

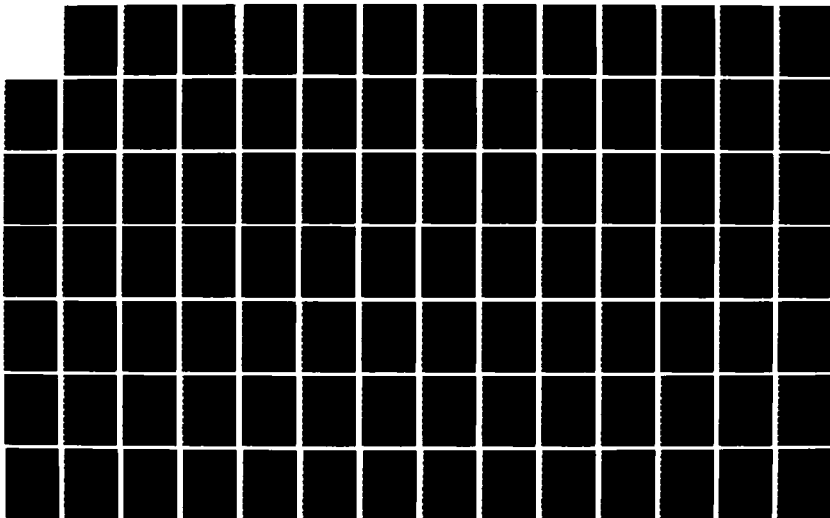
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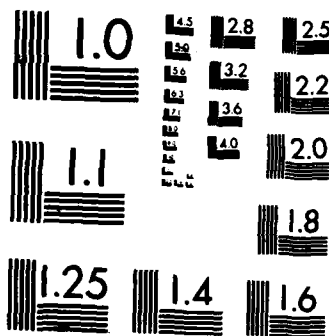
DUAL LEVEL STUDY OF ORGANIZATIONAL COMMITMENT AND ITS
RELATIONSHIP WITH 1 (U) AIR FORCE INST OF TECH
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DUAL LEVEL STUDY OF ORGANIZATIONAL
COMMITMENT AND ITS RELATIONSHIP WITH
INTENTIONS TO REMAIN IN SERVICE

THESIS

Steven B. Reynolds
First Lieutenant, USAF

AFIT/GLM/LSB/86S-67

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DUAL LEVEL STUDY OF ORGANIZATIONAL COMMITMENT
AND ITS RELATIONSHIP WITH INTENTIONS
TO REMAIN IN SERVICE

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



Steven B. Reynolds, B.S.
First Lieutenant, USAF

September 1986

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Acknowledgements

Although this thesis has only my name on the title page, there are five others who deserve much of the credit for its completion. The first is my wife, Darleen, who not only endured fifteen months of being a virtual single parent, but also managed to give me the love, support, and encouragement I needed to complete this program. Secondly, I would like to thank my three beautiful daughters, Kelli, Rhonda, and Stevi, for understanding why daddy spent so much time in his study room when we could have been doing "something fun." Finally, I would like to express my sincere appreciation to Lt Col James T. Lindsey for his invaluable assistance in making this thesis project a rewarding and enriching academic experience.

— Steven B. Reynolds

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Abstract

This study was undertaken to determine to what extent differences existed in the micro and macro organizational commitment attitudes of Air Force lieutenants. Organizational commitment attitudes have been shown to be significant factors in decisions to either stay in or leave organizations. Because of the importance of commitment in this regard, particular interest was given to investigating the strength of the relationship between the two commitment attitudes and the participant's stated intentions to remain in the Air Force beyond initial service obligations.

The study was conducted in two phases. The first portion of the study was concerned with the development and testing of an organizational commitment model. The results of the model analysis indicated that although the model was an excellent tool in explaining the variance in unit (micro) commitment, it was relatively weak in explaining the variance in Air Force (macro) commitment attitudes. The entry of several additional independent variables did little to enhance the utility of the model in this regard.

The second portion of the study compared the measures of unit level and Air Force commitment attitudes to determine (1) what relationships existed between the two,

7 (2) how those relationships changed when the sample was grouped by job type and years of service. The results of this investigation indicated that among Air Force lieutenants, there are significant differences in the magnitudes of commitment attitudes when officers are grouped based on the type of work performed. Additionally, the findings suggested that a negative trend in one of the commitment attitudes may contribute to a negative trend in the other.

DUAL LEVEL STUDY OF ORGANIZATIONAL COMMITMENT
AND ITS RELATIONSHIP WITH INTENTIONS
TO REMAIN IN SERVICE

I. Introduction

Research Issue

Low retention of company grade officers is a perennial concern for the United States Air Force. There are two primary reasons for this concern: (1) the Air Force mission demands a high degree of readiness which in turn requires experienced personnel, and (2) it is very costly to replace experienced officers ("Quality People, 1985). Statistics from the Air Force Military Personnel Center Retention Report (1986) show that the retention rates of officers at the end of their initial service obligations range from 57 to 77 percent. For specific job categories in the first quarter of fiscal year 1986, the retention rate for pilots was 57 percent, the rate for navigators was 77 percent, and both engineers and nonrated line officers were retained at a 63 percent rate. The reason for the Air Force's concern becomes clear when one considers the financial investment the Air Force makes to obtain and train officers. In fiscal year 1984, officer training leading to commissioning cost the Air Force an average of

\$20,794 per officer commissioned through ROTC, over \$9,000 per Officer Training School Graduate, and more than \$500,000 for every pilot who completed flight training.

Statistics such as these have not gone unnoticed. Former Air Force Chief of Staff, General Charles A. Gabriel, stated in the November, 1985 issue of Air Force Magazine ("Quality People, 1985:108) that, "Retaining our experienced people takes a combination of personal commitment from them and a strong commitment to them on our part." His linkage between commitment and retention has long been supported by management researchers. In a study of the outcomes of organizational commitment, Steers (1977) found strong support for the proposition that commitment was associated with an employee's desire and intent to remain with an organization. A 1981 study by Welsh and LaVan (1981:1079) concluded that "keeping employees committed is important, especially in not-for-profit firms whose salary scales may not be as competitive as industrial firms." Staw and Salancik (1971:44) submit that "Indeed, some organizations rely completely on commitment to maintain themselves."

If, as suggested by the literature, commitment is an important element in the decision to remain in an organization (Cotton and Tuttle, 1986; Steers, 1977), then certainly it would be useful to Air Force managers to know what variables may lead to increased organizational

commitment. Several extensive studies of organizational commitment have been accomplished (and are reviewed in Chapter II); however, the focus of this study, the organizational commitment of Air Force lieutenants, presents new opportunities for knowledge. This study virtually eliminates a potential source of bias encountered in a similar commitment study by Buchanan (1974). In his study, Buchanan (1974:543) noted that the members of an organization that were least committed had probably already departed, while those who answered his questionnaire had probably found things sufficiently to their liking to remain with the organization. The sample used in this study has a unique characteristic which effectively eliminates this source of bias. Air Force officers, unlike their contemporaries in the private sector, are contractually obligated to serve tours of active duty of at least four years and cannot simply quit their jobs at will. This contractual feature should provide for a more accurate assessment of the relationship between commitment attitudes and intentions to remain in an organization than previous cross-sectional studies.

Background

Organizational commitment is defined as "the relative strength of an individual's identification and involvement in a particular organization" (Steers, 1977:46).

It can be 1) a strong belief in and acceptance of the organization's goals and values; 2) a willingness to exert considerable effort in behalf of the organization; and 3) a strong desire to maintain membership in the organization. (Mowday and others, 1979:226)

Research indicates that the early years of association with an organization have the greatest impact on an individual's eventual level of commitment (Staw and Salancik, 1977). Air Force officers in the grades of first and second lieutenant are unique from other officers in two important ways: (1) they are relatively new to the officer corps and, as such, generally have less military experience than other higher ranking officers; and (2) they are serving in their initial service obligations and are in general not yet formally obligated to military service beyond this initial period. Because these officers are relatively new to the Air Force and not yet obligated to a military career, managers must strive to understand and appeal to those factors which are important to the development of organizational commitment attitudes during these early years of association with the Air Force.

Scope

A large body of research indicates that organizational commitment is useful as a predictor of turnover. In fact, the strongest behavioral outcome of employee commitment should be reduced turnover (Steers and Porter, 1983). Steers (1977) points out that in view of the potential

importance of commitment to organizational behavior, it is not surprising that a great deal of effort has been directed toward identifying variables that may influence levels of commitment.

One objective of this study is to determine the extent to which variables previously identified as predictors of organizational commitment can be used to describe the organizational commitment attitudes of a sample of lieutenants in the Air Force. Confirmation that these variables are significantly related to commitment would be of value to Air Force managers. Kidron (1978) states that an investigation of the correlates of commitment can indicate what the important variables related to commitment are and may possibly assist in the identification of those variables that, if changed, can lead to higher commitment.

Secondly, this study will investigate a relatively unexplored area of organizational commitment. Individuals develop organizational commitment attitudes on both micro and macro organizational levels (Stevens and others, 1978). Previous studies in the literature have failed to examine the extent to which multivariate commitment models are robust to intra- and inter-organizational differences (Morris and Sherman, 1981:523). This study was undertaken with the understanding that differences do exist depending upon the organizational focus of the employee. To assess

those differences, separate measures of commitment attitudes were constructed. One scale was designed to measure the commitment attitudes that individuals expressed toward their unit of assignment (micro organizational scale), and a second scale was used to measure commitment attitudes toward the Air Force in general (macro organizational scale). Morris and Sherman (1981:515) acknowledge this shortcoming of the previous research. They state that before managers can hope to influence commitment in an informed manner, more needs to be known about the extent to which predictive models are generalizable, both within and across organizations.

Stevens, Beyer, and Trice (1978) also suggest that individual organizational commitment attitudes vary with changing organizational levels. For instance, one may be more strongly attached to his immediate work unit than to the larger organization of which his unit is a part. Current organizational commitment literature does not directly address the different relationships that exist between these two (micro and macro) levels of organizational commitment and intentions to remain in an organization. This study attempts to determine whether it is commitment toward the unit of assignment or commitment toward the Air Force in general that is most relevant to an officer's decision to remain in the service beyond the initial service obligation.

Investigative Questions and Hypotheses

Investigative Question #1. Using variables known to be highly related to organizational commitment, which variables are most highly related to the organizational commitment attitudes expressed by Air Force company grade officers?

Hypothesis 1.1. Personal characteristics are more highly related to commitment to the Air Force than either job characteristics or work experiences.

Hypothesis 1.2. Work experiences are more highly related to commitment to the unit of assignment than either personal characteristics or job characteristics.

Investigative Question #2. Do commitment attitudes toward the unit of assignment and commitment toward the Air Force in general vary together among officers serving their initial service obligations?

Hypothesis 2.1. As the years of commissioned service increase, the relationship between commitment to the Air Force and commitment to the unit of assignment decreases.

Investigative Question #3. Are there significant differences in organizational commitment attitudes when officers are categorized by years of service?

Hypothesis 3.1. Officers with more than four years of prior enlisted service are more highly committed to the Air Force than are initial service officers.

Hypothesis 3.2. Initial service officers with less than one year of service are more highly committed to their unit of assignment than those with more than one year of service.

Investigative Question #4. Are there significant differences in organizational commitment attitudes when officers are categorized by job type?

Hypothesis 4.1. When categorizing officers by job type, officers with professional jobs are less committed to both their unit of assignment and the Air Force in general than either technical or non-technical officers.

Investigative Question #5. Given a measure of commitment attitudes to the unit of assignment and commitment to the Air Force, which is more highly related to stated intentions to remain in the service beyond initial service obligations?

Hypothesis 5.1. When considering the entire survey population, commitment attitudes toward the Air Force are better indicators of intentions to remain in the service beyond initial service obligations than are commitment attitudes toward the unit of assignment.

Summary

A great deal of research has been focused on the identification of antecedents of organizational commitment; however, there has been very little investigation into the strength of the relationships between the commitment attitudes that individuals possess for various organizational levels. The literature provides both a basis for the construction of organizational models and an instrument for the independent measurement of commitment attitudes. The first part of this research is concerned with developing models of both unit level organizational commitment and commitment to the Air Force in general. The second part of the study focuses on determining the relationship between the two commitment attitudes and documenting how those relationships vary when the respondents are grouped by job type and years of service. Finally, this study examines the relationship between both types of organizational commitment (micro and macro) and the stated intentions of the research participants to remain in the service beyond initial service obligations. Chapter II provides a review of the current literature and an outline of the model that will be tested in this research.

II. Literature Review

The Steers Model

Management researchers have conducted numerous studies in an attempt to identify antecedents of organizational commitment. Steers (1977) performed a cross-sectional study among 382 hospital employees and 119 scientists and engineers to test his model of the antecedents of employee commitment to organizations. From his work, Steers contended that the antecedents of commitment were grouped into three main categories: personal characteristics, job characteristics, and work experiences (Steers, 1977:47).

Personal characteristics within the Steers model consist of variables used to define the individual; e.g., an individual's age, tenure (years with the organization), educational level, and need strengths. Need strengths are a measure of the strength of four separate needs assumed to be important in determining work attitudes (Steers and Braunstein, 1976). The need for achievement is the extent to which a person places importance on succeeding in an organization. The need for affiliation is the extent to which an individual desires membership in a group. The third need, autonomy, is the degree of personal freedom an individual desires. Lastly, the dominance need is a

measure of how much importance an individual places on being in a leadership position.

Job characteristics reflect variables that are a function of the job itself. These variables are: (1) autonomy--the degree to which the job allows an individual to determine how work will be performed; (2) variety--the extent to which work differs from day to day; (3) feedback--the process of supervisor or self-evaluation of job performance; (4) task identity--the degree to which the job is clearly defined; and (5) optional interaction--the opportunity to develop close friendships at work. A study by Hackman and Oldham (1976) provides evidence that job characteristics can directly affect employee attitudes and behavior at work. In testing their model, Hackman and Oldham were able to show significant correlations between the core variables of feedback, variety, task identity, task significance, and autonomy with such outcomes as internal motivation, general satisfaction, growth satisfaction, reduced absenteeism, and rated work effectiveness.

Work experiences are variables which describe the facts or events that individuals observe in an organization. One of these variables is group attitudes toward the organization. Another variable is a measure of the extent to which an employee's expectations of an organization are met once employment begins. The work experiences category also includes the concept of personal importance.

Personal importance is defined as the perception an individual has regarding his importance in an organization with regard to the organization as a whole. Organizational reliability is also included in this group of variables. Organizational reliability is defined as the extent to which an organization fulfills its obligations to its employees. Figure 1 is a graphic representation of the Steers model.

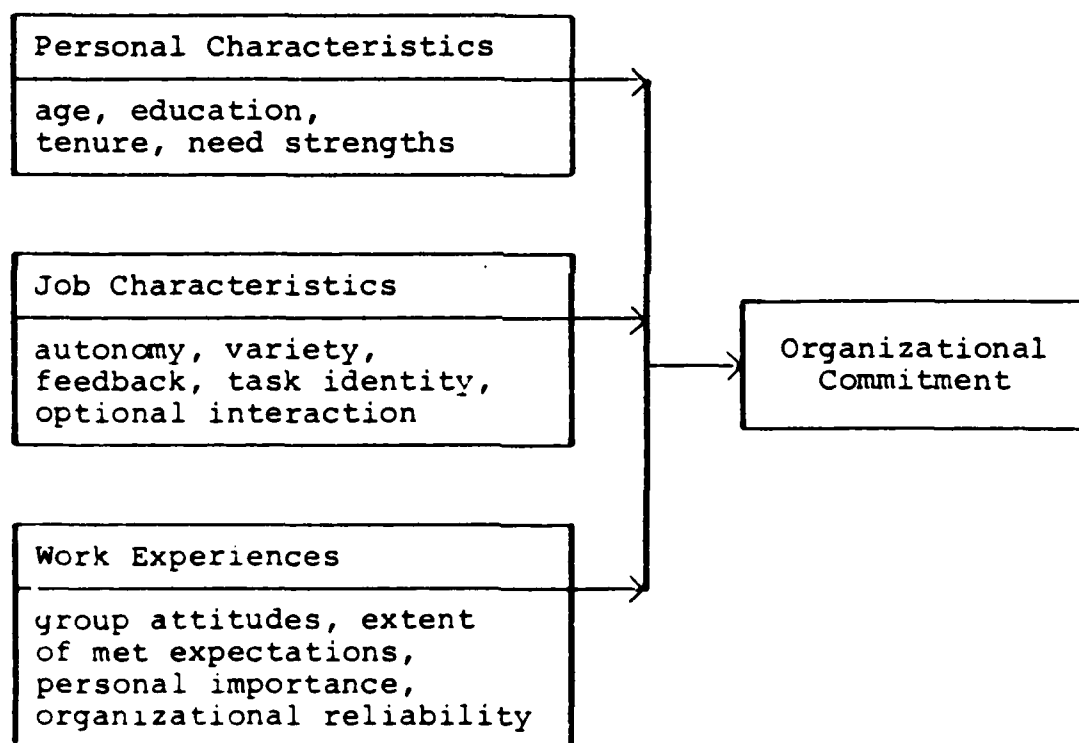


Fig. 1. Steers' Organizational Commitment Model
(Adapted from Steers, 1977:47)

The results of Steers' study provided support for all three categories of the model. Multiple correlations for both samples revealed the relationships shown in Table 1. When interest was focused on attempting to identify the specific variables that most strongly influenced commitment, stepwise multiple regression revealed that across both groups, six variables emerged with significant associations: need for achievement, group attitudes toward the organization, education (inversely), organizational reliability, personal importance to the organization, and task identity. Additionally, three variables were significantly related to commitment among the hospital employees (optional interaction, age, and met expectations); while feedback had a significant relationship with commitment among the engineers and scientists.

TABLE 1
MULTIPLE CORRELATIONS BETWEEN ANTECEDENTS AND
ORGANIZATIONAL COMMITMENT FOR BOTH SAMPLES
(Adapted from Steers, 1977:51)

Antecedents	Hospital Employees		Scientists and Engineers	
	R	F-Value	R	F-Value
Personal Characteristics	.55	24.96 ^a	.42	3.28 ^b
Job Characteristics	.64	47.86 ^a	.38	3.89 ^b
Work Experiences	.71	89.26 ^a	.64	20.04 ^a

^asignificant at .001 level.

^bsignificant at .01 level.

Steers and Porter

Subsequent organizational commitment research by Steers and Porter (1983) investigated the relationship between organizational commitment and several organizational structural characteristics. Structural characteristics included such variables as: degree of formalization, functional dependence, decentralization, and degree of participation in decision making.

The degree of formalization addresses the structure or chain of command that exists in an organization. Functional dependence is the degree to which an individual is dependent upon other people or units in an organization in order to perform his own tasks. Decentralization is defined as the dispersion of functions and powers from a central authority. The fourth variable, degree of participation in decision making, is a measure of the degree of opportunity individuals have to participate in decisions which affect their job.

A test of the Steers and Porter model found significant relationships between the variables and organizational commitment. These relationships are shown in Table 2.

It is important to note that the work by Steers and Porter is, to a large degree, based on previous research by others. Further, one must be aware that neither model presented thus far includes all the variables

TABLE 2
RELATIONSHIPS BETWEEN ANTECEDENT VARIABLES
AND ORGANIZATIONAL COMMITMENT

Variable	Type Relationship
<u>Personal Characteristics</u>	
age, tenure, achievement motivation	positive
education	negative
<u>Job Characteristics</u>	
enriched jobs, role clarity, role congruence	positive
<u>Structural Characteristics</u>	
degree of formalization, decentralization, functional dependence, degree of par- ticipation in decision making	positive
<u>Work Experiences</u>	
positive group attitudes, organizational reliability, met expectations	positive

that have been found to be significantly related to organizational commitment by previous and subsequent studies to Steers and Porter. For instance, other researchers have found that such variables as competence, sex, job satisfaction, instrumentality, and socialization (to name a few) are highly related to organizational commitment attitudes. The following summaries review and justify the inclusion of these and other variables as part of this research effort.

The Stevens, Beyer and Trice Model

Stevens, Beyer, and Trice (1978) used a role and exchange theory framework to examine the commitment of 634 managers in 71 federal government organizations. Their study was designed to integrate two distinct approaches in the study of commitment, the psychological approach and the exchange approach. The psychological approach considers commitment as "an attitude or an orientation toward the organization which links or attaches the identity of the person to the organization" (Sheldon, 1971:143). Proponents of the exchange approach hypothesize that individuals become attached to organizations as a result of their perceptions of associated benefits. When the individual perceives associated benefits as positive elements in an exchange, he is likely to stay with that organization

rather than risk losing those benefits (Stevens and others, 1978).

The researchers also recognized that among federal service workers, there may be differences in the magnitude and antecedents of commitment depending upon the organizational focus of the employees. To investigate this possibility, the researchers measured workers' commitment to both the work organization and their commitment to the federal service. The findings were that seven of the seventeen variables were significantly related to organizational (work organization) commitment and eight were significantly related to federal service commitment. Four variables were common to both commitment measures. Although the two measures of commitment were substantially correlated ($r = .40$), they still exhibited sufficient independence to support the notion of separate constructs and measures. Two of the significant correlates (job involvement and education) were clearly different across the two measures and another (skill level) produced relationships in opposite directions.

It is interesting to note that this study stopped short of discussing which of the two measures of commitment was the best predictor of propensity to stay or leave the federal service.

Staw and Salancik

Staw and Salancik (1977) raise an interesting point in their discussion of organizational commitment regarding an individual's felt responsibility. "In general, any characteristic of a person's job situation which reduces his felt responsibility will reduce his commitment" (Staw and Salancik, 1977:17). They submit that an individual's felt responsibility is a function of the manner of supervision.

If a supervisor merely stands by without taking an active part in determining the subordinate's behavior, his presence may serve to reinforce the subordinate's felt responsibility. (Staw and Salancik, 1977:17)

Therefore, the more freedom a job permits, the greater the commitment.

A second rather unique idea advanced by these researchers relates to the importance of instrumentality to commitment. Instrumentality is the concept that work is a means to some other end, and in the opinion of the authors, is perhaps the most pervasive condition of a job which affects commitment. In general, they concluded that when the instrumental basis for work is salient it reduces a person's felt responsibility. When an individual is doing a job only for the money, it should inhibit his commitment.

Buchanan

Buchanan (1974) studied organizational commitment to determine the impact of tenure on commitment attitudes. He measured thirteen variables in a survey of 297 business and government managers to determine if the influence potential of particular variables changed significantly with tenure. These thirteen variables were: role clarity, peer group cohesion, group attitudes toward the organization, expectations realization, reality shock, first-year job challenge, loyalty conflicts, personal importance, self-image reinforcement, fear of failure, organizational commitment norms, work commitment norms, and organizational reliability.

Buchanan categorized managers into three stages: first year employees, second through fourth year employees, and employees in the fifth year and beyond. When he entered the variables into a regression equation, six of the thirteen explained 68 percent of the commitment variance. Those six variables warrant further definition:

1. Peer group cohesion--the degree to which peers are either close-knit or aloof.

2. Group attitudes toward the organization--fellow worker's positive or negative attitudes toward the organization.

3. First-year job challenge--a measure of whether an employee's work during the first year is interesting or dull.

4. Personal importance--the general extent to which the individual's work experiences make him feel important to the organization.

5. Organizational commitment norms--the extent to which an individual senses that he is expected to be personally committed to the organization.

6. Organizational reliability--a measure of whether or not the organization is perceived as fulfilling its obligations to its employees.

Buchanan's results confirmed his hypothesis that the influence of a particular variable did vary with tenure. Table 3 summarizes his findings regarding the impact of tenure on the antecedents of organizational commitment.

Hrebiniak and Alutto

Hrebiniak and Alutto (1972) conducted a study of the relationship between personal and role (job) related factors and organizational commitment among 318 school teachers and 395 registered nurses. The purpose of their research was to identify those individual characteristics and organizational variables central to the organizational commitment of the two groups. A stepwise regression analysis of organizational commitment highlighted four areas of high relationship that were not included in the previously discussed models.

TABLE 3
THE IMPACT OF TENURE ON THE ANTECEDENTS OF
ORGANIZATIONAL COMMITMENT
(Adapted from Buchanan, 1974:542)

Organizational Experience/Variables	Standardized Coefficient
<u>Stage 1 (N = 66)</u>	
Group attitudes toward the organization	.56 ^a
First year job challenge	.31 ^a
Loyalty conflicts	.11
<u>Stage 2 (N = 71)</u>	
Self image reinforcement	.34 ^a
Personal importance	.25 ^b
First year job challenge	.15
Organizational commitment norms	.11
Group attitudes toward the organization	.15
<u>State 3 (N = 142)</u>	
Group attitudes toward the organization	.62 ^a
Expectations realization	.21 ^a
Work commitment norms	.17 ^a
Fear of failure	-.09

^asignificant to .01.

^bsignificant to .05.

The researchers found that levels of tension and number of years experience were the most important variables in explaining organizational commitment. To a lesser degree, they concluded that dissatisfaction and sex of the respondent were also related to levels of expressed commitment among the teachers and nurses examined. Under Hrebiniak and Alutto's conceptualization, dissatisfaction is a measure of a "respondent's displeasure with organizational reward policies of the valuation of factors necessary for organizational advancement" (Hrebiniak and Alutto, 1972:560).

An additional interesting finding from their study was that the occupation of the father was highly correlated with commitment. Research has shown that background factors such as the father's occupation do affect the professional commitment attitudes of the child (Werts, 1968). This thesis will investigate the relationship between commitment attitudes and family background of career military service. Table 4 summarizes the findings of the study.

Morris and Sherman

A 1981 study by Morris and Sherman tested a multivariate predictive model of organizational commitment. They recognized there is no widely accepted set of commitment antecedents and suggested that at least three factors may account for this situation. First, few studies have used multivariate analytical techniques to identify

TABLE 4
RELATIONSHIP BETWEEN ROLE RELATED FACTORS
AND ORGANIZATIONAL COMMITMENT
(Adapted from Hrebiniak and Alutto, 1972:569)

Variable Entered	Multiple R	F-Value	Significance
Tension	.2606	51.78	.001
Years of experience	.2972	15.93	.001
Sex	.3106	6.36	.01
Occupation - father	.3212	5.27	.01
Dissatisfaction	.3293	4.21	.01

potential determinates of commitment. As a result, wide varieties of variables have been shown to obtain significant correlations with commitment. Secondly, many of these previously identified variables have not been tested competitively. As a consequence, researchers have had difficulty in synthesizing the various models that have been proposed. Morris and Sherman also submit that even with the appearance of multivariate modeling, most organizational commitment studies have not linked their respective empirical results to a common, theoretically-grounded framework from which predictor variables were derived.

In order to correct for the previously described discrepancies, Morris and Sherman selected seven independent variables for their study from the model developed by Steers (1977). The findings are shown in Table 5.

TABLE 5

ORGANIZATIONAL COMMITMENT ANTECEDENTS
(Adapted from Morris and Sherman, 1981:518)

Independent Variable	Standardized Beta	Level of Significance
Sense of competence	.44	.001
Role conflict	-.21	.001
Education	-.14	.001
Initiating structure	.11	.01
Age	.11	.01
Consideration	.10	.01
Role ambiguity	-.05	--

The term "sense of competence," as used by Morris and Sherman, refers to the extent to which organizational members see themselves as being competent. The high significance of the relationship between competence and organizational commitment was somewhat surprising in that it had not been a part of previous commitment studies. Morris and Sherman (1981:518) contend that the significance of competence in their model is consistent with long-held arguments suggesting that intrinsic rather than extrinsic factors are important influences on commitment because they influence self-referent processes that may in turn influence the way the individual links his identity to the organization. Because of these results, competence appears

to be a good candidate variable for a comprehensive organizational commitment model.

Sheldon

In a 1971 study of organizational commitment, Sheldon conducted a survey of Ph.D. scientists in private laboratories to test two hypotheses. The hypotheses were: (1) investments (tenure) will produce commitment to the organization, and (2) social involvements will also produce commitment to the organization. Social involvements refer to an individual's voluntary participation and involvement in organizational social functions apart from his actual duties. Sheldon's findings were that "the person most likely to be indifferent to both the organization and the profession was a young man with short length of service and with a medium position" (Sheldon, 1971:148).

Organizational commitment, as defined earlier in this chapter, is the relative strength of an individual's identification and involvement in a particular organization (Steers, 1977:46). Professional commitment, as defined by Sheldon (1971:143), is related to three types of experiences: (1) time spent in obtaining the professional education, (2) involvements with peers and teachers which reinforce the value of the profession, and (3) the development of technical interests and skills. Regarding the relationship between these two commitment attitudes, Sheldon found that among the respondents with short lengths

of service, organizational commitment was highest when professional commitment was high. As for the second hypothesis, Sheldon concluded that

For the newer, younger men, low investments, low social involvements, and low professional skills and prestige result in a lack of commitment to both the organization and the profession. (Sheldon, 1971:149)

Social involvements in the organization, according to Sheldon, assure that the organization retains some of its personnel with professional competence.

Welsh and LaVan

Welsh and LaVan (1981) hypothesize that the variables that lead to organizational commitment are grouped into five categories (Welsh and LaVan, 1981:1080):

1. Demographic characteristics. This category of variables includes: age, organizational level, education, tenure, and length of professional employment.

2. Job satisfaction. This category consists of variables that measure satisfaction with pay, work, and promotion opportunities.

3. Job characteristics. Role conflict--role conflict occurs when the behaviors expected of an individual from his superiors are inconsistent (Rizzo and others, 1970). Role ambiguity--role ambiguity is a state experienced when an employee does not know what he has the authority to decide, what he is expected to accomplish, or how he will be judged (Rizzo and others, 1970). Power--power

is defined as the opportunity to legitimately influence decisions within the organization. Teamwork--teamwork is simply the degree to which employees work together to accomplish goals.

4. Professional behavior. Professional behavior variables include membership in professional organizations, professional meetings attended, professional journals read, and seminars attended.

5. Organizational climate. This category measures employee perceptions of the importance of communication, decision making, leadership, motivation, and goal-setting.

To test their model, Welsh and LaVan distributed questionnaires to 397 employees of a large midwestern medical center. Research participants were selected from upper and middle management as well as from the medical employee population (those with direct patient care responsibilities). The questionnaire was composed of items drawn from previously published organizational commitment research.

While many findings of Welsh and LaVan's study served to confirm previous commitment research findings, there was also some interesting differences. For instance, satisfaction with work ($r = .4858$) and satisfaction with promotions ($r = .2858$) were strongly correlated with organizational commitment, while satisfaction with pay was not ($r = .0257$). An additional interesting note is that only one of the professional behavior variables proved to

significantly correlate with commitment. Perhaps the most impressive finding from Welsh and LaVan was a strong correlation between commitment and the organizational climate variables. Welsh and LaVan suggest that their results indicate "the worker wants to be communicated with so that he may be informed, so that he will be part of the action" (Welsh and LaVan, 1981:1086). Table 6 highlights those variables that Welsh and LaVan found to be highly correlated with organizational commitment.

Summary and Application to this Research

A review of organizational commitment studies shows that many variables are associated with individual organizational commitment attitudes. Further, the review clearly demonstrates that the variables that emerge as the best predictors will change across times and settings. The literature contains several credible models, but each model contains a slightly different set of variables. Asher (1983:10) states that application of particular analytical techniques is relatively straightforward and easy to apply; however, "if one has omitted a key variable from the data collection or invalidly measured a key concept, then statistically correct analyses may still yield incorrect results." To avoid the pitfall of failing to consider a potentially important variable, the variable set for this study was an expanded version of the Steers (1977) model.

TABLE 6

PEARSON CORRELATION COEFFICIENTS FOR RELATIONSHIPS BETWEEN
 ORGANIZATIONAL COMMITMENT AND THE DEMOGRAPHIC
 CHARACTERISTICS, JOB SATISFACTION,
 PROFESSIONAL BEHAVIORS, AND
 ORGANIZATIONAL CLIMATE
 (Adapted from Welsh and LaVan, 1981:1085)

Variable	Pearson R with Commitment
<u>Demographic Characteristics</u>	
age	.2812 ^a
GS level	.1884 ^a
tenure in organization	.1403 ^a
time in profession	.2525 ^b
<u>Job Satisfaction</u>	
satisfaction with work	.4858 ^a
satisfaction with promotion	.2858 ^b
<u>Job Characteristics</u>	
role conflict	-.4748 ^a
role ambiguity	-.4497 ^a
power	.3587 ^a
teamwork	.4749 ^a
<u>Professional Behaviors</u>	
professional journals read	.2281 ^b
<u>Organizational Climate</u>	
communication	.6192 ^a
decision making	.4034 ^a
leadership	.4536 ^a
motivation	.5176 ^a
goal setting	.4523 ^a

^asignificant to .01.

^bsignificant to .001.

The model was supplemented by variables identified in the literature that (1) were found to be highly related to organizational commitment attitudes, and (2) appear to have potential in predicting commitment attitudes for the population of this study. The variables selected for further study are shown in Figure 2. Figure 3 is the organizational commitment model for Air Force officers in their initial commissioned service obligations that was tested in this study.

The United States Air Force is an extremely large and diverse organization composed of many subordinate organizations. If increasing an individual's organizational commitment has the ultimate aim of increasing retention, we must first specify the various levels in an organization that are relevant to an individual's intention to remain in that organization (Reichers, 1985). By measuring the commitment attitudes that individuals have toward their unit of assignment and then measuring their commitment attitudes toward the Air Force in general, we can determine which commitment attitude has the greatest relevance to an individual's intention to remain in the service. We can then appeal to those factors which will enhance the most relevant of the two organizational commitment attitudes.

One objective of this study is to document the differences in the sets of antecedent variables that are

Personal Characteristics

age (A)
service tenure (A)
education (A)
competence (B)
sex (C)
dominance need (A)
achievement need (A)
autonomy need (A)
positional tenure (I)
instrumentality (E)

Job Characteristics

role clarity (F)
role conflict (C)
feedback (A)
variety (A)
responsibility (E)
type of supervision (E)
job challenge (F)
socialization (G)
functional dependence (H)

Source Codes for Variables

Work Experiences

group attitudes (A)
organizational reliability (A)
personal importance (A)
met expectations (A)
participation in decisions (H)
job satisfaction (D)

(A) Steers 1977 Model
(B) Morris and Sherman
(C) Hrebiniak and Alutto
(D) Welsh and LaVan
(E) Staw and Salancik
(F) Buchanan
(G) Sheldon
(H) Steers and Porter
(I) Stevens and others
Model

Fig. 2. Variables Related to Organizational Commitment;
Air Force Officers in their Initial
Service Obligation

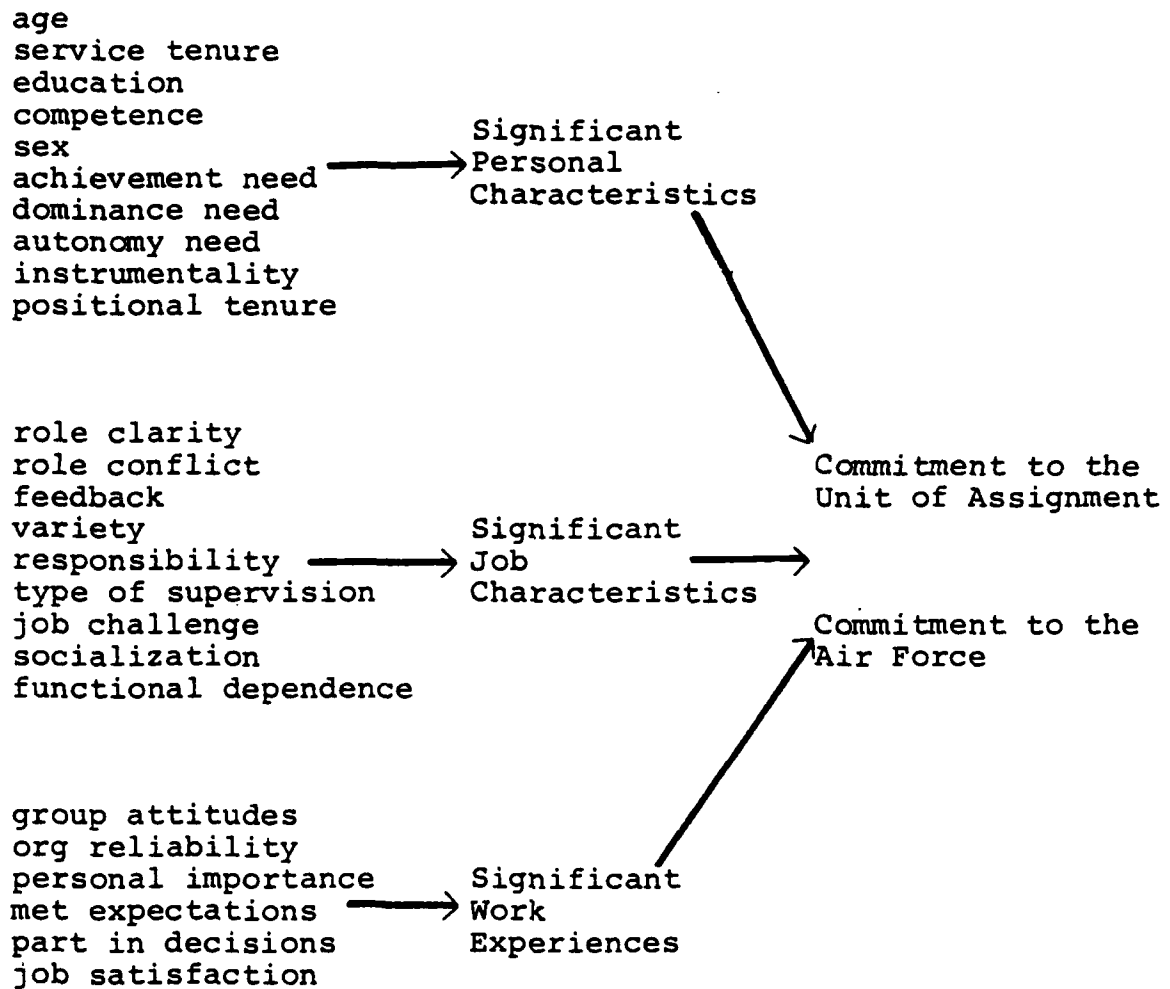


Fig. 3. Proposed Organizational Commitment Model for Air Force Officers in their Initial Service Obligation

most highly related to each type of organizational commitment, and to analyze how those relationships differ among groups of officers when categorized by years of service and job types (see Figure 3, page 32).

An additional objective is to determine which of the two measured levels of organizational commitment is more highly related to stated intentions to stay in the Air Force beyond initial service obligations (see Figure 4).

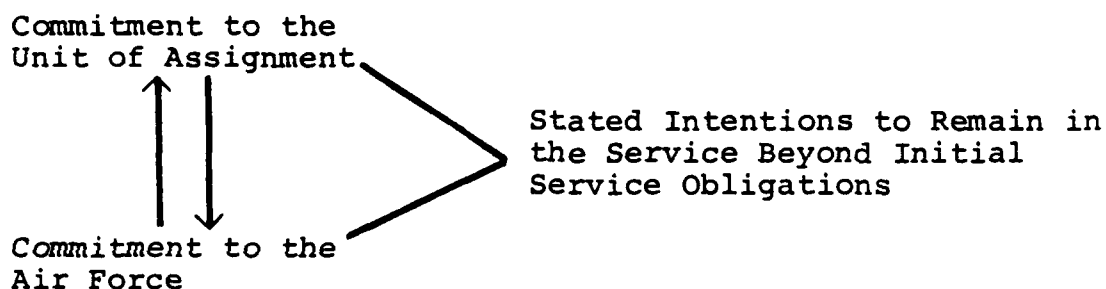


Fig. 4. Relationships Between Two Types of Organizational Commitment and Stated Intentions to Remain in the Service

The model for this study considers twenty-five independent variables. Each of these variables was selected based on strong empirical support from the current literature. Similarly, in order to maximize the validity of the study, the data were grouped and analyzed in a manner used in previous commitment studies. The specific methodology and statistical processes are discussed in greater detail in Chapter III.

III. Methodology

This chapter outlines the methodology used in this research effort. The first section provides information regarding the data collection method employed. The data collection discussion is followed by a description of the sample population and a section describing the steps that were taken in the analysis of the data. The final section is a conclusion summarizing the objectives of the study.

Data Collection Method

Data were gathered for this project using a mail survey. A mail survey was selected primarily because surveys permit data to be gathered from a large number of responses and because they are economical in terms of both time and money (Emory, 1985). As discussed earlier, many different models of commitment antecedents have been developed and tested. To minimize the possibility of omitting a key variable, the survey questionnaire was designed to include a larger set of variables than was tested in most previous studies. In order to insure internal validity and reliability of the questionnaire items, the questions were drawn from a collection of previously published, non-copywrited surveys (Seashore and others, 1983; Hackman and Oldham, 1976; Mowday and others, 1979; Buchanan, 1974).

The survey was approved for distribution by Air University on 9 April 1986 and assigned control number AUSCN 86-13. Appendix E is a complete copy of the survey instrument.

Sample Population

Since the focus of this study is on the organizational commitment attitudes of Air Force officers serving in their initial service obligations, the decision was made to limit the study to first and second lieutenants in all career fields. While there are some career fields where initial obligations are greater than four years, such as pilots, this limitation did ensure that no one surveyed would be beyond his or her initial obligation. Further, it was recognized that since physicians are generally commissioned as captains, the study does not include that portion of the sampled population.

Given the population parameters, Wright-Patterson Air Force Base proved to be fertile ground for the sample. An ATLAS data base search revealed a population of 1977 first and second lieutenants permanently assigned to the base. Two hundred thirty-five full-time students at the Air Force Institute of Technology were not surveyed because their "current job" is as a student in an academic environment rather than an operational environment and their responses may have biased the results of the study. Mailing labels were obtained for each individual and 1742 of

the lieutenants were surveyed. Of the 1742 surveys that were distributed, 1222 were completed and returned; a return rate of 70.1 percent.

Analysis

The Statistical Package for the Social Sciences (SPSS) (Nie and others, 1975) and the AFIT Academic Support Computer (ASC) were used to accomplish the analysis of the data. The data were input to the ASC via optical scan sheets. Investigative question 1 was answered using regression techniques. The SPSS regression analysis package was used to develop the two models of organizational commitment. As discussed in Chapter II, the commitment models were built around three composite variables: personal characteristics, job characteristics, and work experiences. The independent variables that were combined in constructing the composite variables were selected from the current literature.

As the first step in the model-building process, a correlation matrix of all twenty-five independent variables was analyzed to confirm proper variable grouping. After the variables were grouped, a regression analysis was conducted using all twenty-five of the independent variables. The results of this initial regression analysis were used to identify for further review those antecedent variables which made no significant contribution to the composite variables. When the variable selection for each of the

composite variables was complete, the variables were grouped into three composite variables: personal characteristics, job characteristics, and work experiences and the grouping was confirmed with reliability analyses. After the reliability of the composite variables was confirmed, they were entered into regression equations using both measures of organizational commitment as dependent variables.

Following the development and discussion of the commitment model, an investigation was conducted to determine what relationships existed between the two measures of commitment (investigative question 2).

Next, the measures of the respondents' commitment to their unit of assignment and their commitment to the Air Force were compared to determine if differences in organizational commitment attitudes existed among lieutenants when they were categorized by job type and years of service (investigative questions 3 and 4). Finally, an analysis was performed to determine which of the two commitment attitudes was more highly related to stated intentions to remain in the service beyond initial service obligations (investigative question 5).

Conclusion

By determining what factors lead to the development of organizational commitment among Air Force officers who are serving in their initial service commitment,

Air Force managers can appeal to those factors and reap the benefits. By using existing, validated survey items in conjunction with sophisticated statistical techniques, we can determine and document the most salient factors for several categories of officers based on job type and years of service. Additionally, for the first time, we will have some information available to use regarding the differences between commitment attitudes toward the unit of assignment and commitment attitudes toward the Air Force in general. If results from this research are applied and generate increased commitment and ultimately the retention of only one officer who would have left the service otherwise, the Air Force will avoid the loss of a valuable human asset and save thousands of dollars in recruiting and training expenses.

IV. Data Analysis and Discussion

This chapter outlines and summarizes the statistical analysis of the data that were collected for this study. The first section is an analysis of the sample data to establish that the sample is representative of the research population. This analysis is followed by the development of the composite organizational commitment model that was described in Chapter III. The final section is a presentation of several statistical analyses investigating the differences in commitment attitudes among various groups from the sample.

Sample Data Analysis

The data used in this research were collected from the entire population of first and second lieutenants at Wright-Patterson Air Force Base, Ohio. Of the 1742 people surveyed, 1222 (70.1 percent) returned completed questionnaires. This sample of 1222 represents approximately 4.1 percent of the Air Force population of lieutenants. The questionnaire was distributed to the participants in mid May, 1986. To verify that the respondents were representative of the general population of Air Force lieutenants, population statistics were obtained from Headquarters, Air Force Military Personnel Center. The data were taken from ATLAS data base runs of demographic data (1986) dated

30 April 1986. Tables 7 through 11 show comparisons of the percentages of selected characteristics for the two groups.

Examination of Table 7 indicates that the sample is very representative of the population in terms of rank. Tables 8 and 9 show that the sample distributions of males and females and the percentage of the sample with prior enlisted service are both very close to that of the population. The sample data in Table 10 vary widely from the population data. The different distributions are a function of the mission of the base from which the sample was taken. The base selected for the sample offered a large pool of available respondents; however, the distribution of Air Force specialty codes is not closely aligned with that of the USAF population. To compensate for this difference, the hypotheses in the study consider these groups separately where appropriate in an effort to reduce any bias that may otherwise occur. Table 11 indicates there are no significant deviations in the educational level between the sample and the USAF population.

Model Development and Analysis

The objective of this portion of the data analysis is to explain the procedure used in refining and analyzing the organizational commitment model used in this study. As a first step in this process, the variable sets were tested for reliability.

TABLE 7
COMPARISON OF THE PROPORTION OF
FIRST AND SECOND LIEUTENANTS

Rank	Sample		USAF	
			Population	
Second Lieutenant	638	52.2%	15,325	51.7%
First Lieutenant	<u>584</u>	<u>47.8%</u>	<u>14,340</u>	<u>48.3%</u>
Total	1222	100.0%	29,665	100.0%

TABLE 8
COMPARISON OF THE PROPORTION OF
MALES AND FEMALES

Sex	Sample		USAF	
			Population	
Male	1026	84.0%	24,622	83.0%
Female	<u>196</u>	<u>16.0%</u>	<u>5,043</u>	<u>17.0%</u>
Total	1222	100.0%	29,665	100.0%

TABLE 9
COMPARISON OF THE PROPORTION WITH
PRIOR ENLISTED SERVICE

Prior Service	Sample		USAF Population	
Yes	311	25.5%	6,497	21.9%
No	<u>911</u>	<u>74.5%</u>	<u>23,168</u>	<u>78.1%</u>
Total	1222	100.0%	29,665	100.0%

TABLE 10
COMPARISON OF THE PROPORTION WITH TECHNICAL,
PROFESSIONAL, AND NON-TECHNICAL JOBS*

Job Type	Sample		USAF Population	
Technical	26	2.1%	9,442	31.8%
Professional	680	55.8%	7,451	25.1%
Non-technical	<u>514</u>	<u>42.1%</u>	<u>12,772</u>	<u>43.1%</u>
Total	1220	100.0%	29,665	100.0%

*See Table 23 for category composition.

TABLE 11
COMPARISON OF THE PROPORTION WITH
ADVANCED EDUCATIONAL DEGREES

Highest Degree Obtained	Sample		USAF Population	
Bachelor's Degree	1106	90.5%	27,262	91.9%
Master's Degree	113	9.3%	2,225	7.5%
Ph.D.	<u>3</u>	<u>.2%</u>	<u>178</u>	<u>.6%</u>
Total	1222	100.0%	29,665	100.0%

Variable Description and Model Composition. The variables used in this study were measured using a survey composed of previously published, validated questionnaire items. The concepts chosen as candidate independent variables were selected from a consensus of organizational commitment literature. The three composite independent variables (personal characteristics, job characteristics, and work experiences), were constructed by combining the twenty-five candidate independent variables as shown in Table 12. These twenty-five independent variables were measured using either single or multiple questions.

Reliability analyses were performed on the three variables that were measured with more than one question. The first variable, feedback, was measured in terms of the source of feedback. Question 34 was designed to determine

TABLE 12
ORGANIZATIONAL COMMITMENT MODEL VARIABLE
GROUPINGS AND ITEM NUMBERS

Variables	Survey Question Number
<u>Personal Characteristic Variables</u>	
Age	1
Air Force (commissioned) Tenure	5
Positional (Job) Tenure	8
Education	3
Competence	22
Sex	2
Achievement Need	23
Autonomy Need	29
Dominance Need	26
Instrumentality	21
<u>Job Characteristic Variables</u>	
Role Clarity	31
Role Conflict	32
Feedback	34 & 35
Variety	33
Responsibility	28
Type of Supervision	30
Job Challenge	37
Functional Dependence	39
Socialization	24, 41, 42, & 43
<u>Work Experience Variables</u>	
Group Attitudes Toward the Organization	44
Organizational Reliability	45
Personal Importance	46
Met Expectations	47
Participation in Decision Making	25 & 27
Job Satisfaction	19

the frequency with which feedback was received from the individual's supervisor. Additionally, since some jobs involve work which is itself a source of immediate feedback, question 35 was added to measure that additional source of feedback. The reliability analysis of the two-item factor yielded a standardized item coefficient alpha of .595. Although this score is relatively low, the two-factor item was retained and included in this study based on the strong evidence of the importance of feedback on organizational commitment attitudes from the current literature.

The socialization variable was constructed from a combination of two concepts: the need for affiliation (Steers and Braunstein, 1976), and optional interaction (Sheldon, 1971). Question 24 was designed to measure the degree to which the individual desired membership in work groups on the job, while questions 41, 42, and 43 were designed to measure the degree to which individuals desired and felt obliged to socialize with coworkers during off-duty hours. Admittedly, these items are rather diverse in nature and, not surprisingly, yielded a standardized coefficient alpha of only .448. However, given Sheldon's assessment that socialization is among the strongest factors producing organizational commitment, this item was retained as a valid part of the study.

Items 25 and 27 are measures of the degree to which individuals were permitted and encouraged to participate in decisions affecting their work. Reliability analysis revealed a standardized coefficient alpha for these two items of .677, which indicates marginal but acceptable item reliability for this type of investigation.

The two dependent variables measured for this study, commitment to the unit of assignment and commitment to the Air Force in general, were each measured using Porter's Organizational Commitment Questionnaire (OCQ) (Mowday and others, 1979). A review of eight previous studies which used the OCQ shows a consistently high coefficient alpha, ranging from .82 to .93 (Mowday and others, 1979:232). The calculation of coefficient alpha for unit commitment in this study (questions 48-56) resulted in a standardized coefficient alpha of .854. The coefficient alpha for commitment to the Air Force (questions 57-65) was .837.

Model Refinement and Reliability. The organizational commitment model used in this study is composed of three composite variables (personal characteristics, job characteristics, and work experiences) as outlined in Chapter II. Although the basic foundation for this model is found in Steers' work (1977), this particular model was augmented with thirteen additional variables that were selected from other organizational commitment literature.

As an initial check of each variable's utility, all twenty-five independent variables were entered into multiple regression equations against both dependent variables. Pendyke and Rubinfeld (1981:80) advise that in order to maximize the corrected R squared with respect to the set of independent variables, those with a t statistic greater than 1 should be retained and the remainders dropped. Using Pendyke and Rubinfeld's advice as an initial criteria for variable acceptance, all but six variables proved significant in at least one of the two equations. See Appendix A. The six which did not satisfy this criteria were: functional dependence, type of supervision, sex, competence, variety, and the need for autonomy. Since the aim of this research was to build a model based on the available literature, and not based solely on the data, a careful review of the literature was reaccomplished regarding these six variables with questionable statistics. Strong positive support exists for inclusion of all the variables with the exception of sex. Although included in models by Steers (1977), Stevens and others (1978) and Welsh and LaVan (1981) as an antecedent of organizational commitment, researchers have reported conflicting conclusions as to its predictive utility. Given this type of empirical support, sex was removed from the basic model but was retained for subsequent evaluation as a dummy variable.

With the number of variables reduced to twenty-four, the items were grouped as shown in Table 12 (page 44) and a reliability analysis was performed to assess construction of the three composite independent variables. The alpha coefficients obtained are shown in Table 13. See Appendix B for the associated statistics. While a larger alpha would have been more desirable for the personal characteristics variable, the alphas obtained are acceptable for this type of initial investigative effort and reflect sufficient grouping among the data to confirm model reliability.

TABLE 13
COEFFICIENT ALPHAS FOR COMPOSITE VARIABLES

Composite Variable	Standardized Item Alpha
Personal Characteristics	.584
Job Characteristics	.634
Work Experiences	.829

Preliminary Model Analysis. With the proper variable grouping confirmed, a multiple regression analysis of the twenty-four independent variables was undertaken as a first step in confirming what, if any, differences exist in the variable sets related to unit commitment and Air Force commitment.

Constructing both models such that each was composed of exactly the same independent and dependent variables allows direct comparison of the two models (Pendyke and Rubinfeld, 1981). Use of this model comparison approach was appropriate for this study because the independent variable sets were identical and the dependent variables (micro and macro commitment attitudes) were measured using identical survey items from the Organizational Commitment Questionnaire (Mowday and others, 1979).

The first observation that must be made is that there is a remarkable difference between the adjusted R squared values of the two models; the adjusted R squared for unit commitment was .633 while the same parameter measured .227 for commitment to the Air Force. While some investigators focus almost exclusively on R square to assess a model, we cannot place a great deal of stock in the value of R squared as a goodness of fit parameter (Achen, 1982). We can, however, say that the twenty-four variables do provide greater explanation of the variance in unit commitment than they do for commitment to the Air Force. This observation lends strong support to the notion that there may be significant differences in the antecedents of the two types of commitment attitudes.

The commitment measures are substantially correlated ($r = .43$), yet an analysis of the beta coefficients of the twenty-four variables reveals striking differences.

The beta coefficient reveals the average change in the dependent variable associated with a unit change in its associated independent variable when all other independent variables are held constant (Lewis-Beck, 1980:49).

Table 14 shows the observed beta values. Detailed presentations of these regression procedures are presented in Appendix A.

A comparison of the variables that emerged as being statistically significant revealed a considerable difference between the two variable sets. Six of the personal characteristics were significantly related ($p < .05$) to Air Force commitment while only three of the items were significantly related to the unit commitment scale. Not surprisingly, the personal characteristics that emerged as having the strongest relationships with each of the two commitment scales were age and the corresponding (micro/macro) tenure items. A third item, the achievement need, was also strongly associated with both commitment measures; and the dominance need and Air Force tenure were related only to the macro commitment attitude. The fact that six of the nine variables in this category are highly related to Air Force commitment attitudes tends to support the first hypothesis of this study; that personal characteristics are more highly related to Air Force commitment than either job characteristics or work experiences.

TABLE 14
LINEAR REGRESSION OF ORGANIZATIONAL
COMMITMENT VARIABLES

Variable	Commitment to the Unit		Commitment to the Air Force	
	Beta	Pearson Corr	Beta	Pearson Corr
<u>Personal Characteristics</u>				
age	.065*	.0137	.138**	.0343
education	-.015	.0216	-.034	-.0285
service tenure	-.053	-.1376	-.129**	-.1325
unit tenure	-.117**	-.2086	-.080*	-.1418
instrumentality	.005	-.0499	.098**	.0632
competence	-.001	.1186	-.004	.0662
achievement need	.055*	.1201	.121**	.1713
dominance need	.019	.1109	.056*	.1497
autonomy need	.018	.3537	.001	.1802
<u>Job Characteristics</u>				
responsibility	.038	.2763	.118**	.2451
type of supervision	.009	.0815	.003	.0126
role clarity	.044	.4109	-.015	.1599
role conflict	-.030	-.1271	-.002	-.0332
variety	-.013	.2537	-.003	.1385

TABLE 14--Continued

Variable	Commitment to the Unit		Commitment to the Air Force	
	Beta	Pearson Corr	Beta	Pearson Corr
<u>Job Characteristics Continued</u>				
feedback	-.009	.4337	-.045	.1494
challenge	.054*	.3576	-.001	.1584
functional dependence	.010	.0329	-.025	.0182
socialization	.100**	.2598	.285**	.3410
<u>Work Experiences</u>				
job satisfaction	.118**	.5536	.089*	.2244
part in decisions	.033	.4585	.022	.1947
group attitudes	.273**	.6294	.055	.2147
organization reliability	.264**	.6691	.061	.2519
personal importance	.057*	.4551	.039	.2110
met expectations	.133**	.5509	.012	.2028

* $p < .05$ ** $p < .001$

Of the job characteristics variables, only two emerged with statistically strong relationships for each commitment measure. Of particular interest was the relative strength of the socialization variable with regard to both dependent variables. The strength of the socialization variable lends strong support to Sheldon's (1971) finding that the socialization process is an important factor in the development of commitment attitudes.

All of the work experience variables except participation in decision making were significantly related to unit commitment while only one of the six, job satisfaction, was strongly associated with Air Force commitment. This result lends strong support to hypothesis 1.2; that work experiences are more highly related to unit commitment than either personal or job characteristics.

The Composite Model. The composite model that resulted from the analysis of the previous sections has the general form:

$$\text{Commitment} = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

where

X_1 = personal characteristics (Perchar)

X_2 = job characteristics (Jobchar)

X_3 = work experiences (Workexp)

Calculating the regression equation for each of the two dependent variables yielded the following beta coefficients (complete results are provided in Appendix C):

$$\begin{aligned}\text{Unit Commitment} = & -.072 (\text{Perchar}) + .034 (\text{Jobchar}) \\ & + .744 (\text{Workexp})\end{aligned}$$

* Perchar and Workexp significant to .0003 and .0000 respectively, Jobchar significant to .1411

Adjusted R squared = .563
F (3, 1189) = 512.6
Significant F = .0000

$$\begin{aligned}\text{Air Force Commitment} = & .024 (\text{Perchar}) + .104 (\text{Jobchar}) \\ & + .221 (\text{Workexp})\end{aligned}$$

* Jobchar and Workexp significant to .0000 and .0018 respectively, Perchar significant to .404

Adjusted R squared = .085
F (3, 1179) = 37.79
Significant F = .0000

Because differences were anticipated in the antecedent sets of the two models, several items were included in the survey which, when entered into the regression equations, would hopefully aid in identifying the sources of the differences between the two commitment measures. Table 15 is a summary of the results obtained.

The entry of these variables produced some interesting results. Analyses of the data in Table 15 served to confirm the general hypothesis of this study; that there are differences in the variable sets that are most highly

TABLE 15

COMPOSITE MODEL OF ORGANIZATIONAL COMMITMENT
USING SELECTED DUMMY VARIABLES

Variable Entered	Assigned	Unit Commitment		Air Force Commitment	
		Beta (signif)	Resultant Adjusted R Squared	Beta (signif)	Resultant Adjusted R Squared
sex	0 = female 1 = male	.003 (.865)	.562	.015 (.586)	.085
military history	0 = none 1 = history	-.016 (.405)	.563	-.006 (.808)	.085
technical job type	0 = other 1 = tech	-.024 (.200)	.563	-.068 (.015)	.089
prof job type	0 = other 1 = prof	-.037 (.061)	.564	-.089 (.002)	.092
non-tech job type	0 = other 1 = non-tech	.045 (.024)	.564	.110 (.000)	.096
prior service	0 = no 1 = yes	.028 (.145)	.563	.119 (.000)	.099

TABLE 15--Continued

Variable Entered	Value Assigned	Unit Commitment		Air Force Commitment	
		Beta (signif)	Resultant Adjusted R Squared	Beta (signif)	Resultant Adjusted R Squared
SOS complete	0 = no 1 = yes	-.016 (.426)	.563	.033 (.270)	.086
supervise others	0 = no	-.023 (.232)	.563	-.032 (.247)	.086
number of units	0 = one 1 = more than one	.029 (.124)	.565	-.035 (.207)	.086
number of jobs	0 = one	-.003 (.838)	.566	-.009 (.749)	.086
intent to remain	0 = other 1 = yes	.093 (.000)	.571	.393 (.000)	.226

related to the commitment attitudes that individuals have toward the unit of assignment and their attitudes toward the Air Force. Multiple regression techniques and correlation analyses clearly indicate that, among the participants of this study, there are differences in the antecedents that best describe the two separate commitment attitudes. Additionally, evaluation of the adjusted R squared provides indications that, at least among Air Force lieutenants, the model used is a much better indicator of unit (micro) level commitment attitudes than of commitment to the larger (macro) organization, the United States Air Force.

Prior service was more highly related to commitment to the Air Force (macro) than to commitment to the unit of assignment (micro). The variable took on a beta value of .119 (significant to .0000) when entered as a dummy variable into the Air Force commitment equation, although it had no statistically significant relationship with the unit commitment measure. See Appendix D for complete regression statistics. Further, analysis of the adjusted R squared revealed improvement in the variance explaining utility for the Air Force commitment model with virtually no change in the R squared for the unit commitment model. This finding is not surprising. A great deal of literature exists substantiating the importance of tenure in predicting commitment attitudes, and since prior service has little relationship ($r = .0605$; $p < .017$) with

unit tenure, we would expect it to have very little impact on micro organizational commitment attitudes.

The type of job an individual performs has some relationship to commitment attitudes. Among those with non-technical jobs, the job type variables took on statistically significant betas in regression equations for both unit commitment and Air Force commitment. In the Air Force commitment equation, the beta weight was relatively substantial (.110; $p < .0001$), second only to work experiences. Stevens and others (1978:338) suggest that some people are tied to organizations through their occupations. Since officers with non-technical jobs frequently occupy positions that do not have occupational identity outside the military, increased organizational commitment from these officers may occur because the individual cannot obtain a similar position (at a similar salary) in the private sector.

The regression model also indicated evidence of a negative relationship with both unit and Air Force commitment among those with professional job types (scientists, engineers, lawyers, etc.). Again, this relationship is not surprising. Sheldon (1971:143) points out that professionals are likely to have a prior commitment to their profession which is more enduring than their commitment to the organization.

Family history of career military service was not highly related to either commitment attitude measure. There is empirical evidence (Werts, 1968) that the occupation of the father does have some affect on the commitment attitudes of the child. Werts' findings were subsequently supported by research from Hrebiniak and Alutto (1972) and therefore selected for investigation in this study. This study focused on only the military background of the parents and grandparents of the respondents. Although 25 percent of the respondents indicated their family did have a background of career military service, entry of this variable into the regression equation revealed the variable had very little relationship with either of the two measures of commitment. Future studies in this area should perhaps broaden this item to include blue collar/white collar influences rather than approaching the issue with such a narrow focus.

Perhaps the most interesting finding was the strong relationship between the stated intentions to remain in the Air Force and both commitment attitude scales. In the Air Force commitment model, the intent to remain variable took on an impressive beta value of .393 (significant to .0000) and resulted in the near tripling of the adjusted R squared. See Appendix D for complete regression statistics. Although this variable also proved to be strongly related to unit commitment, there was no correspondingly

large change in the adjusted R squared for the model. The bulk of the literature (Steers, 1977; Stevens and others, 1978; Mowday and others, 1979) views propensity to remain in an organization as an outcome of organizational commitment; however, these data suggest that a reciprocal relationship may exist in which the decision to remain in the Air Force may result in increased commitment on both the micro and macro levels. This suggestion has a great deal of intuitive appeal because commitment, by definition, results from an individual's strong desire to maintain membership in an organization. In their discussion of the outcomes of organizational commitment, Steers and Porter (1983:445) make the same point in suggesting that the nature of the causal relationship between commitment and employees' desires to remain in an organization has yet to be established. Further research is needed in this area to establish whether commitment results in the intent to stay in an organization or the propensity to stay leads to increased commitment.

Analysis of Grouped Data

After development and analysis of the composite model, this research was refocused toward an analysis of the differences in the commitment attitudes of the sample when the respondents were grouped by years of commissioned service, prior enlisted service, and type of job. These tests were conducted primarily with the use of the two

independent measures of organizational commitment that were discussed earlier in this chapter. The SPSS statistical package was used to calculate t-statistics and their associated statistical significance.

The first analysis performed was a t-test to establish that a statistically significant difference existed between the commitment attitudes that the respondents expressed toward their units of assignment and their attitudes toward the Air Force in general (Table 16). Interpretation of Table 16 statistics provides strong evidence that among Air Force lieutenants in general, commitment to the Air Force is greater than commitment to the unit of assignment. Stevens and others (1978) reached a similar conclusion regarding commitment among a sample of federal civil service employees.

TABLE 16
COMPARISON OF UNIT COMMITMENT AND COMMITMENT TO
THE AIR FORCE FOR ALL RESPONDENTS

Variable	N	Mean	Standard Deviation	Standard Error	T-Value	2-Tail Prob
Air Force Commitment	1198	38.1185	7.265			
				.231	21.13	.0000
Unit Commitment		33.2479	7.658			

Table 17 shows the results obtained when the sample was grouped based on prior enlisted service and the same test was conducted. The fact that commitment to the Air Force is higher among prior service officers also supports Sheldon's (1971) contention that individuals are more highly committed as years of service increase, regardless of position.

The next analysis of the respondent's commitment attitudes was a breakdown of the sample's commitment scores when the sample was grouped by years of commissioned service. The results of this analysis are found in Table 18.

At first inspection, these results appear to be contradictory to the notion that commitment increases with increased tenure. However, research by Sheldon (1971) shows that among those occupying management positions, the commitment patterns are not linear. Rather, Sheldon's study suggests a curvilinear relationship where commitment is highest among individuals with less than two years of organizational service, dips to its lowest point for employees with somewhere between two and ten years, and increases among those with over ten years. Figure 5 is a graphic representation showing the similarity between Sheldon's model and the data in Table 18.

Figure 5 indicates we should not be surprised by the decreasing trends in the commitment attitudes among

TABLE 17

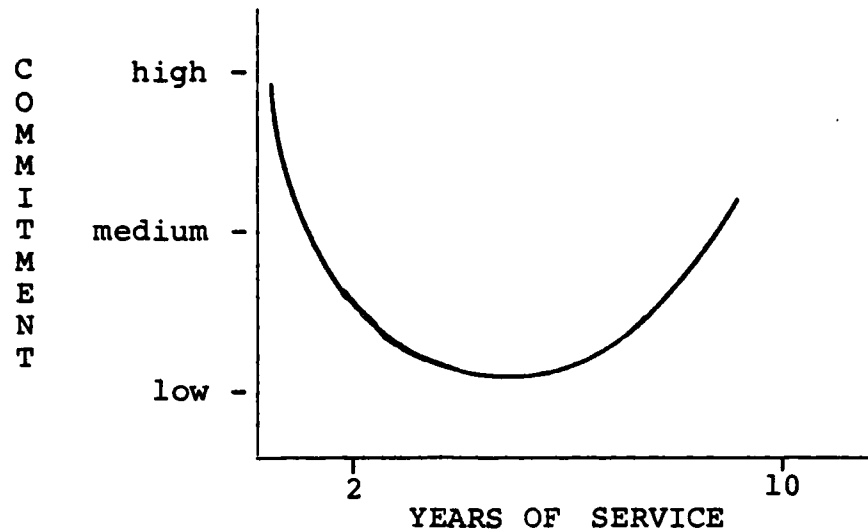
COMPARISON OF UNIT COMMITMENT AND COMMITMENT TO THE
AIR FORCE WHEN GROUPED BY PRIOR ENLISTED SERVICE

Variable	N	Mean	Standard Deviation	Standard Error	Pooled Variance Est	
					T-Value	2-Tail Prob
<u>Air Force Commitment</u>						
Initial Service	900	37.6344	7.351	.245	-4.17	.0000
Prior Service	304	39.5559	6.797	.390		
<u>Unit Commitment</u>						
Initial Service	905	33.1050	7.703	.256	-.94	.3480
Prior Service	304	33.5812	7.638	.435		

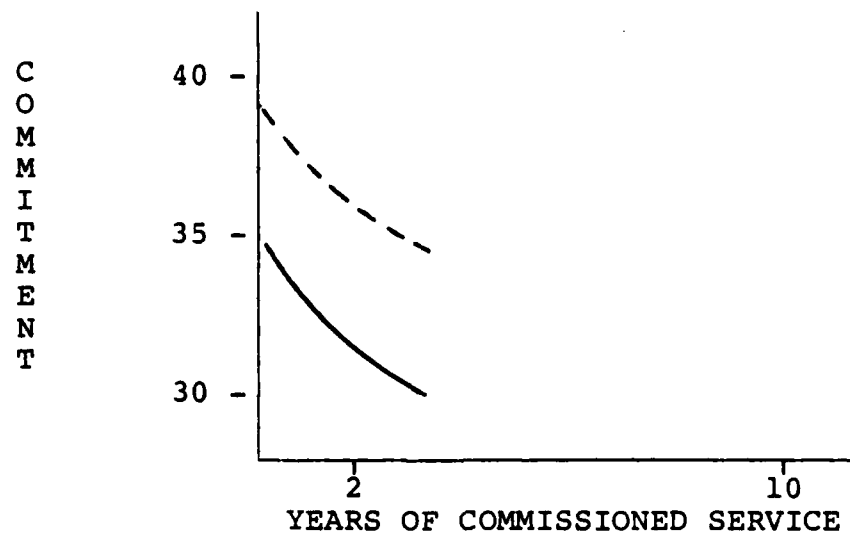
TABLE 18
BREAKDOWN OF COMMITMENT SCORES BY
YEARS OF COMMISSIONED SERVICE

Variable	Years Commissioned	N	Mean	Standard Deviation
Air Force Commitment	less than one year	270	39.4222	7.3888
	one year but not two	354	38.4407	7.0340
	two years but not three	295	38.0102	6.8320
	three years but not four	260	36.6371	7.6095
	four years or more	26	36.0385	7.4859
Unit Commitment	less than one year	271	35.1402	7.4592
	one year but not two	354	33.3842	7.4339
	two years but not three	301	32.5615	7.8312
	three years but not four	263	31.7529	7.7077
	four years or more	25	34.0400	7.7485

Sheldon's Model of Commitment Development Patterns



Commitment Development Patterns Among Air Force Lieutenants



Unit Commitment —————
Air Force Commitment - - - - -

Fig. 5. Commitment Development Patterns

the sample population. The high initial commitment is a natural result of any new employee's initial enthusiasm and desire to become a member of an organization. Staw and Salancik (1977:14) support Sheldon's model with their suggestion that, during the early years of association with an organization, individuals are frequently unsure of their responsibilities. The authors submit that this uncertainty, in the short term, may result in reduced commitment. As the years with the organization increase and people begin to better understand their jobs, they become more attached to the organization.

Table 19 presents a breakdown of commitment attitudes by prior service and years of commissioned service. Because commissioned and enlisted service are very different job positions, we should not expect the pattern of the learning/commitment curve to be significantly different for the two groups of officers. The data in Table 19 are consistent with this notion of similar commitment development patterns.

In a study of the commitment attitudes of federal service employees, Stevens and others (1978:389) reported a correlation of .404 between employee commitment attitudes toward the federal service and their attitudes toward their work units. The correlation between the micro (commitment to the unit) and macro (commitment to the Air Force) commitment attitudes among the participants of this study

TABLE 19

BREAKDOWN OF COMMITMENT SCORES BY INITIAL SERVICE,
PRIOR SERVICE, AND YEARS COMMISSIONED

Air Force Commitment					
	less than 1	1 but not 2	2 but not 3	3 but not 4	4 or more
Initial Service	38.8476 (210)	37.9459 (259)	37.5352 (213)	36.3510 (208)	32.9000 (10)
Prior Service	41.4333 (60)	39.7766 (94)	39.2439 (82)	37.9615 (52)	38.0000 (16)
Unit Commitment					
	less than 1	1 but not 2	2 but not 3	3 but not 4	4 or more
Initial Service	34.7299 (211)	33.2946 (258)	32.5972 (216)	31.8714 (210)	30.8000 (10)
Prior Service	36.5833 (60)	33.5474 (95)	32.4706 (85)	31.2830 (53)	36.2000 (15)

($r = .4313$) was virtually identical to the value reported by Stevens and others. To investigate the changing nature of this relationship, the correlations between the two attitude measures were broken down by years of commissioned service. The results of these computations are given in Table 20.

TABLE 20
BREAKDOWN OF CORRELATIONS BETWEEN COMMITMENT
TO THE AIR FORCE AND COMMITMENT
TO THE UNIT OF ASSIGNMENT

Years Commissioned	Less than 1	1 but not 2	2 but not 3	3 but not 4	4 or more
Pearson Correlation	.4622 (.0000)	.3900 (.0000)	.3998 (.0000)	.4276 (.0000)	.6024 (.0010)

Tables 21 and 22 are additional comparisons of Air Force and unit commitment. Table 21 is a comparison of Air Force (macro) commitment among officers who are grouped by years of prior and initial service. These data provide further support of the notion that organizational tenure (in this case, Air Force tenure) is strongly related to commitment attitudes.

Table 22 considers the differences in unit commitment among initial service officers when grouped by years of commissioned service. The data in Table 22 indicate that, among initial service officers, micro commitment attitudes actually decrease as Air Force tenure increases.

TABLE 21

COMPARISON OF COMMITMENT TO THE AIR FORCE AMONG
OFFICERS GROUPED BY YEARS OF SERVICE

Years of Service	N	Mean	Standard Error	Pooled Variance Est	
				T-Value	2-Tail Prob
0 to less than 4 yrs total service	1024	37.7422	.227		
4 or more yrs total service	180	40.2667	.512	-4.33	.0000

TABLE 22

COMPARISON OF UNIT COMMITMENT FOR INITIAL
SERVICE OFFICERS GROUPED BY YEARS
OF COMMISSIONED SERVICE

Years of Service	N	Mean	Standard Error	Pooled Variance Est	
				T-Value	2-Tail Prob
less than one year	211	34.7299	.535		
one year or more	694	32.6110	.289	3.52	.0000

Over 81 percent of the participants in this study reported having only one unit assignment since commissioning. This fact, coupled with the results of this t-test, is consistent with the assertion by Stevens and others (1978:384) that too much time in any one position may be perceived as career stagnation and have an adverse effect on commitment.

The following analyses of the research data were focused on the effects that various job types had on commitment attitudes. Question 6 of the survey was used to group the respondents based on the type of jobs they perform. Three general job categories were used: technical, professional, and non-technical. Table 23 is a breakdown showing how the various Air Force Specialty Codes (AFSCs) were grouped to form the three categories.

When choosing the categories for the AFSCs, an attempt was made to group those job types that were very similar in terms of their job characteristics. The job types selected for the technical category were those that require a high degree of technical skill, but do not differ greatly in day-to-day execution. Professional jobs, on the other hand, generally require extensive education and training and, as a rule, are not repetitive in nature. The non-technical jobs are those which are focused more toward the management of people in organizations rather than actually performing specific technical tasks.

TABLE 23

BREAKDOWN OF JOB CATEGORIZATION
BY JOB TITLE AND AFSC

Technical		Non-Technical	
AFSC	Job Title	AFSC	Job Title
02	International Protocol	27	Acquisition Program Mgt
05	Disaster Preparedness	29	Program Mgt
10-14	Pilot	30	Communications/ Electronics
15,22	Navigator	31	Missile Maintenance
16	Air Traffic Control	40	Acft Maintenance and Munitions
17	Air Weapons Director	60	Transportation
18	Missile Operations	62	Services
20	Space Operations	64	Supply Mgt
23	Audiovisual	65	Acquisition
51	Computer Systems	66	Contracting Mgt
		66	Logistics Plans and Programs
		67	Financial
		69	Cost and Mgt Analysis
		70	Administration
		73	Personnel
		74	Manpower Management
		75	Education and Training
		79	Public Affairs
		80	Intelligence
		81	Security Policy
		82	Special Investigations
		90	Health Services Management
		XX	All other AFSCs
Professional			
25	Weather		
26	Scientific		
28	Development Engineering		
55	Civil Engineering		
57	Cartography/Geodesy		
87	Band		
88	Legal		
89	Chaplain		
91-92, 99	Biomedical Services		
93-96	Physician		
97	Nurse		
98	Dental		

Substantial research (Steers, 1977; Sheldon, 1971; Stevens and others, 1978) indicates that commitment attitudes can be affected by the type of work individuals perform. The three broad job categories used in this study were designed to investigate whether individuals who are very similar in terms of years commissioned and rank exhibit significantly different commitment scores when they are categorized by the type of work they do.

Table 24 provides an initial overview of the number of respondents in each category in addition to the mean commitment scores for each of the three groups. As discussed in Chapter III, because of the mission of Wright-Patterson AFB, most of the lieutenants in this sample fall into either the professional or non-technical category.

TABLE 24
BREAKDOWN OF COMMITMENT SCORES
BY TYPE OF JOB

Variable	Job Type	N	Mean	Standard Deviation
Air Force Commitment	Technical	26	35.5769	6.5980
	Professional	667	37.6972	7.2919
	Non-technical	510	38.8314	7.1865
Unit Commitment	Technical	26	32.8077	5.9398
	Professional	677	33.3220	7.7484
	Non-technical	509	33.1415	7.7011

Tables 25, 26, and 27 show the results of t-tests which were conducted to determine which of the differences between job-grouped commitment attitudes were statistically significant. Table 25 shows that when lieutenants with non-technical jobs are compared to all respondents, the non-technical officers exhibit statistically higher ($p < .004$) commitment to the Air Force than the remaining officers. This finding may be best explained by Stevens and others' (1979) assertion that because the non-technical officers frequently do not possess skills with direct application to the civilian job market, they may become more attached to their organizations.

The data in Table 26 indicate that the respondents with technical jobs are less committed ($p < .070$) to the Air Force than all other lieutenants. This finding is somewhat curious but may be explained by generally low perceptions of job freedom and felt responsibility. Staw and Salancik (1977) submit that routine, unchanging jobs (such as those in this category) do not provide individuals with the opportunity to make a personal impact or feel responsible for the outcome of a task. Reductions in the level of felt responsibility will result in reduced commitment (Staw and Salancik, 1977:17).

Table 27 indicates ($p < .020$) that those with professional jobs are less committed to the Air Force than other officers. This finding supports Sheldon's (1973:143)

TABLE 25
COMPARISON OF COMMITMENT SCORES FOR OFFICERS
WITH NON-TECHNICAL JOBS

Variable	N	Mean	Standard Deviation	Standard Error	Pooled Variance Est	
					T-Value	2-Tail Prob
<u>Air Force Commitment</u>						
Non-Tech	510	38.8314	7.186	.318	2.87	.004
All Other	693	37.6176	7.274	.276		
<u>Unit Commitment</u>						
Non-Tech	509	33.1415	7.701	.341	.36	.718
All Other	703	33.3030	7.686	.290		

TABLE 26
COMPARISON OF COMMITMENT SCORES FOR OFFICERS
WITH TECHNICAL JOBS

Variable	N	Mean	Standard Deviation	Standard Error	Pooled Variance Est	
					T-Value	2-Tail Prob
<u>Air Force Commitment</u>						
Technical	26	35.5679	6.598	1.294	-1.82	.070
All Other	693	38.1886	7.265	.212		
<u>Unit Commitment</u>						
Technical	26	32.8077	5.940	1.165	-.29	.775
All Other	703	33.2445	7.725	.224		

TABLE 27
COMPARISON OF COMMITMENT SCORES FOR OFFICERS
WITH PROFESSIONAL JOBS

Variable	N	Mean	Standard Deviation	Standard Error	Pooled Variance Est	
					T-Value	2-Tail Prob
<u>Air Force</u>						
Professional	667	37.6972	7.292	.282	-2.32	.020
All Other	536	38.6735	7.187	.310		
<u>Unit</u>						
Professional	677	33.3220	7.748	.298	.44	.658
All Other	703	33.1252	7.621	.329		

research which contends that professionals often have a prior commitment to their profession which is more enduring than their commitment to the organization. Additionally, professionals are likely to have the least difficulty in securing similar positions in the private sector which may serve to reduce their commitment.

Finally, an analysis was conducted investigating the relationship between the respondent's stated intention to remain in the Air Force and the two organizational commitment attitudes. Table 28 provides clear indications of a strong relationship between commitment attitudes and intentions to remain. Analysis of Table 28 shows clearly that those who intend to remain in the service are more highly committed to both the Air Force and the unit of assignment than those who are either undecided or separating. Both Air Force and unit commitment follow similar decreasing trends when broken down based on respondent's answers to the intent to stay question. Both commitment measures were significantly correlated with the intent to remain; Air Force commitment was correlated at .5288 ($p < .000$) while unit commitment had an $r = .3214$ ($p < .000$). Complicating this analysis is the relationship between the two commitment measures of $r = .4313$ ($p < .000$). Blalock (1960:311) provides a statistical procedure for establishing which of two related variables is more highly related to a third variable. The procedure is shown in Figure 6.

TABLE 28

BREAKDOWN OF COMMITMENT SCORES BY STATED
INTENTIONS TO REMAIN IN THE AIR FORCE

Air Force Commitment			
Intent to Stay	N	Mean	Standard Deviation
Yes	569	41.5114	5.9753
Undecided	482	36.7739	6.1513
No, separating	102	35.0000	6.0918
No, I would get out today if I could	51	27.7451	7.5122
Unit Commitment			
Intent to Stay	N	Mean	Standard Deviation
Yes	576	35.3576	7.0873
Undecided	481	32.4802	7.4839
No, separating	103	29.4563	7.2054
No, I would get out today if I could	51	24.3396	6.2878

Let X = Commitment to the Air Force
 Let Z = Commitment to the Unit
 Let Y = Stated intention to remain in the Air Force
 N = 1198

The null hypothesis is:

$$H_0: r_{xy} = r_{zy} \quad H_a: r_{xy} > r_{zy}$$

Reject H_0 if $|t_0| > 1.65$

$$t_0 = (r_{xy} - r_{zy}) \sqrt{\frac{(N-3)(1+r_{xz})}{2(1-r_{xy}^2 - r_{xz}^2 - r_{zy}^2 + 2r_{xy}r_{xz}r_{zy})}}$$

$t_0 = 7.995$: Reject H_0 , conclude Commitment to the Air Force is more highly related to stated intentions to remain than is Commitment to the Unit of Assignment.

Fig. 6. T-test for Comparison of Pearson Correlation Coefficients

The calculations from Figure 6 show that the null hypothesis can be rejected. Rejection of H_0 indicates that when the effects of the moderating variable (unit commitment) are controlled, commitment to the Air Force is clearly still the better indicator of stated intentions to remain in the service.

An additional method of determining the relative strength of the two scales is through the use of linear regression. A linear regression analysis was conducted using the two commitment scales as independent variables and intent to stay (question 13) as the dependent variable. The results of the regression analysis are in Table 29.

TABLE 29
MULTIPLE REGRESSION FOR THE
INTENT TO STAY VARIABLE

Dependent Variable: Intent to stay Independent Variables: Afcom Unitcom					
Multiple R	.44982			F = 151.56124	
R Square	.20233			Signif F = .0000	
Adjusted R Square	.20100				
Standard Error	.44652				
Variables in Equation					
Variable	B	SE B	Beta	t	Sig t
Unitcom	.005865	.001861	.090228	3.151	.0017
Afcom	.027744	.001969	.403475	14.090	.0000
(Contant)	.221544	.074992	--	2.954	.0032

The beta values taken on by the two commitment scales show the relative strength of their relationships to the intent to stay variable. The .40 ($p < .0000$) beta value of the Afcom scale indicates the macro commitment attitude has a far stronger relationship with the dependent variable than does unit (micro) commitment.

Chapter V contains further discussions of the topics presented in this chapter including results of tests of the hypotheses that were presented in Chapter I.

V. Results and Conclusions

Five investigative questions were advanced for study in Chapter I. In this chapter, each of those investigative questions will be addressed and discussed. In addition, those areas which appear to warrant further investigation will be highlighted. Following these discussions is a section outlining areas that emerged from this research which are worthy of additional investigation. The final section provides some thoughts regarding the management implications of this research and a summary of the study.

Tests of Hypotheses and Related Findings

Investigative Question #1. Using variables known to be highly related to the organizational commitment, which variables are most highly related to the organizational attitudes expressed by Air Force lieutenants?

Investigative question #1 led to two hypotheses. Hypothesis 1.1 has its roots in Staw and Salancik's (1977) notion that one of the driving factors in the development of organizational commitment is increased age and tenure. As age and tenure in an organization increase, such instrumental considerations as increased pay, retirement systems,

and higher organizational positions result in increased attachment to the organization. Since instrumentality, age, and tenure are components of the personal characteristics variable; and since the Air Force (versus the unit of assignment) is the source of these instrumental considerations, it was hypothesized that:

Hypothesis 1.1. Personal characteristics are more highly related to commitment to the Air Force than either job characteristics or work experiences.

Review of the regression equation using the three composite variables that was presented in Chapter IV indicates a relatively weak relationship between commitment to the Air Force and personal characteristics. Among the participants of this study, the work experience variable is the most highly significant of the three in the explanation of commitment to the Air Force. This finding does not support hypothesis 1.1.

Hypothesis 1.2. Work experiences are more highly related to commitment to the unit of assignment than either personal characteristics or job characteristics.

Hypothesis 1.2 was based on substantial research (Hrebiniak and Alutto, 1972:569; Morris and Sherman, 1981: 524; Buchahan, 1974:533) indicating that work experiences are more closely associated with commitment attitudes than are other variables. This hypothesis was strongly supported in this research as indicated by the relatively

overwhelming beta value of the work experiences variable in the unit commitment regression equation that was presented in Chapter IV.

Investigative Question #2. Do commitment attitudes toward the unit of assignment and commitment toward the Air Force in general vary together among officers serving in their initial commissioned service obligations?

No previous research exists investigating the current trends between the two commitment attitudes. The rationale for this study was based on the notion that as tenure in an organization increases, individuals would be able to draw more distinct lines between the two organizational levels. It was thought that this distinction between organizational levels would result in a decreased relationship between the commitment measures. Based on this concept, the following hypothesis was advanced:

Hypothesis 2.1. As the years of commissioned service increase, the relationship between commitment to the Air Force and commitment to the unit of assignment decreases.

Figure 5 (page 65) shows graphically that a strong relationship between the two measures does exist. To quantitatively analyze the trend of the relationship between the two measures, a breakdown of correlations was produced (see Table 20, page 68). The statistics and data from Table 20 do not support the hypothesis as stated.

The relationship between the two measures does decrease substantially between the first and second years, but increases through the next three years of service. This finding tends to support the notion that an education of sorts does occur during the first year, but it also strongly suggests that the relationships are increasingly related with increased tenure.

Investigative Question #3. Are there significant differences in organizational commitment attitudes when officers are categorized by years of service?

The common thought that runs through nearly all organizational commitment studies is that a primary factor in commitment attitudes is the length of organizational tenure. This sample is composed of only individuals with four or less years of commissioned service. Since it was expected that a high percentage of respondents would have some prior enlisted service time, this investigative question was studied using two hypotheses. The hypotheses were designed to selectively consider groups of prior and initial service officers.

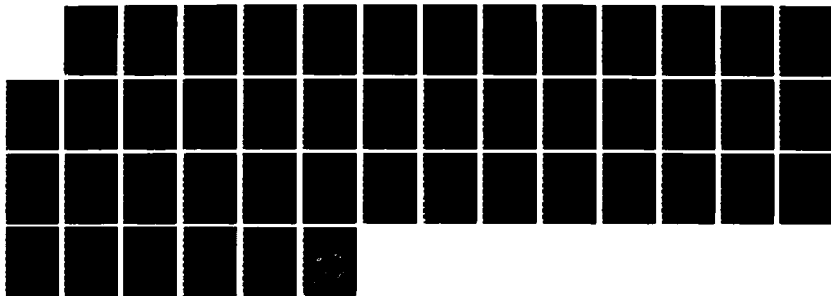
Hypothesis 3.1. Officers with more than four years of prior enlisted service are more highly committed to the Air Force than are initial service officers.

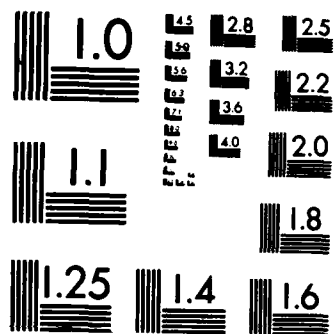
Hypothesis 3.1 was designed as a test of the "golden padlock" theory posed by Staw and Salancik (1977). Staw and Salancik suggest that when individuals reach a

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DUAL LEVEL STUDY OF ORGANIZATIONAL COMMITMENT AND ITS 2/2
RELATIONSHIP WITH 1 (U) AIR FORCE INST OF TECH
WRIGHT-PATTERSON AFB OH SCHOOL OF SVST S B REYNOLDS
SEP 86 AFIT/GLM/LSB/865-67 F/G 5/9 NL

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

certain point in their careers, they feel locked into retirement programs that fulfill their needs for future security. Four years of prior enlisted service in addition to a four-year commissioned service obligation, constitute nearly half of the years required to secure a military pension and was therefore selected as the break point in the division of the sampled population. T-tests performed with the respondents grouped in this manner (Table 21, page 69) clearly indicate that officers with more than four years of prior service are more highly committed to the Air Force than those with less than four years (including those with no prior service). These results provide strong support for both this hypothesis and Staw and Salancik's "golden padlock" theory.

Hypothesis 3.2. Initial service officers with less than one year of service are more highly committed to their unit of assignment than those with more than one year of service.

Hypothesis 3.2 was advanced to determine whether individuals in their first year of initial commissioned service were significantly more committed to their unit of assignment than those with more than one year of service. This hypothesis was designed to block the effects of prior enlisted service and to focus on unit level versus Air Force commitment attitudes.

The data in Table 22 (page 69) indicate that when initial service officers were grouped as stated in this hypothesis, those with less than one year of service expressed statistically significant higher commitment ($p < .0000$) toward their unit of assignment than those with one year or more. This finding strongly supports this hypothesis. Further, this is exactly the result we would expect based on Sheldon's (1971:148) research of commitment trends (see Figure 5, page 65). Sheldon suggests that new employees have the highest commitment relative to other employees in an organization but the reality of the working situation is likely to cause a subsequent decrease in commitment.

Research by Steers (1977) indicates that the type of work individuals perform has an impact on commitment attitudes. In his study comparing the commitment attitudes of hospital employees and scientists, Steers noted diverse sources of factors affecting employee commitment. As a result, there was a substantial difference in the adjusted R squared for the two samples. A linear regression model containing identical independent variables yielded an R square of .65 for the hospital employees while the figure for the scientists was .48. Sheldon (1971) also concluded that differences in commitment attitudes can be, in part, a function of the type of work an employee performs. These

findings by Steers and Sheldon gave rise to investigative question #4.

Investigative Question #4. Are there significant differences in organizational commitment attitudes when officers are categorized by job type?

To study this issue, the following hypothesis was formed:

Hypothesis 4.1. When categorizing officers by job type, officers with professional jobs are less committed to both their unit of assignment and the Air Force in general than either technical or non-technical officers.

This hypothesis was also based, in part, on findings by Stevens and others (1978) that initial commitment to an organization may be due to an inability to occupy a similar position outside the federal service. Using Stevens' findings, professionals should have the least difficulty of the three groups in securing similar positions outside the military, and would therefore be less committed. Table 24 (page 72) provides a breakdown of commitment scores by job type. T-tests were conducted (Tables 25, 26, and 27; pages 74-76) comparing each job category to the rest of the population. The results of the t-tests indicate that, when compared to the remainder of the population, officers in non-technical jobs were more highly committed to the Air Force ($p < .004$) than the

rest of the population; while those in professional positions were statistically less committed to the Air Force ($p < .020$) than the remainder of the population. None of the three groups was statistically different from the others regarding commitment to the unit of assignment. The statistics from Table 27 provide strong support for hypothesis 4.1.

The premise of this study was based on a large body of research that suggests organizational commitment has a strong relationship with employee intentions to remain in an organization. Steers and Porter (1983:449) recognize that although organizational commitment is not a panacea for solving employee turnover problems, it is clearly one vehicle to improving the stability of an organization's work force. Stevens and others (1978) have shown that employees are committed to organizations on both the micro and macro levels. Stevens, however, stopped short of investigating the relationship between the two commitment attitudes and the propensity to remain in an organization. This gap in the literature resulted in the final investigative question of this study.

Investigative Question #5. Given a measure of commitment attitudes to the unit of assignment and commitment to the Air Force, which is more highly related to stated intentions to remain in the service beyond initial service obligations?

The approach taken in the study of this question is reflected in hypothesis 5.1.

Hypothesis 5.1. When considering the entire survey population, commitment attitudes toward the Air Force are better indicators of intentions to remain in the service beyond initial service obligations than are commitment attitudes toward the unit of assignment.

Because a positive relationship exists between the two commitment measures, a test of this hypothesis was necessary to state conclusively which measure of commitment was more highly related to intentions to remain in the Air Force. The statistical procedure used (Figure 6, page 79) provides strong evidence that commitment to the Air Force is more highly related to stated intentions to remain in the Air Force than is unit commitment. Linear regression techniques were then used to obtain partial regression coefficients for the two commitment measures. Partial regression coefficients are indicative of the relative strength of the relationships between the independent variables and the dependent variable in the regression equation. When the two commitment scales are entered as independent variables against the intent to stay variable (Table 29, page 80), Air Force commitment emerged with a beta of .40 ($p < .0000$) compared to a beta of .09 ($p < .0017$) for unit commitment. The results from both Figure 6 and those from Table 29 provide strong support for this hypothesis.

Areas for Future Research

Several topics emerged from this study as being fertile ground for future research. First, the organizational commitment model developed and tested in this study provided a far better description of unit (micro) level commitment than of commitment to the Air Force (macro level). Several independent variables were entered into the regression equation in an attempt to enhance the variance explaining power of the Air Force commitment model; however, even the best R squared obtained did not approach the R squared level obtained in the unit commitment model. Future studies investigating the antecedents of Air Force commitment should be conducted with the aim of discovering a model with greater predictive utility.

A second area worthy of additional study is the relationship between stated intentions to remain in an organization and organizational commitment. The data in this study indicate that a very strong relationship exists between the intent to stay and both Air Force and unit commitment measures. The question that remains concerns the nature of the relationship. Does commitment lead to the propensity to stay or does the intent to stay result in commitment?

This study looked at trends in commitment patterns among "first term" officers and therefore could only discuss stated intentions to remain in the Air Force.

Longitudinal studies in organizational commitment are needed in order to investigate the relationships between the two commitment measures and the actual decisions to remain in the Air Force. A study of this nature could also address the issue of when commitment attitudes "bottom out" among Air Force officers. Does the low point occur between the second and tenth years as suggested by Sheldon (1971)? Does it occur when the initial decision to remain in the service is made at the four-year point?

Finally, the results of this study indicate the relationship between commitment to the Air Force and commitment to the unit of assignment increases with tenure. Does this trend continue beyond the four-year point? Studies of each of these issues would add valuable knowledge to the body of commitment research.

Implications for Managers

Organizational commitment attitudes are among the best predictors of intention to remain in an organization (Mowday and others, 1979). A longitudinal study by Steers and Porter (1983:446) found that those who eventually left organizations were significantly lower in commitment attitudes than those who stayed. Organizational commitment attitudes are clearly powerful factors in the retention of employees. This study indicates that among first-term Air Force officers, commitment attitudes toward both the Air Force and the unit of assignment are at all-time

relative lows at the four year point, just when the decision to remain on active duty is made. Buchanan (1974) points out that it is during the early years that employees' organizational attitudes are most susceptible to influence. Air Force managers should seize this early opportunity to promote the development of positive commitment attitudes among young officers which, in turn, should increase the likelihood that the officers will choose to remain in the Air Force.

Previous organizational commitment research provided managers with an extensive list of organizational commitment antecedents toward which the manager could focus his commitment-enhancing efforts. This research, however, has uncovered an important discrepancy in the previous findings. The most widely accepted model of organizational commitment (Steers, 1977) is an excellent tool for predicting unit level (micro) commitment attitudes but does a relatively poor job of explaining the variance in commitment to the Air Force (macro level). This finding is significant in view of subsequent findings that commitment to the Air Force has a much more powerful relationship with intentions to remain in the service than does commitment on the micro level. This does not mean, however, that those variables related to unit commitment should be ignored. There is strong evidence that multiple common antecedents exist; particularly strong relationships were

noted between the work experience variables and both commitment measures. Efforts to identify additional variables that would assist in explaining a larger amount of the variance in Air Force commitment were generally unsuccessful and this task is recommended for future study.

Summary and Conclusion

This study was undertaken to determine to what extent differences existed in the micro and macro organizational commitment attitudes of Air Force lieutenants. Organizational commitment attitudes have been shown to be significant factors in decisions to either stay in or leave organizations. Because of the importance of commitment in this regard, particular interest was given to investigating the strength of the relationship between the two commitment attitudes and the participant's stated intentions to remain in the Air Force beyond initial service obligations.

The study was conducted in two phases. The first portion of the study was concerned with the development and testing of an organizational commitment model. The model tested was based on the most widely accepted model (Steers, 1977) from the current literature and, for this study, was augmented with selected variables from other organizational commitment studies. This portion of the study indicated that although the model was an excellent tool in explaining the variance in unit (micro) commitment, it was relatively

weak in explaining the variance in Air Force (macro) commitment attitudes. The entry of several additional independent variables did little to enhance the utility of the model in this regard.

The second portion of the study was geared toward comparing the measures of unit level and Air Force commitment attitudes to determine what relationships existed between the two; and how those relationships changed when the sample was grouped by job type and years of service. A major finding in this area indicated that among Air Force lieutenants, both the micro and macro commitment attitudes were at their lowest points during the last of the initial four years of commissioned service. Additionally, the data indicate that as the years of commissioned service increased, the relationship between the two commitment attitudes increased. This finding suggests that a negative trend in one of the commitment attitudes may contribute to a negative trend in the other.

In conclusion, this research has made substantial inroads into discovering the relationships between micro and macro commitment levels in organizations. While the data indicate there are many similarities in the two commitment measures, there are also indications of significant differences. Further research of this topic is required to better understand this complex issue.

Appendix A: Multiple Linear Regression of Independent Variables

Multiple R .49318
 R Square .24315
 Adjusted R Square .22746
 Standard Error 6.36184

Analysis of Variance
 Regression 24
 Residual 1158

Sum of Squares
 15952.87429
 46865.93844

F = 15.58873 Signif F = .0008

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 21.48184 Air force Inst of Technology VAX 11/785 UNIX 4.2 BSD

**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. AFCON

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T	
047	.061143	.175658	.011916	.348	.7278	metexp
019	-.12521	.133318	-.025344	-.928	.3579	funcdp2
08	-.522759	.228489	-.082479	-2.278	.029	instru2
021	.586913	.137759	.097932	3.588	.002	educatn
03	-.331832	.257342	-.034327	-1.289	.1975	typsupv
SOC	2.412916	.226851	.284872	10.637	.000	doanecd
038	-.016234	.156556	-.002929	-.184	.8612	rolconf
026	.449038	.234892	.056598	1.912	.0562	respons
028	.916281	.217385	.117629	3.863	.001	age
032	-.086588	.143525	-.001296	-.846	.3934	compctc
022	-.024621	.183198	-.004188	-.134	.8931	grpstatd
01	.932543	.286468	.138824	4.517	.000	varlety
044	.298335	.173837	.054925	1.678	.0936	achneed
023	-.017916	.186965	-.003831	-.096	.9237	autneed
023	.754296	.183584	.128644	4.189	.000	challge
029	.086554	.183888	.001141	.036	.9713	perimp2
037	-.086886	.147846	-.001289	-.841	.3674	rolcler
046	.241284	.199246	.038987	1.211	.2261	orgrell
P10C	.133484	.287958	.021848	.642	.5213	045
031	-.077917	.189366	-.014628	-.412	.6887	FDRK
045	.371147	.210679	.068749	1.597	.0859	019
045	-.287452	.238985	-.045171	-1.245	.2134	05
019	-.438873	.184881	-.088682	-2.374	.0178	
05	-.038765	.255390	-.001274	-.3253	.8812	
(Constant)	15.174658	1.806545		8.844	.000	

Multiple R .88914
 R Square .64023
 Adjusted R Square .63284
 Standard Error 4.62276

Analysis of Variance
 Regression 24
 Residual 1168

Sum of Squares
 4447.59617
 24968.81155
 Mean Square
 185.73317
 21.35987

Signif F = .0000

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 21.46.46 Air Force Inst of Technology VAX 11/785

*** MULTIPLE REGRESSION ***

Equation Number 1 Dependent Variable.. UNITCON

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T	
047	.718591	.127387	.132600	5.642	.0000	metexpc
039	.052770	.096653	.019334	.547	.5848	funcdp2
08	-.781076	.167123	-.117809	-4.674	.0000	sytenur
021	.027501	.099567	.005046	.276	.7824	instru2
03	-.157238	.185446	-.015418	-.843	.3992	educatn
SOC	.094679	.163961	.108231	5.467	.0000	typsupv
030	-.053977	.113368	-.019986	-1.458	.1473	downeed
026	.178663	.178229	.019986	1.403	.1613	rolconf
032	-.168225	.183966	-.023831	-1.541	.1236	respons
028	.312535	.171737	.038128	1.828	.0698	age
01	.462988	.149312	.065119	3.108	.0020	compctc
022	-.088645	.132732	-.081366	-.865	.3981	grpatud
044	1.524649	.125568	.272817	12.142	.0000	varlaty
033	-.082922	.135688	-.013292	-.612	.5409	achneed
023	.361785	.132619	.054866	2.728	.0065	autneed
029	.112345	.132189	.018448	.858	.3956	challge
037	.264365	.186953	.053762	2.472	.0136	perimp2
046	.371781	.144257	.057142	2.577	.0101	PIDC
PIDC	.218183	.158288	.032698	1.399	.1622	rolcler
031	.246466	.136732	.043984	1.883	.0717	orgrell
045	1.697123	.158241	.264238	10.725	.0000	jobsat
f08K	-.050663	.167058	-.007608	-.351	.7255	yrscomm
019	.616838	.133625	.118326	4.616	.0000	
05	-.361385	.186587	-.053119	-1.941	.0525	
(Constant)	7.187664	1.382232		5.276	.0000	

Appendix B: Reliability Analyses

RELIABILITY ANALYSIS - SCALE (PERSCHAR)

01
03
05
08
021
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023
026
029

age
educatn
yrscomm
sqtenur
instru2
competc
achneed
downeed
autneed

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3.
4.
5.
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7.
8.
9.

MEAN
3.4211
1.6324
2.5173
3.0674
4.0050
4.5946
4.3505
4.7410
4.5732

STD DEV
1.0720
.7452
1.1213
1.1434
1.4040
1.2046
1.1644
.0902
1.2509

CASES
1216.0
1216.0
1216.0
1216.0
1216.0
1216.0
1216.0
1216.0
1216.0

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COVARIANCE MATRIX

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026

023

022

021

08

05

03

01

01	1.1510								
03	.1000	.5553							
05	.6273	.1590	1.2573						
08	.4037	.0709	.0754	1.3074					
021	.0054	.0600	.0392	.0440	1.9712				
022	.0573	.0503	.2406	.3171	.1646	1.4511			
023	.0510	.0940	.1344	.1100	.2576	.3001	1.3553		
026	.0199	.0449	.0259	.0100	.1694	.1605	.7926	1.5040	
029	.0671	.1055	.0374	.0477	.1204	.2077	.1490		

RELIABILITY ANALYSIS - SCALE (PERSCHAR)

CORRELATION MATRIX

	01	03	05	08	021	022	023	026	029
01	1.0000								
03	.1361	1.0000							
05	.5215	.1903	1.0000						
08	.3291	.0032	.6020	1.0000					
021	-.0573	.0650	-.0249	-.0274	1.0000				
022	.0443	.0649	.1040	.2302	.0972	1.0000			
023	.0415	.1004	.1030	.0032	.1676	.2624	1.0000		
026	.0209	.0677	.0259	.0090	.1355	.3077	.1571	1.0000	
029	.0497	.1125	.0265	.0332	.0726	.1097	.1595	.1336	1.0000

RELIABILITY ANALYSIS - SCALE (PERSCHAR)

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	SQUARED MULTIPLE CORRELATION	ALPHA IF ITEM DELETED
01	29.2829	19.5841	.2632	.2010	.5432
03	31.0715	21.2599	.2065	.0621	.5505
05	30.1067	17.0392	.4360	.5772	.4914
08	29.6365	10.3435	.3650	.4014	.5124
021	20.6902	20.0265	.0904	.0435	.6033
022	20.1094	10.4432	.3220	.1432	.5247
023	20.5535	10.5733	.3293	.2113	.5232
026	27.9522	20.4611	.2459	.1641	.5409
029	20.1300	19.5343	.1901	.0656	.5671

RELIABILITY COEFFICIENTS 9 ITEMS

ALPHA = .5717 STANDARDIZED ITEM ALPHA = .5840

RELIABILITY ANALYSIS - SCALE (JOBCHAR)

CORRELATION MATRIX										
	Q28	Q30	Q31	Q32	Q33	F08K	Q37	Q39	SOC	
Q28	1.0000									
Q30	.9544	1.0000								
Q31	.2670	.2249	1.0000							
Q32	-.0450	-.0833	-.2438	1.0000						
Q33	.3589	.1051	.5670	-.1103	1.0000					
F08K	.2337	.3160	.3185	-.0340	.4396	1.0000				
Q37	.2944	.1640	.3185	-.0476	.4396	.0676	1.0000			
Q39	.0720	.1732	.0630	.2451	.0950	.0722	.0675	1.0000		
SOC	.0556	.0526	.1136	.0173	.0837	.1049	.0875	.1010	1.0000	

OF CASES = 1209.0

STATISTICS FOR MEAN VARIANCE STD DEV # OF
SCALE 54.7531 32.0550 5.6617 VARIABLES

RELIABILITY ANALYSIS - SCALE (JOBCHAR)

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	SQUARED MULTIPLE CORRELATION	ALPHA IF ITEM DELETED
Q28	49.5050	20.0756	.3135	.1789	.6025
Q30	51.4735	26.4210	.2934	.1331	.6044
Q31	50.5022	24.7000	.4055	.3522	.6743
Q32	51.3693	20.6140	.0930	.0550	.6503
Q33	50.0939	25.1356	.4425	.2003	.5676
F08K	51.0939	24.9609	.5090	.4207	.5546
Q37	51.0602	23.0956	.4350	.2794	.5610
Q39	50.7349	26.5792	.2103	.0974	.6306
SOC	51.7039	30.9379	.1463	.0263	.6302

RELIABILITY COEFFICIENTS 9 ITEMS

ALPHA = .6205 STANDARDIZED ITEM ALPHA = .6330

RELIABILITY ANALYSIS - SCALE (JOBCHAR)

1. respons
2. typsupv
3. rolclar
4. rolconf

020
030
031
032

variety
challenge
funcdp2

033
FDBK
037
039
SOC

	MEAN	STD DEV	CASES
1.	5.2401	.9340	1209.0
2.	3.2796	1.3030	1209.0
3.	3.7709	1.3622	1209.0
4.	3.3030	1.4200	1209.0
5.	4.6592	1.2219	1209.0
6.	3.6592	1.1335	1209.0
7.	7.6049	1.6507	1209.0
8.	1.0102	1.4949	1209.0
9.	23.0492	.5202	1209.0

020
030
031
032
033
FDBK
037
039
SOC

COVARIANCE MATRIX

	020	030	031	032	033	FDBK	037	039	SOC
020	.8730								
030	.8663	1.6599							
031	.3400	.3994	1.0656						
032	-.0537	.1592	-.1612	2.0165					
033	.4009	.1674	.4045	.1913	1.4930				
FDBK	.2490	.4695	.6013	-.0549	.4060	1.2985			
037	.4260	.3316	.6720	.0729	.0329	.6010	2.4047		
039	.1006	.3376	.1203	.5203	.1751	.1229	.1564	2.2340	
SOC	.0290	.0357	.0006	.0120	.0632	.0622	.0706	.0792	.2707

RELIABILITY ANALYSIS - SCALE (WORKEXP)

	Jobset	MEAN	STD DEV	CASES
1.	019	4.2949	1.4598	1214.0
2.	PTDC	4.2397	1.1923	1214.0
3.	014	3.5717	1.3750	1214.0
4.	015	3.8822	1.1943	1214.0
5.	016	4.2990	1.1735	1214.0
6.	017	3.4168	1.4898	1214.0

COVARIANCE MATRIX

	019	PTDC	014	015	016	017
019	2.1682	1.4215	1.8986	1.4263	1.3771	1.9076
PTDC	.8485	.6238	.9454	.6189	.7681	
014	.8156	.6429	.5330	.8141		
015	.8814	.5577	.7989			
016	.7551	.6488				
017	1.1354					

CORRELATION MATRIX

	019	PTDC	014	015	016	017
019	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
PTDC	.4842	.3805	.5757	.4416	.4594	
014	.4836	.4515	.3383	.4836		
015	.6021	.3986	.4888			
016	.4378	.3868				
017	.5769					

ITEM-TOTAL STATISTICS					
	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	SQUARED MULTIPLE CORRELATION	ALPHA IF ITEM DELETED
019	19.4086	21.9739	.6526	.4521	.7891
PTDC	19.4638	25.8618	.5565	.3226	.8098
044	20.1318	23.8186	.5527	.3678	.8186
045	19.8213	23.8947	.6885	.4717	.7877
046	19.4844	25.2996	.5463	.3117	.8189
047	20.2875	22.7283	.6264	.4212	.7947

RELIABILITY COEFFICIENTS 6 ITEMS

ALPHA = .8282 STANDARDIZED ITEM ALPHA = .8296

Appendix C: Initial Regression of Composite Variables

*** MULTIPLE REGRESSION ***

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. AFCON

Beginning Block Number 1. Method: Enter WORKEXP JOBCHAR PERCHAR

Variable(s) Entered on Step Number
1.. PERCHAR
2.. WORKEXP
3.. JOBCHAR

Multiple R .29618
R Square .08773
Adjusted R Square .08548
Standard Error 6.92121

Analysis of Variance
Regression 3 5438.96917
Residual 1179 56177.83667
F = 37.79138 Signif F = .0000

Sum of Squares
1819.32386
47.98317

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
PERCHAR	.342245	.418689	.023988	.833	.4048
WORKEXP	1.679888	.249795	.228912	6.726	.0000
JOBCHAR	1.176162	.375688	.184828	3.131	.0018
(Constant)	25.786991	1.688583		15.225	.0000

•
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Listwise Deletion of Missing Data

Equation Number	Dependent Variable..	UNITCOM
Beginning Block Number 1.	Method: Enter	WORKEXP
		JOBCHAR
		PERCHAR

Variable(s)	Entered on Step Number	1.. PERCHAR	2.. WORKEXP
-------------	------------------------	-------------	-------------

3.3. JOBCLAR

Multiple R	.75098	Analysis of Variance	DF	Sum of Squares	Mean Square
R Square	.56397	Regression	3	39126.74686	13042.24869
Adjusted R Square	.56287	Residual	1189	30250.86165	25.44227
Standard Error	5.04407	F =	512.62122	Signif F =	.0000

Variables in the Equation				
Variable	B	SE B	Beta	T Sig T
PERCHAR	-1.084859	.298095	-.072189	-3.639 .0003
WORKEXP	5.955416	.181140	.744109	32.877 .0000
JOBCHAR	.401157	.272412	.033717	1.473 .1411
(Constant)	11.955167	1.221765		9.785 .0000

*** MULTIPLE REGRESSION ***

Equation Number	Dependent Variable..	AFCOM
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
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98		
99		
100		

Beginning	Block Number	1. Method:	Enter	WORKEXP	JOBCHAR	PERCHAR	Q7

Variable(s)	Entered on Step	Number	Q7	WORKEXP	PERCIAR	JOBCHAR	prlsrv
1..							
2..							
3..							
4..							

Multiple R	.31875	Analysis of Variance	Sum of Squares	Mean Square
R Square	.10160	Regression	6289.38482	1572.34621
Adjusted R Square	.09855	Residual	55611.34614	47.24838
Standard Error	6.87375	F	33.27831	Signif F = .0000

Variable	B	SE B	Beta	T	Sig T
.07	1.982245	.463465	.118942	4.277	.0000
WORKEXP	1.625701	.248424	.213763	6.544	.0000
WORKEXP	.212415	.409004	.014884	.519	.6036
JORCHAR	1.332158	.374816	.117825	3.554	.0004
(Constant)	25.267899	1.680119		15.039	.0000

***** MULTIPLE REGRESSION *****

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. UNITCOM
Beginning Block Number 1. Method: Enter WORKEXP JOBCHAR PERCHAR Q7

Variable(s) Entered on Step Number 1.. Q7 prserv
2.. WORKEXP

3.. PERCHAR
4.. JOBCHAR

Multiple R	.75140	Analysis of Variance	Df	Sum of Squares	Mean Square
R Square	.56459	Regression	4	39136.54185	9784.13546
Adjusted R Square	.56313	Residual	1187	38181.39184	25.42661
Standard Error	5.04248	F =	304.79899	Signif F =	.0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
Q7	.493287	.338537	.028899	1.457	.1454
WORKEXP	5.948877	.181331	.742378	32.758	.0000
PERCHAR	-1.118168	.298985	-.074432	-3.741	.0002
JOBCHAR	.448818	.273719	.037854	1.618	.1076
(Constant)	11.858185	1.223753		9.683	.0000

***** MULTIPLE REGRESSION *****

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. AFCON

Beginning Block Number 1. Method: Enter WORKEXP JOBCHAR PERCHAR Q6

Variable(s) Entered on Step Number 1.. Q6
2.. JOBCHAR
3.. PERCHAR
4.. WORKEXP
Jobtype NON TECHNICAL

Multiple R .31464
R Square .09988
Adjusted R Square .09593
Standard Error 6.88185

Analysis of Variance
Regression 4
Residual 1176
Sum of Squares 6119.63196
55695.15089
Mean Square 1629.90799
47.35983
F = 32.38377 Signif F = .0000

Variables in the Equation				
Variable	B	SE B	Beta	t Sig t
Q6	1.614566	.416948	.118324	3.872 .0001
JOBCHAR	.988113	.379522	.000355	2.393 .0169
PERCHAR	.578686	.414886	.048491	1.395 .1633
WORKEXP	1.828783	.258925	.239588	7.256 .0000
(Constant)	24.687661	1.787925		14.455 .0000

***** MULTIPLE REGRESSION *****

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. UNITCOM

Beginning Block Number 1. Method: Enter WORKEXP JOBCHAR PERCHAR Q6

Variable(s) Entered on Step Number 1.. Q6 Jobtype NON-TECHNICAL
2.. JOBCHAR

3.. PERCHAR
4.. WORKEXP

Multiple R	.75238	Analysis of Variance	DF	Sum of Squares	Mean Square
R Square	.56596	Regression	4	39238.14955	9809.53739
Adjusted R Square	.56449	Residual	1186	30892.62291	25.37321
Standard Error	5.03718	F =	386.61008	Signif F =	.0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig	1
Q6	.688731	.384442	.844576	2.262	.0239	
JOBCHAR	.284146	.276628	.023882	1.027	.3045	
PERCHAR	-.987164	.382478	-.865572	-3.264	.0011	
WORKEXP	6.016208	.182828	.751856	32.908	.0000	
(Constant)	11.542433	1.248886		9.302	.0000	

***** MULTIPLE REGRESSION *****

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. AFCON

Beginning Block Number 1. Method: Enter WORKEXP JOBCHAR PERCHAR Q6

Variable(s) Entered on Step Number 1.. Q6 Jobtype PROFESSIONAL
2.. WORKEXP
3.. PERCHAR
4.. JOBCHAR

Multiple R .38829
R Square .09584
Adjusted R Square .09196
Standard Error 6.89694

Analysis of Variance
Regression 4 5875.82786
Residual 1176 55939.76388

Sum of Squares
1468.75596
47.56783

F = 38.87711 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig
Q6	-1.388117	.415566	-.099315	-3.129	.0018
WORKEXP	1.797379	.251586	.236511	7.144	.0000
PERCHAR	.518353	.415295	.036270	1.248	.2122
JOBCHAR	.949758	.388883	.084848	2.494	.0128
(Constant)	26.237873	1.698792		15.518	.0000

***** MULTIPLE REGRESSION *****

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. UNITCOM

Beginning Block Number 1. Method: Enter WORKEXP JOBCHAR PERCHAR Q6

Variable(s) Entered on Step Number 1.. Q6 Jobtype PROFESSIONAL

2.. WORKEXP
3.. PERCHAR
4.. JOBCHAR

Multiple R .75191
R Square .56537
Adjusted R Square .56398
Standard Error 5.84858

Analysis of Variance
Regression 4
Residual 1186
Sum of Squares 39197.56136
38133.21118

Mean Square
9799.39034
25.48743

F = 385.68996 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
Q6	-.567769	.302902	-.836954	-1.874	.0611
WORKEXP	6.807212	.183022	.750732	32.822	.0000
PERCHAR	-1.810725	.302315	-.867137	-3.343	.0009
JOBCHAR	.308186	.277139	.025224	1.083	.2791
(Constant)	12.285982	1.227891		9.947	.0000

***** MULTIPLE REGRESSION *****

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. AFCON

Beginning Block Number 1. Method: Enter WORKEXP JOBCHAR PERCHAR Q13

Variable(s) Entered on Step Number

1..	Q13	Intstay
2..	PERCHAR	
3..	WORKEXP	
4..	JOBCHAR	

Multiple R	.47866	Analysis of Variance	DF	Sum of Squares	Mean Square
R Square	.22911	Regression	4	14184.86816	3546.81454
Adjusted R Square	.22649	Residual	1178	47724.74657	40.51337
Standard Error	6.36581	F =	87.52783	Signif F =	.0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
Q13	5.697764	.387635	.393219	14.699	.0000
PERCHAR	-.444943	.381463	-.031175	-1.166	.2437
WORKEXP	1.139802	.232641	.149898	4.899	.0000
JOBCHAR	.868599	.346898	.076118	2.487	.0138
(Constant)	29.157828	1.578459		18.566	.0000

***** MULTIPLE REGRESSION *****

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. UNITCOM

Beginning Block Number 1. Method: Enter WORKEXP JOBCHAR PERCHAR Q13

Variable(s) Entered on Step Number 1.. Q13 Intslay
2.. PERCHAR

3.. WORKEXP
4.. JOBCHAR

Multiple R .75625
R Square .57192
Adjusted R Square .57047
Standard Error 4.99995

Analysis of Variance
Regression 4
Residual 1108
Sum of Squares 39678.17468
29699.43303
F = 396.78932 Signif F = .0000

Mean Square
9919.54367
24.99952

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
Q13	1.421210	.302607	.093069	4.697	.0000
PERCHAR	-1.276923	.298307	-.084969	-4.281	.0000
WORKEXP	5.020532	.181839	.727255	32.009	.0000
JOBCHAR	.329874	.270458	.027725	1.220	.2228
(Constant)	12.768797	1.223416		10.437	.0000

Appendix E: Survey Instrument

AUSCN: 86-13

Expires: 9 Apr 87

This survey is in two parts. Part one is a short series of demographic questions and part two contains opinion/attitude questions. Mark your answer to each question on both this questionnaire and the optical scan sheet. Darken the spaces on the enclosed optical scan sheet using a number 2 pencil. After completing the survey and the scan sheet, please mail both items back in the enclosed preaddressed envelope.

MARK THE ONE ANSWER TO EACH QUESTION THAT BEST DESCRIBES YOU.

1. How old are you?

- [1] 22 or younger
- [2] 23
- [3] 24
- [4] 25 to 30
- [5] over 30

2. What is your sex?

- [1] male
- [2] female

3. What is your education level (indicate highest level completed)?

- [1] College degree (B.A., B.S., or other Bachelor's degree)
- [2] College degree plus some graduate studies
- [3] Masters degree
- [4] Master's degree plus additional graduate studies
- [5] Ph.D. or equivalent

4. What is your present rank?

- [1] Second lieutenant
- [2] First lieutenant
- [3] Captain
- [4] Major
- [5] Lieutenant Colonel

5. How many years of active commissioned service do you have?

- [1] less than 1 year
- [2] 1 but less than 2 years
- [3] 2 but less than 3 years
- [4] 3 but less than 4 years
- [5] 4 but less than 5 years
- [6] 5 but less than 6 years
- [7] 6 but less than 7 years
- [8] 7 but less than 8 years
- [9] 8 but less than 10 years
- [10] 10 years or more

6. What is your primary AFSC ?

- [1] 02, 05, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 51
- [2] 25, 26, 28, 55, 57, 87, 88, 89, 91, 92, 93, 94, 95, 96, 97, 98, 99
- [3] 27, 29, 30, 31, 40, 60, 62, 64, 65, 66, 67, 69, 70, 73, 74, 75, 79, 80, 81, 82, 90
- [4] None of the above

7. How many years of prior enlisted time did you serve?

- [1] No prior enlisted time
- [2] 0 to less than 2 years
- [3] 2 to less than 4 years
- [4] 4 to less than 8 years
- [5] 8 years or more

8. How long have you been a member of your current squadron or unit of assignment?

- [1] less than 6 months
- [2] 6 months but less than 1 year
- [3] 1 year but less than 2 years
- [4] 2 years but less than 3 years
- [5] 3 years or more

9. How long have you been in your present job?

- [1] less than 3 months
- [2] 3 months but less than 6 months
- [3] 6 months but less than 1 year
- [4] 1 year but less than 2 years
- [5] 2 years but less than 3 years
- [6] 3 years or more

10. How many different jobs have you held since being assigned to your current organization?

- [1] one
- [2] two
- [3] three
- [4] four
- [5] five or more

11. Since commissioning, and not counting basic and technical training, to how many different units have you been assigned?

- [1] one
- [2] two
- [3] three
- [4] four
- [5] five or more

12. How many people do you supervise in your current job?

- [1] none
- [2] 1 to 5 people
- [3] 6 to 20 people
- [4] more than 20 people

13. Do you intend to stay in the Air Force beyond your present commitment?

- [1] Yes
- [2] Undecided
- [3] No, I am separating
- [4] No, I am retiring
- [5] No, I would get out today if I could

14. If you suddenly inherited a million dollars, would it affect your decision about staying in the Air Force?
- [1] Yes
 - [2] No
15. Is your present job a major factor in your decision to stay in or separate from the Air Force?
- [1] Yes
 - [2] No
16. Do your parents or grandparents have a history of career military service?
- [1] Yes
 - [2] No
17. In what part of the country did you spend the majority of your life before entering the service?
- [1] New England
 - [2] Middle Atlantic States
 - [3] South East
 - [4] South Central States
 - [5] Midwest
 - [6] Central Plains
 - [7] Rocky Mountain States
 - [8] West Coast
 - [9] None of the above
18. Have you completed Squadron Officer's School?
- [1] Yes, by correspondence
 - [2] Yes, in residence
 - [3] Yes, by correspondence and in residence
 - [4] No

PLEASE INDICATE THE EXTENT TO WHICH YOU AGREE OR DISAGREE WITH THE STATEMENT OR CONCEPT PRESENTED IN EACH ITEM BY USING THE FOLLOWING SCALE:

STRONGLY		SLIGHTLY	SLIGHTLY		STRONGLY
DISAGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

REMEMBER TO MARK YOUR ANSWER ON BOTH THIS SURVEY AND ON THE OPTICAL SCAN SHEET.

19. All things considered, I am generally satisfied with my current job.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

20. I am confident that I could find a civilian job with about the same pay and benefits I have now.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

21. The pay and benefits I receive are not among the most attractive features of my job.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

22. Considering the time I have spent on the job, I feel thoroughly familiar with my tasks.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

23. I take moderate risks and stick my neck out to get ahead at work.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

24. When I have a choice, I try to work in a group instead of by myself.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

25. I am usually allowed to participate in decisions affecting my job.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

STRONGLY DISAGREE	DISAGREE	SLIGHTLY DISAGREE	SLIGHTLY AGREE	AGREE	STRONGLY AGREE
----------------------	----------	----------------------	-------------------	-------	-------------------

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

26. I try to gain more control over the events around me at work.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

27. My boss seldom asks for my opinions and thoughts on decisions affecting my work.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

28. I feel personally responsible for the work I do on my job.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

29. I have a great deal of freedom in deciding how my job gets done.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

30. My boss closely monitors my job performance.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

31. On my job, I know exactly what is expected of me.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

32. To satisfy some people on my job, I have to upset others.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

33. My job requires me to do different things at work, using a variety of skills and talents.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

STRONGLY DISAGREE	DISAGREE	SLIGHTLY DISAGREE	SLIGHTLY AGREE	AGREE	STRONGLY AGREE
----------------------	----------	----------------------	-------------------	-------	-------------------

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

34. My boss gives me frequent feedback about how well I am doing on my job.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

35. In addition to feedback from my boss or coworkers, the type of work I do provides me with clues about how well I am doing.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

36. The work I do is likely to significantly affect the lives or well being of other people.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

37. To be successful in my job requires all my skill and ability.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

38. On my job I produce a whole product or perform a complete service.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

39. I depend directly on the work of other sections in my organization in order to get my work done.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

40. People in other sections of my organization need my assistance to get their work done.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

41. I frequently socialize with other officers from my squadron during off duty hours.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

STRONGLY DISAGREE	DISAGREE	SLIGHTLY DISAGREE	SLIGHTLY AGREE	AGREE	STRONGLY AGREE
----------------------	----------	----------------------	-------------------	-------	-------------------

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

42. All officers have an obligation to attend squadron social functions.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

43. Most of my friends are not people I work with.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

44. The people I work with express mostly positive attitudes toward our organization.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

45. This organization usually does the things it said it would do for me.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

46. It is generally accepted by those above me that my work is important to this organization.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

47. I have found what I expected since coming to work for this organization.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

48. I am willing to put in a great deal of effort beyond that normally expected to help this organization be successful.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

49. I talk up this organization to my friends as a great organization to work for.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

STRONGLY DISAGREE	DISAGREE	SLIGHTLY DISAGREE	SLIGHTLY AGREE	AGREE	STRONGLY AGREE
----------------------	----------	----------------------	-------------------	-------	-------------------

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

50. I would accept almost any type of job assignment in order to keep working for this organization.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

51. I find that my values and this organization's values are not very similar.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

52. I am proud to tell others that I am part of this organization.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

53. I would prefer working for a different organization as long as the type of work was similar.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

54. This organization really inspires my very best job performance.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

55. I often find it difficult to agree with this organization's policies on important matters relating to its members.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

56. I think this is the best of all possible organizations I could work for.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

THE FOLLOWING ARE A SERIES OF STATEMENTS THAT REPRESENT POSSIBLE FEELINGS THAT INDIVIDUALS MIGHT HAVE ABOUT THE AIR FORCE IN GENERAL. WITH RESPECT TO YOUR OWN FEELINGS ABOUT THE AIR FORCE, PLEASE INDICATE THE EXTENT TO WHICH YOU AGREE OR DISAGREE WITH EACH STATEMENT.

STRONGLY		SLIGHTLY	SLIGHTLY		STRONGLY
DISAGREE	DISAGREE	DISAGREE	AGREE	AGREE	AGREE

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

57. I am willing to put in a great deal of effort beyond that normally expected to help the Air Force be successful.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

58. I talk up the Air Force to my friends as a great organization to work for.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

59. I would accept almost any type of job assignment in order to keep working for the Air Force.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

60. I find that my values and the Air Force's values are not very similar.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

61. I am proud to tell others that I am part of the Air Force.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

62. I would prefer working in any organization besides the Air Force as long as the type of work was similar.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

63. The Air Force really inspires my very best job performance.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

64. I often find it difficult to agree with the Air Force's policies on important matters relating to its members.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

65. I think the Air Force is the best of all possible organizations I could work for.

[1]-----[2]-----[3]-----[4]-----[5]-----[6]

PLEASE PLACE BOTH THIS SURVEY AND YOUR COMPLETED OPTICAL SCAN SHEET IN THE PREADDRESSED ENVELOPE AND PLACE INTO THE MAIL.

THANK YOU FOR YOUR PROMPT RESPONSE.
YOUR INPUT IS IMPORTANT TO THIS RESEARCH EFFORT.

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Vita

First Lieutenant Steven B. Reynolds was born on March 12, 1957, in Hamilton! Ohio. He was graduated from high school in Louisville, Kentucky, in May 1975, and enlisted in the United States Air Force. While on active duty, he obtained an Associate's of Arts Degree in Mathematics from Louisiana Tech University and a Bachelor's of Science Degree in Industrial Technology from Southern Illinois University. In September 1982, he was selected for Officer Training School and was commissioned in June 1983. He served as the Chief of the Supply Division for the 26th Air Division (1st Air Force), March Air Force Base California from August 1983 until entering the School of Systems and Logistics, Air Force Institute of Technology, in May 1985.

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REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED			1b. RESTRICTIVE MARKINGS						
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited.						
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			5. MONITORING ORGANIZATION REPORT NUMBER(S)						
4. PERFORMING ORGANIZATION REPORT NUMBER(S) AFIT/GLM/LSB/86S-67			7a. NAME OF MONITORING ORGANIZATION						
6a. NAME OF PERFORMING ORGANIZATION School of Systems and Logistics		6b. OFFICE SYMBOL (If applicable) AFIT/GLM	7b. ADDRESS (City, State and ZIP Code)						
6c. ADDRESS (City, State and ZIP Code) Air Force Institute of Technology Wright-Patterson AFB, Ohio 45433-6583			9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER						
8a. NAME OF FUNDING/SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (If applicable)	10. SOURCE OF FUNDING NOS.						
8c. ADDRESS (City, State and ZIP Code)		<table border="1"> <tr> <td>PROGRAM ELEMENT NO.</td> <td>PROJECT NO.</td> <td>TASK NO.</td> <td>WORK UNIT NO.</td> </tr> </table>				PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.	WORK UNIT NO.
PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.	WORK UNIT NO.						
11. TITLE (Include Security Classification) See Box 19									
12. PERSONAL AUTHOR(S) Steven B. Reynolds, B.S., First Lieutenant, USAF									
13a. TYPE OF REPORT MS Thesis		13b. TIME COVERED FROM _____ TO _____		14. DATE OF REPORT (Yr., Mo., Day) 86 September					
15. PAGE COUNT 140									
16. SUPPLEMENTARY NOTATION									
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)						
FIELD 05	GROUP 10	SUB. GR.	Organizational Commitment, Commitment Attitudes, Commitment Model, Air Force First and Second Lieutenants, Career Intentions						
19. ABSTRACT (Continue on reverse if necessary and identify by block number)									
Title: DUAL LEVEL STUDY OF ORGANIZATIONAL COMMITMENT AND ITS RELATIONSHIP WITH INTENTIONS TO REMAIN IN SERVICE Thesis Chairman: James T. Lindsey, Lieutenant Colonel, USAF Assistant Professor of Organizational Behavior and Management Approved for public release. IAW AFR 100-17. <i>[Signature]</i> 29 Sep 86 E. WOLVER Dir. for Research and Professional Development Air Force Institute of Technology (AFIT) Wright-Patterson AFB OH 45433									
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT. ☐ DTIC USERS ☐			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED						
22a. NAME OF RESPONSIBLE INDIVIDUAL James T. Lindsey, Lt Col, USAF			22b. TELEPHONE NUMBER (Include Area Code) 513-255-4529		22c. OFFICE SYMBOL AFIT/LSB				

This study was undertaken to determine to what extent differences existed in the micro and macro organizational commitment attitudes of Air Force lieutenants. Organizational commitment attitudes have been shown to be significant factors in decisions to either stay in or leave organizations. Because of the importance of commitment in this regard, particular interest was given to investigating the strength of the relationship between the two commitment attitudes and the participant's stated intentions to remain in the Air Force beyond initial service obligations.

The study was conducted in two phases. The first portion of the study was concerned with the development and testing of an organizational commitment model. The results of the model analysis indicated that although the model was an excellent tool in explaining the variance in unit (micro) commitment, it was relatively weak in explaining the variance in Air Force (macro) commitment attitudes. The entry of several additional independent variables did little to enhance the utility of the model in this regard.

The second portion of the study compared the measures of unit level and Air Force commitment attitudes to determine (1) what relationships existed between the two, and (2) how these relationships changed when the sample was grouped by job type and years of service. The results of this investigation indicated that among Air Force lieutenants, there are significant differences in the magnitudes of commitment attitudes when officers are grouped based on the type of work performed. Additionally, the findings suggested that a negative trend in one of the commitment attitudes may contribute to a negative trend in the other.

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