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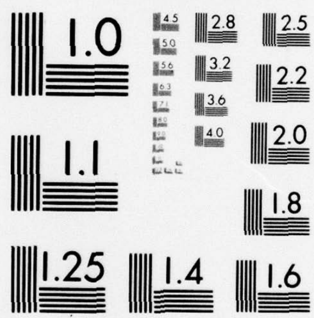

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TURNOVER OF NON-RATED COMPANY GRADE AIRCRAFT MAINTENANCE OFFICERS (AFSC 40XX)

Glenn D. Mills, Jr., Captain, USAF
William A. Osadchey, Captain, USAF

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Air Force managers are currently facing the problem of retention of non-rated company grade aircraft maintenance officers. Very little research has been directed toward developing a predictive model of voluntary turnover for this specific group of Air Force personnel. This research effort developed a conceptual model of turnover based on a synthesis of existing theoretical frameworks from the sociological and industrial psychology literature. The model was tested using data obtained from a newly developed 1979 Aircraft Maintenance Officer (AFSC 40XX) Questionnaire. The study focused on non-rated company grade aircraft maintenance officers. The basic structure of the conceptual model was confirmed, however, several modifications were indicated and incorporated into the revised conceptual model. Age and gender did not function as determinants of turnover as originally hypothesized. Additionally, job satisfaction and expectancy were not confirmed as intervening variables between the determinants and intention to make the Air Force a career. Perceived opportunity to enter a civilian job was confirmed as a significant intervening variable. Recommendations are for modification and further development of the model as an aid in personnel policy decisions.

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TURNOVER OF NON-RATED COMPANY GRADE AIRCRAFT MAINTENANCE OFFICERS (AFSC 40XX)

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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September 1979

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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 degree of

MASTER OF SCIENCE IN LOGISTICS MANAGEMENT
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CHAPTER I

INTRODUCTION

Overview

All organizations within the Department of Defense experience personnel turnover in varying degrees. The current strict budgetary constraints placed on military expenditures and the costs associated with recruiting and training large numbers of personnel to fill the vacancies of those who choose to leave the military are important matters of concern. Excessive turnover increases replacement costs and inhibits the building of a career force with the desired experience and expected proficiency levels needed to maintain organizational effectiveness (5:360).

The Air Force is in direct competition with the other military services and civilian organizations in the recruitment of young college educated men and more recently, women. This competition for potential officers has become more intense and magnifies the importance of retaining those who are presently serving as Air Force members. In addition to the tasks of competition and retention, research studies have shown an increasing trend that Americans in general are demanding more from their jobs than economic return.

Providing more satisfying duty requirements and environmental conditions may place the Air Force in a better position to attract and retain a higher percentage of its personnel (24:73).

Problem Statement

The Air Force is currently facing the problem of retaining non-rated company grade aircraft maintenance officers. In order to offset this specific retention problem area, the Air Force has used the rated supplement program to fill existing non-rated maintenance officer vacancies and has also increased the accession of new lieutenants into the career field (1:3-4). This is reflected by the fact that the Air Force has 492 lieutenant authorizations and currently have 984 assigned. There are also 3803 captain authorizations and only 1278 assigned. To help fill this gap approximately 688 rated supplement officers are assigned to the aircraft maintenance officer career field (14).

The impact of these actions has resulted in a definite experience gap within the career aircraft maintenance officer force. Furthermore, the use of rated supplement officers in maintenance management positions has been perceived by non-rated junior maintenance officers as a detriment to potential promotion opportunities (12). This perception may be causing the non-rated company grade maintenance officers to seek other career fields within the Air Force or to separate

from the service. The retention problem of maintenance officers is a subset of the retention problem confronting the entire Air Force. The Chief of Staff, Gen. Lew Allen, Jr., wrote in "The Air Force Policy Letter for Commanders" on 1 February 1979 that

> The signs of a retention problem are clear and troubling. We have compounded the problem ourselves with sometimes poorly focused management efforts and pressure to compensate for force reductions and to support increased readiness by working long hours. We've pushed our people hard. To some extent, we may have lost the vital balance between concern about the task and concern about the individual. . . . The job of defense will continue to demand hard work, but I do not think hard work is at the root of the problem [26:2-3].

Resolving this retention problem may be possible if senior Air Force managers gain a deeper understanding of turnover within the aircraft maintenance career field. This additional knowledge will assist these same senior managers in establishing policy and providing guidance for non-rated maintenance officers.

To gain knowledge of the organizational turnover phenomenon, it is necessary to review the conclusions from past research efforts. The associated costs and impact of voluntary and involuntary turnover encountered by organizations have been studied by a myriad of researchers. A large portion of the research has centered on identifying costs, determining the extent, and assessing the impact of turnover on organizational effectiveness. This research is concerned primarily with voluntary turnover because this type of

turnover can be influenced by senior managers.

Research efforts have isolated many factors and intervening variables which contribute to voluntary turnover. Pay, promotion, integration, and supervisory style are examples of some of the factors causing turnover. Three intervening variables discussed in the literature are opportunity, expectations, and job satisfaction.

The literature reveals that the study and research of organizational turnover is best accomplished by the use of a conceptual model. One well known model is that presented by Price in The Study of Turnover (20). Another recognized model is that presented by Porter and Steers in their article "Organizational, Work, and Personal Factors in Employee Turnover and Absenteeism" (19). A synthesized version of these two models was developed by Blackburn and Johnson in their thesis, "Turnover of Junior Officers" (2). These turnover models describe the interaction and relationships of the independent variables, intervening variables, and the dependent variable voluntary turnover. In addition to continuing the research begun by Blackburn and Johnson, it is the purpose of this research to determine if the relationships between the independent variables, intervening variables, and voluntary turnover hold when applied to the voluntary turnover of non-rated company grade aircraft maintenance officers in the United States Air Force.

Scope

Many factors of personnel turnover have been identified in the literature. These factors are called the correlates and determinates of turnover. The correlates are the bench marks or indicators to which turnover appears to be related. Two correlates which have consistent support are age and tenure. Ten determinants which have consistent support are similarity of job and vocational interests, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibility, task repetitiveness, and overall reaction to job content. Additionally, two determinants have inconclusive support: family size and responsibilities and the gender of the organization's members (sex). All of the factors identified above are termed independent variables for the purpose of this research.

Three additional factors identified in the literature are job satisfaction, expectations, and opportunity. These factors are termed intervening variables for the purpose of this research.

This study considers age, tenure, similarity of job and vocational interests, family size and responsibilities, sex, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibility, task repetitiveness, overall reaction to job content, job satisfaction, expectations, and opportunity

as variables affecting the turnover of non-rated company grade aircraft maintenance officers in the Air Force.

Research Objectives

Six research objectives were developed from the relationships identified in the literature between the independent variables, the intervening variables, and turnover. These objectives are to:

(1) Determine the direction of the relationships between each of the independent variables and

a. job satisfaction

b. turnover

(2) Determine the strength of the relationships between each of the independent variables and

a. job satisfaction

b. turnover

(3) Determine the direction of the relationships between each of the intervening variables and turnover (voluntarily leave the AFSC 40XX for a different AFSC or separate from the Air Force).

(4) Determine the strength of the relationships between each of the intervening variables and turnover.

(5) Determine the direction and strength of the relationships between the intervening variables.

(6) Test the presumed causal relationships between the independent variables, intervening variables, and the dependent variable.

CHAPTER II

LITERATURE REVIEW

Introduction

The concept of turnover is given several meanings within the literature. Definitions concerning turnover may be expressed in any of the following terms: quits, exits, wastage, retention, mobility, and occupational choice (20:6). Each of these terms implies a slightly different view of the turnover concept. This research is concerned only with voluntary turnover. Price defined voluntary turnover as ". . . individual movement across the membership boundary of a social system which is initiated by the individual [20:9]." Price suggested three criteria in association with system membership:

1. The person must consider himself or herself a member.
2. Frequent interaction within the system boundary.
3. The person must be . . . "subject to the official sanctions . . . of the system [20:5-6]."

Transcending this system boundary is considered turnover. The framework of the social system for this research is the aircraft maintenance officer career field of the United States Air Force (USAF). Turnover within the aircraft maintenance officer field is

considered to be those commissioned officers who voluntarily leave the career field for another or separate from the Air Force, as illustrated in Figure 1. For the purpose of this study, the term turnover is synonymous with voluntary turnover.

It is important to understand the distinctions and dimensions of the turnover concept. Allen Bluedorn attempted to clarify the concept by developing a taxonomy of turnover. The taxonomy centers on a cross-classification, encompassing two dimensions. The two dimensions are the direction of movement across the organization's or system membership boundary and whether or not the movement is initiated by the member (3:648). Within these two dimensions Bluedorn classifies four types of turnover: (1) voluntary separations, (2) voluntary accessions, (3) involuntary accessions, and (4) involuntary separations (3:648). This research centers on the dimension of moving across the boundary and out of the defined system on a voluntary basis.

The concept of turnover has been the subject of considerable research and discussion (2; 5; 10; 13; 19; 20; 21). It is apparent that the volume of turnover research is great. However, each individual research effort usually studies a specific aspect of turnover. In order to obtain an overall perspective and understanding of turnover, it is necessary to examine reviews and codifications of the literature.

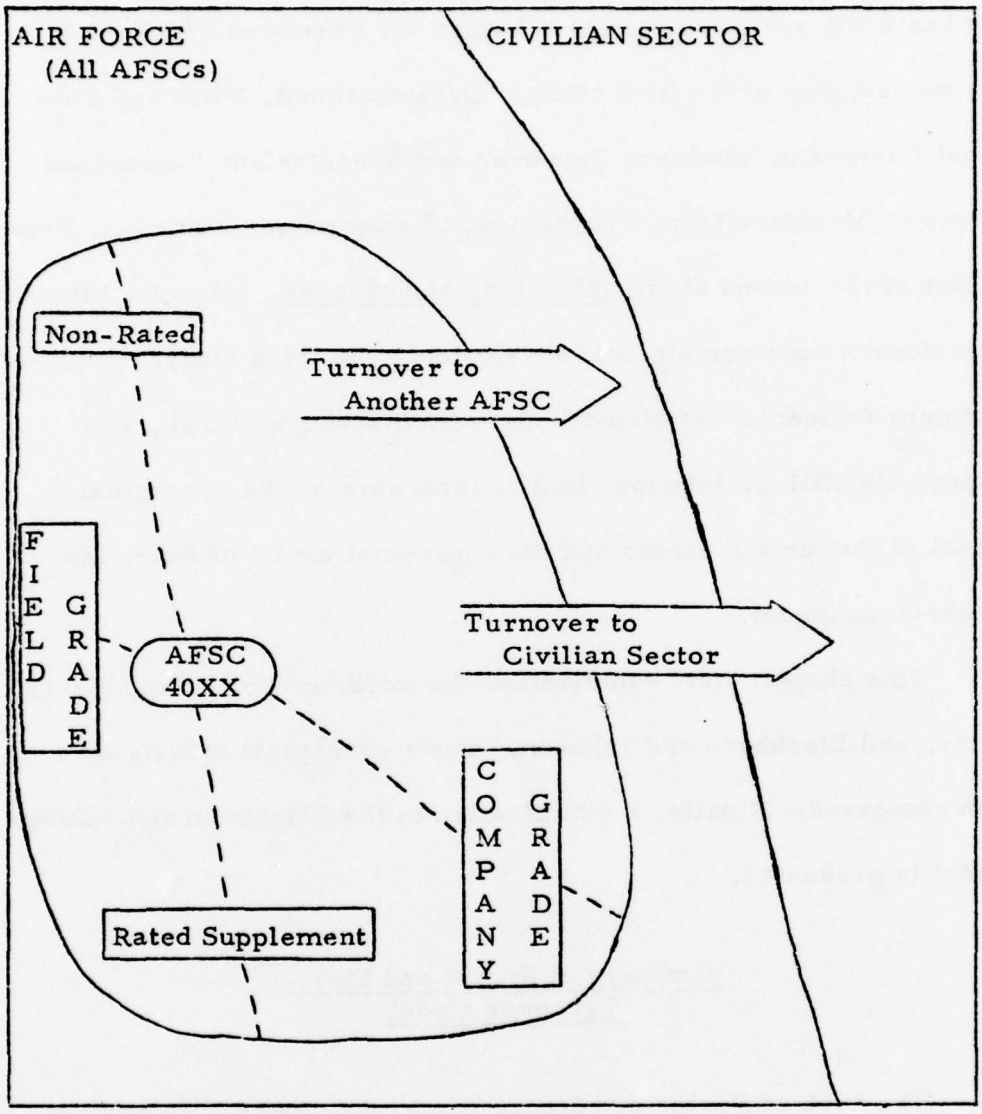

Figure 1

Model of Non-Rated Company Grade
Aircraft Maintenance Officer Turnover

The literature review identified three studies that comprehensively present reviews of the literature and conceptual frameworks for analyzing research results. Lyman W. Porter and Richard M. Steers, authors of the first study, "Organizational, Work and Personal Factors in Employee Turnover and Absenteeism," examined turnover literature from a psychological standpoint. James L. Price, author of the second study, The Study of Turnover, examines turnover literature from a sociological standpoint. The third study, "Turnover of Junior Officers," by Major Ronald L. Blackburn, USAF, and Captain Randall L. Johnson, USAF, incorporated the conceptual model of Porter and Steers and the conceptual model of Price into a synthesized model.

This chapter first summarizes the works of Porter and Steers, Price, and Blackburn and Johnson. Their conceptual models are then compared. Finally, a modification to the Blackburn and Johnson model is presented.

Summary of Porter and Steers Turnover Model

The work of Porter and Steers is a review and codification of literature pertinent to personnel turnover. They concluded that overall job satisfaction is consistently and inversely related to turnover (19:157). The authors systematically separated fourteen factors

of the work environment which constitute overall job satisfaction into four generalized categories. In order to present a mechanism through which each specific factor contributes to overall job satisfaction, they incorporated the concept of met expectations. It is the identification of the distinctive causal factors (independent variables) of job satisfaction and the introduction of met expectations (an intervening variable) that makes the Porter and Steers model relevant to further research studies. Figure 2 presents a visual conceptualization of the Porter and Steers model of turnover.

Job Satisfaction

Porter and Steers concluded that overall job satisfaction plays the central role in an individual's decision to continue serving in his/her present job or withdraw from the job. This withdrawal from the job is turnover. The authors cited fourteen specific studies which consistently conclude that overall job satisfaction is inversely (negatively) related to turnover (19:154). That is, if an individual's overall job satisfaction is low, he/she is more likely to withdraw from the job and thereby become a turnover statistic. Conversely, if an individual's overall job satisfaction is high, he/she is less likely to withdraw from the job.

Causal Factors of Job Satisfaction

Having established the central role of overall job satisfaction

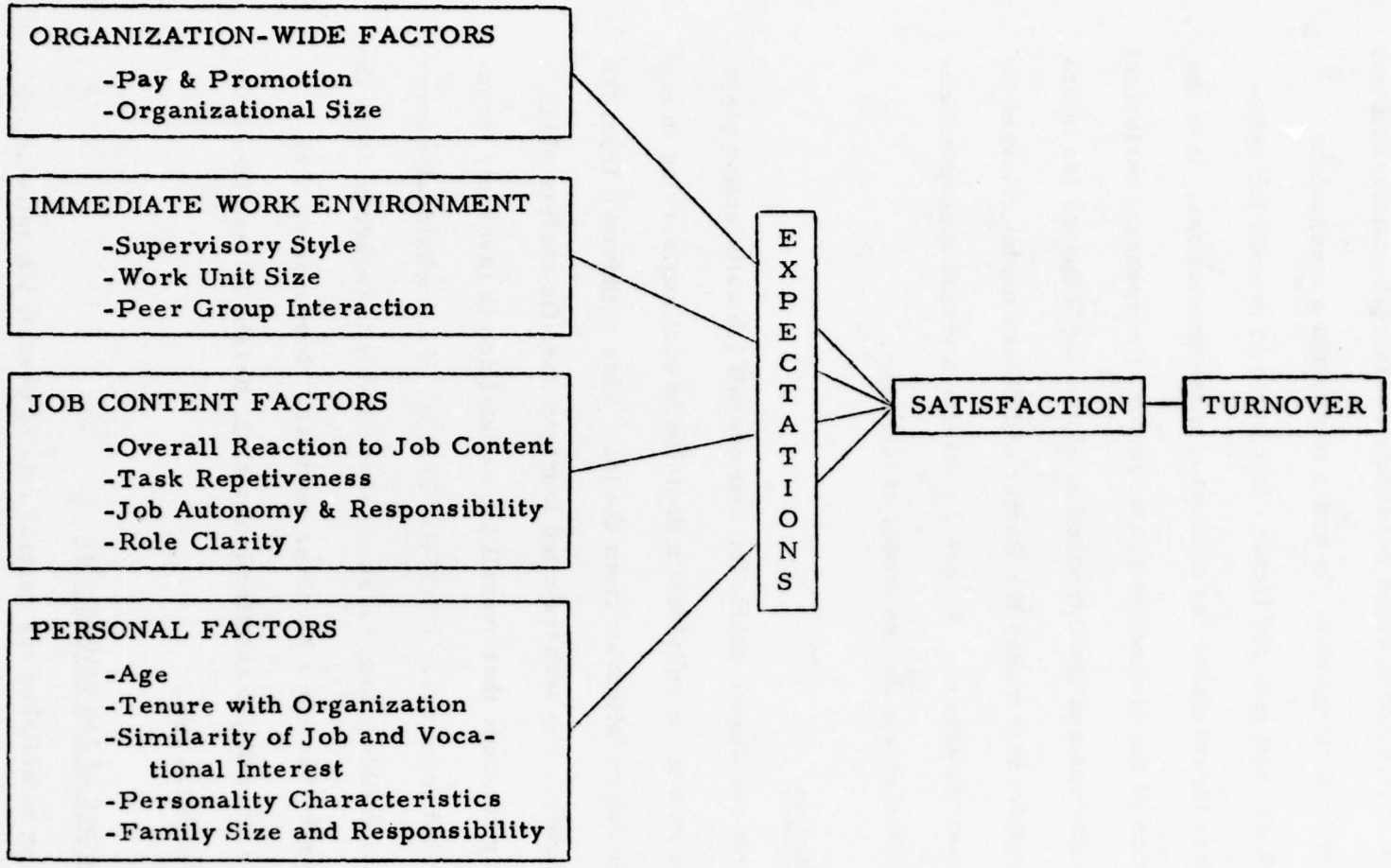

Figure 2

Model of Porter and Steers' Conceptual Framework (2:19)

and its inverse relationship to turnover, Porter and Steers systematically separated fourteen factors of the environment which contribute to overall job satisfaction into four generalized categories. These categories are "(a) organization-wide factors, (b) immediate work environment factors, (c) job content factors, and (d) personal factors [19:152]."

Organization-wide factors. Organization-wide factors were defined as "those variables affecting the individual that are primarily determined by persons or events external to the immediate work group [19:154-155]." The two factors in this category are: (1) pay and promotion, and (2) organization size (19:155). The authors cited eleven studies which concluded that pay and promotion contribute to overall job satisfaction. To this conclusion, Porter and Steers included the concepts of perceived equity and met expectations in an individual's determination of satisfaction (19:155-156). With regard to organization size, the authors cited only one study which inconclusively determined that organization size contributes to overall job satisfaction (19:156). However, it was noted that the factor should be included in further studies to determine its significance and relationship to job satisfaction.

Immediate work environment factors. This second category of factors are those which center around "the immediate work situation

in which the employee finds himself [19:157]." Factors considered in this area include: (a) supervisory style, (b) work unit size, and (c) the nature of peer group interaction (19:157). The authors cite ten specific studies and concluded that increased satisfaction with supervisory style directly results in more positive job satisfaction (19:157-159). With regard to work unit size, Porter and Steers cited nine studies which concluded that larger work units result in "lower group cohesiveness, higher task specialization, and poorer communications [19:159]" and thereby decrease overall job satisfaction. Finally, the authors concluded from six studies that increased peer group interaction in the form of mutual support contributes to an individual's higher level of overall job satisfaction (19:159-161).

Job content factors. Job content factors are those duties and activities associated with a particular job and comprise the third category of job satisfaction factors. Porter and Steers identified four specific factors in this category: (a) overall reaction to job content, (b) task repetitiveness, (c) job autonomy and responsibility, and (d) role clarity (19:161). The authors cited nine studies which concluded that increased satisfaction with the overall content of a particular job in association with met expectations results in increased overall job satisfaction (19:161-162). This denotes a direct relationship between overall reaction to job content and overall job satisfaction. However,

the authors concluded from five studies that an inverse relationship exists between task repetitiveness and overall job satisfaction. Porter and Steers noted that the pursuit of efficiency has resulted in standardized routine jobs and employee dissatisfaction. Therefore, the authors determined that increased task repetitiveness generally results in decreased overall job satisfaction (19:162).

With regard to job autonomy, Porter and Steers concluded from seven studies that when an individual perceives that his/her autonomy over the job is greater, the individual will exhibit increased overall job satisfaction since his/her needs of self-fulfillment are met (12:163). Similarly, the authors determined from four separate studies that higher congruence between the individual's expectations of the job and the expectations of the organization result in a higher degree of overall job satisfaction on the part of the individual (12:163-164). Porter and Steers stressed that realistic information and communication between the individual and the organization are necessary for the attainment of this congruency.

Personal factors. The fourth and final category is that of personal factors that are unique to the individual. The authors identified five factors in this category: (a) age, (b) tenure, (c) similarity of job and vocational interest, (d) personality characteristics, and (e) family size and responsibility (19:164). Porter and Steers cited twelve

studies concerning age and six studies concerning tenure which indicate that both age and tenure are directly related to job satisfaction (12:168). That is, as age and tenure increase, the degree of overall job satisfaction increases. Likewise, the authors determined from three specific studies that higher congruence between the nature of the job and the individual's vocational interest generally results in higher degrees of overall job satisfaction (19:166).

With regard to personality characteristics, Porter and Steers determined from six studies that individuals with extreme personality traits, such as high or low achievement needs, are more apt to experience lower degrees of overall job satisfaction (19:166). Finally, the authors concluded that increases in family size and responsibilities result in lower overall job satisfaction for female personnel if the nature of the job interfers with family responsibilities. However, a definitive relationship concerning male personnel could not be made from the eight cited studies (19:166-167).

Concept of Met Expectations

As previously stated, Porter and Steers incorporated the concept of met expectations to explain the mechanism by which each specific factor contributes to overall job satisfaction.

> The concept of met expectations may be viewed as the discrepancy between what a person encounters on the job in way of positive and negative experiences and what he expected to encounter [19:152].

In theory, each employee formulates certain expectations concerning his/her job. The authors concluded that met expectations acts as an intervening variable in weighing the employee's final degree of overall job satisfaction with regard to each specific factor.

Summary of Price Turnover Model

The Study of Turnover by Price, is a synopsis and codification of the major works of literature on organizational turnover. Price systematically constructs propositions based on turnover research to allow the ranking of factors according to their ability to predict the extent and variations in turnover (20:91). It is the accumulation of the distinctive factors of turnover that makes the use of the Price model applicable to further research efforts. The three significant components of the model are what Price calls the determinants, intervening variables, and correlates of turnover. The known causal factors of turnover are contained in these components as shown in Figure 3.

Determinants

The determinants of turnover are a set of variables which are generally considered causal factors in the variation of turnover (20:61). A total of nine determinants were codified. The first five determinants of pay, integration, instrumental communications,

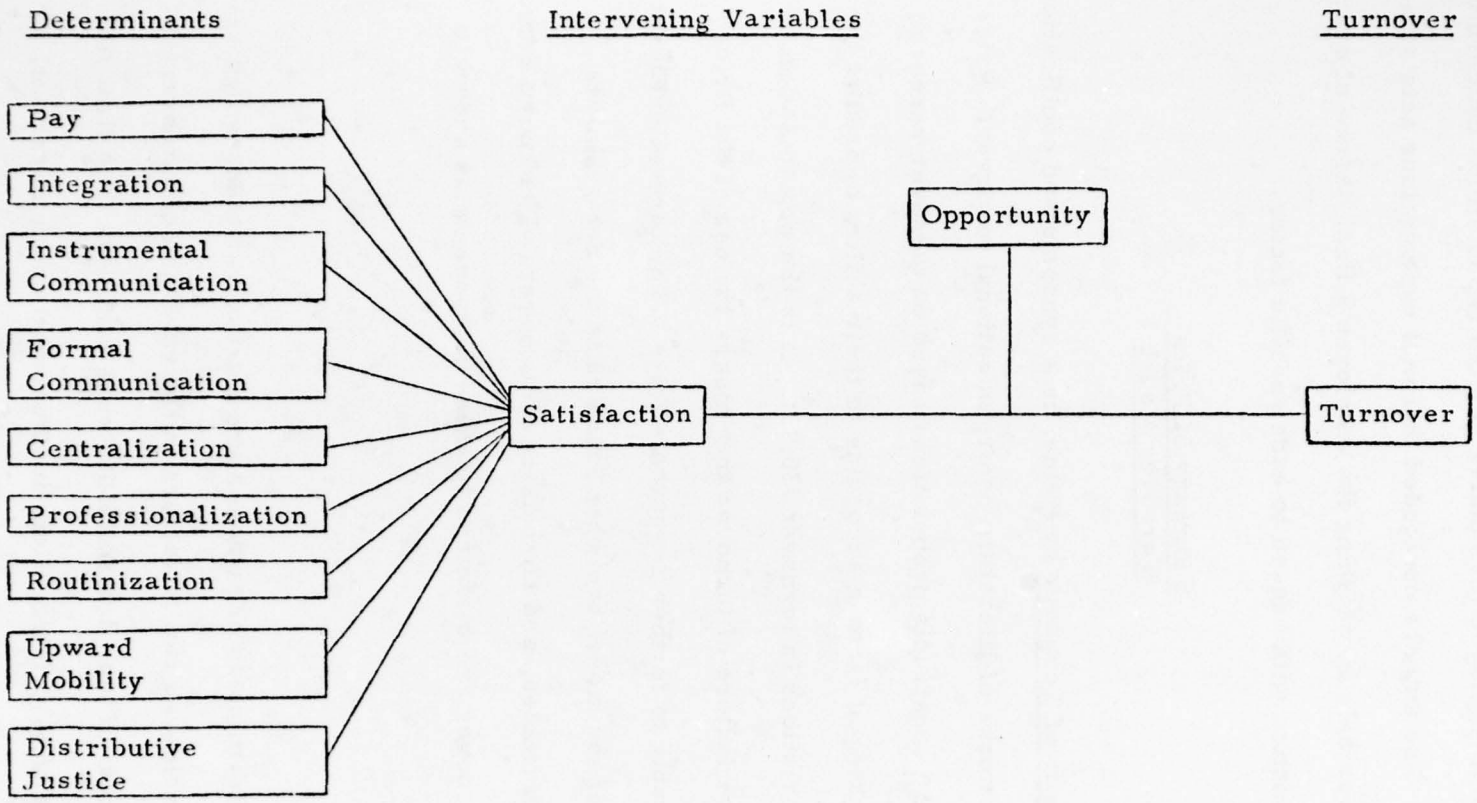

Figure 3

Model of Price's Conceptual Framework (2:30)

formal communication, and centralization are the strong determinants because of the large amount of support in the literature. The next four determinants of routinization, professionalization, upward mobility, and distributive justice are the weak determinants due to the lesser amount of support. These weak determinants were included for the evidence has shown that they are consistently related to turnover (9:31 and 10:144).

Intervening Variables

Price identified two intervening variables: opportunity and satisfaction. These variables are those that interact or intervene between the determinants (independent) variables and turnover (dependent variable) (20:79). It is significant to note that satisfaction and opportunity do not interact with the independent variable at the same time. The satisfaction level is established prior to the intervening nature of the opportunity variable.

Correlates

The correlates ". . . are the indicators to which turnover is related [20:24]." Contrasted with determinants, the correlates are not considered factors which cause turnover. They do imply correlation between variables (20:24). Price lists six correlates that are highly supported by the literature and three weakly supported correlates. Only two of the nine correlates are presented in this research

as the other seven represent factors which are not applicable to this study. Length of service (tenure) and age are the two correlates that are discussed. The Porter and Steers model identified these two correlates as determinants and this study uses that approach.

Length of service. Price noted the following generalization about the strong correlate, length of service: "members with low lengths of service usually have higher rates of turnover than members with high lengths of service [20:26]." This does not mean that organization members with high lengths of service do not leave an organization; it does indicate that their rate of leaving is lower.

Age. Price made this generalization about age: "younger members usually have higher rates of turnover than older members [20:28]." This correlate is also strongly supported. The indication is that the older members of an organization usually have more length of service than the younger members.

The influence of sex. Price does not include sex as a correlate or determinant due to inconsistent findings in the literature. Three codifications and eleven empirical studies support the finding that female members have higher rates of turnover than male members (20:40). Singer's 1970 study supports this finding with international comparisons (23:109-114). However, Price also lists two

codifications and four empirical studies which support the finding that male members have higher rates of turnover than female members (20:40). The March and Simon codification supports this finding except they indicate that marriage may be an influencing factor in the turnover rate (11:101). Additionally, there is a significant amount of literature that supports the finding that there is no significant differences between male and female turnover rates (20:40). Due to these findings Price does not offer a generalization concerning the relationship between sex and turnover.

Relationship Between the Determinants, Correlates, and Intervening Variables

Price suggested that the determinants and intervening variables ". . . offer a plausible explanation for the correlates [20:87]." The determinants and intervening variables should allow a researcher to predict patterns and these patterns should be consistent with the correlate generalization (20:84). This appears to be true when length of service is analyzed. Personnel who have been with a particular organization a short time period typically have lower pay, less power, and fewer friends. Consequently, it is anticipated that these individuals have higher turnover rates.

Blackburn and Johnson Synthesized Model

This synthesized model identified three major areas of

similarity or difference in the Price and Porter and Steers' models:

1. Consideration of factors external to the organization were considered by Price.

2. Emphasis on the individual was stressed by Porter and Steers.

3. Emphasis on expectancy theory was stressed by Porter and Steers.

Based on these three areas, the synthesized model was developed as shown in Figure 4. The synthesized model effectively combined the factors that Price or Porter and Steers did not specifically include in their respective models. For example, the Price model considered factors external to the organization such as job opportunity whereas Porter and Steers did not include external factors. Therefore,

> . . . the Price model is an open-system model capable of reflecting changes in the external environment and the Porter and Steers model is a closed-system model reflecting organizational and individual factors in isolation [2:32].

Blackburn and Johnson also point out that the Porter and Steers' model emphasized nine factors that focus on the individual (2:32). Price only addresses two of these factors (tenure and age). Lastly, the synthesized model includes Porter and Steers' emphasis on expectancy theory and the use of the concept of met expectations (2:32).

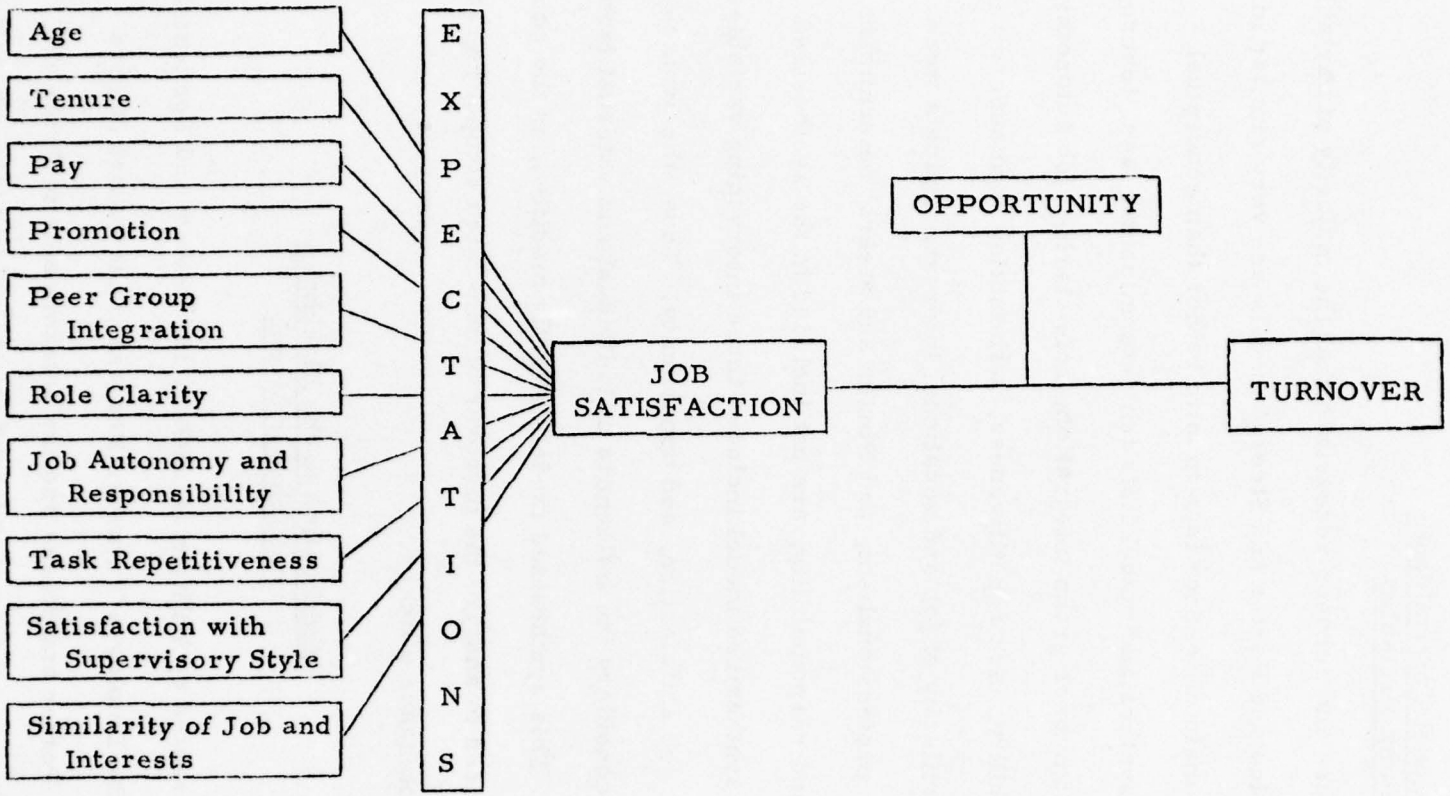

Figure 4

Model of Blackburn and Johnson's Conceptual Framework (2:40)

Synthesized Model Determinants and Intervening Variables

Blackburn and Johnson recognized that the majority of variables within the Price and Porter and Steers' models are very similar in nature. The main difference is semantic rather than conceptual (2:35). The synthesized model lists ten determinants: age, tenure, pay, promotion, peer group integration, role clarity, job autonomy and responsibility, task repetitiveness, satisfaction with supervisory style, and similarity of job and vocational interest. Price's weak determinant, professionalism, and Porter and Steers' determinant, family size and responsibility, are not included in the synthesized model. The synthesized model includes three intervening variables: expectations, job satisfaction, and opportunity. Thus, the synthesized model considers the influences of individual and external factors on turnover. This synthesized model, slightly modified, is the conceptual tool used to analyze the turnover of non-rated company grade aircraft maintenance officers.

Modification to the Blackburn and Johnson Model

As presented by William H. Mobley in "Review and Conceptual Analysis of the Employee Turnover Process," the causal factors identified by Porter and Steers and the determinants of Price are organized into two subsets of independent variables: (1) personal

characteristics and (2) organizational and job characteristics (11: Table 13). The intervening variables are presented in the sequential order that they are applied to each specific independent variable in formulating overall job satisfaction. The overall modified model consists of fourteen independent variables and three intervening variables as shown in Figure 5.

Independent Variables:
Personal Characteristics

Age. Porter and Steers defined age to be a causal factor whereas Price defined age to be a correlate in association with tenure. The Porter and Steers definition is more applicable when prior enlisted officers are considered. Age is considered an independent variable.

Tenure. Like age, Porter and Steers defined tenure to be a causal factor whereas Price defined tenure as a correlate in association with age. Again, the Porter and Steers definition is more readily applicable when prior enlisted officers are considered. Tenure is considered to be an independent variable.

Similarity of job with vocational interest. Porter and Steers defined this factor to be a causal factor. Price did not consider this factor. In the modified model, similarity of job with vocational interest is

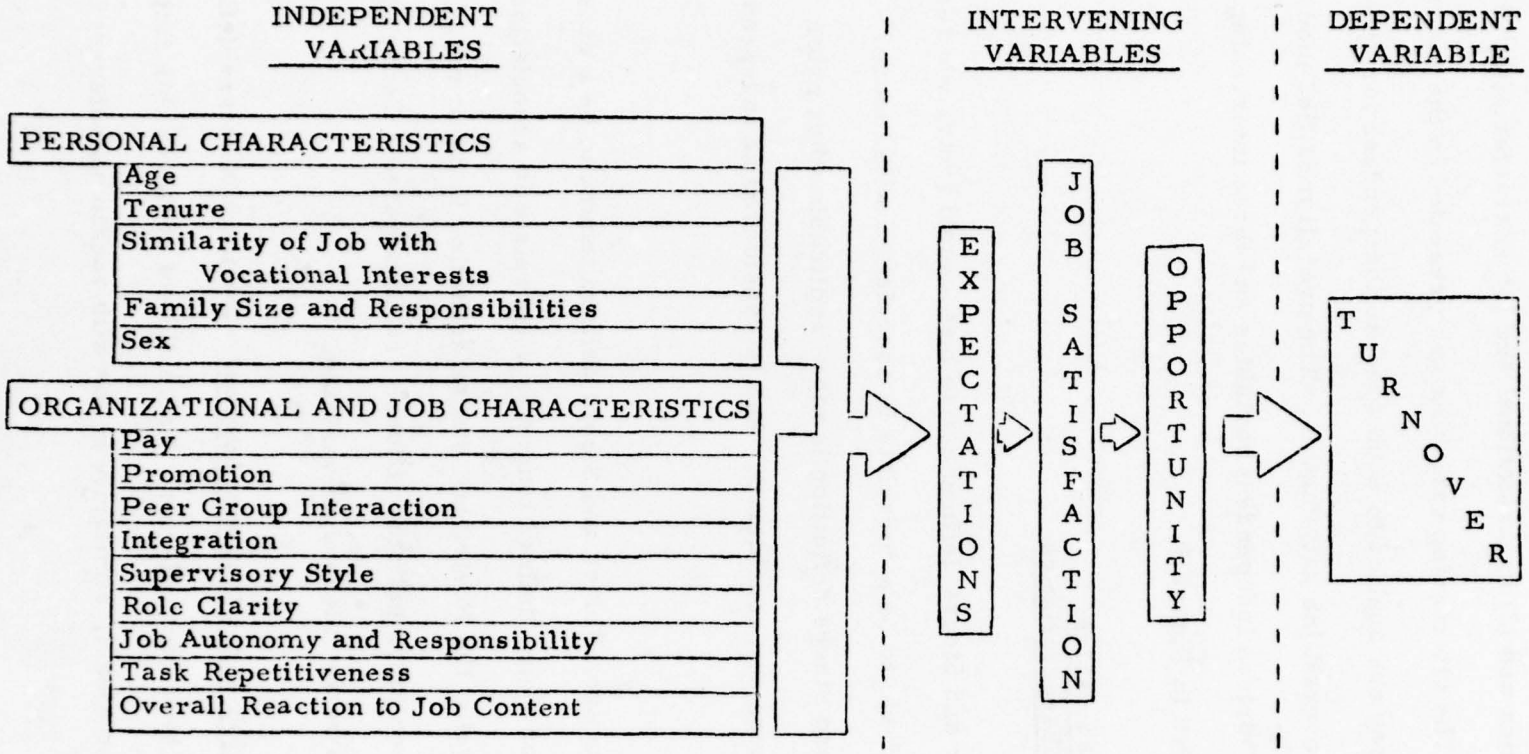

Figure 5

Modification to Blackburn and Johnson Synthesized Turnover Model

considered to be an independent variable since it applies to the subject of this study.

Family size and responsibility. This variable is included in the Porter and Steers codification but not in the Price review. Additionally, this variable is not generally well supported by the literature. The contradictory nature of the literature reviewed indicates that family size and responsibilities is a factor in job satisfaction within some populations. Thus, family size and responsibilities is considered to be an independent variable in the modified model.

Sex. Porter and Steers do not include sex within their model. Price also does not include sex, primarily due to the inconclusive and contradictory findings in the literature. Price suggests that further research on the relationship between sex and turnover is needed. This study includes sex as an independent variable due to the increased percentage of women within the non-rated maintenance officer career field.

Independent Variables: Organizational and Job Characteristics

Pay. Pay is a well supported variable in both the Porter and Steers review and the Price review. It is important to note the difference between pay and satisfaction with pay. Satisfaction with pay is the

individual's perception of the amount of reward received for services. Pay is considered to be an independent variable.

Promotion. Porter and Steers addressed this factor when considering the concepts of opportunity and equity. Price addressed promotion in the concepts of upward mobility and distributive justice. In the modified model, promotion is considered to be an independent variable which represents

> . . . the individual's perceived level of, and equity of, opportunity for upward movement in military rank and/or opportunity for a position within the organization with greater prestige, power, or responsibility [2:38].

Peer group interaction. Porter and Steers addressed peer group interaction as the interactive dynamics between the individual and his/her peers. Price suggests that peer group interaction is the extent or nature of the individual's perceived relationship in other than the primary group (20:71). Peer group interaction is considered to be an independent variable in the modified model.

Integration. In defining integration, Price extended the Porter and Steers' definition of peer group interaction to include both peer group interaction and interaction with the entire organizational environment. Integration is considered to be an independent variable.

Supervisory style. Porter and Steers determined supervisory style

a well supported causal factor in the literature. Price did not address this factor in his review. Supervisory style is considered to be an independent variable in the modified model.

Role clarity. Porter and Steers' role clarity concept includes Price's determinants of instrumental and formal communications. Instrumental communication is ". . . the transmission of information directly related to role performance [20:74]." Formal communication is a subset of instrumental communication and it is considered to be ". . . communication officially transmitted [20:74]." This study considers both types of information important. Thus, the more general term, role clarity, is considered to be an independent variable.

Job autonomy and responsibility. Price considered the concepts of employee autonomy and responsibility in addressing the concept of centralization. The centralization concept is related to the amount or degree of participation subordinates within an organization are allowed to influence the decision making process. Porter and Steers considered job autonomy and responsibility as an all encompassing concept. The Porter and Steers overall concept is used as an independent variable in the modified model.

Task repetitiveness. The Porter and Steers definition of task repetitiveness as a causal factor included Price's concept of routinization.

The Porter and Steers definition is considered to be more inclusive. Task repetitiveness is considered to be an independent variable.

Overall reaction to job content. Porter and Steers defined overall reaction to job content to be a causal factor. Price did not address this factor separately. Overall reaction to job content is considered to be an independent variable.

Intervening Variables

The modified model contains three intervening variables: expectations, job satisfaction, and opportunity. These variables are those that interact or intervene between the independent variables (determinants) and the dependent variable (turnover) (20:79).

Expectations. The Porter and Steers model discusses the role of individual expectations (defined earlier) on the level of satisfaction. The fact that the independent variables produce differing effects in each individual points out the need to include expectations as an intervening variable.

Satisfaction. This intervening variable is defined as ". . . the degree to which members of a social system have a positive affective orientation toward membership in the system [20:79]." A majority of the literature support satisfaction as a variable influencing turnover (2; 8; 9; 10; 11; 13; 19; 20; 27). Some of the literature refers to

satisfaction as a determinant rather than an intervening variable. However, the notion that the level of satisfaction affects turnover is consistent. This illustrates the necessity of determining the causal factors of variations in satisfaction. For example, Porter and Lawler's motivation model shows that motivation depends on reward values, perceived effort required, and the probability of receiving the reward. Actual performance is determined by the amount of spent effort subject to an individual's abilities, task perception, and necessary activities. This actual performance leads to either intrinsic or extrinsic rewards. The perceived value of these rewards will determine the level of satisfaction (8:571). This motivation model links Porter and Steers' expectations to satisfaction. Therefore, both are considered intervening variables in the modified model.

Opportunity. "Opportunity is the availability of alternative roles in the environment [20:81]." This variable allows external environmental factors to influence the decision on whether or not to withdraw from a system or organization. The literature does reflect a relationship between opportunity and turnover (20:12). However, the findings as to the extent of this relationship are inconsistent. Price proposes that the causal factors (interaction of independent variables and intervening variables) influence the level of satisfaction and the role of opportunity in organizational turnover. The modified model

includes opportunity as an intervening variable.

Correlation of Career Intent and Career Status

The study of Blackburn and Johnson determined that a correlation between expressed career intent and the career status of young officers existed. As such, the authors determined that the "expressed career intent of young officers was a reasonably accurate predictor of career status and, hence, turnover [2:42]." Furthermore, Porter and Steers, in their review of the literature, determined that "expressed intentions concerning future participation may be an even better predictor [19:153] . . ." of turnover. Therefore, this study considers expressed career intent to be a reliable predictor of turnover.

Research Implications and Hypotheses

The literature review identified the paramount independent variables and intervening variables of turnover. In view of the literature review, a modified model is presented in Figure 5.

The literature also identified expressed career intent as a reliable predictor of turnover. This correlation of expressed career intent and turnover is used in applying the proposed model on the population of non-rated company grade aircraft maintenance officers. It is hypothesized that as overall job satisfaction increases, individuals

express higher degrees of career intent. The following hypotheses were developed from the relationships identified in the literature.

The following hypotheses concern the relationships between the independent variables and job satisfaction (objectives 1 and 2).

Hypothesis 1a - as the values of the independent variables (age, tenure, similarity of job with vocational interests, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibility, task repetitiveness, and overall reaction to job content) increases, the level of job satisfaction increases.

Hypothesis 1b - as family size and responsibility increases the level of job satisfaction increases for men and decreases for women.

Hypothesis 2 - as the values of the independent variables increases the intention to remain in the Air Force and the 40XX Air Force specialty will increase.

The following hypotheses concerns the relationship between the intervening variables and turnover (objectives 3 and 4).

Hypothesis 3 - as job satisfaction increases, turnover decreases.

Hypothesis 4 - as perceived opportunity increases, turnover increases.

Hypothesis 5 - as expectancy increases, turnover decreases.

The following hypotheses concerns the relationship between the intervening variables (objective 5).

Hypothesis 6 - as job satisfaction increases, perceived opportunity decreases.

Hypothesis 7 - as job satisfaction increases, perceived expectancy increases.

Hypothesis 8 - as perceived opportunity increases, expectancy decreases.

Research Question

What is the validity of the presumed causal ordering of the independent variables, intervening variables, and turnover (objective 6)?

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

Introduction

This chapter presents the research design and methodology used in this study. The data gathering plan is presented first, followed by variable definitions and measurement plans. Finally, the chapter presents the data analysis plan.

Data Gathering Plan

Data Collection Instrument

The data collection instrument used in this study was a composite of the Organizational Climate Survey and 32 newly developed questions. The Organizational Climate Survey was developed by HQ USAF DCS/Manpower and Personnel and is managed by AFMPC/MPCYP, Randolph AFB TX 78148 (26:I-1). The newly developed questions are derivations of questions found in the Organizational Climate Survey.

The data collection instrument, hereafter referred to as the survey instrument, consisted of 95 questions of which the first 12 provided demographic information. The remaining 83 questions related to the

individual's perception of the factors which impact his/her Air Force life. A copy of the survey instrument is attached as Appendix A.

Survey instrument bias. The survey instrument did not have any intentional bias incorporated into its structure.

Instrument validity and reliability. The Organizational Climate Survey has been extensively used under the supervision of AFMPC/MPCYP. Past studies have obtained valid analytical results and it is assumed that the instrument was valid and reliable for the purposes intended in this study.

Description of the Population

The target population in this study consisted of non-rated company grade aircraft maintenance officers on active duty with operational USAF units. The total size of the target population was 2,036 (14). No individuals or groups of individuals were excluded from the target population.

Description of the Sample

The survey instrument was mailed to 834 randomly selected individuals in the target population with the intention of obtaining a representative sample. It was anticipated that at least 400 responses would be obtained since previous Air Force surveys accomplished

through the mail exhibited approximately 50% return rates (21:36). The data producing sample consisted of 480 members of the target population who responded to the survey. Incorrectly completed survey instruments were eliminated from the sample as well as those that were not returned within 45 days of initial distribution. Chapter IV includes a description and discussion of the demographic characteristics of the survey respondees.

Inference about the Population

Inferences about the population will be made only for the Air Force population represented by the sample previously described. That is, inferences about non-rated company grade aircraft maintenance officers will be made. No inferences will be made about officers excluded from the sample population or Air Force personnel in general.

Variable Definitions and Measurement

To empirically measure the variables contained within the questionnaire, it is necessary to operationally define each variable and identify the specific survey questions which facilitate statistical measurement. This procedure facilitates the drawing of inferences from the data analysis.

Turnover

Turnover is the dependent variable of the modified model presented in Figure 5, and as such, was dealt with first. Turnover in the Air Force is seen to have two dimensions: voluntarily leaving the present career field and/or voluntarily leaving the Air Force. Expressed career intent was used as a surrogate for turnover and, as operationalized in this study, expressed career intent is the intent of an individual to permanently remain in the aircraft maintenance career field and/or make the Air Force a career. Each respondent's expressed career intent was measured by his/her responses to survey questions 21 and 50. Question 21 concerns the individual's intent to remain in AFSC 40XX and question 50 concerns the individual's intent to make the Air Force a career. The responses to the questions were arrayed on a Likert seven point scale and were given values from 1 (strongly disagree) to 7 (strongly agree).

The career intent question has proven to be valid and reliable. Similar questions were used in the Naval Health Research Center and Air Force Human Resources Laboratory studies. These studies indicated that expressed career intent, as measured on a Likert response scale, is a reliable and accurate predictor of behavior (2:49).

Job Satisfaction

Job satisfaction is defined as the degree to which a member of an

organization has a positive affective orientation toward membership in the organization (20:156). As operationalized in this study, job satisfaction is the individual's perception of his satisfaction with his job and was measured by the Hoppock Job Satisfaction Survey.

Hoppock Survey is a set of four questions relating to an individual's perception of satisfaction with various aspects of his job. Each of the four questions was given equal weight and a job satisfaction score was obtained by summing the responses to questions 83, 84, 85 and 86 in the survey. The responses to these four questions were arrayed on a seven point Likert scale with values from 1 to 7. The sum of the responses ranged from 4 to 28. The sequence of responses on questions 83 and 86 were reversed and a correction for the reversal made prior to summing the four responses (2:50). The Hoppock Job Satisfaction measure has been widely used and provides a valid and reliable measure of job satisfaction. McNichols conducted a study on data bases of 28,000 responses from target populations including research and development professionals, secretaries, clerks, and managerial employees from all organizational levels. The research results of the McNichols study indicate that the Hoppock Job Satisfaction Measure provides a meaningful measure of job satisfaction when evaluated in terms of reliability, construct validity, and face validity. In addition, the Hoppock Measure continues to provide a meaningful measure of job satisfaction when applied to different

samples such as differing job categories, demographic groups, and organizational levels (2:51).

Opportunity

Opportunity represents the external factors that contribute to an individual's turnover decision. In this study, opportunity specifically represents alternative job opportunities in the environment and is defined as the individual's perception of the availability of alternative jobs in other AFSC's or in private industry with pay, benefits, duties, and responsibilities comparable with his/her present Air Force job.

Opportunity was measured by the responses to questions 31, 40, 58, and 70. Questions 40 and 70 concern the individual's perceived opportunity to enter another AFSC and questions 31 and 58 concern the individual's perceived opportunity to obtain a comparable job in the civilian sector. The responses to the questions were arrayed on a Likert seven point scale and given the values from 1 (strongly disagree) to 7 (strongly agree). Question 58 was reverse scored since it was negatively stated. Each of the four questions were given equal weight and an opportunity score, ranging from 4 to 28, was obtained by summing the responses to the four questions.

No previous studies were located that utilized the opportunity question alone; thus, prior reliability and validity data were unavailable. However, the question specifically asked whether an individual

agreed or disagreed with the fact that comparable employment was obtainable in another AFSC or in the civilian sector at the present time. Therefore, the question was a valid measure of the individual's perception of opportunity for comparable employment outside of the AFSC 40XX career field or the Air Force. The reliability of the measurement question can be determined by techniques that are within the scope of this study. However, it seemed reasonable to assume that these simple, direct questions produced reliable data. Furthermore, all the questions used to measure the variables that follow were equally simple and direct and were assumed to be reliable and valid for the purposes of this study.

Expectations

Expectations is strongly supported as an intervening variable of turnover, and as defined in this study, the concept of met expectations is used to explain the vehicle by which each specific factor contributes to overall job satisfaction. Met expectations can be viewed as the difference between what a person meets on the job in the way of positive and negative experiences and what he expected to meet (19:152). Expectancy was measured by the responses to questions 87 through 95. The responses were arrayed on a Likert seven point scale and given values of 1 (strongly disagree) to 7 (strongly agree). Each of the nine questions were given equal weight and an expectancy score,

ranging from 9 to 63, was obtained by summing the responses to the nine questions.

Age, Tenure, Family Size and Responsibilities, and Sex

Twelve demographic questions were included in the survey instrument to obtain descriptive data concerning the sample. Four of the previously identified independent variables of the modified turnover model were measured by eight of the twelve demographic variables. The four independent variables are age, tenure, family size and responsibilities, and sex.

The respondent's age was measured by question 3. The respondent's tenure, total years of Air Force service, was measured by questions 4 and 5. The family size and responsibilities of each respondent was measured by questions 8 and 9. The respondent's sex was obtained by the response to question 2.

The questions were direct and provided valid data for the measurement of these independent variables. The measured data were used to draw inferences concerning the relationships between these four independent variables, the intervening variables, and turnover.

Similarity of Job With Vocational Interests

Similarity of job with vocational interests was supported as a determinant by some of the literature and, as defined in this study

represents the degree of congruency of the individual's personal vocational interests and his/her job. This determinant was measured by the responses to questions 25, 37, 57, and 68. The responses to the questions were arrayed on a Likert seven point scale and given the values of 1 (strongly disagree) to 7 (strongly agree). Questions 37 and 57 were reverse scored since they were negatively stated. Each of the four questions was given equal weight and a similarity of job with vocational interest score, ranging from 4 to 28, was obtained by summing the responses to the five questions. The questions were direct and provided valid interval level data for the measurement of the variable as defined.

Pay

Pay is one of the determinants of turnover that has consistent and strong support in the literature and is defined as the individual's perception of satisfaction of basic human needs such as food, shelter, clothing; the ability to maintain an acceptable standard of living.

Pay was measured by the responses to questions 18, 27, 45, and 64. The responses to the questions were arrayed on a Likert seven point scale and given the values of 1 (strongly disagree) to 7 (strongly agree). Each of the four questions was given equal weight and a pay score, ranging from 4 to 28, was obtained by summing the responses to the four questions. The questions were direct and

produced valid interval level data for the measurement of the variable as defined.

Promotion

Promotion is also strongly supported as a determinant of turnover in the literature and, as defined in this study, represents the individual's perception of the effectiveness of the Air Force promotion system in terms of selecting the best qualified people for promotion.

Promotion was measured by the responses to questions 19, 32, 46, 54, and 67. The responses to the questions were arrayed on a Likert seven point scale and given the values of 1 (strongly disagree) to 7 (strongly agree). Question 67 was reverse scored since it was negative stated. Each of the five questions was given equal weight and a promotion score, ranging from 5 to 35, was obtained by summing the responses to the five questions. The questions were direct and provided valid interval level data for the measurement of the variable as defined.

Peer Group Interaction

Peer group interaction, a strongly supported determinant, is primarily determined by the extent of the individual's perceived relationship with other than the primary group. It is defined as the degree to which members of the individual's work group encourage participation, teamwork, and exchange of information.

Peer group interaction was measured by the responses to questions 16, 22, 33 and 41. The responses to the questions were arrayed on a Likert seven point scale and given the values of 1 (strongly disagree) to 7 (strongly agree). Each of the four questions was given equal weight and a peer group interaction score, ranging from 4 to 28, was obtained by summing the responses to the four questions.

The questions were given equal weight because they dealt with different aspects of peer group interaction. It was not the purpose of this study to determine which aspect plays the predominant role. Furthermore, the four questions directly solicited the respondent's perception of the aspects of peer group interaction and produced valid interval level data for the measurement of the variable as defined.

Integration

Integration is another strongly supported determinant and it is defined as ". . . the extent of participation in primary and/or quasi-primary relationships [13:70]." It is similar to peer group interaction except that integration implies interaction with the entire organizational environment.

Integration was measured by the responses to questions 14, 15, 30, 38, 39, 52, 60, 62, and 63. The responses to the questions were arrayed on a Likert seven point scale and given values of 1 (strongly disagree) to 7 (strongly agree). Question 39 was reverse scored since

it was negatively stated. Each of the nine questions were given equal weight and an integration score, ranging from 9 to 63, was obtained by summing the responses to the nine questions. The questions were direct and provided valid interval level data for the measurement of the variable as defined.

Satisfaction With
Supervisory Style

Various aspects of satisfaction with supervisory style have strong support in the literature as determinants of turnover. The determinant satisfaction with supervisory style is defined as the individual's perception of satisfaction with the following aspects of leadership/supervision: supervisor has employee interests and that of the Air Force at heart; supervisor is approachable and helpful rather than critical; supervisor has a good knowledge of the job.

Satisfaction with supervisory style was measured by the responses to questions 13, 20, 26, 36, 47, 53, 56, 61, and 66. The responses to the questions were arrayed on a Likert seven point scale and given the values of 1 (strongly disagree) to 7 (strongly agree). Questions 26, 47, 53, and 61 were reverse scored since they were negatively stated. Each of the nine questions was given equal weight and a satisfaction with supervisory style score, ranging from 9 to 63, was obtained by summing the responses to the nine questions. The questions were direct and provided valid interval level data for

measurement of the variable as defined.

Role Clarity

Role clarity is another determinant of turnover that is strongly supported in the literature and represents the individual's perception of various aspects of the clarity of his task within the organization. For the purposes of this study, role clarity is defined as the individual's perception of the amount and frequency of clarifying information received relative to job accomplishment and performance.

Role clarity was measured by the responses to questions 42 and 69. The responses to the questions were arrayed on a Likert seven point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Each question was given equal weight and a role clarity score, ranging from 2 to 14, was obtained by summing the responses to the two questions.

The role clarity score produced valid data for the measurement of the determinant as defined because each question dealt with a type of clarifying information and the responses indicated the individual's perception of the amount or frequency of information received. The two questions were given equal weight because it was not the purpose of this study to determine which type of clarifying information contributes the most to role clarity.

Job Autonomy and Responsibility

Job autonomy and responsibility, another strongly supported determinant of turnover, deals with the individual's perception of the amount of autonomy and responsibility allowed on his/her job. For this study, job autonomy and responsibility is defined as the individual's perception of the amount of freedom given to him to do his/her job.

Job autonomy and responsibility was measured by the responses to questions 17, 23, 29, 35, 43, 48, 51, and 59. The responses to the questions were arrayed on a Likert seven point scale and given values of 1 (strongly disagree) to 7 (strongly agree). Questions 43, 48, and 51 were reverse scored since they were negatively stated. Each of the eight questions was given equal weight and a job autonomy and responsibility score, ranging from 8 to 56, was obtained by summing the responses to the eight questions. The questions were direct and provided valid interval level data for the measurement of the variable as defined.

Task Repetiveness

Task repetiveness (sometimes called routinization) is weakly supported but consistently related to turnover (20:88). We believe that task repetitiveness is a determinant in the target population. Task repetitiveness is the degree to which role performance in a

particular social system is repetitive (20:88).

Task repetitiveness was measured by the responses to questions 28, 44, and 71. The responses to these questions were arrayed on a Likert seven point scale and each response was given the value 1 (strongly disagree) to 7 (strongly agree). Question 44 was reverse scored since it was negatively stated. A task repetitiveness score was obtained by summing the three response values. Use of the sum of the three responses gave each question equal weight. Additionally, the three questions solicited the respondent's perception of three ways to view task repetitiveness and produced valid interval level data for measurement of the variable as it is defined.

Overall Reaction to Job Content

Overall reaction to job content is one of the determinants of turnover that has had more strong support than weak support in the literature (19:161-162). Overall reaction to job content is defined as the individual's perception of satisfaction with the assigned duties and tasks of the job.

Overall reaction to job content was measured by the responses to questions 24, 34, 49, 55, and 65. The responses to the questions were arrayed on a Likert seven point scale and given the values of 1 (strongly disagree) to 7 (strongly agree). Questions 24 and 34 were reverse scored since they were negatively stated. Each of the five

questions was given equal weight and an overall reaction to job content score, ranging from 5 to 35, was obtained by summing the responses to the five questions. The questions were direct and provided valid data for the measurement of the variable as defined.

Summary

Operationally defining the independent variables, the intervening variables, and the two dimensions of the dependent variable clarifies how each variable was viewed by the researchers. The independent variables were age, tenure, similarity of job with vocational interests, family size and responsibilities, sex, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibility, task repetitiveness, and overall reaction to job content. The intervening variables were expectations, job satisfaction, and opportunity. Finally, the two dimensions of the dependent variable, turnover, were leaving the aircraft maintenance career field and/or separating from the Air Force.

The alignment of each variable to a specific set of questions in the questionnaire enables the scientific analysis of the response data. Consequently, the research hypotheses and the research question can be statistically tested and inferences can be drawn concerning the strength and direction of the relationships between the independent variables, intervening variables, and the dependent variable.

Data Analysis

Statistical Method

The modified model presented in Figure 5 is the basis for the research hypotheses of this study and indicates directional relationships between the determinants, intervening variables, and expressed career intent. When such directional independent-dependent variable relationships are indicated, regression analysis is the appropriate statistical method.

Regression analysis measures the linear relationship between an independent variable, X, and a dependent variable, Y, and is more efficient and powerful than nonparametric methods (6:510; 22:213). Regression analyses were accomplished using the Statistical Package for the Social Sciences (SPSS), subprogram REGRESSION (16:320-367).

Regression coefficient, B. B, the regression coefficient of an independent variable, is of primary concern in testing the statistical significance of the variable relationships evidenced by a regression analysis. The statistical significance of B, and, hence, of a regression analysis was tested using the F statistic at a 0.05 level of significance. Furthermore, the sign of a B coefficient indicates a direct or inverse relationship between the regression variables. That is, if the sign of B is positive, a direct relationship is indicated. Conversely, if the sign of B is negative, an inverse relationship is

indicated (16:391-425).

Coefficient of determination, R^2. If the variable relationships evidenced by the regression analysis proved to be statistically significant, the coefficient of determination, R^2, was used to test the practical importance of the relationship between the dependent and independent variables identified in the research hypotheses. The R^2 value indicates ". . . the proportion of variability in the dependent variable Y that is explained by the independent variable X [18:408]."

R^2 can take on values from zero to one. When $R^2 = 0$, the independent variable, X, does not explain the variability of the dependent variable, Y. On the other hand, when $R^2 = 1$, X explains all of the variability of Y. Past research on attitudes indicates that an R^2 value greater than or equal to 0.10 can be considered to have practical importance (2:59). Therefore, the research hypotheses was considered supported by the data if the R^2 value of the regression was greater than or equal to 0.10.

Multiple linear regression. In the research hypotheses, job satisfaction and expressed career intent were postulated to be dependent upon several independent variables. In such situations, the independent variables often do not have completely independent effects on the dependent variables; that is, the effects may overlap. The result

of this overlap, known as multicolinearity, is that the portion of the variability of the dependent variables explained by the combined effect of all the independent variables which is less than the sum of the portions of the variability explained by each independent variable alone. In order to detect the existence of this overlap of independent variable effects, multiple linear regression was used. Separate regression analyses were performed with job satisfaction and career intent (entering another AFSC or separation from the Air Force) as dependent variables. The independent variables which were used in each analysis were the fourteen testable correlates and determinants: age, tenure, similarity of job with vocational interests, family size and responsibilities, sex, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibilities, task repetitiveness, and overall reaction to job content.

Bivariate correlations. Bivariate correlation provides an index number to summarize the relationship between two variables. The correlation coefficient indicates the degree to which variation in one variable is related to variation in another (16:276). Correlation analysis will show the strength of the relationship when the value of a variable is changed and provides a good illustration of how closely the two variables move together (28:407).

The use of bivariate correlations aids in the interpretation of

the regression results. A zero value for the correlation coefficient (r) indicates there is no linear relationship. A positive value of r indicates a direct relationship and a negative value indicates an indirect relationship. Consequently, the bivariate correlations enhances the analysis of the regression results.

Path Analysis

Path analysis will be used to answer the proposed research question. Simple bivariate correlational analysis (like Pearson's r) does not allow the causal ordering of a set of variables. However, the method of path analysis does give a basis for drawing causal inferences.

Path analysis was initially introduced by Sewell Wright and O. D. Duncan has been an important adapter of the method for research in the social sciences (16:383).

Path analysis is a method of decomposing and aiding the interpretation of linear relationships among a set of variables by assuming that (1) a (weak) causal order among these variables is known or can reasonably be assumed, and (2) the relationships among these variables are causally closed (16:383).

The assumption of weak causal order postulates that, given a pair of variables, X_1 and X_2, a weak causal order is established, such that X_2 causes X_1 if it is assumed or known that X_2 may effect

X_1, but X_1 cannot affect X_2. This does not necessarily required X_2 to be a cause of X_1 (16:384-385).

Causal closure assumes that, given a bivariate covariation between X_2 and X_1 and a known weak causal ordering, X_2 causes X_1, the observed covariation between X_1 and X_2 may be due (1) solely to the causal dependence of X_1 on X_2, (2) to their mutual dependence on an outside variable (or variables), or (3) to the combination of the previous two (16:385).

When using path analysis the basic assumptions of linear regressions concerning the error components are also operative; that is, that the error terms are independently, identically and normally distributed; they have an expected value equal to zero; and a constant variance (homoscedasticity). Path analysis, however, is primarily a technique for working out the logical consequences of the first two cited assumptions.

It is important to highlight the fact that the identification of a causal structure does not prove causal relationships, but it does provide a basis for drawing inferences regarding the adequacy of causal models (4:7).

Path analysis involves linear, additive, asymmetric relationships among a set of variables which are measurable on an interval scale. Some of these variables are interpreted as being linearly dependent on others. The remaining variables are then assumed to

be given. It must be stressed that each dependent variable must be regarded as solely determined by a combination of variables in the system (16:384).

Path analysis uses both path (or causal) diagrams and systems of linear regression equations to represent a system of relationships among a set of variables (7:329). In path diagrams, assumptions about the causal order or direction of relationships are explicitly indicated by the direction of one-way arrows leading from each determining variable to each variable dependent on it. Paths between variables are labeled with path coefficients (similar to regression coefficients (17:62). According to the Statistical Package for the Social Sciences (SPSS), the order of the subscripts is significant: the first subscript identifies the dependent variable and the second indicates the variable whose direct effect on the dependent variable is measured by the path coefficient (16:384).

In general, given n variables with the weak order $X_n \leqq \ldots \leqq X_2 \leqq X_1$, estimation of all the path coefficients will require (n-1) regression solutions, taking in succession each of the (n-1) lower-order variables as the dependent variable and using all of its higher-order variables as predictors (16:386). Also, ". . . although path coefficients can be represented by either the ordinary regression coefficients or standardized betas, it is customary to use the beta values [16:387]."

Procedures. A major concern of this study was to test whether job satisfaction functions as an intervening variable between expectations, opportunity and career intent (entering another AFSC or separation from the Air Force) as the dependent variable. Path analysis provided the means of testing the presumed causal ordering of the variables.

Four steps in the path analysis procedure were necessary. First, the derived variables were examined to insure they meet the pre-requisites for a regression analysis. The sample was large enough to use the central limit theorem, and determine the central tendency of each variable.

The second step was to calculate and investigate the path coefficients from the residual variables in order to assess the completeness of the important subsystems. Since path coefficients are the beta coefficients in a regression model, the ordinary system for a regression analysis will be used. In other words, the estimation of the path coefficients requires a series of least squares regressions taking one variable at a time as the dependent variable and all the variables with higher causal order as the independent variables (16:392).

The third step was to identify the effects of any prior causal variable by calculating its effect coefficient. The effect coefficient is the sum of the direct effect of the independent variable on the dependent variable plus the indirect effect of the intervening variable.

The fourth step in the analysis was to construct a decomposition table for the total variation between pairs of variables.

Hypotheses Testing

In this section, the research objectives and the associated hypotheses will be reviewed, the dependent and independent variables will be identified, and the statistical hypotheses will be introduced. The null statistical hypothesis in every case is tested at the 0.05 level of significance. If the null hypothesis can not be rejected (that is, if statistical significance is not established), it was concluded that there is insufficient evidence to support the research hypothesis in question. If the null hypothesis was rejected and if R^2 was greater than or equal to 0.10, it was concluded that the data supports the research hypothesis.

Objectives 1 & 2, Hypothesis 1a. Objectives 1 & 2 and Hypothesis 1a are concerned with the relationships between the independent variables and job satisfaction. For this hypothesis, the independent variables are age, tenure, similarity of job with vocational interests, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibilities, task repetitiveness, and overall reaction to job content. The dependent variable is job satisfaction.

Hyp 1a: The null hypothesis (H_o) of Hypothesis 1a is that the

independent variables are not directly related to job satisfaction. That is:

$$H_o: B_i = 0$$

$$H_a: B_i \neq 0$$

where B_i is the regression coefficient of each respective independent variable.

Objectives 1 & 2, Hypothesis 1b. Objectives 1 & 2 and Hypothesis 1b are concerned with the relationship between the independent variable family size and responsibilities and job satisfaction. For this hypothesis, the independent variable is family size and responsibilities and the dependent variable is job satisfaction.

Hyp 1b: The null hypothesis (H_o) of Hypothesis 1b is that family size and responsibilities is not directly related to job satisfaction. That is:

$$H_o: B_1 = B_2 = 0$$

$$H_a: B_1 \neq B_2 \neq 0$$

where B_1 is the regression coefficient of males' family size and responsibilities and B_2 is the regression coefficient of females' family size and responsibilities.

Objectives 1 & 2, Hypothesis 2. Objectives 1 & 2 and Hypothesis 2

are concerned with the relationships between the independent variables and career intent. For this hypothesis, the independent variables are age, tenure, similarity of job with vocational interests, family size and responsibilities, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibilities, task repetitiveness, and overall reaction to job content. The dependent variable is career intent.

Hyp 2: The null hypothesis (H_o) of Hypothesis 2 is that the independent variables are not directly related to career intent. That is:

$$H_o: B_i = 0$$

$$H_a: B_i \neq 0$$

where B_i is the regression coefficient of each respective independent variable.

Objectives 3 & 4, Hypothesis 3. Objectives 3 & 4 and Hypothesis 3 are concerned with the relationships between the intervening variables and turnover. For this hypothesis, the independent variable is job satisfaction and the dependent variable is career intent (surrogate for turnover).

Hyp 3: The null hypothesis (H_o) of Hypothesis 3 is that job satisfaction is not directly related to career intent. That is:

$$H_o: B = 0$$

$$H_a: B \neq 0$$

where B is the regression coefficient of job satisfaction.

Objectives 3 & 4, Hypothesis 4. Objectives 3 & 4 and Hypothesis 4 are concerned with the relationships between the intervening variables and turnover. For this hypothesis, the independent variable is opportunity and the dependent variable is career intent (surrogate for turnover).

Hyp 4: The null hypothesis (H_o) of Hypothesis 4 is that opportunity is not directly related to career intent. That is:

$$H_o: B = 0$$

$$H_a: B \neq 0$$

where B is the regression coefficient of opportunity.

Objectives 3 & 4, Hypothesis 5. Objective 3 & 4 and Hypothesis 5 are concerned with the relationships between the intervening variables and turnover. For this hypothesis, the independent variable is expectancy and the dependent variable is career intent (surrogate for turnover).

Hyp 5: The null hypothesis (H_o) of Hypothesis 5 is that expectancy is not directly related to career intent. That is:

$$H_o: B = 0$$

$$H_a: B \neq 0$$

where B is the regression coefficient of expectance.

Objective 5, Hypothesis 6. Objective 5 and Hypothesis 6 are concerned with the relationships between the intervening variables. For this hypothesis, the independent variable is job satisfaction and the dependent variable is opportunity.

Hyp 6: The null hypothesis (H_o) of Hypothesis 6 is that job satisfaction is not directly related to opportunity. That is:

$$H_o: B = 0$$

$$H_a: B \neq 0$$

where B is the regression coefficient of job satisfaction.

Objective 5, Hypothesis 7. Objective 5 and Hypothesis 7 are concerned with the relationships between the intervening variables. For this hypothesis, the independent variable is job satisfaction and the dependent variable is expectancy.

Hyp 7: The null hypothesis (H_o) for Hypothesis 7 is that job satisfaction is not directly related to expectancy. That is:

$$H_o: B = 0$$

$$H_a: B \neq 0$$

where B is the regression coefficient of job satisfaction.

Objective 5, Hypothesis 8. Objective 5 and Hypothesis 8 are concerned with the relationships between the intervening variables. For this hypothesis, the independent variable is opportunity and the dependent variable is expectancy.

Hyp 8: The null hypothesis (H_o) for Hypothesis 8 is that opportunity is not directly related to expectance. That is:

$$H_o: B = 0$$

$$H_a: B \neq 0$$

where B is the regression coefficient of opportunity.

Assumptions

The following assumptions will be made based on the literature review, survey data, and statistical analysis techniques employed:

1. The survey instrument will be valid and reliable.

2. The questions used for variable measurement will be valid and reliable.

3. The variables being tested will be normally distributed.

4. The respondents will answer the questions honestly and their responses will reflect their true opinions.

Summary

This chapter presented the research design, methodology and data gathering plan used in this study. The data collection instrument, target population and sample were then presented. Next, each variable was defined and the method of measurement was described. The data analysis plan was then presented, including a discussion of multiple regression analysis and the hypotheses to be tested. Finally, an overview of path analysis and the assumptions used in this study were presented. The results of the data analysis are given in the next chapter.

CHAPTER IV

RESULTS AND ANALYSES

Introduction

The modified turnover model protrayed in Chapter II defines relationships between the determinants of turnover, expectations, job satisfaction, opportunity, and expressed career intent. These relationships were tested on a random sample of company grade non-rated aircraft maintenance officers. The data was obtained from a newly developed survey responded to by members of the sample population. This chapter presents the results of the data analysis in terms of the research objectives and stated hypotheses of this study.

Results of the demographic survey questions are presented and discussed first. Secondly, the two expressed career intent questions are presented and discussed. These presentations and discussions are provided in order to present a profile of the sample before performing subsequent analysis.

Third, simple linear regression results pertaining to the research objectives are presented. Each of the research objectives are restated and the regression results pertinent to the objectives are illustrated with a brief explanation.

Fourth, the multiple linear regression results are presented with job satisfaction and expressed career intent as the dependent variables. Next, the results of the simple and multiple regressions are compared with an assessment of multicolinearity.

The complete regression results are followed by an analysis of the bivariate correlations of the variables. Finally, to answer the research question, the path analysis results are presented to test the presumed causal relationships between the independent variables, intervening variables, and turnover.

Demographic Results

Survey Questions 1 through 10 and 12 provided a demographic profile of the respondents. The following paragraphs present the demographic results through use of Tables 1 through 11. A short discussion accompanies each table.

Respondents' Grade

TABLE 1

RESPONDENTS' GRADES

Category	Frequency		
	Absolute	Percentage	Cumulative
2nd Lt	143	29.9	29.9
1st Lt	98	20.5	50.3
Captain	238	49.7	100.0
No Response	1	-	-
Total Responses	480	-	-

Table 1 shows that the sample was composed of an equal distribution of lieutenants and captains, indicating that one-half of the respondents have served in the officer corps for less than four years.

Respondents' Sex

TABLE 2

RESPONDENTS' SEX

Category	Frequency		
	Absolute	Percentage	Cumulative
Male	417	86.9	86.9
Female	63	13.1	100.0
Total Responses	480	-	-

Table 2 indicates that the sample was composed of approximately seven males for each female respondent. Even though this does not denote an equal distribution, it does indicate that the career field has employed females in increasing numbers.

Respondents' Age

TABLE 3

RESPONDENTS' AGE

Category	Frequency		
	Absolute	Percentage	Cumulative
20 - 24	65	13.6	13.6
25 - 29	150	31.3	44.9
30 - 34	185	38.6	83.5
35 - 39	62	12.9	96.5
40 or More	17	3.5	100.0
Total Responses	480	-	-

Table 3 indicates that the modal age of the respondents fell between 30 and 34 years. This infers that the non-rated company grade aircraft maintenance officer population is a relatively young segment of the Air Force.

Respondents' Tenure

TABLE 4

RESPONDENTS' TENURE

Category	Frequency		
	Absolute	Percentage	Cumulative
Under 2 Years	45	9.4	9.4
2 - 3 Years	54	11.3	20.6
3 - 4 Years	35	7.3	27.9
4 - 5 Years	50	10.4	38.3
6 - 8 Years	41	8.5	46.9
8 - 10 Years	41	8.5	55.4
10 - 12 Years	90	18.8	74.2
12 - 14 Years	49	10.2	84.4
14 Years or More	75	15.6	100.0
Total Responses	480	-	-

Table 4 indicates that over one-half of the respondents have less than ten years of active military service, again reflecting the relative youth of the non-rated company grade aircraft maintenance officer population.

Respondents' Prior Enlisted Service

Table 5 clearly indicates that over one-half of the respondents had no prior enlisted service. It is interesting to note that 15.9

percent of the sample was composed of members with over ten years of prior enlisted service.

TABLE 5

RESPONDENTS' PRIOR ENLISTED SERVICE

Category	Frequency		
	Absolute	Percentage	Cumulative
None	280	58.5	58.5
1 Year or Less	24	5.0	63.5
1 - 2 Years	10	2.1	65.6
2 - 3 Years	8	1.7	67.2
3 - 4 Years	14	2.9	70.1
4 - 5 Years	14	2.9	73.1
5 - 6 Years	8	1.7	74.7
6 - 7 Years	6	1.3	76.0
7 - 8 Years	19	4.0	80.0
8 - 9 Years	10	2.1	82.0
9 - 10 Years	10	2.1	84.1
Over 10 Years	76	15.9	100.0
No Response	1	-	-
Total Responses	480	-	-

Respondents' Major Command Assignment

Table 6 reflects the distributions of the respondents by major command of assignment. It should be noted that responses from members in stateside commands were received shortly after distribution of the survey instrument and that many responses from overseas commands were received after the 45 day cut off date of acceptance.

TABLE 6

RESPONDENTS' MAJOR
COMMAND ASSIGNMENT

Category	Frequency		
	Absolute	Percentage	Cumulative
SAC	101	21.1	21.1
TAC	142	29.6	50.7
MAC	82	17.1	67.8
ATC	36	7.5	75.4
USAF RED	1	0.2	75.6
HQ USAF	3	0.6	76.2
PACAF	8	1.7	77.9
USAFE	24	5.0	82.9
USAFSO	1	0.2	83.1
AAC	7	1.5	84.6
ADCOM	29	6.1	90.6
AFCS	2	0.4	91.0
AFLC	24	5.0	96.0
AFSC	17	3.5	99.6
Other	2	0.4	100.0
No Response	1	-	-
Total Responses	480	-	-

Respondents' Organizational Level of Assignment

Table 7 reflects that almost two-thirds of the respondents were serving at squadron level and over three-fourths of the members in the sample were functioning as aircraft maintenance officers at the base level (squadron, group, and wing).

Respondents' Marital Status

Table 8 reflects that three-fourths of the respondents in the sample were currently married.

TABLE 7

RESPONDENTS' ORGANIZATIONAL LEVEL OF ASSIGNMENT

Category	Frequency		
	Absolute	Percentage	Cumulative
Squadron or Below	298	62.3	62.3
Group	18	3.8	66.1
Wing	60	12.6	78.7
Air Division	1	0.2	78.9
Numbered AF	37	7.7	86.6
MAJCOM	53	11.1	97.7
HQ USAF	2	0.4	98.1
DOD	3	0.6	98.7
Separate Agency	1	0.2	99.0
Other	5	1.0	100.0
No Response	2	-	-
Total Responses	480	-	-

TABLE 8

RESPONDENTS' MARITAL STATUS

Category	Frequency		
	Absolute	Percentage	Cumulative
Married	360	75.3	75.3
Single	83	17.4	92.7
Previously Married	35	7.3	100.0
No Response	2	-	-
Total Responses	480	-	-

Respondents' Number of Supported Dependents

Table 9 reflects that 87.2 percent of the respondents supported three or less dependents.

TABLE 9

RESPONDENTS' NUMBER OF SUPPORTED DEPENDENTS

Category	Frequency		
	Absolute	Percentage	Cumulative
None	124	25.9	25.9
One	86	18.0	43.9
Two	97	20.3	64.2
Three	110	23.0	87.2
Four	45	9.4	96.7
Five	13	2.7	99.4
Six	2	0.4	99.8
Seven	1	0.2	100.0
No Response	2	-	-
Total Responses	480	-	-

Respondents' Tenure at Present Assignment

TABLE 10

RESPONDENTS' TENURE AT PRESENT ASSIGNMENT

Category	Frequency		
	Absolute	Percentage	Cumulative
1 Year or Less	236	49.3	49.3
1 - 2 Years	146	30.5	79.7
2 - 3 Years	66	13.8	93.5
3 Years or More	31	6.5	100.0
No Response	1	-	-
Total Responses	480	-	-

Table 10 reflects that one-half of the members of the sample had been at their present assignment for one year or less. Additionally, over one-fourth of the sample respondents had been at their

assignment between one to two years.

Respondents' Highest Level of Formal Education

TABLE 11

RESPONDENTS' HIGHEST LEVEL OF FORMAL EDUCATION

Category	Frequency		
	Absolute	Percentage	Cumulative
Some College	4	0.8	0.8
Undergrad Degree	165	34.4	35.2
Undergrad Plus	151	31.5	66.7
Masters Degree	145	30.2	96.9
Masters Plus	15	3.1	100.0
Total Responses	480	-	-

Table 11 reflects that, with the exception of 0.8 percent of the respondents, the sample members had completed baccalaureate degrees. Additionally, one-third of the sample had completed master degrees or higher.

Summary of the Demographics

Overall, the respondents to the survey were generally young, well-educated, married male officers who primarily served at base level. The sample respondents are quite representative of the demographic distribution of the overall non-rated company grade aircraft maintenance officers in the Air Force.

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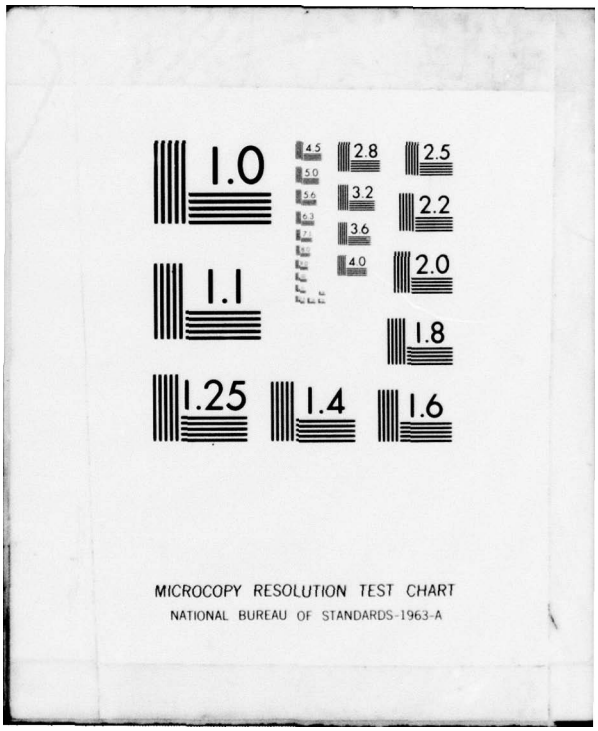
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Expressed Career Intent

Survey Questions 21 and 50 provided an indication of the respondents' attitudes toward career intent. The following presents the indicated attitudes through use of Tables 12 and 13.

Respondents' Expressed Career Intent

Two measures of expressed career intent were used as surrogates for turnover. Expressed career intent is the stated intent of an individual to remain in the 40XX AFSC or to make the Air Force a career. This definition reflects the dual nature of how this study viewed expressed career intent as the dependent variable of the modified turnover model. Survey Question 21:

'I intend to remain in my present career field (AFSC 40XX).'

asked the respondents to answer on a 7 point Likert type scale from strongly disagree to strongly agree. Survey Question 50:

'I intend to make the Air Force a career.'

asked for a similar response. Tables 12 and 13 summarize the respondents' answers by category.

When the response categories are collapsed into disagree, neither agree or disagree, and agree categories, the questionnaire results reflect that 36 percent of the respondents indicated that they do not intend to remain in the 40XX AFSC, while 15.8 percent were

TABLE 12

RESPONDENTS' CAREER INTENT TO REMAIN IN THE 40XX AFSC

Category	Frequency		
	Absolute	Percentage	Cumulative
Strongly Disagree	91	19.0	19.0
Disagree	59	12.3	31.3
Slightly Disagree	23	4.8	36.0
Neither Agree or Disagree	76	15.8	51.9
Slightly Agree	27	5.6	57.5
Agree	131	27.3	84.8
Strongly Agree	73	15.2	100.0
Total Responses	480	-	-

TABLE 13

RESPONDENTS' CAREER INTENT TO REMAIN IN THE AIR FORCE

Category	Frequency		
	Absolute	Percentage	Cumulative
Strongly Disagree	39	8.1	8.1
Disagree	25	5.2	13.4
Slightly Disagree	15	3.1	16.5
Neither Agree or Disagree	84	17.5	34.0
Slightly Agree	37	7.7	41.8
Agree	137	28.6	70.4
Strongly Agree	142	29.6	100.0
No Response	1	-	-
Total Responses	480	-	-

undecided and 58.2 percent intended to remain in the 40XX AFSC. For career intent to remain in the Air Force, 16.5 percent of the respondents indicated that they do not intend to remain in the Air Force, while 17.5 percent were undecided and 65.9 percent intended

to make the Air Force a career.

The expressed career intent questions results indicated that more officers desired to leave the 40XX AFSC than separate from the Air Force. However, it was recognized that some of the respondents who indicated a desire to separate from the Air Force also indicated that they did not intend to remain in the 40XX AFSC.

Summary of Respondents' Expressed Career Intent

Overall, two-thirds of the respondents to the survey indicated that they intend to remain in the Air Force. Additionally, over a third of the respondents indicated that they do not desire to remain in the 40XX AFSC. Having obtained an overall perspective of the respondents, the following data analyses beginning with simple linear regression can be more readily considered.

Determinants of Turnover → Job Satisfaction and Expressed Career Intent

Objectives

The first research objective was to determine the direction of the relationships between each of the independent variables and job satisfaction. The second objective was to determine the strength of the relationships between each of the independent variables and expressed career intent. Hypotheses 1a, 1b, and 2 were formulated

to obtain the first two objectives. Each hypothesis was evaluated using simple linear regression analysis.

Regression results. The results of the regression analyses are summarized in Tables 14 through 16. In the following paragraphs, the hypotheses pertinent to the objectives are restated and the data analysis explained.

Hypothesis testing. Hypothesis 1a - as the values of the independent variables (age, tenure, similarity of job with vocational interests, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibility, task repetitiveness, and overall reaction to job content) increases, the level of job satisfaction increases - was not supported by the data.

The relationship between the independent variables and satisfaction was statistically significant for only one of the independent variables: similarity of job with vocational interests. However, none of the independent variable R^2 values as shown in Table 14 met the practical significance criterion of 0.10. With the exception of age (B = -.04033), all regression coefficients were positive and supported weak relationships with satisfaction.

Hypothesis 1b - as family size and responsibility increases, the level of job satisfaction increases for men and decreases for women - was not supported by the data as illustrated in Table 14.

TABLE 14

REGRESSION RESULTS WITH SATISFACTION AS THE DEPENDENT VARIABLE

Determinant	B	R^2
Age	-.04033	.00046
Tenure	.12792	.00158
Similarity of Job with Vocational Interests	.16060*	.01401
Pay	.04445	.00157
Promotion	.03938	.00203
Peer Group Interaction	.04747	.00230
Integration	.02060	.00075
Supervisory Style	.00907	.00017
Role Clarity	.13794	.00520
Job Autonomy and Responsibility	.05840	.00517
Task Repetitiveness	.10362	.00829
Overall Reaction to Job Content	.07673	.00759
Family Size and Responsibility (Men)	.01417	.00014
Family Size and Responsibility (Women)	.00000	.00000

*$p \leq .05$

The relationship between family size and responsibility for men and women was not statistically significant and the respective R^2 values (men = .00014, women = .00000) did not meet the practical significance criterion of 0.10. There was a positive regression coefficient (B = .01417) for men which weakly supported a positive relationship, however, there was no relationship for women (B = .00000).

Hypothesis 2 - as the values of the independent variables increase, expressed career intent will increase - was partially supported by the data. With the intention to remain in the Air Force as the dependent variable, all variables except age, similarity of job with vocational interests and role clarity were statistically significant (Table 15). The R^2 values of the statistically significant independent variables (tenure, family size and responsibility, pay, promotion, peer group interaction, integration, supervisory style, job autonomy and responsibility, task repetitiveness, and overall reaction to job content) surpassed the practical significance criterion of 0.10 with the exception of tenure (R^2 = .03640). All independent variables had positive regression coefficients and supported the hypothesized relationship.

With the intent to remain in the 40XX AFSC as the dependent variable only four independent variables were statistically significant (tenure, similarity of job with vocational interests, role clarity, and job autonomy and responsibility) (Table 16). The R^2 values of the

TABLE 15

REGRESSION RESULTS WITH INTENT TO REMAIN IN THE AIR FORCE AS THE DEPENDENT VARIABLE

Determinants	B	R^2
Age	.04036	.00152
Tenure	.33736*	.03640
Similarity of Job with Vocational Interests	.02318	.00097
Family Size and Responsibility	.47684*	.42232
Pay	.32755*	.28253
Promotion	.19382*	.16238
Peer Group Interaction	.26148*	.23045
Integration	.13909*	.11365
Supervisory Style	.13354*	.11882
Role Clarity	.05641	.00283
Job Autonomy and Responsibility	.17435*	.15235
Task Repetitiveness	.33980*	.29453
Overall Reaction to Job Content	.20466*	.17850

*$p \leq .05$

TABLE 16

REGRESSION RESULTS WITH INTENT TO REMAIN IN THE 40XX AFSC AS THE DEPENDENT VARIABLE

Determinants	B	R^2
Age	.03996	.00686
Tenure	.18200*	.04893
Similarity of Job with Vocational Interests	.05305*	.02334
Family Size and Responsibility	.00346	.00010
Pay	.02350	.00672
Promotion	.00374	.00028
Peer Group Interaction	.01804	.00507
Integration	.00577	.00090
Supervisory Style	.00427	.00056
Role Clarity	.05407*	.01201
Job Autonomy and Responsibility	.02175*	.01095
Task Repetitiveness	.02554	.00769
Overall Reaction to Job Content	.01854	.00677

*$p \leq .05$

statistically significant variables (.04893, .02334, .01201, and .01095) did not meet the established practical significance criterion of 0.10. All independent variables had positive regression coefficients and supported the hypothesized relationship.

Summary

The results of the data analysis presented in the preceding paragraphs surprised the researchers since only one independent variable, similarity of job with vocational interests, was found to be of practical significance in relationship with the level of job satisfaction. Based on the literature review in Chapter II, it was anticipated that all of the independent variables would significantly affect job satisfaction. However, the analysis did show positive relationships for all independent variables with the exception of age.

When the relationships between the independent variables and expressed career intent (both to remain in the Air Force and the 40XX AFSC) were analyzed, it was found that age, role clarity, and similarity of job with vocational interests were not of practical importance in affecting expressed career intent. These results implied that job satisfaction may not intervene between family size and responsibility, pay, promotion, peer group interaction, integration, supervisory style, job autonomy and responsibility, task repetitiveness, and overall reaction to job content and expressed

career intent to remain in the Air Force. The modified turnover model had indicated that job satisfaction is an intervening variable.

Job Satisfaction → Turnover
Opportunity → Turnover
Expectancy → Turnover

Objectives

The third objective was to determine the direction of the relationships between each of the intervening variables and expressed career intent. The fourth objective was to determine the strength of the relationships between each of the intervening variables and expressed career intent. Hypotheses 3 through 5 were formulated to obtain these objectives. Each hypothesis was evaluated using regression analysis.

Regression results. The results of the regression analysis are summarized in Tables 17 through 20. In the following paragraphs, each hypothesis pertinent to these objectives is restated and the data analysis explained.

Hypothesis testing. Hypothesis 3 - as satisfaction increases, expressed career intent increases - was not supported by the data. The relationship between satisfaction and expressed career intent to remain in the Air Force was statistically significant; however, the R^2 value (.00862) did not meet the practical significance criterion of

0.10 (Table 17). Also, the positive regression coefficient (B = .05107) did support the hypothesized relationship.

The data also did not support the third hypothesis with expressed career intent to remain in the 40XX AFSC as the dependent variable (Table 18). The relationship between satisfaction and expressed career intent was statistically significant but the R^2 value (.03469) did not surpass the established criterion of 0.10. Also, the positive regression coefficient (B = .04767) did support the hypothesized relationship.

Hypothesis 4 - a perceived opportunity increases, expressed career intent decreases - was partially supported by the data as illustrated in Table 17. The relationship between expressed career intent to remain in the Air Force and opportunity to enter a civilian job was statistically significant and the R^2 value (.16877) exceeded the practical significance criterion of 0.10. The positive regression coefficient of .19908 supported the hypothesized relationship. The relationship between expressed career intent to remain in the Air Force and opportunity to enter another AFSC was not statistically significant and the R^2 value (.00021) did not meet the established criterion.

The data did not support the fourth hypothesis with expressed career intent to remain in the 40XX AFSC as the dependent variable as illustrated in Table 18. The regression coefficients of opportunity

TABLE 17

REGRESSION RESULTS WITH INTENT TO REMAIN IN THE AIR FORCE AS THE DEPENDENT VARIABLE

Determinants	B	R^2
Job Satisfaction	.05107*	.00862
Opportunity to Enter Another AFSC	.01060	.00021
Opportunity to Enter a Civilian Job	.19908*	.16877

*p ≦ .05

TABLE 18

REGRESSION RESULTS WITH INTENT TO REMAIN IN THE 40XX AFSC AS THE DEPENDENT VARIABLE

Determinants	B	R^2
Job Satisfaction	.04767*	.03469
Opportunity to Enter Another AFSC	.03423	.01325
Opportunity to Enter a Civilian Job	.00935	.00172

*p ≦ .05

to enter another AFSC (B = .03923) and opportunity to enter a civilian job (B = .00935) were positive, but weakly supported the hypothesized

relationship.

Hypothesis 5 - as expectancy increases, expressed career intent increases - was not supported by the data. The relationship between expectancy and expressed career intent to remain in the Air Force was not statistically significant and the R^2 value (.00016) did not surpass the criterion of 0.10 (Table 19). The positive regression coefficient (B = .00424) did not support the hypothesized relationship.

The data did not support the fifth hypothesis with expressed career intent to remain in the 40XX AFSC as the dependent variable (Table 20). The relationship between expectancy and expressed career intent to remain in the Air Force was not statistically significant and the R^2 value of .00066 did not surpass the established criterion of 0.10. The regression coefficient of expectance (.00396) was positive and did not support the hypothesized relationship.

Summary

The results in the preceding paragraphs were again surprising to the researchers. Opportunity to enter a civilian job was the only intervening variable that had practical significance in the relationship with expressed career intent to remain in the Air Force. The hypothesized relationships of job satisfaction and expectancy with expressed career intent did not occur. Consequently, the existence of intervening variables between the determinants of turnover and turnover has not

TABLE 19

REGRESSION RESULTS WITH INTENT TO REMAIN IN THE AIR FORCE AS THE DEPENDENT VARIABLE

Determinant	B	R^2
Expectancy	.00424	.00016

TABLE 20

REGRESSION RESULTS WITH INTENT TO REMAIN IN THE 40XX AFSC AS THE DEPENDENT VARIABLE

Determinant	B	R^2
Expectancy	.00396	.00066

been supported at this point in the analysis.

Opportunity → Job Satisfaction
Expectancy → Job Satisfaction
Expectancy → Opportunity

Objective

The fifth objective was to determine the direction and strength of the relationships between the intervening variables. Hypotheses 6 through 8 were formulated to obtain this objective. Each hypothesis

was evaluated using regression analysis.

Regression results. The results of the regression analysis are summarized in Tables 21 through 24. In the following paragraphs, each hypothesis pertinent to this objective is restated and the data analysis explained.

Hypothesis testing. Hypothesis 6 - as job satisfaction increases, perceived opportunity decreases - was not supported by the data. The relationship between opportunity to enter another AFSC and job satisfaction was not statistically significant and the R^2 value (.00544) did not surpass the criterion of 0.10. The positive regression coefficient (B = .05538) also did not support the hypothesized relationship (Table 21).

The relationship between opportunity to enter a civilian job and job satisfaction was statistically significant but the R^2 value (.04909) did not surpass the criterion of 0.10 (Table 22). The positive regression coefficient (B = .25152) also did not support the hypothesized relationship.

Hypothesis 7 - as job satisfaction increases, perceived expectancy increases - was not supported by the data (Table 23). The relationship between expectancy and job satisfaction was statistically significant but the R^2 value (.07195) did not surpass the criterion of 0.10. The positive regression coefficient (B = .44593) did support the

TABLE 21

REGRESSION RESULTS WITH OPPORTUNITY TO ENTER ANOTHER AFSC AS THE DEPENDENT VARIABLE

Intervening Variable	B	R^2
Job Satisfaction	.05538	.00544

TABLE 22

REGRESSION RESULTS WITH OPPORTUNITY TO ENTER A CIVILIAN JOB AS THE DEPENDENT VARIABLE

Intervening Variable	B	R^2
Job Satisfaction	.25152*	.04909

*p ≦ .05

TABLE 23

REGRESSION RESULTS WITH EXPECTANCY AS THE DEPENDENT VARIABLE

Intervening Variable	B	R^2
Job Satisfaction	.44593*	.07195

*p ≦ .05

hypothesized relationship.

Hypothesis 8 - as perceived opportunity increases, expectancy decreases - was not supported by the data (Table 24). The relationship between expectancy and opportunity to enter another AFSC was not statistically significant and the R^2 value (.00011) did not surpass the criterion of 0.10. The negative regression coefficient (B = -.02355) did support the hypothesized relationship.

The data also did not support the eighth hypothesis with opportunity to enter a civilian job as the dependent variable. The relationship between expectancy and opportunity to enter a civilian job had a R^2 value of .00006 and it did not surpass the practical significance criterion of 0.10. The negative regression coefficient (B = -.01120) did support the hypothesized relationship.

Summary

The results in the preceding paragraphs revealed that the hypothesized relationship between job satisfaction and opportunity was not supported. The relationship between job satisfaction and expectancy was positive but not statistically significant. The R^2 value of the relationship between the two variables did not surpass the criterion of 0.10. Additionally, the hypothesized negative relationship was supported but the low R^2 value (.00011) made the hypothesis not statistically significant.

TABLE 24

REGRESSION RESULTS WITH EXPECTANCY
AS THE DEPENDENT VARIABLE

Intervening Variable	B	R^2
Opportunity to Enter Another AFSC	-.02355	.00011
Opportunity to Enter a Civilian Job	-.01120	.00006

Overall Summary of Simple Linear Regression Results

The overall results of the simple linear regression analysis did not support all of the relationships of the hypotheses presented in Chapter III. Only Hypotheses 2 and 4 were partially supported. In Hypothesis 2 with career intent to remain in the Air Force as the dependent variable, 10 of the 13 independent variables were statistically significant and 9 met the practical significance criterion. The nine independent variables were family size and responsibility, pay, promotion, peer group interaction, integration, supervisory style, job autonomy and responsibility, task repetitiveness, and overall reaction to job content.

In Hypothesis 4 with expressed career intent to remain in the Air Force as the dependent variable, the only variable that was

statistically and practically significant was opportunity to enter a civilian job. The remaining hypotheses did not prove to be statistically significant and the R^2 values did not surpass the established criterion of 0.10. However, a majority of the associations were greater than chance occurrences, but the relationships were not powerful enough to support the hypothesized relationships.

Multiple Linear Regression

Table 25 presents the results of the multiple linear regression with satisfaction as the dependent variable. Similarity of job with vocational interests was the most powerful independent variable and promotion was the weakest independent variable. The relative strength of each variable coincides with the simple linear regression results presented in Table 15. Table 26 presents the results with expressed career intent to remain in the Air Force as the dependent variable and Table 27 presents the results with expressed career intent to remain in the 40XX AFSC as the dependent variable. Table 26 shows that family size and responsibility was the most powerful independent variable and integration was the weakest independent variable based on the change in R^2 values. Three other variables: task repetitiveness, similarity of job with vocational interests, and tenure entered the regression equation and accounted for 80.56 percent of the explained variation. However, the correlation coefficient values

TABLE 25

MULTIPLE LINEAR REGRESSION RESULTS
WITH JOB SATISFACTION AS THE
DEPENDENT VARIABLE

Determinants	R^2	R^2_Δ	Simple r
Similarity of Job with Vocational Interests	.01401*	.01401	.11838
Supervisory Style	.01653	.00252	.01289
Overall Reaction to Job Content	.01847	.00194	.08714
Integration	.02021	.00173	.02748
Tenure	.02179	.00158	.03980
Job Autonomy and Responsibility	.02254	.00076	.07192
Age	.02320	.00066	-.02140
Role Clarity	.02341	.00021	.07211
Pay	.02366	.00025	.03968
Peer Group Interaction	.02400	.00034	.04795
Promotion	.02412	.00011	.04505

*$p \leq .05$

(simple r) showed that family size and responsibility (r = .64986), task repetitiveness (r = .54270), pay (r = .28253), and peer group interaction (r = .23045) had the highest correlations with expressed career intent to remain in the Air Force. These results were not

TABLE 26

MULTIPLE LINEAR REGRESSION RESULTS WITH
INTENT TO REMAIN IN THE AIR FORCE
AS THE DEPENDENT VARIABLE

Determinants	R^2	R^2_Δ	Simple r
Family Size and Responsibility	.42232*	.42232	.64986
Task Repetitiveness	.52260*	.10029	.54270
Similarity of Job with Vocational Interests	.77278*	.25017	.03107
Tenure	.80557*	.03279	.19079
Overall Reaction to Job Content	.80820*	.00263	.42250
Peer Group Interaction	.80968*	.00148	.48006
Pay	.81177*	.00209	.53153
Job Autonomy and Responsibility	.81266*	.00089	.39032
Promotion	.81327	.00061	.40296
Role Clarity	.81405*	.00077	.05321
Age	.81436	.00031	.03893
Supervisory Style	.81460	.00024	.34470
Integration	.81462	.00002	.33712

*$p \leq .05$

TABLE 27

MULTIPLE LINEAR REGRESSION RESULTS WITH
INTENT TO REMAIN IN THE 40XX AFSC
AS THE DEPENDENT VARIABLE

Determinants	R^2	R^2_Δ	Simple r
Tenure	.04893*	.04893	.22121
Similarity of Job with Vocational Interests	.07307*	.02414	.15276
Age	.07668	.00360	.08282
Task Repetitiveness	.08004	.00336	.08767
Pay	.08378	.00374	.08196
Job Autonomy and Responsibility	.08743	.00365	.10465
Peer Group Interaction	.09025	.00282	.07118
Supervisory Style	.09241	.00216	.02373
Overall Reaction to Job Content	.09390	.00150	.08226
Integration	.09539	.00149	.03008
Role Clarity	.09605	.00066	.10960
Family Size and Responsibility	.09615	.00009	.01016

*$p \leq .05$

totally consistent with the simple linear regression results shown in Table 15. This caused the researchers to believe that multicolinearity was present in the regression equation.

Multicolinearity

As explained in Chapter III, multiple linear regression was used to further define structural relationships among a set of variables and assess the possibility of multicolinearity. Multicolinearity was implied when the simple linear regression results and multiple linear regression results were compared. This implication led the researchers to perform a correlation analysis of the independent variables. From this additional analysis, it was found that several of the independent variables were intercorrelated. The intercorrelations were not severe enough to alter the statistical findings. The next section presents the bivariate correlation results.

Bivariate Correlation Results

The results of the regression analysis illustrated the necessity for further analysis of the variables and their relationships within the modified turnover model. The Pearson Product-Moment Correlations (r) between the variables was used to additionally test the postulated hypotheses and accomplish the research objectives. The correlations of the variables are statistically significant when $p \leq .05$.

Determinants of Turnover → Job Satisfaction

Objectives

The first research objective was to determine the direction of the relationships between each of the independent variables and job satisfaction. The second objective was to determine the strength of the relationships between each of the independent variables and expressed career intent. Hypotheses 1a, 1b, and 2 were formulated to obtain the first and second objectives. Each hypothesis was evaluated using bivariate correlation analysis.

Correlation results. The results of the correlation analysis are summarized in Tables 28 through 31. In the following paragraphs, each hypothesis pertinent to these objectives is restated and the data analysis explained.

Hypothesis testing. Hypothesis 1a - as the values of the independent variables (age, tenure, similarity of job with vocational interests, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibility, task repetitiveness, and overall reaction to job content) increases, the level of job satisfaction increases - was not supported with the exception of similarity of job with vocational interests ($r = .1184$, $p \leq .01$), task repetitiveness ($r = .091$, $p \leq .05$), and overall reaction to job content

(r = .0871, p ≦ .05) which were statistically significant (Table 28). All of the independent variables had positive correlation coefficients with the exception of age (r = -.0214) and supported the hypothesized relationships. However, the low r values did not show strong support for the overall hypothesis.

Hypothesis 1b - as family size and responsibility increases, the level of job satisfaction increases for men and decreases for women - was not supported by the data (Table 29). The correlation between family size and responsibility for men (r = -.0120) and for women (r = .0034) was not statistically significant. The negative correlation coefficient for men and positive correlation coefficient for women did not support the hypothesized relationships for both men and women.

Hypothesis 2 - as the values of the independent variables increase, the intention to remain in the Air Force increases - was largely supported by the data (Table 30). The correlations of family size and responsibility, task repetitiveness, pay, peer group interaction, overall reaction to job content, promotion, job autonomy and responsibility, supervisory style, integration, and tenure were statistically significant at the 0.001 level. Of this grouping, the strongest correlation coefficients were for family size and responsibility (r = .6499), task repetitiveness (r = .5427), pay (r = .5315), and peer group interaction (r = .4801). The positive correlation coefficients of all the independent variables supported the hypothesized

TABLE 28

BIVARIATE CORRELATIONS OF THE INDEPENDENT VARIABLES WITH JOB SATISFACTION

Independent Variable	Correlation Coefficient	Level of Significance
Age	-.0214	n. s.
Tenure	.0398	n. s.
Similarity of Job with Vocational Interests	.1184	$p \leq .01$
Pay	.0397	n. s.
Promotion	.0450	n. s.
Peer Group Interaction	.0479	n. s.
Integration	.0275	n. s.
Supervisory Style	.0129	n. s.
Role Clarity	.0721	n. s.
Job Autonomy and Responsibility	.0719	n. s.
Task Repetitiveness	.0910	$p \leq .05$
Overall Reaction to Job Content	.0871	$p \leq .05$

TABLE 29

BIVARIATE CORRELATION OF FAMILY SIZE AND RESPONSIBILITY WITH JOB SATISFACTION

Independent Variable	Correlation Coefficient	Level of Significance
Family Size and Responsibility (Men)	-.0120	n. s.
Family Size and Responsibility (Women)	.0034	n. s.

relationships.

The data supported the second hypothesis with expressed career intent to remain in the 40XX AFSC for eight of the independent variables: age ($r = .0828$, $p \leq .05$), tenure ($r = .2212$, $p \leq .001$), similarity of job with vocational interests ($r = .1528$, $p \leq .001$), pay ($r = .0820$, $p \leq .05$), role clarity ($r = .1096$, $p \leq .01$), job autonomy and responsibility ($r = .1047$, $p \leq .05$), task repetitiveness ($r = .0877$, $p \leq .05$), and overall reaction to job content ($r = .0823$, $p \leq .05$) (Table 31). These variables were statistically significant. All of the independent variables had positive correlation coefficients and supported the hypothesized relationships. The r values, however, did not show strong relationships.

TABLE 30

BIVARIATE CORRELATIONS OF THE INDEPENDENT VARIABLES WITH EXPRESSED CAREER INTENT TO REMAIN IN THE AIR FORCE

Independent Variables	Correlation Coefficient	Level of Significance
Age	.0389	n. s.
Tenure	.1908	$p \leq .001$
Similarity of Job with Vocational Interests	.0311	n. s.
Family Size and Responsibility	.6499	$p \leq .001$
Pay	.5315	$p \leq .001$
Promotion	.4030	$p \leq .001$
Peer Group Interaction	.4801	$p \leq .001$
Integration	.3371	$p \leq .001$
Supervisory Style	.3447	$p \leq .001$
Role Clarity	.0532	n. s.
Job Autonomy and Responsibility	.3903	$p \leq .001$
Task Repetitiveness	.5427	$p \leq .001$
Overall Reaction to Job Content	.4225	$p \leq .001$

TABLE 31

BIVARIATE CORRELATIONS OF THE INDEPENDENT VARIABLES WITH EXPRESSED CAREER INTENT TO REMAIN IN THE 40XX AFSC

Independent Variables	Correlation Coefficient	Level of Significance
Age	.0828	$p \leq .05$
Tenure	.2212	$p \leq .001$
Similarity of Job with Vocational Interests	.1528	$p \leq .001$
Family Size and Responsibility	.0102	n. s.
Pay	.0820	$p \leq .05$
Promotion	.0168	n. s.
Peer Group Interaction	.0712	n. s.
Integration	.0301	n. s.
Supervisory Style	.0237	n. s.
Role Clarity	.1096	$p \leq .01$
Job Autonomy and Responsibility	.1047	$p \leq .05$
Task Repetitiveness	.0877	$p \leq .05$
Overall Reaction to Job Content	.0823	$p \leq .05$

Job Satisfaction → Turnover
Opportunity → Turnover
Expectancy → Turnover

Objectives

The third objective was to determine the direction of the relationships between each of the intervening variables and expressed career intent. The fourth objective was to determine the strength of the relationships between each of the intervening variables and expressed career intent. Hypotheses 3 through 5 were formulated to obtain these objectives.

Correlation results. The results of the correlation analysis are summarized in Tables 32 through 35. In the following paragraphs, each hypothesis pertinent to these objectives is restated and the data analysis explained.

Hypothesis testing. Hypothesis 3 - as job satisfaction increases, expressed career intent increases - was supported by the data (Table 32). The correlation of expressed career intent to remain in the Air Force with job satisfaction was statistically significant at the 0.05 level. The positive correlation coefficient ($r = .0928$) was quite low and supported the hypothesized relationship.

The third hypothesis was also supported when expressed career intent to remain in the 40XX AFSC was correlated with job satisfaction.

TABLE 32

BIVARIATE CORRELATION OF EXPRESSED CAREER INTENT WITH JOB SATISFACTION

Aspect of Expressed Career Intent	Correlation Coefficient	Level of Significance
To Remain in the Air Force	.0928	$p \leq .05$
To Remain in the 40XX AFSC	.1863	$p \leq .001$

The correlation between expressed career intent to remain in the 40XX AFSC and job satisfaction was statistically significant at the 0.001 level. The correlation coefficient (r = .1863) was positive and did support the hypothesized relationship.

Hypothesis 4 - as perceived opportunity increases, expressed career intent decreases - was partially supported by the data (Table 33). The correlation of opportunity to enter a civilian job with expressed career intent to remain in the Air Force was statistically significant at the 0.001 level. The correlation coefficient (r = .4108) was positive and supported the hypothesized relationship. The correlation of opportunity to enter another AFSC with expressed career intent to remain in the Air Force was not statistically significant and the correlation coefficient (r = .0145) was low. The positive r value did support the hypothesized relationship.

TABLE 33

BIVARIATE CORRELATION OF OPPORTUNITY WITH EXPRESSED CAREER INTENT TO REMAIN IN THE AIR FORCE

Aspect of Opportunity	Correlation Coefficient	Level of Significance
To Enter a Civilian Job	.4108	$p \leq .001$
To Enter Another AFSC	.0145	n. s.

The correlation between opportunity to enter a civilian job and career intent to remain in the 40XX AFSC was partially supported by the data (Table 34). The correlation of opportunity to enter a civilian job with expressed career intent to remain in the 40XX AFSC was not statistically significant. The correlation coefficient ($r = .0415$) was positive and weakly supported the hypothesized relationship. The correlation of opportunity to enter another AFSC with career intent to remain in the 40XX AFSC was statistically significant at the 0.05 level. The correlation coefficient ($r = .1151$) was positive and supported the hypothesized relationship.

Hypothesis 5 - as expectancy increases, expressed career intent increases - was not supported by the data (Table 35). The correlation between expectancy and expressed career intent to remain in the Air

TABLE 34

BIVARIATE CORRELATION OF OPPORTUNITY WITH EXPRESSED CAREER INTENT TO REMAIN IN THE 40XX AFSC

Aspect of Opportunity	Correlation Coefficient	Level of Significance
To Enter a Civilian Job	.4108	n. s.
To Enter Another AFSC	.1151	$p \leq .05$

TABLE 35

BIVARIATE CORRELATION OF EXPRESSED CAREER INTENT WITH EXPECTANCY

Aspect of Expressed Career Intent	Correlation Coefficient	Level of Significance
To Remain in the Air Force	.0128	n. s.
To Remain in the 40XX AFSC	.0257	n. s.

Force was not statistically significant. The correlation coefficient ($r = .0128$) was positive and did not support the hypothesized relationship.

The fifth hypothesis was also not supported when expectancy was

correlated with expressed career intent to remain in the 40XX AFSC. The r value (.0257) was not statistically significant and the positive correlation coefficient did not support the hypothesized relationship.

Job Satisfaction → Opportunity
Job Satisfaction → Expectancy
Opportunity → Expectancy

Objective

The fifth objective was to determine the direction and strength of the relationships between the intervening variables. Hypotheses 6 through 8 were formulated to obtain this objective. Each hypothesis was evaluated using bivariate correlation analysis.

Correlation results. The results of the correlation analysis are summarized in Tables 36 through 38. In the following paragraphs, each hypothesis pertinent to this objective is restated and the data analysis explained.

Hypothesis testing. Hypothesis 6 - as job satisfaction increases, perceived opportunity decreases - was not supported by the data (Table 36). The correlation between job satisfaction and opportunity to enter another AFSC was not statistically significant. The correlation coefficient (r = .0707) was positive and did not support the hypothesized relationship.

The sixth hypothesis was also not supported when job satisfaction

TABLE 36

BIVARIATE CORRELATION OF OPPORTUNITY WITH JOB SATISFACTION

Aspect of Opportunity	Correlation Coefficient	Level of Significance
To Enter a Civilian Job	.2216	$p \leq .001$
To Enter Another AFSC	.0707	n. s.

was correlated with opportunity to enter a civilian job. The r value (.2216) was statistically significant at the 0.001 level. The positive correlation did not support the hypothesized relationship.

Hypothesis 7 - as job satisfaction increases, perceived expectancy increases - was supported by the data (Table 37). The correlation between job satisfaction and expectancy was statistically significant at the 0.001 level. The positive correlation coefficient ($r = .2682$) supported the hypothesized relationship.

Hypothesis 8 - as perceived opportunity increases, expectancy decreases - was not supported by the data (Table 38). The correlation between opportunity to enter another AFSC and expectancy was not statistically significant, however, the negative correlation coefficient ($r = -.0106$) supported the hypothesized relationship.

The eighth hypothesis was also not supported when opportunity

TABLE 37

BIVARIATE CORRELATION OF JOB SATISFACTION WITH EXPECTANCY

Variable	Correlation Coefficient	Level of Significance
Job Satisfaction	.2682	$p \leq .001$

TABLE 38

BIVARIATE CORRELATION OF OPPORTUNITY WITH EXPECTANCY

Aspect of Opportunity	Correlation Coefficient	Level of Significance
To Enter a Civilian Job	-.0077	n. s.
To Enter Another AFSC	-.0106	n. s.

to enter a civilian job was correlated with expectancy. The r value (-.0077) was not statistically significant but the negative regression coefficient did support the hypothesized relationship.

Summary of Bivariate Correlation Results

The results of the bivariate correlations did not support all of the hypothesized relationships presented in Chapter II. Hypotheses

1a, 2, and 4 were partially supported and Hypotheses 3 and 7 were fully supported.

Tenure, similarity of job with vocational interests, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibility, task repetitiveness, and overall reaction to job content had positive relationships with job satisfaction. However, task repetitiveness, overall reaction to job content, and similarity of job with vocational interests were considered to be of practical importance. Only age, similarity of job with vocational interests, and role clarity were not statistically significant when correlated with expressed career intent to remain in the Air Force. The correlations of the significant variables were all positive and quite strong. When correlations with career intent to remain in the 40XX AFSC were accomplished, it was discovered that eight variables were significant: tenure, similarity of job with vocational interests, age, pay, role clarity, job autonomy and responsibility, task repetitiveness, and overall reaction to job content.

The correlations between job satisfaction and both aspects of expressed career intent were statistically significant and had positive correlations. The correlation results also found opportunity to enter a civilian job to be practically significant with expressed career intent to remain in the Air Force ($r = .4108$). Expressed career intent to remain in the 40XX AFSC was significant, however, the r

value was quite low (r = .1863). At this point in the analysis, the researchers reasoned that the overall treatment of expressed career intent to remain in the 40XX AFSC as a dependent variable was not of practical importance and was no longer considered significant in the development of a turnover model for the 40XX AFSC.

The correlations between the intervening variables (Hypotheses 6, 7, and 8) resulted in a practically important relationship between job satisfaction and expectancy. However, the relationships between expectancy and both aspects of opportunity were negative but not practically important.

In order to more clearly define the strength and direction of the relationships among these variables and to answer the research question, the path analysis results will be discussed in the next section.

Path Analysis Results

Figures 6 and 7 illustrates the relative impact of the independent variables on the dependent variable, expressed career intent to remain in the Air Force, with job satisfaction and opportunity to enter a civilian job as the intervening variables. The various path coefficients are depicted on the diagrams in Figures 6 and 7. The effect coefficients are listed in Table 39 with job satisfaction as the presumed intervening variable. Table 40 lists the effect coefficients when opportunity to enter a civilian job is the presumed intervening variable.

Figure 6 shows that job satisfaction did not function as an

intervening variable between the independent variables and expressed career intent to remain in the Air Force. Table 39 lists the direct, indirect, and total path coefficient values and none of the indirect path coefficients exceeded the practical significance criterion of 0.09.[1] It was also discovered that the direct path coefficients of age, similarity of job with vocational interests, and role clarity were not practically significant with expressed career intent to remain in the Air Force.

Figure 7 shows that opportunity to enter a civilian job did function as an intervening variable between the independent variables and expressed career intent to remain in the Air Force. Table 40 lists the direct, indirect, and total path coefficient values and only two indirect paths were not practically significant: age and tenure. The direct path coefficient of age (.036) was also not practically significant.

Figures 6 and 7 illustrated that the paths from age and tenure to expressed career intent to remain in the Air Force were not significant when either job satisfaction or opportunity to enter a civilian job were the presumed intervening variables. Therefore, age and tenure were regressed as single variables on expressed career intent to remain in the Air Force with job satisfaction and then opportunity to enter a civilian job as intervening variables. When age was regressed

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[1]Bluedorn determined that a path is not significant if the path coefficient has an absolute value of less than 0.09 (3:109).

TABLE 39

EFFECTS OF THE MODIFIED MODEL VARIABLES ON EXPRESSED CAREER INTENT TO REMAIN IN THE AIR FORCE WITH JOB SATISFACTION AS THE INTERVENING VARIABLE

Variable	Effects		
	Direct	Indirect	Total Causal
Job Satisfaction	.093	-	.093
Age	.041	-.002	.039
Tenure	.187	.004	.191
Similarity of Job with Vocational Interests	.020	.011	.031
Family Size and Responsibility	.651	-.001	.650
Pay	.529	.004	.533
Promotion	.400	.004	.404
Peer Group Interaction	.477	.004	.481
Integration	.335	.003	.338
Supervisory Style	.344	.001	.345
Role Clarity	.047	.007	.054
Job Autonomy and Responsibility	.386	.007	.393
Task Repetitiveness	.539	.008	.547
Overall Reaction to Job Content	.418	.008	.426

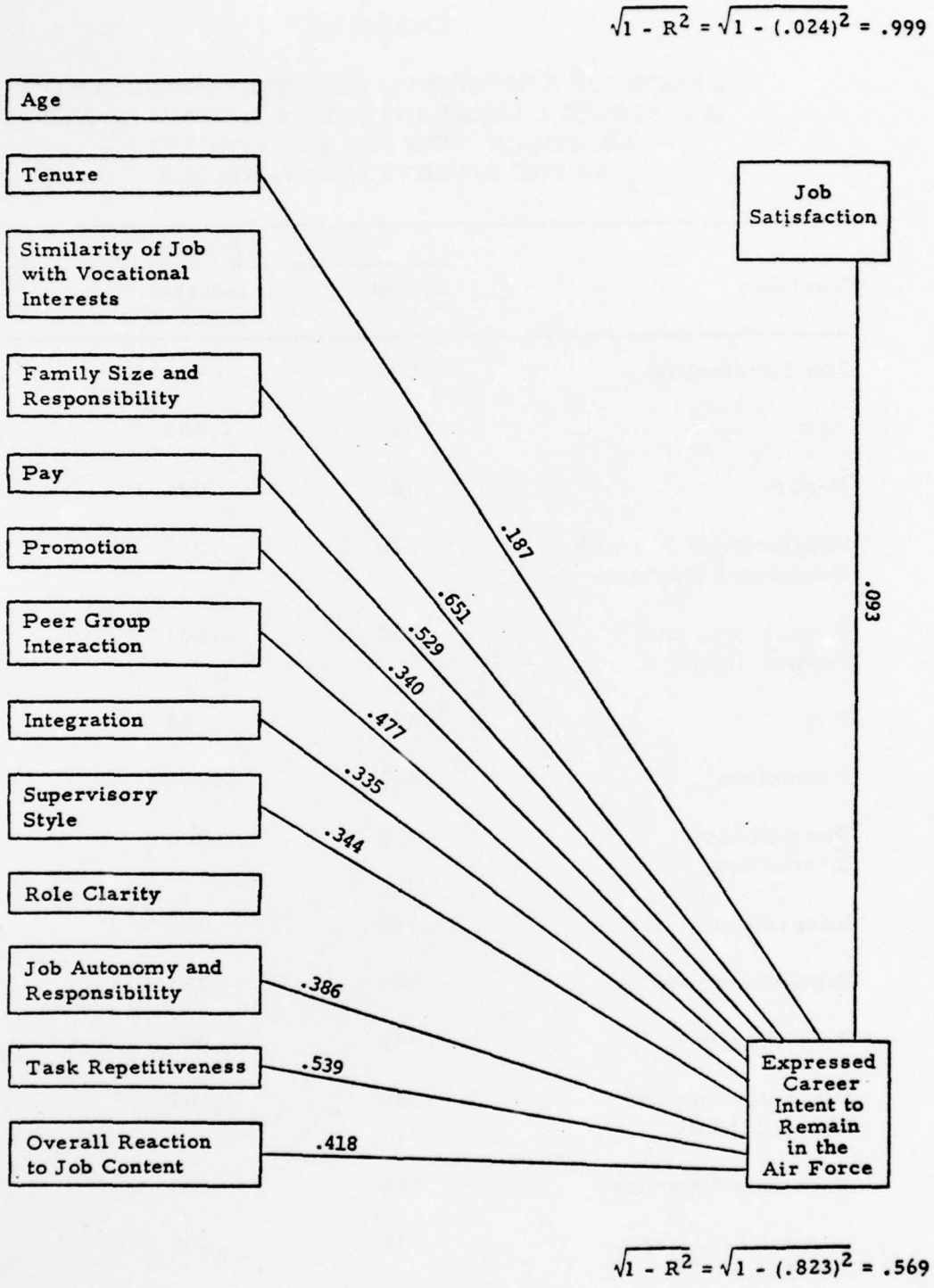


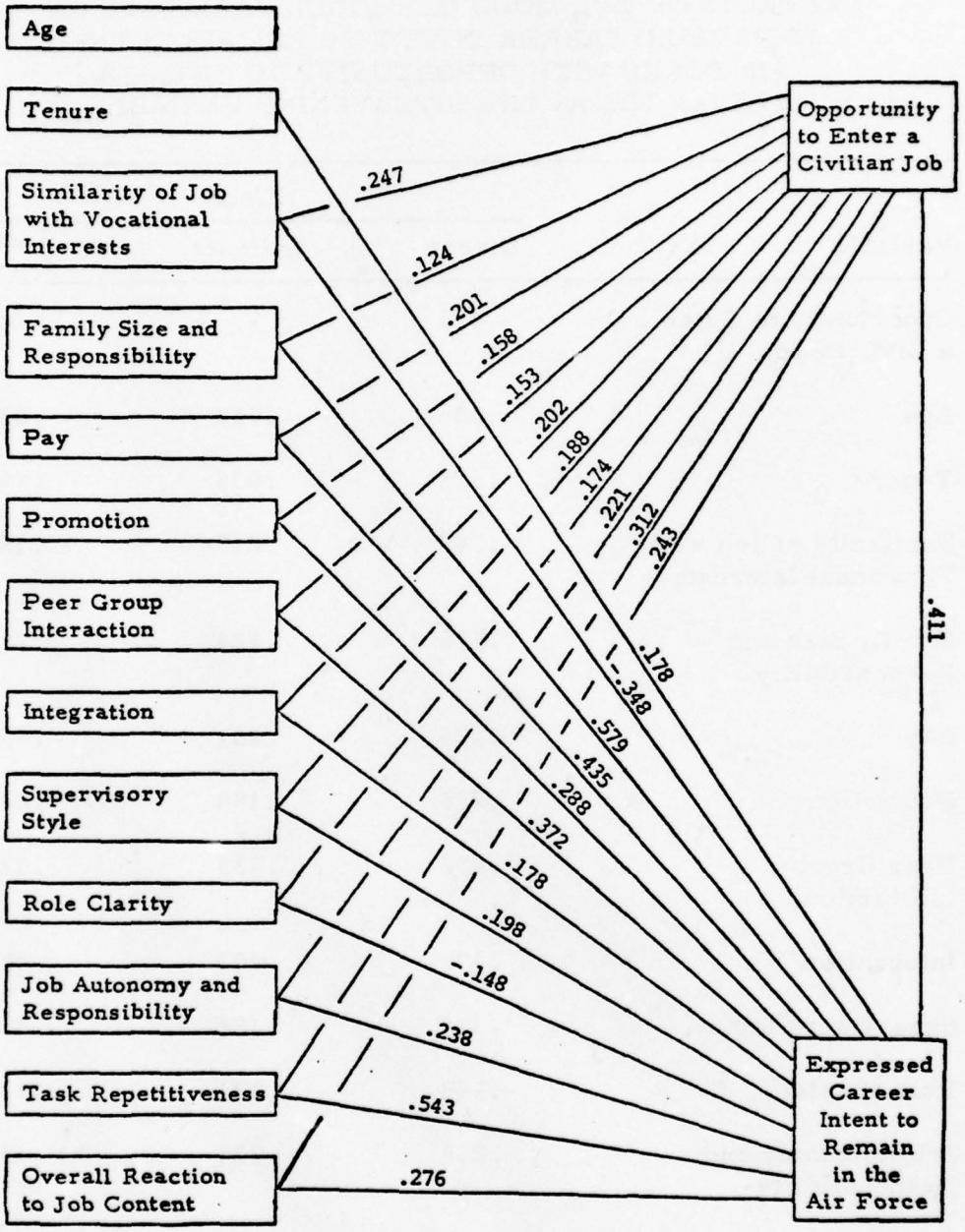
Figure 6. Causal Model with Job Satisfaction as the Intervening Variable

TABLE 40

EFFECTS OF THE MODIFIED MODEL VARIABLES ON EXPRESSED CAREER INTENT TO REMAIN IN THE AIR FORCE WITH OPPORTUNITY TO ENTER A CIVILIAN JOB AS THE INTERVENING VARIABLE

Variable	Effects		
	Direct	Indirect	Total Causal
Opportunity to Enter a Civilian Job	.411	-	.411
Age	.036	.003	.039
Tenure	.178	.013	.191
Similarity of Job with Vocational Interests	-.348	.247	.101
Family Size and Responsibility	.578	.124	.703
Pay	.434	.201	.635
Promotion	.288	.158	.446
Peer Group Interaction	.372	.153	.525
Integration	.178	.202	.400
Supervisory Style	.198	.188	.386
Role Clarity	-.148	.174	.026
Job Autonomy and Responsibility	.238	.221	.459
Task Repetitiveness	.543	.312	.855
Overall Reaction to Job Content	.276	.243	.519

$$\sqrt{1 - R^2} = \sqrt{1 - (.581)^2} = .814$$



$$\sqrt{1 - R^2} = \sqrt{1 - (.815)^2} = .579$$

Figure 7. Causal Model with Opportunity to Enter a Civilian Job as the Intervening Variable

with job satisfaction as the intervening variable, the path coefficient of .041 was not practically significant. Also, when tenure was regressed with job satisfaction as the intervening variable, the path coefficient of .085 was again not practically significant. However, when age was regressed on expressed career intent to remain in the Air Force with opportunity to enter a civilian job as the intervening variable, the path coefficient of .096 was practically significant. Lastly, when tenure was regressed with opportunity to enter a civilian job as the intervening variable, the path coefficient of .178 was practically significant. Consequently, these results indicated that age and tenure functioned as independent variables of expressed career intent to remain in the Air Force with opportunity to enter a civilian job as the intervening variable.

Summary of Path Analysis

The path analysis did not confirm that opportunity to enter a civilian job was an intervening variable between job satisfaction and expressed career intent to remain in the Air Force. In fact, the analysis discovered that job satisfaction did not function as an intervening variable for any of the independent variables and expressed career intent to remain in the Air Force. Opportunity to enter a civilian job did function as an intervening variable between similarity of job with vocational interests, family size and responsibility,

promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibility, task repetitiveness, and overall reaction to job content and the dependent variable, career intent to remain in the Air Force. Additionally, when the path coefficients of age and tenure in Figures 6 and 7 are compared, the path coefficients have greater strength with opportunity to enter a civilian job as the intervening variable between age and tenure and expressed career intent to remain in the Air Force. As a result of the preceding analysis, a causal model is presented in Chapter V.

CHAPTER V

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

Chapter IV presented the results of the data analysis performed in testing the research hypotheses and the research question regarding the causal order of the variables. The results were not particularly strong nor entirely consistent with the prior research. This was surprising since the survey instrument was specifically designed to test the variables presented in this study. At least part of the reason for results differing from prior research efforts may have been due to the homogeneity of the research population.

This chapter explains the implications of the data analyses. First, the findings of the data analyses are discussed with regard to the proposed modified turnover model presented in Chapter II. Next, conclusions are presented including the presentation of a revised turnover model based on the collective statistical analyses. Finally, the chapter concludes with a final note and recommendations for further research.

Discussion

This research study did accomplish the research objectives and answered the research question. Based on the results of the statistical analyses, the relationships of the modified model were not entirely confirmed. Tenure, similarity of job with vocational interests, family size and responsibility, pay, promotion, peer group interaction, integration, supervisory style, role clarity, job autonomy and responsibility, task repetitiveness, and overall reaction to job content did function as determinants of turnover for non-rated company grade aircraft maintenance officers. Age appeared not to be a determinant of turnover for this particular group of Air Force officers, which was not surprising since the modal age of the sample was 30 to 34 years. These results were consistent with the majority of literature on turnover.

Expectancy did not function as an intervening variable between the identified determinants and turnover. Positive relationships were not found between the determinants and expectancy. For example, an individual's overall reaction to job content would not interact with his or her expectations toward the job when considering whether or not to make the Air Force a career. The fact that expectancy did not function as an intervening variable may have been due to the use of survey questions which did not properly measure the basic concept

of expectancy. Since expectancy did not function as an intervening variable between the identified determinants and turnover, expectancy was not included in the revised turnover model.

The role of job satisfaction as an intervening variable between the determinants and expressed career intent to remain in the Air Force was not supportable. This may have been due to the use of the Hoppock measure of job satisfaction which is a universal or general measure. The homogenous nature of this study's population might have made the Hoppock measure inappropriate for this specific group of aircraft maintenance officers. The fact that job satisfaction was confirmed as directly affecting the expressed career intent of non-rated company grade aircraft maintenance officers lends credence to the researchers' feelings of poor measurement by the Hoppock measure. It is also possible that there may be one or more other variables fulfilling the intervening role that were not investigated in this research study or that job satisfaction just does not function in the intervening role. For these reasons, job satisfaction was placed straddling the boundary between the determinants and intervening variables within the revised model of turnover.

The role of opportunity to enter a civilian job as an intervening variable between the determinants and expressed career intent to remain in the Air Force was supportable. This intervening role of opportunity to enter a civilian job confirmed the researchers'

intuitive beliefs based on extensive personal experience in the aircraft maintenance officer career field. This is generally consistent with prior research findings that if military personnel perceived good opportunity within the civilian environment, they would express desire to separate from the service. Whether or not the military individual actually separates is more than likely dependent upon his or her personal situation at the time of the opportunity perception. For example, an officer with ten or more years of service would probably express the desire to remain in the Air Force and discount the opportunity to enter a civilian job while an officer with less than ten years of service would probably express a lessened desire to remain in the Air Force when considering the opportunity to enter a civilian job.

The researchers' a priori belief that opportunity to enter another AFSC functioned as an intervening variable was not supportable. Likewise, expressed career intent to remain in the 40XX AFSC was not supported by the overall data analyses as a valid surrogate for the dependent variable, turnover. Consequently, the researchers' initial belief that the 40XX AFSC itself was important in the turnover decision was not supportable. Therefore, opportunity to enter another AFSC was not included in the revised model of turnover.

The overall data analyses results caused the researchers to believe that some of the statistically supported and unsupported relationships may be suspect. The effects of multicolinearity among the

determinants and the possibility of curvilinear relationships with job satisfaction may have affected the actual data analyses results. The officers in the data base included both prior and non-prior enlisted officer personnel. These two groups of officers have different backgrounds and experiences which quite naturally may have caused different perceptions with regards to particular survey questions. In particular, the results of the responses to the questions measuring job satisfaction may have offset each other and caused insignificant statistical relationships.

Also, the effects of additional variables not included within the proposed turnover model should not be discounted. The differing attitudes and resultant behaviors of a homogenous group may not allow the accurate development of a universal turnover model. The relationships among the variables of a traditional turnover model such as presented in the literature review may not necessarily apply to non-rated company grade aircraft maintenance officers. The proposed turnover model presented in Chapter II synthesized aspects of several models.

In summary, we contend that relationships among turnover variables must be revised in light of the statistical data analyses, the possible effects of variables not included in the model, and our subjective beliefs. Also, personal behavior and attitudes are not static and will change as the forces within a particular environment change.

However, senior managers within the Air Force need a tool to manage the aircraft maintenance officer career force.

The revised model of turnover presented in the next section is such a management tool. If the primary causes of turnover within a particular segment of the Air Force (i.e., the 40XX AFSC) can be identified and predicted, then the opportunity costs of taking action to prevent or influence the turnover rate can be evaluated. Thus, the revised turnover model is another attempt to provide the needed insight.

Conclusions

This research effort has culminated in several conclusions regarding the turnover of non-rated company grade aircraft maintenance officers. First, job satisfaction, as measured, does not function as an intervening variable between the identified determinants of turnover and expressed career intent. Job satisfaction, however, does appear to directly affect the non-rated officers' expressed career intent. In other words, this research may not have accurately measured job satisfaction or one or more other variables are fulfilling the intervening role between the turnover determinants and expressed career intent. The lack of strong relationships between the determinants of turnover and job satisfaction was not consistent with the body of literature on turnover.

Given that weak relationships were generally found, similarity of job with vocational interests did seem to have the strongest interaction with job satisfaction. This finding led the researchers to believe that it is logical to assume that similarity of job with vocational interests does influence the level of satisfaction more than the other determinants and that all of the determinants with the exception of age have some effect on general satisfaction level. The researchers also felt that job satisfaction may in fact be viewed by non-rated company grade aircraft maintenance officers as synomymous with expressed career intent. This would explain the relatively strong direct relationships the determinants had with expressed career intent.

Secondly, perceived opportunity to enter a civilian job functions as a strong intervening variable between the determinants of turnover and expressed career intent to remain in the Air Force. Logically, Air Force personnel managers can expect higher turnover rates among non-rated company grade aircraft maintenance officers when these officers perceive better career opportunities in the civilian sector of the economy than available within the Air Force. To avert voluntary personnel losses, senior managers should take actions to ensure that the non-rated company grade aircraft maintenance officers do in fact have excellent career opportunities and that these officers are informed of these opportunities.

Third, the determinants of turnover which were the most powerful in terms of total causal effect were task repetitiveness, family size and responsibility, pay, peer group interaction, and overall reaction to job content. Personnel policies should be focused on these particular determinants because they appear to be the most influential in affecting the turnover rate of non-rated company grade aircraft maintenance officers. For example, senior Air Force managers can vary the tasks required of an aircraft maintenance officer's job, and thus take advantage of the high causal effect task repetitiveness has on turnover. One method of accomplishing this end is to periodically reassign the maintenance officer within the structure of the maintenance organization. A typical base level aircraft maintenance organization has approximately twenty-five maintenance officer positions and rotating an officer from one production squadron to another or to a staff position might be effective.

The last conclusion is that expressed career intent to remain in the 40XX AFSC is not a reliable surrogate for turnover. The hypothesized dual nature of turnover was not supported by the earlier data analyses. Viewing turnover as exiting the 40XX AFSC for another AFSC and not separating from the Air Force does not allow accurate prediction or provide valid information when studying the turnover phenomenom. This discovery was contrary to what the researchers were led to believe when interviewing some senior Air Force

managers and subsequently caused the researchers to develop the dual aspect of turnover.

Revised Model

The modified model presented in Chapter II provided the straw-man for the research effort. The results of the data analysis coupled with conclusions already made in this chapter guided the researchers in developing the revised model for non-rated company grade aircraft maintenance officers illustrated in Figure 8. A review and comparison between the modified model of Chapter II and the revised model shows that not all of the variables specified in the modified model function to the same degree and manner as hypothesized for the target population. In fact, the revised model was a considerable change from the conceptionalized modified model. The revised model also confirmed that when studying turnover, homogenous populations require specific consideration of the determinants and intervening variables influencing the decision and behavior of the members within that peculiar population. The researchers consider the revised model to be a meaningful conceptual framework for the study of non-rated company grade aircraft maintenance officers in the United States Air Force.

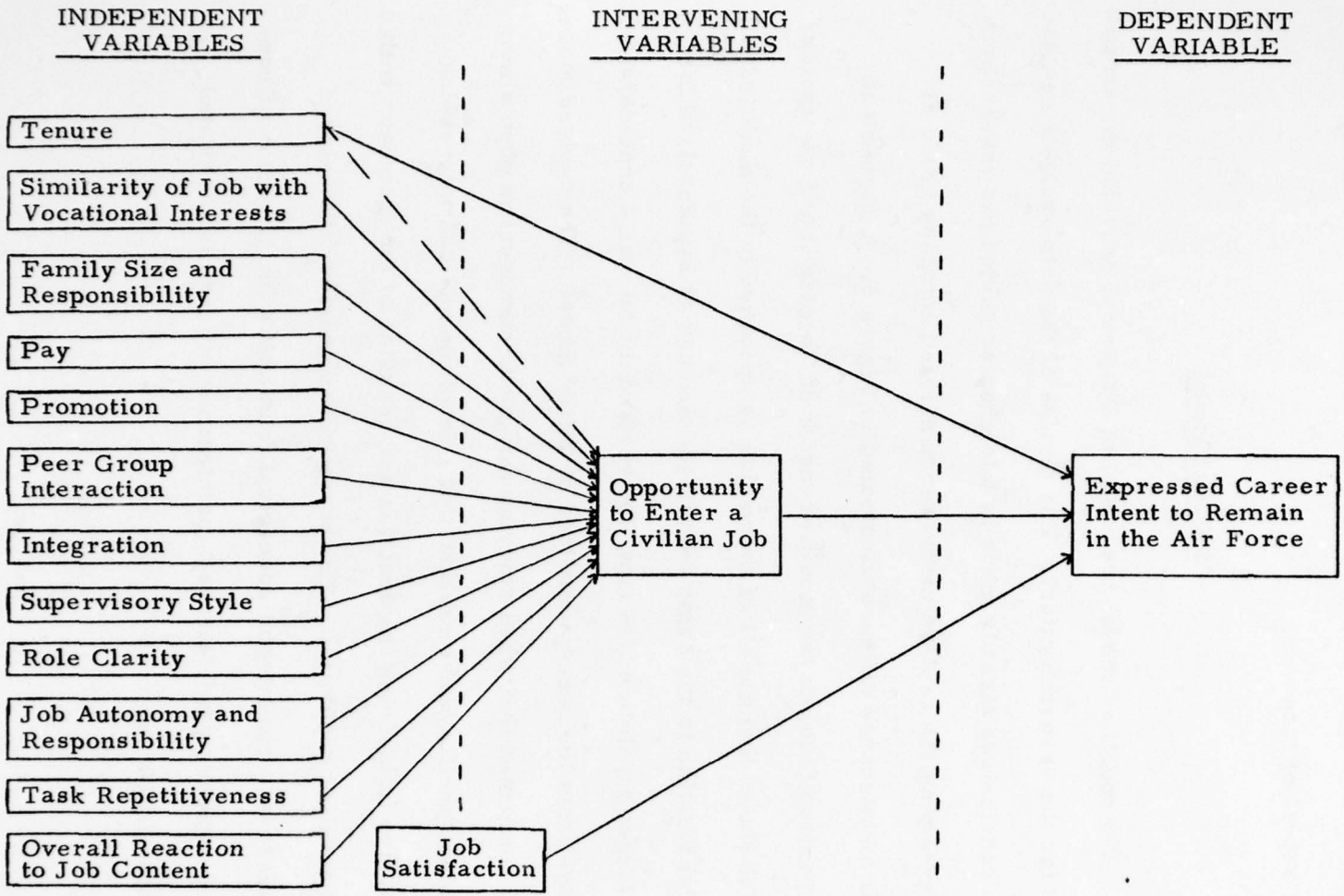


Figure 8. Revised Model of Turnover

A Final Note

Over fifty survey respondents enclosed additional comments with their questionnaire answer sheets. Many of these comments supported the findings of this research effort. The comments also provided ideas for further research and convinced the researchers that the retention of non-rated company grade aircraft maintenance officers will become even more difficult in the future if senior Air Force managers do not implement policies which consider the primary factors, such as identified in this study, that affect the turnover of aircraft maintenance officers. A sample of the comments are included in Appendix B for the reader's review.

Recommendations for Further Research

As a result of conducting this study, the researchers feel that the traditional explanations of officer turnover, and hence, the steps to enhance retention of qualified personnel, may be based upon an inaccurate and outdated conceptual framework. This study has partially tested and confirmed a realistic conceptual framework with its basis founded in theoretical and empirical research. The framework developed in this study should provide the basis for further definitive research in the area of non-rated company grade aircraft maintenance officer turnover.

During the course of this research, additional variables and analyses pertinent to the study of turnover of non-rated company grade aircraft maintenance officers became apparent to the researchers. The recommendations that follow are divided into two categories: first, recommendations for research utilizing the existing data base compiled by the survey instrument; second, recommendations requiring development of a new, comprehensive data base.

Further Analyses of the Existing Data Base

Due to the limitations of time and the defined scope of this study, three analyses of the existing data base were not accomplished by the researchers. They are the basis of the recommendations that follow.

The first recommendation concerns further analyses of the relationships between the independent variables, the various aspects of the intervening variables, and the different aspects of the dependent variable. This analysis should concentrate on determining if any of the defined relationships are curvilinear in nature instead of the assumed linear relationships utilized in this study. Special consideration should be given to further evaluation of the hypothesized function of job satisfaction as an intervening variable within the model.

The second recommendation is to divide the sample into prior enlisted and non-prior enlisted personnel subgroups in order to evaluate possible differences in perceptions between the two subgroups

of the population. Major perceptual differences would indicate the possible need for differentiated turnover models; lack of significant differences would support the general applicability of the revised turnover model to the population.

The third recommendation is to divide the sample into strategic, tactical, and general purpose oriented forces subgroups in order to evaluate possible differences in perceptions between the three subgroups of the population. Again, major perceptual differences would indicate the possible need for a differentiated turnover model; lack of significant differences would support the general applicability of the revised turnover model to the population.

Recommendations Requiring a New Data Base

As noted in the introduction to this chapter, the results of the data analyses were not relatively strong and entirely consistent with the prior research discussed in the literature review. The survey instrument was designed to test the specific variables and relationships that were the basis of this study. It should be noted that the specific variables and relationships were primarily derived from civilian oriented research. In spite of the relatively weak results, the researchers feel that the results obtained are sufficiently strong to warrant further investigation. Specifically, the researchers recommend the continued development of the survey instrument for

the study of the revised turnover model presented in this chapter.

Additionally, the relatively weak results obtained account for a small percentage of the variation in expressed career intent to remain in the Air Force (see Figure 7). The large percentage of unexplained variation in this study of turnover suggests the existence of pertinent variables not previously identified and tested in the turnover literature. Identification and validation of additional variables peculiar to the 40XX Air Force specialty could significantly enhance the predictive power of the turnover model. The researchers would suggest the following candidates for inclusion in the model of turnover of non-rated company grade aircraft maintenance officers:

1. Long duty hours
2. Government enforced pay caps
3. Perceived preferential treatment of rated supplement officers in the 40XX AFSC
4. Perceived integrity of senior officers
5. Effect of duties not directly related to the career field
6. Effect of temporary duty assignments
7. Erosion of benefits
8. Erosion of prestige
9. Erosion of military discipline
10. Effect of many permanent changes of station during one's career
11. Spouse's satisfaction with the military.

APPENDICES

APPENDIX A

SURVEY INSTRUMENT

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (ATC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

REPLY TO ATTN OF: LSGR (LSSR 7-79B)/Capt Mills/Capt Osadchey/AUTOVON 78-56513

15 May 79

SUBJECT: Aircraft Maintenance Officer (AFSC 40XX) Questionnaire

TO:

1. The attached questionnaire was prepared by a research team at the Air Force Institute of Technology, Wright-Patterson AFB, Ohio. The purpose of this questionnaire is to obtain your attitudes toward some factors which affect the retention of personnel within the aircraft maintenance officer career field.

2. You are requested to provide an answer for each question. Headquarters USAF Survey Control Number 79-90 has been assigned to this questionnaire. Your participation in this research is voluntary.

3. Your responses to the questions will be held confidential. Your cooperation in providing this data will be appreciated. Please return the completed answer sheet in the attached envelope within one week after receipt.

Donald R Edwards

DONALD R. EDWARDS, Lt Col, USAF
Associate Dean for Graduate Education
School of Systems and Logistics

3 Atch
1. Questionnaire
2. Answer Sheet
3. Return Envelope

AIRCRAFT MAINTENANCE OFFICER
(AFSC 40XX) QUESTIONNAIRE

SCN 79-90
EXPIRES 31 JULY 1979

PRIVACY STATEMENT

In accordance with paragraph 30, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

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) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel; and/or

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

b. Principal purposes. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine uses. The survey data will be converted to information for use in research of management related problems. Results of the research, based on the data provided, will be included in written master's theses and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

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.

GENERAL INSTRUCTIONS

1. Do not in any manner indicate your name or Social Security Number on the answer sheet.

2. All statements may be answered by filling in appropriate spaces on the answer sheet. If you do not find the exact answer that reflects your opinion, use the one that is closest to it. Do not answer in the survey booklet; use the separate answer sheet.

3. The answer sheet is designed for machine scanning of your responses. Please use a Number 2 pencil 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.

4. Below is a list of key words and their definitions as they are used in this survey:

UNIT/ORGANIZATION: your Squadron/Division

SUPERVISOR/BOSS: the person to whom you report directly (the reporting official on your performance report)

WORK GROUP: All those persons who report to the same supervisor as you do

5. Do not staple or otherwise damage the answer sheet.

THANK YOU FOR YOUR COOPERATION IN COMPLETING THIS QUESTIONNAIRE. PLEASE FEEL FREE TO ENCLOSE ANY ADDITIONAL COMMENTS ON A SEPARATE SHEET.

PLEASE ENCLOSE THE ANSWER SHEET IN THE ATTACHED PRE-ADDRESSED RETURN ENVELOPE AND PLACE THE ENVELOPE IN OUTGOING OFFICIAL DISTRIBUTION.

SECTION I

For the following questions choose the response which best reflects your current status.

1. What is your current grade?
   a. 0-1
   b. 0-2
   c. 0-3

2. What is your sex?
   a. Male
   b. Female

3. What was your age on your last birthday?
   a. 20-24
   b. 25-29
   c. 30-34
   d. 35-39
   e. 40 or more

4. What is your total years of service for pay (active and reserve, officer and enlisted)?
   a. under 2 years
   b. 2 years, but less than 3 years
   c. 3 years, but less than 4 years
   d. 4 years, but less than 6 years
   e. 6 years, but less than 8 years
   f. 8 years, but less than 10 years
   g. 10 years, but less than 12 years
   h. 12 years, but less than 14 years
   i. 14 years or more

5. Do you have prior active enlisted service?
   a. No
   b. Yes, 1 year or less
   c. Yes, over 1 year to 2 years
   d. Yes, over 2 years to 3 years
   e. Yes, over 3 years to 4 years
   f. Yes, over 4 years to 5 years
   g. Yes, over 5 years to 6 years
   h. Yes, over 6 years to 7 years
   i. Yes, over 7 years to 8 years
   j. Yes, over 8 years to 9 years
   k. Yes, over 9 years to 10 years
   l. Yes, over 10 years

6. What is your present Major Command of assignment?

a. SAC	g. PACAF	m. ADCOM
b. TAC	h. USAFA	n. AFAFC
c. MAC	i. USAFE	o. AFCS
d. ATC	j. USAFSO	p. AFLC
e. USAF RED	k. USAFSS	q. AFSC
f. HQ USAF	l. AAC	r. Other

7. What is the organizational level of your current assignment?

a. Squadron or below	f. Major Command
b. Group	g. HQ Air Force
c. Wing	h. Department of Defense
d. Air Division	i. Separate Operating Agency
e. Numbered Air Force	j. Other

8. What is your marital status?
   a. Married
   b. Single, never married
   c. Single, previously married

9. How many dependents do you support?

a. 0	e. 4	i. 8
b. 1	f. 5	j. 9
c. 2	g. 6	k. 10 or more
d. 3	h. 7	

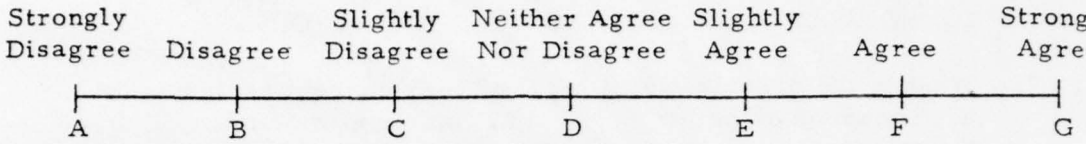
10. How long have you held your present assignment?
    a. 1 year or less
    b. Over 1 year but less than 2 years
    c. 2 years but less than 3 years
    d. 3 years or over

11. What is your aeronautical rating?
    a. Pilot
    b. Navigator
    c. Nonrated

12. What is the highest level of formal education you have completed?
    a. Some college
    b. Undergraduate degree (BA, BS, or equivalent)
    c. College beyond undergraduate degree
    d. Master's degree
    e. College beyond Master's degree

SECTION II

The following are a series of statements about your job. Using the scale below, indicate how much you agree or disagree with each statement.



Mark A in the answer sheet if you STRONGLY DISAGREE
Mark B in the answer sheet if you DISAGREE
Mark C in the answer sheet if you SLIGHTLY DISAGREE
Mark D in the answer sheet if you NEITHER AGREE NOR DISAGREE
Mark E in the answer sheet if you SLIGHTLY AGREE
Mark F in the answer sheet if you AGREE
Mark G in the answer sheet if you STRONGLY AGREE

The scale above will be at the top of each page in this section. Please respond to every statement. While some of the statements may appear similar to each other, no two statements are identical. Please do not go back to previous statements. Try to give as accurate a picture as possible of your feelings and opinions about all aspects of your unit.

13. My supervisor sets an example by working hard.

14. Information is usually widely shared in my unit so that those who make the decisions will base their decisions on the best available know-how.

15. I feel I am doing something important by serving as a member of the Air Force team.

16. I have confidence and trust in the persons in my work group.

17. The opportunity to take on new responsibilities is available if I want it.

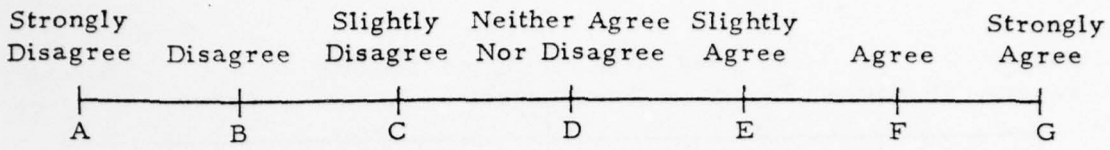
18. I feel my career provides sufficient economic security.

19. I have a good chance for promotion.

20. My supervisor tries to strike a balance between people needs and production needs.

21. I intend to remain in my present Air Force career field.

22. Persons in my work group are friendly and easy to approach.



23. In general, I decide for myself how to accomplish a job.

24. I do not look forward to coming to work each day.

25. In my job I utilize my civilian/military education and training.

26. Most of the time my supervisor will not back me up.

27. Most of the time my military service pay is adequate to cover the basic expenses with a little left over.

28. My job requires me to use a number of different skills.

29. I am often given responsibility for a total project.

30. My immediate supervisor usually tells me what's going on at higher levels of management.

31. The probability of my getting the job of my choice outside of the Air Force is high.

32. Opportunity for promotions in my career field is fair and equitable.

33. The people in my unit work together effectively as a team.

34. My job is boring.

35. I have a say in setting my work goals.

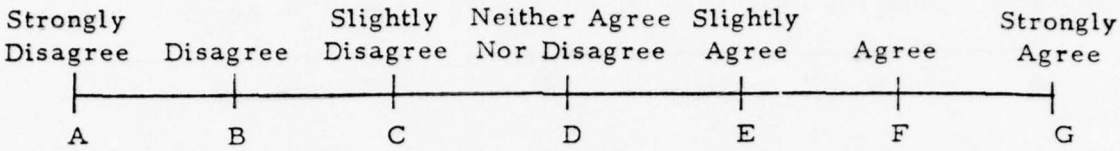
36. My supervisor handles the technical side of his/her job well--for example, general expertness, knowledge of job, technical skills needed in his/her profession or trade.

37. There is not much similarity between my abilities and the requirements of my job.

38. The people in my work unit believe that they are doing something important for the country by working in the Air Force.

39. Our work unit receives little information about what is going on in other sections or branches.

40. The chances for me to voluntarily enter a job specialty (AFSC) I desire are high.



41. Persons in my work group know what their jobs are and know how to do them well.

42. I know how my job fits into my organization's mission.

43. I usually don't get the chance to handle the tough and highly visible projects.

44. My job is quite simple and repetitive.

45. My military service income provides me with an acceptable standard of living.

46. My present job assignment offers the opportunity for future advancement.

47. My supervisor has poor leadership qualities.

48. Very little responsibility goes with my job.

49. I enjoy my job.

50. I intend to make the Air Force a career.

51. Rarely am I given the opportunity to make decisions for myself.

52. I am proud to be a member of the Air Force team.

53. My supervisor is not effective in handling personnel problems.

54. Promotions are usually based on performance and ability.

55. My job gives me the chance to "dig deeper" into work activities which interest me.

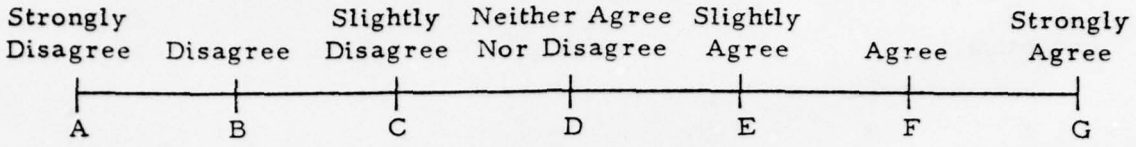
56. My supervisor is well qualified for his/her job.

57. My present assignment does not give me the chance to do the kind of work I do best.

58. If I left the Air Force, it would be very difficult to get a job with pay, benefits, duties, and responsibilities comparable with those of my present job.

59. I generally decide the work methods and procedures for my job.

60. Our work unit is usually aware of important events and situations.



61. My supervisor is not a capable individual.

62. The Air Force usually tries to take care of its own.

63. When decisions are being made in my unit, the persons who will be affected most are asked for their ideas.

64. I feel secure that I will be able to make ends meet on my military service pay.

65. I get to do a lot of interesting work in my present job.

66. I have confidence and trust in my supervisor.

67. Promotion policy is unfair.

68. In general, most of my skills and abilities are being used in my present job.

69. I know what is expected of me in my job.

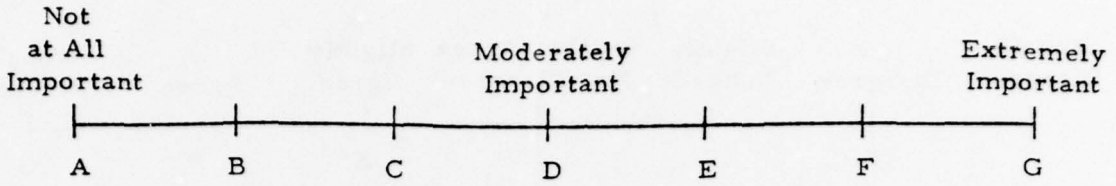
70. The probability that I could enter another Air Force specialty that I truly desire is high.

71. My job contains a lot of variety. That is, the job requires me to do many different things at work using a variety of my skills and talents.

SECTION III

Listed below in items 72-82 are a number of factors and their descriptions which are often used to describe organizational well being.

Using the scale below, please indicate the amount of importance you personally place on each of these factors. Mark the appropriate letter of the scale next to the appropriate number on the answer sheet. For example, if you feel that ACHIEVEMENT is between not important and moderately important, then darken either the B or C oval next to number 72 on the answer sheet. If, however, you feel ACHIEVEMENT is extremely important, then you would mark G on the answer sheet. Indicate only how important each factor is to you, not how satisfied you currently are with each factor in your organization.



72. ACHIEVEMENT - Feelings of accomplishment derived from job performance. The pride and pleasure associated with a job well done.

73. COMMUNICATION - Adequacy of communication structure. Free flow of dialogue up, down and across organizational structure. Well defined feedback loops.

74. GROUP COHESION/WORKER RELATIONS - The compatibility of coworkers. Includes characteristics of coworkers such as how friendly, cooperative, competent, and sociable they are.

75. INDEPENDENCE - The chance for the individual to plan and carry out work activities rather than be directed by others. The chance to work with minimal supervision, and to have some independence in planning and implementing work.

76. INTEREST - The chance to perform work activities which are consistent with personal preferences or interests. The chance to do work which is pleasurable.

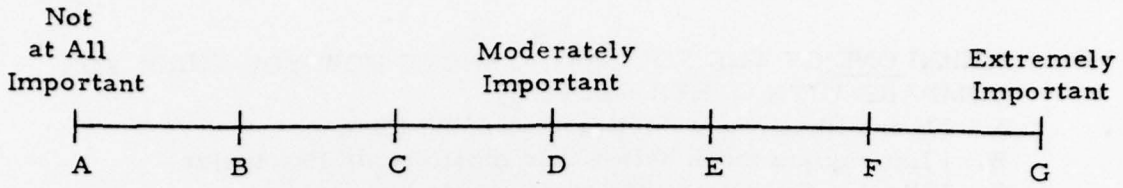
77. PAY AND BENEFITS/ECONOMIC SECURITY - The level of pay and the desirability of military service benefits. Included (as applicable) are incentive pay, retirement, medical care or insurance, BX, commissary, etc. Feeling that the job is secure even if economic situation changes. The feeling that basic needs will be met.

78. PERSONAL GROWTH AND DEVELOPMENT - The opportunity for self-fulfillment in the job. The chance to "grow" in the job, by developing new interests and skills.

79. PROMOTION OPPORTUNITY - The operation of the military service promotion system. Includes opportunity for promotion, the criteria for promotion, etc.

80. RESPONSIBILITY - The amount of responsibility for your actions, decisions, and their consequences. Includes responsibility for the welfare of people, for accomplishment of a mission, for tools or equipment and other property, or for financial assets.

81. SUPERVISION - The ability of the boss or supervisor to handle human or social situations on the job. The amount of concern displayed by supervisor for the welfare of his/her people. The competence displayed by supervisor dealing with technical problems encountered in the job. Supervisor's ability to develop technical skills in his/her people.



82. UTILIZATION - The extent to which the job makes use of individual abilities, training, and expertise.

SECTION IV

For the following questions choose the response that best reflects your feeling about your job. Darken the letter that most accurately reflects your feelings.

83. WHICH ONE OF THE FOLLOWING SHOWS HOW MUCH OF THE TIME YOU FEEL SATISFIED WITH YOUR JOB?
   A. All the time
   B. Most of the time
   C. A good deal of the time
   D. About half of the time
   E. Occasionally
   F. Seldom
   G. Never

84. CHOOSE THE ONE OF THE FOLLOWING STATEMENTS WHICH BEST TELLS HOW WELL YOU LIKE YOUR JOB.
   A. I hate it
   B. I dislike it
   C. I don't like it
   D. I am indifferent to it
   E. I like it
   F. I am enthusiastic about it
   G. I love it

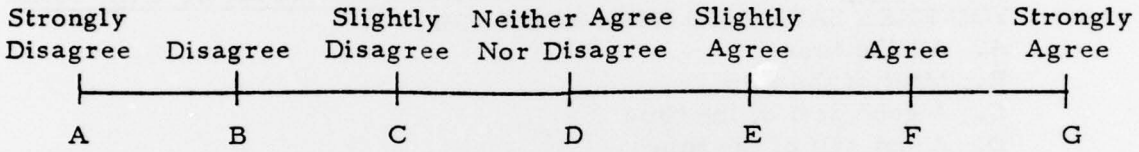
85. WHICH ONE OF THE FOLLOWING BEST TELLS HOW YOU FEEL ABOUT CHANGING YOUR JOB?
   A. I would quit this job at once if I could
   B. I would take almost any other job in which I could earn as much as I am earning now
   C. I would like to change both my job and my occupation
   D. I would like to exchange my present job for another one
   E. I am not eager to change my job, but I would do so if I could get a better job
   F. I cannot think of any jobs for which I would exchange
   G. I would not exchange my job for any other

86. WHICH ONE OF THE FOLLOWING SHOWS HOW YOU THINK YOU COMPARE WITH OTHER PEOPLE?

A. No one likes his job better than I like mine
B. I like my job much better than most people like theirs
C. I like my job better than most people like theirs
D. I like my job about as well as most people like theirs
E. I dislike my job more than most people dislike theirs
F. I dislike my job much more than most people dislike theirs
G. No one dislikes his job more than I dislike mine

SECTION V

The following are a series of statements about your job performance. Using the same scale as that used in Section II, indicate how much you agree or disagree with each statement.



87. If my job performance level was high, I would receive increased opportunities for personal growth and development.

88. If my job performance level was low, I would have less opportunity for promotion.

89. If my job performance level was high, I would be given more authority and responsibility.

90. If my job performance level was high, I would receive recognition from my supervisor.

91. If my job performance level was low, I would be criticized by my fellow workers.

92. If my job performance level was low, I would have less freedom from supervision.

93. If my job performance level was high, I would have feelings of accomplishment.

94. If my job performance level was high, I would have more opportunities to work on tasks that really interest me.

95. If my job performance level was high, I would expect that my abilities and skills would be better utilized.

APPENDIX B

SELECTED RESPONDENT COMMENTS

This appendix provides additional comments that were received with the questionnaire answer sheets returned by the respondents. Fifty-four additional comment letters were received with the 480 total responses. The inclusion of a subjective sampling of the candid comments in an appendix provides additional insight into the perceptions of non-rated company grade aircraft maintenance officers. Alterations of the comments were not made with the exception of deleting a respondent's name and duty location when it was provided.

Enclosed Comments

"I throughly enjoy my job. I have had great opportunity for professional and personal growth. I would never change career fields as I enjoy the challenge and the people.

However, I am separating from the service although I have been offered a Regular Commission, the better assignments, and have an outstanding service record. This is because of one reason: We are expecting our first child shortly after my regular (normal) date of separation (DOS). I feel that my family would suffer because my job would require lengthy times away from home. In my own list of priorities, my family comes first - above any job civilian or military."

"The two major problems of the 40XX's in the field are:

1. Long duty hours averaging 12 hours per day including weekends and nights.
2. My maintenance supervisor is generally a rated supplement officer with little or no maintenance or management experience. He is just punching his ticket for a few months and moving on."

"I find this questionnaire long overdue. The 4024's have too long been criticized when in error and ignored at all other times.

I am getting bitter about being supervised by Lt Cols who have no maintenance experience, no personnel or production management knowledge and could care less. In eight years of maintenance and eight bases only two have been good. One Major had been a

maintenance officer for 16 years. Besides being a dynamic individual he understood maintenance, my viewpoint, and the problems of my personnel. I would have followed Major _____ [name deleted] to Hell and back. Why is he the only one in eight years!

As a Lt. the salary was adequate. By budgeting, my wife and I could afford to go out to dinner 2 or 3 times a month. Now that I am a Capt with two children living in double digit inflation money is tight. Dinners out are rare occasions now. Budgeting is critical just to live from payday to payday. Buying a new car is out of the question because I won't go in debt for 5 to 6 years.

I like the maintenance career field and the people in it are some of the best. However, in January 1980 when my Masters Degree in Systems Management is complete I will be making a very difficult decision; whether to stay in a job I like or get out where the money is better and I will get an occasional pat on the back for a job well done.

In summary, I am tired of being ignored."

"Two things are critical to the improvement of the 40XX career field - 1) Full career progression opportunities, and 2) reduction of non-productive additional duties.

I do not condone rated/non-rated warfare, but I do not believe a rated officer should be selected, for example, as a maintenance squadron commander if there is a primary AFSC 40XX who wants the job. The same applies to the position of Deputy Commander for Maintenance, or any job.

The career aircraft maintenance officer has to believe that he/she has the full opportunity to progress to the highest position within the 40XX career field. Otherwise, there will be frustration, dissatisfaction, etc. 40XX's do not presently have this full opportunity. Opportunity exists at squadron/wing level, for the most part.

Too many additional duties inhibit a maintenance officer's duty performance - especially since many additional duties are as time consuming as primary duties."

"This officer is on the fence at 10 years TAFMSD. I have been fortunate with assignments that provide great job satisfaction. However, economic considerations find me searching the civilian sector for job opportunities. Being single with two dependents to support in these times of high inflation and consistent, inadequate 5.5% pay raises, stretches to the limit my ability to justify the sacrifices required of military service. Perceived/real income has shrunk below my 'sacrificial' tolerance level."

"In my opinion, a maintenance officer's job consists of stamping out little fires all of the time.

We just had a gentleman come here TDY and ask us what we 40XX's thought our jobs were. That isn't easy to answer. We do whatever needs to be done.

I am one of the few maintenance officers in my complex who actually chose maintenance. Everyone else had it put upon them. These folks are dissatisfied and their attitudes have begun to rub off on me.

Yes, I do hope to cross-train out of the 40XX career field.

Why? Just look at how many successful career maintenance officers there are. What do I have to look forward to? Twenty years on the flightline? No dice.

My friends, someone has to do this bloody job. But it isn't going to be me. Who wants to work 12 hours a day for the rest of his life, doing the same job he did as a 2 Lt.?"

"I am not now being used as an aircraft maintenance officer, though I am in a 4024 slot.

It is largely because I am not in maintenance that I am satisfied with this job.

I believe I have a lot to offer the Air Force in a career field other than maintenance, such as acquisition management (27XX), but have been unable to get out of 40XX.

Therefore, despite my overall satisfaction with the Air Force and feelings of accomplishment and usefulness to date (and 27XX being undermanned), I am being 'FORCED' out of the Air Force by a mindless personnel system which knows me only as a 4024 -- not as a human being with interests, desires, talents, and preferences."

"I have decided not to make the Air Force a career for the following reasons:

- I feel as if I am a second class citizen compared to the rated force.

- I resent benefits such as medical care for dependents and the hassel with "Champus" that you must go through to get the benefits. BX prices exceed local store prices for equal quality.

- My military pay decreases annually due to inflation and pay caps.

- The current Congressional attitude of reducing the number of overseas locations that you can have your family with you.

- Even though I like my job, I can find one I like as well in the Civilian Job Market without the irritants described.

- The GI Bill being cut off for me when I was signed up in 1974, commissioned in 1976 before the law was passed and then

entered active duty two months too late at the convenience of the Air Force."

"With the current shortage of pilots, many 40XX types feel the Air Force is only concerned with our problems on a secondary basis. We like to feel we have as much to contribute as a pilot to the good of the service.

My supervisor is a pilot with no maintenance background. He still flys T-39's once to twice a week even though his slot as Maintenance Supervisor is non-rated. To him, flying is first, maintenance is second; and he is getting away with it.

Information flow and crossfeed in my squadron is awful!

Although a good supervisor is important, it is not the key factor. The maintenance job itself and the feeling that your job is as important to the Air Force as anyone else's job are the keys. A support officer who feels like a second class citizen is not as motivated as a person who is a member of the first string team."

"I have found in my present position that I have to work with a rated supplement for a supervisor who has a very difficult time understanding maintenance. He frequently directs maintenance without adequately considering the possible outcome and ends up creating additional work by trying to save time. Too often, he tries to do my job and ignores the areas he should be concerned with. This base also has a severe morale problem primarily due to the large number of civilian employees and union problems. The mixed workforce creates severe dissatisfaction with the military personnel. All too frequently, OER's are rated on political and social performance rather than on job performance which has a great impact on promotion."

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