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UNDERSTANDING ORGANIZATIONAL CLIMATE AND OUTCOMES IN THE MILITARY: KEYS TO THE FUTURE?

By

Charles George Capps

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ABSTRACT

UNDERSTANDING ORGANIZATIONAL CLIMATES AND OUTCOMES IN THE MILITARY: KEYS TO THE FUTURE?

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Soon after the conclusion of the Gulf War, the United States (U.S.) military no longer faced viable threats from the Middle East and the Soviet Union. Therefore, in 1992, the U.S. Congress mandated that the Department of Defense reduce the size of the military. Over the last eight years, military personnel were reduced by approximately twenty-five percent while the number of obligations supported by the U.S. military increased in number. The result is that there are fewer personnel to perform more missions. Concurrently, the military's recruiting and retention statistics are lower than at any time in the previous twenty years.

This dissertation addresses two very important issues facing senior military leaders: 1) performance and 2) people. The U.S. military cannot sacrifice quality in its fighting force. Defending our national interests and those of our allies are of utmost strategic importance. Therefore, the military must find a way to maximize its performance while creating a work environment that allows military members to improve their skills both personally and professionally. It is proposed that defining a "military organizational climate" and understanding how key variables that comprise the construct may facilitate positive organizational outcomes.

Organizational climate data were collected from 66 U.S. Air Force flying squadrons located around the world. Additionally, two operational performance measures, flying schedule effectiveness and mission capable rates were collected from

these squadrons. Analyses were conducted at the individual-, squadron-, and cross-levels to determine if organizational climate is linked to outcome measures in a military context.

The results indicate that organizational climate does have a predictive capability with members' job satisfaction and performance perceptions at each of the three levels. At the individual level (N=7029), leadership, training, teamwork and job characteristics are important in military members' perceptions of the dependent variables. Similarly, at the squadron-level (N=66), military members' job satisfaction can be predicted by the climate measures: training, supervision, resources, and job characteristics. Teamwork and job characteristics have the largest effects on perceptions of squadron-level performance. Finally, the cross-level analyses (N=7029) show squadron-level climate effects have an additional predictive capacity, over and above the individual-level effects, in members' job satisfaction and performance perceptions. Regression analyses failed to show a significant relationship between climate and the operational performance indices. However, job satisfaction and one of the flying metrics (flying schedule effectiveness) did reach statistical significance in a correlation analysis.

In summary, there is conclusive evidence that military climate does have an effect on organizational outcomes, most notably in members' affective responses to job satisfaction and performance perceptions. Limitations of this study and implications for future research, theory and practice are presented.

DEDICATION

To my daddy. I told you I'd get it one day and here it is. You can tell all the angels that your son has his Ph.D. If only you could be here to celebrate with Mom, Kay, Kacey-Morgan, Ross, and I. Then everything would be O.K. I miss you boy!

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My dissertation committee was fabulous. I won't forget "Smokin' Ed's question that kicked-off the dissertation defense meeting. Man! I thought they would give me a few warm-up questions before going for the juggler – NOT!. John learned that someone else has the corner on the market on climate consensus. I never did get on the same train with Rich about filling tires or getting up in the morning. But, we had fun. Overall, I owe most of my dissertation to the excellent guidance of my two good friends, Kevin and Mike. Kevin played traffic cop when I committed major statistical violations. Also, he encouraged, cajoled, and served as a confidant when I needed it most. The chair (Mike) played his role extremely well. I know that nursing me through this process was a task. However, Mike's kind way made me feel like I really could finish and to do it well. Mike, "Thank you!"

To the Slaters: WOW! You fed me, gave me a bed, provided a world-class iron, listened to me whine, laughed at my jokes, and rubbed a knot. Next time I do a dissertation, I know where I'm staying. Ken, I can't possibly thank you enough for the wisdom, walking, writing code, editing, and NOIR – I thank you for making a

stressful time as FUN as it could possible be. Donna, you really do run a good five-star hotel.

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Mom, you started telling me back in '92 that, "it won't be as long as it has been." It took a little longer than we all thought, but, it's done. You taught me to tackle mountains with confidence. I climbed this one and made it to the top, but, it was sure a long, tough haul. Thanks for giving me what it takes to not be afraid of challenges. I'm also grateful to Mr. and Mrs. Gillespie for support when my family needed it most.

Ross and Kacey, my Ph.D. and this dissertation have been hanging around for most of your life. I doubt you even remember when it WASN'T around. Well, let's give it a try and see how we do without it. I've got some catching-up to do and it's gonna be FUN. Both of you make me so proud. I love you.

The best is always saved for last. And I have the best. In fact, my best friend in the whole world is my wife. Kay-Kay, this has been an incredibly long road. You've been beside me every step and you allowed me to do it my way. I'm so, so, so, thankful that I have you. Your help in completing this document is forever etched in my mind. Your commas, periods, thats, rewrites, references, introduction, and love embedded in the entire manuscript. If only I could have your name next to mine in the diploma. You've certainly earned it. You deserve this degree as much as I do. I'm thinking it's time to put up a shelf or two. This chapter is closed. What's next?

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CHAPTER ONE

INTRODUCTION AND OVERVIEW

Importance of the Topic

The termination of the Gulf War in 1991 brought about sweeping changes in the force structure and fiscal strength of the United States (U.S.) military. No longer facing a potential war with the Soviet Union and with the defeat of Sadaam Hussein in the Middle East, congressional and military leaders began considering strategic changes in the Department of Defense's (DoD) number of military personnel and operating budget. Soon after our troops returned from the war with Iraq, the U.S. Congress issued several mandates aimed at reducing the military personnel end strength. At that time, there were 1,807,180 persons serving in the four DoD components: Air Force, Army, Navy and Marines (Military Personnel Statistics: Directorate for Information Operations and Reports, October 2000: [online]). Congress' plan was to reduce these numbers by approximately 25 percent over the next five years. Now, eight years later, the number of persons wearing a military uniform stands at 1,385,703 (Military Personnel Statistics: Directorate for Information Operations and Reports, October 2000: [online]). The current numbers reflect a 23 percent reduction from the military population in 1992. Thus, the right-sizing efforts closely approximated Congress' directives.

While these initiatives were "downward–directed" by the top echelon of leadership in this country, the same body of legislative forces allowed the mission of the military to increase. Actually, the DoD is currently, "doing more with fewer people." Not only does the military maintain a warfighting capability in the Middle East and in Europe, the forces are now being called upon frequently to perform counter terrorism,

peace keeping, and drug interdiction exercises.

Concurrently, the U.S. has witnessed a number of major socio-political changes in the last eight years. The economy grew increasingly stronger, unemployment rates steadily declined, and the era of the baby boomer generation meant there was a decrease in the number of families that have relatives who served in the military. Traditionally, the DoD has depended rather heavily upon these three contingencies as a source for ensuring the accomplishment of its annual recruiting goals. When the economy is suffering and jobs are difficult to find, the military serves as a viable alternative for employment. Also, the number of active-duty service personnel with family members who served previously has typically been very high over the years.

Yet, the number of new recruits is dwindling. During 1999, only one service component, the U.S. Army, reached its annual recruiting goals. In order to accomplish their objective, the Army reduced its entrance requirements for: 1) a high school or equivalency diploma and 2) entrance scores on the Armed Services Vocational Aptitude Battery (ASVAB). It is a very well known fact that, the services need more people. However, making concessions on accessions policies to ensure enough "bodies" are brought into basic military training may not be the best answer. The military must maintain a quality force.

An equally disturbing trend currently occurring in the military is the fact that the services are experiencing difficulties retaining active duty members, as well. High attrition rates are occurring among the first- and second-term enlisted members. These personnel comprise significant portions of the technical and mechanical specialties that support each of the military services. Officers, in the pilot, navigator, engineering, and scientific career fields, are opting-out of continuing to serve beyond their present

commitments.

The personnel reductions that occurred in the mid-1990s and the current attrition rates are taking their toll on the remaining workforce. In the Air Force, which is the focus of this dissertation, between 1998 and 1999, over 1,600 officers and 5,400 enlisted personnel left the service (Interactive Demographic Analysis System: Air Force Personnel Center, [online]). These numbers are much higher than the expected attrition rate. There simply are not enough people, including active duty, reserve, guard, and civilians, to accomplish ever-increasing military areas of responsibility. Moreover, there does not appear to be any major initiatives aimed at, "*doing less with less.*" Senior military leaders must begin looking for ways to continue meeting their missions, and doing them well, with fewer personnel.

The proposed topic for study is: What are the key factors that contribute to performance in military work environments? Obviously, military members have little impact on the social, economic, and political influences that often times capriciously dictate where their work will be located and what they will be doing when they get there. However, there is a key leverage point over which there is some control, the climate of the organization. Thus, there are two areas that should be of critical importance to the U.S. military: people and performance.

McGregor (1967) stated, "the performance (P) of an individual at work in an industrial organization is a function of certain characteristics of the individual (I), including his knowledge, skills, motivation, attitudes, and certain aspects of the environmental situation (E), including the nature of his job, the rewards associated with his performance and the leadership provided him $\{P = f(I_{a,b,c,d,\ldots} E_{m,n,o,p})\}$" (p.5). The performance of the industrial organization is dependent upon the collective

performances (activities) of the individuals who comprise that organization. An accepted methodology for capturing the $P = f(I_{a,b,c,d,...} E_{m,n,o,p})$ dynamic is through the assessment of organizational climate.

Over the past eight years, climate surveys have become an annual event for the entire U.S. Air Force. In 1996, approximately 130,000 military and civilian Air Force members were administered some form of a climate survey. Then in 1997, the Chief of Staff of the Air Force stopped the practice of multiple, independent surveys and stated that he wanted only one survey to assess organizational climate and quality of life issues. Over 216,000 Air Force personnel (39%) voluntarily participated in that survey. The same survey was administered again in 1999, when approximately 209,000 Air Force personnel (36%) volunteered to participate. The intended goal of these organizational assessments was to provide senior leaders and commanders with valuable information about their organizations. In turn, the data were supposed to show where strengths and weaknesses in Air Force organizations (squadrons) existed. Ultimately, commanders and senior leaders were expected to use the data to improve areas over which they had some means for directing changes.

While the climate results were provided in a timely manner, and presented very rich, actionable information, consultation with trained organizational development (OD) personnel was almost non-existent. The biggest contributor to this void is the fact, the Air Force simply does not have OD practitioners located at every Air Force installation. Thousands of Air Force personnel are trained in group facilitation, problem solving and teamwork principles. However, very few actually have the credentials to use the organizational climate results to design organization-wide interventions. Most of the Air Force OD professionals work as faculty members at the military service academies,

have key staff positions at the Pentagon, or are assigned commander duties at various installations around the world. None of these assignments afford the officers and civilians who have these skills, the opportunity to work as consultants for extended periods of time.

Another key contributor to the lack of interventions is the fact, climate results are not highly regarded as valid and actionable. The general impression is fairly bland and if the results do not match the impressions commanders have for their various organizations, the information is often dismissed as insignificant. Born and Mathieu (1996) addressed the apathy some leaders feel toward a survey-guided feedback approach (Beer, 1980; Lawler, Nadler, & Cammann, 1980; and Bowers & Franklin, 1977). Their results highlighted the ways in which climate survey information is typically treated in a military organization. They found, the most common "users" of survey results were those who received the highest scores at an intervention's inception. A one-year follow-up survey revealed that the "users" were also the ones who had created significant positive changes in their work environment. Conversely, those who received negative feedback from the first survey failed to use the data to enact changes. In fact, the "non-users" received lower scores on the follow-up survey.

Weiner (1974, 1986) proposed that attributions (cognitive evaluations of outcomes) influence future behavior. Attributions are formed by three cognitive assessments: 1) locus of causality (internal or external); 2) stability of outcomes (long or short term); and 3) controllability (volitional) (Kanfer, 1990). Hence, one plausible explanation for Born and Matheiu's findings is related to "fundamental attribution error." This theory asserts that each of the three factors contribute to the ways in which we perceive our environment. In the present example, perhaps, the commanders who

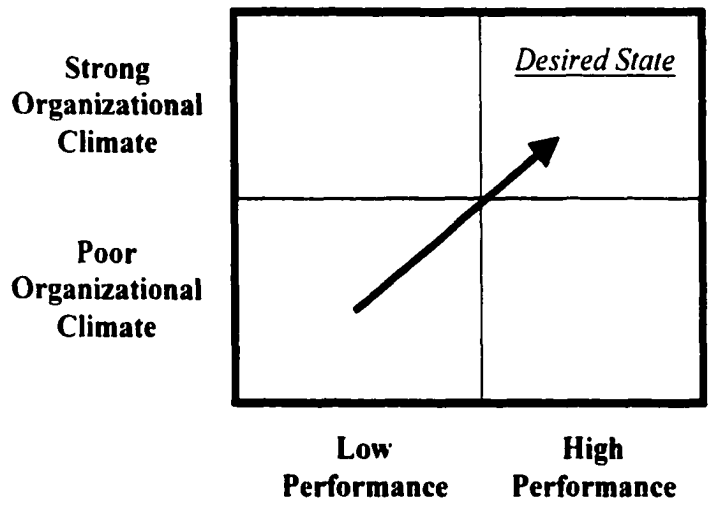
received positive feedback from the initial climate survey saw themselves as an action agent (locus of control) with the ability and willingness (volitional) to make positive changes to the climate in the squadrons (short term stability of outcomes). Conversely, "non-users" may have believed less in their ability to create positive changes or perhaps they deflected accountability by rationalizing that the results were beyond their control. The major point is that commanders, who already had positive work climates, used the results to continue to improve dynamics over which they had control. Those who needed to make the most changes, typically did nothing with the survey results. Over time, continuing to work in a negative work environment has a detrimental effect on individuals. This study did not have the capability to assess the empirical relationship between a military climate and turnover intentions. However, the literature review in Chapter Two highlights the fact that workers intentions to leave an organization may be predicted by their satisfaction with the work environment.

Commanders often voice their concerns about multiple competing priorities. Because they are charged with preparing personnel, supplies, services, and weapon systems for wartime contingencies, many commanders feel as though attention to "organizational climate" is a low priority. A potential antecedent to the apathy might be the fact that commanders are not typically held accountable for the "people-half of the equation." Instead they are evaluated on their abilities to fight wars, train for battles, and support contingencies.

Therein lies the importance of this study. The theoretical basis for asserting that climate is related to organizational outcomes is well documented in Chapter Two. A very important criterion for making climate a strategic piece of information is to show commanders how understanding and using these dynamics to their advantage can

actually help them achieve their missions. Figure 1.1 graphically demonstrates these dynamics:

Figure 1.1: Maximizing Organizational Climate and Performance



In the U.S. Air Force, there is no more important mission than launching airplanes. Therefore, the present study is focused in an operational flying environment that performs two basic missions: fighting wars and supporting the warfighter. Warfighting squadrons actually go to war; whereas, those who support the warfighters carry cargo and personnel, and provide surveillance information for their counterparts.

Finally, this study affords a unique opportunity to assess organizational dynamics at multiple levels: 1) individual- (psychological) level; 2) organizational- (squadron) level; and 3) cross-level. While the literature and theory are well articulated for the individual and organizational levels, the literature describing cross-level dynamics is rather sparse. Thus, this study will serve to advance the knowledge base in the cross-level academic arena. The next section introduces the concept of climate and

outcomes in a military environment.

Climate and Outcomes in a Military Context

Before discussing climate in a military context, it is first important to recognize that in today's literature, "organizational climate" and "organizational culture" have become almost synonymous. Denison (1996) provided a review of the two literatures. Although the two constructs initially appeared in the literature as distinct, over the last thirty years, researchers in both camps have used each other's toolkits to conduct their studies. Denison stated, "the analysis (in this article) has led me to conclude that these two research traditions should be viewed as differences in *interpretation* rather than differences in the *phenomenon*" (p. 645).

While recognizing differences may exist, for the purposes of this dissertation, the two terms, "climate" and "culture," shall be considered the same. Moreover, climate will be defined as, "the shared perceptions of organizational policies, practices, and procedures, both formal and informal" (Reichers & Schneider, 1990). Inherent in this definition is a recognition that perceptions initiate at the individual level. Moreover, the notion that these perceptions are *shared* connotes they are consensual and form the basis for collective response tendencies from the individuals who comprise an organization (Kozlowski and Hults, 1987).

Climate is generally accepted as a multi-dimensional construct that can be defined at the individual or "psychological level" (James and Jones, 1974), and at the organizational level (Ashforth, 1985; Glick, 1985; and Reichers, 1987). Outcomes are considered to organizational measures of success that may be quantifiable (efficiency/effectiveness) or affective (emotional/perceptual) in nature. Organizational

climate studies have been conducted in a large number of environments. Numerous studies attempted to determine "climates" that were specific to an industry or a commercial setting. Notable efforts addressed the following environments: safety (Zohar, 1970); retail (Burke, Borucki, and Hurley, 1992; Wiley, 1991); technical updating (Kozlowski and Hults, 1987); banking/financial management (Parkington and Schneider, 1979; Schneider, Parkington, and Buxton, 1980; Schneider and Bowen, 1985); and schools (Ostroff; 1992, 1993).

James and Jones (1980) attempted to validate the construct of "psychological climate" while collecting data aboard a U.S. Navy ship. Rousseau and Cooke (1988) and Roberts, Rousseau, and La Porte (1994) published culture analyses that described dynamics for high reliability organizations. Although they conducted their studies onboard nuclear aircraft carriers in the U.S. Navy, their emphasis was on describing processes that facilitate: 1) process reliability and 2) performance at high tempo for extended periods of time. Their emphasis was not on describing a military climate. Finally, Born and Mathieu (1996) published a study that included organizational climate data from a U.S. Air Force installation in the Northeast. Their focus was on describing an OD process that included a pre-survey, an OD intervention, and a follow-up survey. Born and Mathieu were not focused on defining the specific dimensions that compose a military climate.

As discussed earlier, climate is an organizational dimension over which there is some leverage. Therefore in order for Air Force leaders to understand organizational climate, the dimensions must be clearly articulated and leaders should have a clear understanding of how it affects behavior and perceptions in an Air Force organization. In the present context, performance is the critical link to getting leaders to pay attention

to organizational climate. No study has specifically addressed organizational climate in a military setting with the purpose of instantiating a set of constructs that may be used as the basis for organizational improvement. Therefore, this dissertation will attempt to: 1) validate the construct, "military climate" and 2) demonstrate that climate does have an affect on outcomes at various levels of the U.S. Air Force "organization."

Description of Chapters in the Dissertation

This section provides a brief overview of the chapters in this manuscript.

Chapter 2: Literature Review

This chapter reviews the literature that guided the formulation of this study. The review begins with a look at climate in its early stages of discussion, with particular emphasis on several seminal works. Then, the discussion changes to information regarding climate at the individual-, organizational-, and cross- levels. Hypotheses that support the ideas in this study are presented, as well.

Chapter 3: Research Methodology

Chapter Three addresses the where, how, who, and what of this dissertation. The first half of the chapter describes the sites used in data collection, the methodology for collecting data, and the sample of subjects. The last half of the chapter provides a thorough discussion of the key variables used in this study and the data analysis procedures used to arrive at the results.

Chapter 4: Results

The outputs from the data analyses are summarized in Chapter Four. Specifically, tables from the factor, correlation, and regression analyses are displayed. Also, the statistical findings are interpreted for the hypotheses at the individual-,

organizational-, and cross- levels.

Chapter 5: Discussion

Chapter Five presents a summary of the findings that were presented in Chapter Four. In addition, limitations of the study, implications for future research, and implications for practice are listed.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The purpose of this chapter is to present a review of the literature that serves as the theoretical basis for the present study. The organizational climate topic has a rich history in the academic study of work environments. First, the seminal research is presented in a chronological fashion to demonstrate how the topic of organizational climate matured from the mid-1960s to the mid-1980s. Next, the sections are divided into the key areas of research that are traditionally associated with understanding organizational climate and outcomes: individual-, organizational-, and cross-levels. The hypotheses that guide this dissertation are presented within each subsection.

Historical Perspective of Climate

The term, "climate," initially appeared in academic circles as a summary term that referred to a generalized condition in an environment where people interact. Actually, the term went undefined for approximately 25 years, even though it was used in several seminal articles. Little attention was initially devoted to understanding the variables and levels (individual and organizational) that might comprise the construct (Reichers & Schneider, 1990).

Lewin, Lippitt, and White (1939) first used the term "social climates" to refer to differing treatment groups in an experimental study designed to assess group behavior. Ten-year-old boys were assigned to autocratic, democratic, and laissez-fair group leaders. The authors were primarily interested in evaluating leadership styles and how

the dynamics associated with each approach may affect aggressive behavior in adolescent boys. The questions of interest, albeit of a social psychology nature, were amazingly similar to phenomena in contemporary management literature. Here are the issues that were of interest to Lewin, Lippitt, and White): "1) What underlies such differing patterns of group behavior as rebellion against authority, persecution of a scapegoat, apathetic submissiveness to authoritarian domination, or attack upon an out group? 2) How many differences in subgroup structure, group stratification, and potency of ego-centered and group-centered goals can be utilized as criteria for predicting the social resultants of different group atmospheres? and 3) Is not democratic group life more pleasant, but authoritarianism more efficient? (p. 271)."

Since the goal of the study was to look at how leadership styles may create differing "social climates," the adolescent boys were assigned to the same leader for six weeks and then they were moved to another group leader who portrayed a different style of leadership. Lewin, Lippitt, and White found that autocratic climates produced either aggressive or apathetic behavior in the boys. They indicated that the key to the boys' behavior rested in the behaviors modeled by the overly assertive leaders. Conversely, the boys' apathetic behavior was explained as the result of them repressing their aggressiveness due primarily to fear of their autocratic leader. Democratic and laissez-faire leaders were better liked than the autocratic leaders.

Lewin (1951) regarded the climate or atmosphere of the psychological field as a characterization of salient environmental stimuli and an important determinant of motivation and behavior (cited in Kozlowski & Doherty, 1989). *Climate* was conceived as the key functional link between the person and the environment. In, The Human Side of Enterprise, Douglas McGregor (1960) devoted an entire chapter to what he

called. *The Managerial Climate*. McGregor believed employees' behavior was more than a function of the leader's style or the leader's personality characteristics. He stated that a great deal of what employees experience at work is due to the "psychological climate" created by the managerial attitudes. Employees' abilities to accomplish their goals are highly dependent upon the attitudes and perceptions of their superiors. Bosses form impressions about their subordinates and it is these perceptions that create the climate in which the working relationship occurs. Both the supervisor and the employee are aware of these dynamics and learn to respond appropriately. Thus, the climate actually becomes more important than the style of the manager. McGregor said, "The boss can be autocratic or democratic, warm and outgoing, or remote and introverted, easy or tough, but these personal characteristics are of less significance than the deeper attitudes to which his subordinates respond" (p. 134).

McGregor cited additional characteristics of the managerial climate such as: trust, the expectation of fairness, and competence as key contributors to subordinates' perceptions of their work environment. Finally, the author stated that the relationship workers establish with their managers effectively determines their happiness at work, because it is through the superior-subordinate communication that they are able to determine whether or not their personal needs are being met. McGregor believed that formal polices, programs, and procedures are interpreted through employees' perceptions of the managerial climate. In fact, he perceived the managerial climate to be of far more importance than the "machinery" of the administration (p. 144).

Additional studies in the early 1960s used the term "climate," to differentiate decentralized vs. centralized authority (Morse and Reimer, 1961), open vs. closed systems (Barnes, 1960), and unstructured vs. structured environments (Leavitt, 1962).

Then in 1964, Forehand and Gilmer offered the first operational definition of the term, "organizational climate." Stating that some researchers have only alluded to the term, they noted there was little consensus about what to call the phenomena (organizational characteristics) that produce differences in organizational personalities. Hence, they offered the following definition for organizational climate: "the set of characteristics that describe an organization and that a) distinguish the organization from other organizations, b) are relatively enduring over time, and c) influence the behavior of people in the organization" (p. 362). They further stated that these organizational properties were chosen in an effort to focus discussion upon features of organizational variation that are amenable to specification, measurement, and incorporation into empirical research.

Forehand and Gilmer (1964) stated that individual perceptions are an appropriate mechanism by which climate can be studied. They cited Likert's (1961), "interaction-influence proposition" and quoted his discussion.

> Organizational structure and the behavior of managers and superiors, impinge upon the personalities of the organization. These two, the causal variables and the personalities interact and determine the perceptions. Thus, each member's perception of the behavior of his superior is determined by both the character of this behavior and by the personality of the member. The individual's perceptions then lead to cognitive orientation. This refers to dimensions of the individual's intellectual understanding: his concept of his job, what he thinks he is supposed to do and how he is supposed to do it and his concept of the organization and its objectives (pp. 197-198).

Until this point, the majority of data collected during organizational research were primarily based upon "observations" of behavior in the work setting. Observers catalogued workers', supervisors', managers', and leaders' behavior according to protocols. However, as Forehand and Gilmer (1964) noted, assessing climate through

workers' perceptions increases the likelihood of fidelity. These perceptions are "based upon experience that is both more extensive and more involved than that of an outside observer" (p. 364).

Over the course of the next ten years, climate researchers invested heavily in attempting to identify the dimensions of climate that tended to distinguish one organization from another. Largely through field studies and laboratory experiments, Sells (1963); Woodward (1965); Hall, Haas, and Johnson (1967); Lawrence and Lorsch (1967); Indik (1968); and Pugh, Hickson, Hinings, and Turner (1969) are credited with spearheading the development of a taxonomy of climate factors that described organizational contexts and structures. Then, in 1970, Campbell, Dunnette, Lawler, and Weick compiled the first synthesis of organizational climate research. In their review, they cited four common climate factors drawn from the following works: Kahn, Wolfe, Quinn, Snoeck, & Rosenthal (1964); Litwin & Stringer (1968); Schneider & Bartlett, 1968). The list included: 1) Individual Autonomy; 2) Degree of Structure Imposed upon the Position; 3) Reward Orientation; and 4) Consideration, Warmth, and Support. Campbell, et al. (1970) stated that organizational climate was a psychological process that is determined by differing situations. Also, they proposed that the four climate variables might be causative or serve as moderators for workers' perceptions of their work environment.

Schneider and Bartlett (1968, 1970) were interested in the extent to which individuals' climate expectations and preferences, when compared to organizational climate realities could be used to predict the probability of success for life insurance agents. Their research included six measures of life insurance climate: 1) Managerial Support; 2) Managerial Structure; 3) Concern for New Employees; 4) Intra-agency

Conflict; 5) Agent Independence; and 6) General Satisfaction. Similarly, Campbell and Beaty (1971) studied salaried personnel in a manufacturing plant. Their research produced seven climate dimensions that were consistent at both the work group and at the organizational levels: 1) Task Structure; 2) Reward/Recognition; 3) Decision Centralization; 4) Achievement Emphasis; 5) Security vs. Risk; 6) Training and Development Emphasis; and 7) Openness vs. Defensiveness.

As the list of climate variables increased, the literature began to focus on the appropriate genesis for climate perceptions. Researchers began discussing the merits of whether climate perceptions were based primarily on workers' cognitive representation of environmental events, or based on organizational events and characteristics. Actually, organizational climate was seen as a summary perception that was the result of both individual and organizational characteristics. Actions and processes occurring in the work environment were interpreted through the experiences, values, levels of satisfaction, and personality characteristics of the individual. Thus, work situations could produce entirely different perspectives based upon the individuals' cognitive schemas.

This theme began to emerge in the literature. Schneider and Hall (1972) defined climate as a set of summary or global perceptions held by individuals about their organizational environment. These summary perceptions reflected, "an interaction between personal and organizational characteristics, in which the individual, by forming climate perceptions, acts as an information processor, using inputs from a) the objective events in and characteristics for the organization, and b) characteristics of the organization and the perceiver." (cited in James and Jones, 1974; p. 1106). Also, James and Jones (1974) stated, "interaction, intervention, and perception, while perhaps

distinct in a conceptual model. take place in the individual and therefore are individual characteristics" (p. 1108). At this point. they recommended the differentiation between climate as an organizational attribute vs. climate regarded as an individual attribute. They proposed that the organizational attributes should be called "organizational climate" and that the individual attributes should be labeled. "psychological climate."

While studying climate aboard a Navy aircraft carrier. Jones and James (1979) found empirical evidence for their concept of the two levels of climate. About psychological climate they stated:

> Psychological climate: a) refers to the individual's cognitively based description of the situation: b) involves a psychological processing of specific perceptions into more abstract depictions to the psychologically meaningful influences in the situation: c) tends to be more closely related to the situational characteristics that have relatively direct and immediate ties to individual experience: and d) is multidimensional. with a central core of dimensions that apply across a variety of situations (though additional specific dimensions might be needed to better describe particular dimensions) (p. 205).

Similarly about organizational climate they wrote:

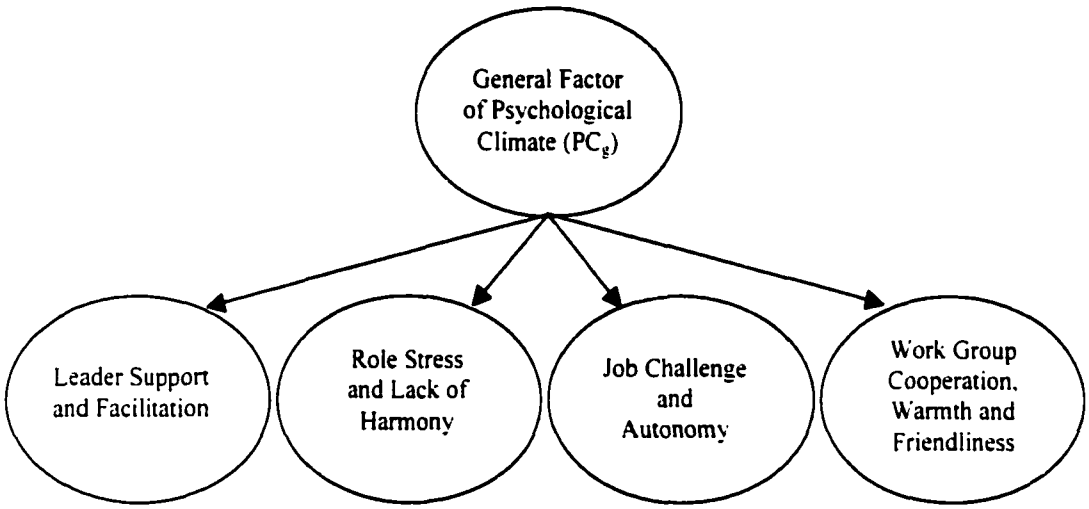
> The argument for aggregating perceptually based climate scores (i.e.. psychological climate scores) appears to rest heavily on three basic assumptions: first. that psychological climate scores describe perceived situation: second. that individuals exposed to the same set of situational conditions will describe these conditions in similar ways. and third. that aggregation will emphasize perceptual similarities and minimize individual differences. Based on this logic. it is generally presumed that empirically demonstrated agreement among different perceivers implies that these perceivers have experienced common situational conditions (p. 206).

In their 1974 article. James and Jones hypothesized that the mean (average) value of subunit. unit. division. organization. etc. would serve as an accurate representation of the aggregate score as the desired levels of analysis progressed upward in the organization hierarchy. Then in their 1979 study. they demonstrated that

significant differences in mean scores existed between functional divisions onboard a Navy aircraft carrier. Twelve differing types of divisions were shown to be homogeneous in their response patterns. Moreover, individuals assigned to these divisions were shown to be similar in their personality characteristics and they performed quite similar work tasks (e.g., navigation, deck maintenance, radio communications, electronics).

James and Jones continued their research with particular interest in expanding the construct of "psychological climate" (PC). In 1989, they presented a hierarchical model (see Figure 2.1) of meaning that represented the lens through which individuals perceive their work environments. They found a general or "*g-factor*" represented a single latent psychological component that is used by individuals to assess their well-being. Citing Lazarus (1982, 1984), they described the *g-factor* as a higher order schema for appraising the degree to which the environment is personally beneficial versus personally detrimental (damaging or painful) to the self and therefore to one's well-being. Underlying the general factor (PC_g) were four first-order factors that were derived from their previous research. These four major factors were: 1) Leader Support and Facilitation; 2) Roll Stress and Lack of Harmony; 3) Job Challenge and Autonomy; and 4) Workgroup Cooperation, Warmth and Friendliness.

Figure 2.1: Hierarchical Model of Psychological Climate



The basis for James' and Jones' model lies in what they termed, "valuations." They believed personal values produce schemas that are in turn used to cognitively assess work environments in terms of what is important to the individual. Obviously, the extent of congruence between the individual and the work environment produces the valence of the valuation. When the work environment reflects the individual's value(s), it is more likely to be perceived as more beneficial to the individual (James, James, & Ashe, 1990; James, Hater, Gent, & Bruni, 1978). Valuation provides the link between psychological climate and PC_g. It is the *g-factor* that furnishes the information to cognitively assess significance for well-being.

In the mid-1980s, another perspective began to emerge. Schneider and Reichers (1983), Ashforth (1985), Glick (1985), and Reichers (1987) challenged the notion that climate was merely a function of individual perceptions. Instead, they introduced hypotheses stating that climate is the result of, or at least includes, socialization processes in the organization.

Glick (1985), in particular, did not believe the entire concept of organizational climate rested at the individual level. He believed climate was a class of *organizational* rather than psychological characteristics (p. 601). Also, he challenged the prevailing view that the definition of organizational climate rested in an empirical decision as to whether or not there was enough agreement between raters at the individual level to aggregate to the next level (Jones and James, 1979). Glick noted that the practice of assessing levels of perceptual agreement, in order to define organizational climate, might rule out the existence of climate in some organizations. If inter-rater agreement is low, then according to the Jones' and James' approach to defining organizational climate, the construct does not exist. In other words, if the level of perceptual agreement among raters from the same work environment is low, then the outcome of the statistical analysis would indicate they were devoid of any organizational climate. Glick believed this was impossible. Every organization has *some* type of climate. Moreover, he stated, over reliance on composition rules negates the traditional criteria of construct validity and measurement reliability. Finally, he said:

> Organizational climate is the result of sociological and organizational processes. Thus it should be conceptualized as an organizational phenomenon not as a simple aggregation of psychological climate. Neither should it be abandoned in some organizations simply because a hypothesis composition is disconfirmed (p. 605).

Schneider and Reichers (1983), Ashforth (1985), and Reichers (1987) proposed what they called, "The Social Interactionist Perspective." They asserted, individuals evaluate their abilities and beliefs in light of the tasks they must perform and in light of the people with whom they perform these tasks. Particularly for newcomers, this

evaluation process predestines them toward social influence. They pay attention to the norms governing behavior and appearance, the status and power of organizational structures, reward systems, communication patterns, etc. When certain dynamics are unclear, they seek guidance and understanding from incumbents who then invoke their values upon the newcomer. Most often, the newcomer seeks this information from those with whom she believes she is most similar.

Workgroup members are likely to have similar backgrounds, demographic characteristics, talent, interests, and current experiences (Schneider, 1983; Lawrence & Lorsch, 1967). The work group is very likely to serve as the referent for social understanding. Hence, interaction does not take place simply because workers are bounded physically, but also because of perceived interpersonal similarities (Ashforth, 1985). Generally speaking, the transfer of information between newcomers and referent groups is accomplished more easily when the two entities are more similar. In time, most newcomers assimilate the prevailing paradigms and perceptions of the work environment, the organizational climate. Ultimately, as common perceptions and understandings about the work environment are instantiated, individuals develop a common stake in the perpetuation of their group (Ashforth, 1985).

Schneider and Reichers (1983) and Reichers (1987) said that the meaning of organizational climate arises out of interactions between people (P), and individuals transform their own perception of events in response to the interactions they have with others in a situation (S). Thus, a person by situation (PxS) interaction occurs. Reichers (1987) wrote, "Because individuals contribute to the meaning that arises in a setting, individuals and situations mutually determine each other" (p. 279). Further, "meaning that becomes the social reality is enacted by and shared by the social collective does not

exist merely in the experience of a single individual, but... exists in the behavioral transaction itself" (Schneider & Reichers, 1983; pp. 29-30). Thus, it is the interaction or the episode that serves as the basis for the interpretation of climate (Ashforth, 1985).

The review presented above summarizes the early research that helped formulate the meaning, etiology, and applications of organizational climate. Next, this chapter focuses on the relevant research that guided this dissertation.

Theory Guiding Present Research

Individual-level (Psychological) Climate and Outcome Measures

Engaging, motivating, rewarding, and safe working environments should increase employees' levels of job satisfaction and cause them to perceive performance outcomes in their organizations as high. Thus, it is important to study psychological climate, because it is employees' perceptions and valuations of the environment, rather than the environment itself, that mediate attitudinal and behavioral responses (James & Jones, 1974; James, et al., 1978; cited in Brown and Leigh, 1996). Therefore, climate researchers began capitalizing on the utility of measuring employees' perceptions about their work environment. Initially, climate was assessed in light of individual demographic variables. Then, the field of research moved in the direction of trying to establish ways in which employees' perceptions of climate may affect other variables. At the individual level, this study focuses on two of these dimensions: Job Satisfaction and Performance.

Schneider and Snyder (1975) and James and Jones (1980) published seminal research articles that addressed these organizational dynamics. Schneider and Snyder (1975) collected climate perceptions and organizational performance data from 50

insurance agencies. Their indices included six measures of climate (Schneider. 1972: Schneider & Bartlett. 1970). five measures of job satisfaction. three measures of individual needs. and three measures of agency-level performance. Their results showed two of the climate dimensions were significantly ($p \leq .05$) correlated with indicators of job satisfaction. Specifically. Managerial Support and Harmony in the Work Place were related to overall satisfaction with supervisors and with co-workers. They also found that climate perceptions differed according to the types of position held in the insurance company. The climate – satisfaction relationship was strongest for staff members. in-house trainees. and insurance brokers; the relationship was somewhat weaker for managers and secretaries/stenographers.

Schneider and Snyder's (1975) research failed to demonstrate that individuals' perceptions of their work environment had an effect on their agency's performance. Generally. only the managers' assessment of climate was correlated with agency ratings. gross volume of insurance sales and how well the agency achieved its planned appointments. It is worth noting that among the ten significant correlations. seven showed an inverse relationship between climate and performance. This suggests that some of the organizational processes that are intended to improve the work environment actually serve to decrease performance.

James and Jones (1980) took a much more focused view of climate. They used only one measure of climate. job attributes. to assess the extent to which climate affected individual measures of job satisfaction. The job attributes factor was composed of five subscales: 1) Job Complexity: 2) Job Pressure: 3) Boundary Spanning: 4) Specialization: and 5) Standardization. These scales are very closely tied to the job characteristics research that received a great deal of attention during that time

(Hackman and Lawler, 1971; Hackman and Oldham, 1976).

Job structure variables differentiated among the sub-samples that included individuals from information systems, production, and fire fighting professions. Also, the results showed that the job attributes factor was a significant predictor of individuals' job satisfaction. In fact, each of the five subscales were significant predictors ($p \leq .01$) of the dependent variable. Increased complexity, pressure, and freedom to conduct business with others outside their work group had the largest influences on individuals' job satisfaction. Conversely, routine jobs that require specialization and standardization had a detrimental effect on individuals' job satisfaction. The authors stated that these findings support the notion that individuals respond to perceptions of environments, and not to the environments *per se*.

More recently, psychological climate research has witnessed an increase in the number and types of climate variables that are considered to have an impact upon outcomes experienced by the individual and by the organization. More attention is being devoted to individuals' perceptions of organizational processes and how such things as training, work procedures, teamwork, promotion, and recognition affect the work environment.

Yet, one dimension remains consistent as a psychological climate measure, job characteristics. Gunter and Furnam (1996) found specific job-related components were significantly correlated with individuals' job satisfaction. Their research identified: jobs that are clearly defined, provide immediate feedback, and are more challenging, increase organizational members' satisfaction. Brown and Leigh (1996) also found that employees' job satisfaction (job involvement) is highly correlated with the extent to which their jobs are perceived to present them with challenging opportunities.

Additionally, Brown and Leigh used a structural equation modeling approach to confirm that a higher-order psychological climate variable was a significant predictor of job satisfaction (job involvement). The results demonstrated a significant path in the expected direction, i.e., psychological climate ⟶ job satisfaction.

Another construct recently receiving increased attention in the climate literature, and shown to be a significant predictor of job satisfaction is, a participative work environment. Tesluk, Vance, and Mathieu (1999) identified a relationship between job satisfaction and a climate in which employees are involved in setting goals, deciding how work gets accomplished, and allowed to voice their opinions about strategic matters. Across four different organizations, Gunter and Furnam (1996) discovered a very similar relationship. Their research indicated that job satisfaction is higher among employees who have some influence over their job, partner with their managers in decision-making scenarios, and feel like they are part of the information channels throughout the organization.

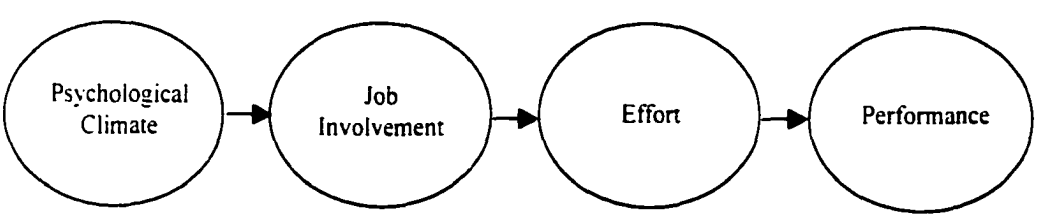
Additional climate variables that appear to affect workers' job satisfaction are: training (Ritchie, 2000; Gunter & Furnam, 1996), management support (Tesluk, Vance, & Mathieu, 1999; Brown & Leigh, 1996), and rewards/recognition (Brown & Leigh, 1996). These will not be addressed in this section.

Earlier in this section, Schneider and Snyder (1975) were cited as a seminal work that included measures of climate and organizational performance. The remainder of the literature that describes the relationship between these two constructs at the individual level is rather sparse. Individual performance measures are difficult to collect. Therefore, surrogates are often used in lieu of these variables. In fact, individual-level climate perceptions are often compared to organizational-level indices.

One exception is Brown and Leigh (1996). They were able to collect performance data on 233 salespersons in the paper manufacturing and office supplies industries. Available performance measures were 1) Achieving Sales Objective (volume); 2) Extent of Technical Knowledge; and 3) Administrative Performance. One of the climate measures, Supportive Management, which included such measures as the manager's flexibility with job-related tasks, willingness to listen to new ideas, autonomy, and trust, was consistently correlated with all three performance measures. Also, when the salespersons felt as though their work was important and that they, as individuals, were highly valued by their company, these perceptions were significantly ($p \leq .01$) correlated with increased levels of job satisfaction. Finally, Role Clarity (understanding of job expectations and performance norms) was inversely correlated with the three measures.

In a structural equation model, Brown and Leigh (1996) also identified a significant path between Job Satisfaction (Job Involvement) and Performance. When these findings are paired with the path between Psychological Climate and Job Satisfaction (Job Involvement) that was described above, the entire effect of the linkage between psychological (individual-level) climate and performance can be identified. The full model also included workers' level of effort as a mediator between job involvement and performance. Figure 2.2 shows the full model.

Figure 2.2: Psychological Climate and Performance Outcomes Model



The studies reviewed in this chapter demonstrate that individual (psychological) climate measures have been shown to be related to job satisfaction and to organizational-level outcomes. The focus of this study is on determining whether or not these same dynamics occur in the contemporary U.S. military.

Hypothesis 1a: Individual climate perceptions will explain a significant amount of variance in squadron members' job satisfaction.

Hypothesis 1b: Individual climate perceptions will explain a significant amount of variance in squadron members' perceptions of performance.

Organizational-level (Squadron) Climate and Outcome Measures

An impressive series of studies were conducted in the banking industry from 1979-1985. Parkington and Schneider (1979); Schneider, Parkington, and Buxton (1980); and Schneider and Bowen (1985) attempted to identify a number of outcome measures that were related to what they called "service climates." Actually, the data were collected from financial services institutions.

Parkington and Schneider (1979) were two of the first researchers to demonstrate the utility of employee attitude surveys in a contemporary work environment. They stated:

> Employees often are as close psychologically, organizationally, (hierarchically and geographically), and physically to the organization's clients as they are to other employees of the organization or perhaps even closer. Because of this boundary position, service employees function as information processors and filters (Aldrich & Herker, 1977), as representatives of the organization, and as formal or informal agents of the organization who influence the organization's clients (Thompson, 1967; p 270).

The authors hypothesized that discrepancies between the way employees act toward clients (service orientation) and the way employees interpret management's

approach to operationalizing a service-oriented climate will result in increased role conflict and role ambiguity for the employees (Blau & Scott, 1962; Crozier, 1964; Kahn, Wolfe, Quinn, Snoeck, & Rosenthal, 1964). In turn, employees will experience job dissatisfaction, frustration, a lack of confidence in the organization, and desire to leave the firm (Brief & Aldag, 1976; cited in Parkington and Schneider, 1979; p. 271). To the extent that differences could be identified, changes could be implemented that would either reduce negative outcomes for employees and/or increase customer satisfaction with services offered by the bank. The authors also believed that employee outcomes (organizational satisfaction, frustration, turnover intentions, and employee service quality views) would be related to customer's perceptions of service they received in the bank.

Using hierarchical regression, Parkington and Schneider verified their hypothesis. They found that discrepancies in employees' perceptions of the service climate and management's practices aimed at creating a service climate, have a direct effect on employees' dissatisfaction, turnover intentions, and perceptions of the quality of services offered to customers. Prior to looking at the effects of the discrepancy variable, they entered measures of role conflict and role ambiguity into the equation. In addition, they found that increased discrepancies in practice and policies have indirect effects on employee outcomes. Specifically, they determined that role conflict and role ambiguity act as "psychological mechanisms" which influence the ways in which employees interpret discrepancies between their perceptions of the service climate and management's actions related to the service climate. As the differences in perception increase, employees feel more role conflict and ambiguity, thus leading to dissatisfaction, desire to leave, and more negative views of the service provided to

customers.

Parkington and Schneider (1979) were also interested in whether employee outcomes were related to customers' perceptions of service quality offered by the bank. The results pointed out that when employees see their service quality as high, so do customers. In addition, when employees are more satisfied with their work environment, customers perceive that they receive better service.

Clearly, these results indicate a need for management and employees to be aligned in their practices and beliefs about what constitutes a service-related climate. Leaders and managers should attempt to determine what discrepancies exist, why they are present, and how they might resolve the differences in a way that promotes effective management and human resource policies. To the extent that these discrepancies can be reduced, management in the banking industry may reduce the amount of role conflict and role ambiguity experienced by its employees.

Schneider, Parkington, and Buxton (1980) were primarily interested in whether a "service-oriented climate" has an effect on customer satisfaction. Schneider et al. asserted, employees' interpretations of the events in the workplace can provide the framework for understanding internal processes. Customers' perceptions offer a different perspective about the same events and services (Thompson, 1967; Blau and Scott, 1962). Moreover, the dual approach to gathering data (assessing employees and customers) "eliminates the potential contamination associated with data coming from a single source by permitting the examination of relationships between the process evaluation of branch practices and procedures by employees, and the outcome evaluation by customers" (Campbell, 1974; Goldstein, 1978; cited in Schneider et al, 1980; p. 263).

Their results showed a strong agreement between employee and customer attitudes about the level of quality service offered, and customers' perception of service received. Traditionally, leaders and managers used customer inputs to make changes/additions in services offered by the company. While external opinions remain quite important, this study pointed to the importance of employee attitudes as an additional source of information.

Schneider et al. also reported that employees' attitudes about promoting a service climate are highly correlated with branch customers' attitudes about the same processes. Essentially, if employees are focused on taking care of customers and not concerned with or tasked with too many internal procedures, they can provide better services. The outcome of such an environment is: customers perceive that the bank operates much more efficiently on a daily basis.

In 1985, Schneider and Bowen replicated Parkington and Schneider (1979) and Schneider et al. (1980). They found that customer perceptions of efficient bank operations and service climate were correlated with employees' perceptions of the bank's human resource policies. In addition, Schneider and Bowen discovered that employee and customer turnover intentions were significantly related. In sum, these findings demonstrate the empirical relationship between an internal service climate in banks and customers' views of banking effectiveness. The authors assert that there is indeed a preferred "service ideal" which both employees and customers desire. To the extent that there is a difference between this ideal and the "organizational climate," employee and turnover behavior can be predicted.

Paradise-Tornow (1991) also validated employee attitudes as a legitimate factor in helping bank leaders make data-based decisions regarding employee/customer

practices. Executives of a large retail-banking firm instituted several changes aimed at creating a "service-quality culture" in an attempt to remain competitive in its market. The author and the bank's leaders conferred to develop a "Leadership/Management Model for Community Banking." The executive committee was interested in evaluating bank presidents and senior bank teams against the criteria in the model. The leaders and the author decided to proceed with an employee opinion survey assessing leadership/management dimensions, customer-service orientation, and an employee connectedness aspect intended to assess how well employees were relating to the bank's internal processes. The results of the survey showed that employees form clear cognitive distinctions between leadership and management practices in the banking climate. Each of these dimensions also has a different relationship with measures of performance in the retail business.

Burke, Borucki, and Hurley (1992) provided an innovative synthesis of James and James (1989), Schneider et al. (1980) and Schneider and Bowen (1985). However, the context in which the new study was conducted was purposely shifted to a large U.S. retail firm. Burke et al. used 18,000 respondents to test the existence of first- and higher-order organizational climate models. Specifically, they sought to determine whether employees in a retail environment reliably form "valuations" (James & James, 1989) about what is beneficial to them and to other constituencies, most notably, their customers (Schneider et al., 1980; Schneider & Bowen, 1985). Their model took into account "valuations" which are shaped not only by history and individual differences, but also by key work environment ideals.

Burke et al.'s assumptions were based on previous research evidence that demonstrated: 1) employees form cognitive appraisals about their work environment in

terms of what is beneficial/harmful to them as individuals (James & James. 1989): and 2) employees who have contact with significant stakeholders have a good idea of what is important to the stakeholders and are aware of organizational processes which support services to the stakeholders (Schneider & Bowen. 1985). Thus. Burke et al. tested the hypothesis: employees perceive not only what is beneficial to themselves. but to stakeholders as well.

Analyses across five regions of the company confirmed the existence of a first order model composed of the following factors: 1) Goal Emphasis: 2) Management Support: 3) Non-Monetary Reward Orientation: 4) Monetary Reward Orientation: 5) Organizational Service Orientation: 6) Human Resource-Related Obstacles: and 7) Merchandise-Related Obstacles. Burke. et al. stated. "our confirmed first-order factors are viewed. in part. as personal value-based schemas (e.g.. goal emphasis) reflecting employees' cognitive appraisals of the degree to which a personal value (e.g.. clarity) is represented in or by retail environmental attributes (e.g.. the extent to which an employee's immediate manager sets clear cut performance standards with respect to approaching customers quickly" (p. 727).

At the beginning of the 1990s. organizational climate researchers showed an intense interest in examining the utility of organizational climate surveys beyond applications to internal organizational processes and with customer satisfaction/expectations. Theses studies focused on whether climate has an empirical relationship with the bottom line for the organization...performance. Unfortunately. the literature showed little overlap in the climate and performance measures used in the respective studies. Comparisons are subjective. at best.

Tornow and Wiley (1991) provided one of the first contemporary studies

investigating empirical linkages between measures of organizational climate and performance. The target environment for this study was the computer services industry. The authors were interested in three linkages: 1) customer satisfaction and employees' perceptions/attitudes; 2) customer satisfaction and organizational performance; 3) employee perceptions/attitudes and organizational performance.

The study was performed for a multi-national corporation that provides payroll, tax filing, accounting, and human resource management services to outside agencies. Overall, 633 customers and 667 employees participated in the survey. Because the authors were interested in finding linkages between the three key measures at the organizational level, the district unit (aggregate of smaller units) served as the unit of analysis. Thirty district units were included in the study and all data were collected over a 12-month period.

Tornow and Wiley (1991) used correlational analyses to determine empirical relationships among the variables of interest. Results indicated that employee perceptions of the organizational climate were related to effectiveness measures in the computer services corporation. Specifically, perceptions about their "Culture for Success" were linked to the company's ability to retain existing contracts ($p \leq .01$). The authors' findings showed, when the organization provided necessary resources for employees to complete their work, an environment that based new product development on customer needs was fostered. Hence the company was better able to retain existing customers. Another employee attitude dimension that correlated with contract retention was Satisfaction with Management Practices ($p \leq .05$). This finding indicated that when managers do a good job of recognizing their employees, and when trust between managers and employees is high; the company is better able to maintain contracts for

extended periods of time.

Overall Employee Satisfaction with the company and the performance dimension, Right First Time, were also significantly correlated ($p \leq .01$). This relationship revealed that when employees feel as though they have job security, are positive about the company's loyalty to them, and are satisfied with their employment, they will in-turn, exert more effort to ensure products are successfully installed the first time the product is placed in the customer's workplace.

Tornow and Wiley (1991) provided rich evidence that organizational climate has an impact on bottom line performance measures that are important to company leaders. Their work marries nicely with Schneider, et al. (1980) and Schneider and Bowen (1985) who found that leadership and management practices, which promote a service quality environment, also influence customers in a positive fashion. This dissertation extends the previous work by demonstrating that positive dimensions of the work environment influence outcome measures, as well.

Paradise-Tornow's (1991) article addressed linkages between organizational climate and measures of performance. She created a leadership/management model for a community banking organization in an effort to "direct, evaluate, and reward the people management behaviors of bank presidents" (p. 129). Key dimensions of the model included: Leadership; Sales/Service Culture; Performance Management and Development; Compensation Management; Staffing; and Employee Relations. Next, Paradise-Tornow developed an employee attitude survey to assess these areas. The results were extremely interesting. Paradise-Tornow found a significant relationship ($p \leq .05$) between the leader's ability to clearly communicate sales goals (Communication) to the sales force, and the Bank's Achievement Against Plan

(Actual/Plan) index. Although the results were slightly weaker ($p \leq .10$). Paradise-Tornow also found that leaders' ability to gain commitment from employees and to promote a positive employee relations environment had an impact on the Achievement Against Plan measure.

This study included measures of bank efficiency, in addition to the performance statistics. When leader behaviors were compared to the efficiency dimensions, Downward Communication, Sales Goals, Teamwork at Top and Change Management were related to varying measures. The most significant relationship existed between Communication and Non-Personal Expenditures ($p \leq .05$).

Paradoxically, factors representing the bank's management culture revealed a consistently negative pattern of relationships with the performance and efficiency measures. Most striking were the negative effects of Communication, Service Climate, Performance Management and Development, and Staffing. Each of these were significant at the $p \leq .01$ level. Similarly, each of the management culture indicators was negatively correlated with the unit efficiency measures.

Paradise-Tornow's (1991) study points out a potential "three-way tradeoff between people, performance, and quality" (p. 139). Clearly, bank employees distinguish between leader and manager behaviors in the work environment. The behaviors are found to differentially affect performance and efficiency measures.

When management behaviors are entered into the summary, the very same activities that promote "service quality environments" appear to deter financial success. The study included possible caveats to these counter-intuitive findings. First, financial indicators may be too multidimensional to correlate with distinct management behaviors. Next, the drive to generate short-term financial success may preclude

managers from paying attention to service quality and lead them to ignore sound human resource (HR) practices. Finally, when the bottom line for the company is considered, e.g. financial performance, success may be viewed more as a function of outputs/outcomes in the form of services and products offered by the company, rather than as a function of the service quality environment and sound HR activities promoted by the organization.

Ostroff (1992) presented one of the classic studies in the climate-performance literature. She asserted that satisfied employees would be more willing to work toward fulfilling organizational objectives than dissatisfied employees. Also, she stated, "organizational performance should not be the cause of employee satisfaction, but that satisfaction and attitudes of employees are predictors of effectiveness" (p. 965).

Therefore, she designed a study aimed at demonstrating empirical linkages between employee attitudes, job satisfaction, and performance. Three types of data were collected from over 13,000 teachers in public school settings: 1) employee satisfaction/attitudes; 2) school demographics; and 3) organizational performance indices. The teacher satisfaction dimension included measures of satisfaction with: co-workers, supervision, pay, administration, career advancement opportunities, student discipline, school curriculum, community and parental support, physical facilities, and communication. Teacher responses to theses scales were aggregated to the school-level and a mean (average) score computed for each of the variables. Thus, each of the 352 schools that participated in the study received one score for each of the satisfaction/attitude dimensions. Organizational outcomes were assessed by: Academic Achievement, Student Behavior, Student Satisfaction, Teacher Turnover, and Administrative Performance. The level of analysis was at the organizational (school)

level.

Ostroff's findings demonstrated the intended relationships among the key variables. As expected, teacher satisfaction was strongly related to the organizational performance scores. In fact, when teacher satisfaction was reported as high, students' scores in reading, math, and social science were also high. The level of teacher satisfaction also predicted students' attendance, intentions to dropout and classroom behavior. Finally, teachers' intentions to quit were predicted by the valence of their satisfaction. That is, when teachers were more satisfied, they intended to remain as an employee in the public school system.

Prior to analyzing results at the school-level, Ostroff computed two intraclass correlation coefficients: ICC(1) and ICC(2) (James, 1982). The first is intended to represent the proportion of variance in individuals' perceptions accounted for by differences in organizations. ICC(2) provides a measure of proportional consistency of variance. Ostroff's use of these coefficients is worth noting because, with the exception of one article (Kozlowski & Hults, 1987), none of the articles reported in this review has shown empirical evidence to justify aggregation to the organizational-level. Kozlowski and Hults reported a measure of within group agreement, r_{wg} (James, Demaree, & Wolf; 1984, 1993) to justify aggregation to the next higher level. The intraclass correlation coefficients indicate the reliability of measures (consistency), whereas r_{wg} is a measure of agreement (consensus) (Kozlowski & Hattrup, 1992).

Another study that maintained academic rigor was Ryan, Schmit, and Johnson (1996). In addition to ICC(1) and ICC(2), they reported r_{wg}. They also attempted to establish relationships between employee attitudes and organizational outcomes using a sample of subjects from the financial management services industry. A key initiative

they addressed was the directionality of the relationship among the variables. Data were collected on eight organizational climate dimensions, ten productivity indicators, and one measure of customer satisfaction.

Correlation analyses showed a fairly consistent pattern of significant relationships ($p \leq .05$) between the climate indicators: Job Satisfaction, Teamwork, and Training, with the financial performance indicators. Ryan et al. then conducted regression analyses using the financial indices as criterion variables and one overall measure of climate that they called, "Satisfaction/Attitudes." The results demonstrated that Employee Satisfaction/Attitudes was a significant predictor of both Customer Satisfaction ($p \leq .001$) and Customer Intentions to Change Financial Institutions ($p \leq .01$). Among the ten "hard" measures of financial performance, only 60-day Delinquent Payment could be predicted by Employee Satisfaction/Attitudes ($p \leq .05$).

These findings are important because they show that when employees report a positive climate and they are satisfied, these dynamics have an important effect on organizational outcomes. Specifically, higher overall satisfaction has a positive effect on customer satisfaction, intentions to remain with the firm, and desire to pay their bills on time.

The next two studies, Petty, Beadles, Lowery, Chapman, and Connell (1995) and Schuster, Morden, Baker, and McKay (1997) were published within the past five years. Neither of these reported using a criterion measure for justifying individual scores to the organizational-level of analysis. Yet, the findings so closely measure the intended approach to organizational-level analyses in this study, the results are worth reporting.

Petty et al. (1995) studied organizational culture in the electric utility industry.

Despite the fact they called their effort a culture study, their assessment tools are very much akin to the ones reported thus far. In fact, the Teamwork: Trust and Credibility; Performance and Common Goals; and Organizational Functioning scales they used to measure culture dynamics are the same as many mentioned in climate studies discussed in this section. One summary performance variable was created from five objective measures of performance (Operations; Customer Accounting; Support Services, Marketing, and Employee Safety and Health). Using correlation analyses, they found that Teamwork, Trust, and Performance and Common Goals were significantly related to the overall performance dimension.

Finally, Schuster, Morden, Baker, and McKay (1997) studied the extent to which an employee-centered management approach affected the financial performance of a dairy products firm. Employee-centered management was defined as, "a strategy for achieving high levels of employee motivation, commitment, and performance through management practices such as participation and involvement that emphasize paying attention to employee needs and goals" (p. 176). Fifteen "climate" dimensions that assessed employee perceptions of the work environment were collected prior to the implementation of an organizational change initiative that was based on training all employees in the employee-centered approach. Financial measures were recorded at the same time.

At the end of five years, the employees were once again asked to complete the climate survey. Financial measures were collected at Time 2, as well. Both measures, Employee-centered Climate and the performance index, increased significantly during the course of the five-year OD dimension. The results of the statistical analyses showed that approximately 75 percent of the changes in the company's financial performance

were due to the accompanying changes in the employee-centered climate. Schuster, et al., noted, "although it is true that the trend of all 15 factors has been upward over the 5-year period, the two factors that have improved the most are Participation and Communication: the two factors that are most directly the focus of the intervention to implement employee-centered management" (p. 188).

The studies presented in this section provide theoretical justification for identifying the organizational-level (squadron) as an appropriate level of analysis. Therefore, four hypotheses will address the relationships between squadron-level climate and squadron outcome measures:

Hypothesis2a: Squadron climate will explain a significant amount of variance in the Squadron Flying Schedule Effectiveness Rates.

Hypothesis 2b: Squadron climate will explain a significant amount of variance in the Squadron Mission Capable Rates.

Hypothesis 2c: Squadron climate will explain a significant amount of variance in the Squadron-level Job Satisfaction.

Hypothesis 2d: Squadron climate will explain a significant amount of variance in the Squadron-level Performance Perceptions.

Cross-level Climate and Outcome Measures

Rousseau (1985) advocated a multi-level approach to the study of organizations. She stated, "the issue of levels is of paramount importance in the field of organizational behavior... it sets the field apart from its parent disciplines in that most of what we study in and about organizations are phenomena that are intrinsically, mixed level" (p. 2). Similarly, Klein, Dansereau, and Hall (1994) wrote:

> By their very nature, organizations are multi-level. Individuals work in dyads, groups and teams within organizations that interact with other organizations both inside and outside the industry. Accordingly, levels issues pervade organizational theory and research. No construct is level free. Every construct is tied to one or more organizational levels or entities that is, individuals, dyads, groups, organizations, industries, markets, and so on. To examine organizational phenomena is thus to encounter levels issues (p. 198).

Researchers considering the use of multi-level phenomena must correctly specify the appropriate level of theory. In the present study, constructs at one level are assumed to be related to constructs at a different level. Thus, the correct specification of theory is called, the "cross-level" (Klein, et al. 1994; Rousseau, 1985). One of the benefits of this type of research is the ability to: 1) improve specification, that is, to describe how variables at one level affect variables at a different level; and 2) increase generalization, determine cause and effect relationships between independent and dependent variables that exist at different levels of the organization.

Over the last decade, cross-level research has grown in popularity. The increase in the number of studies is partly due to the advancement in empirical techniques which support hypothesis testing for multi-level theory development. Two methodologies currently exist to assess these multi-level dynamics: 1) the manipulation of antecedent conditions; and 2) variance partitioning or "variance explained" (Hollenbeck, Colquitt, & Gulley,(1995). Additionally, Hollenbeck, et al., stated, "we emphasize the notion of variance (here at the outset) because of our belief that, in the end, researchers who claim to be studying organizational phenomena must ultimately come to grips with questions of not only variance and variance explained, but, variance explained at different levels of analysis" (p. 3).

A major advantage to variance partitioning is that the analyses allow for assessing the amount of variance that may be attributed to the key variables of interest in the study. Moreover, variance can be determined for the differing levels at which data are collected. By calculating the total variance explained in a variable at one level, additional explainable variance could be determined for that same variable at ascending levels.

For simplicity, assume that the total amount of variance for teamwork at the individual-level is .30. Then, an aggregate measure for the teamwork variable is computed at the next level, perhaps at the branch-level. If the variance in the branch teamwork variable is .20, then the total variance attributable to the teamwork variable at that level is computed by calculating the ratio of branch-level variance to total variance (.20/.30 or .66). The interpretation is that 66% of the variance in teamwork may be attributed to between-branch differences. Subtracting the between-branch variance from the total variance yields the within-branch variance (1.00 - .66 = .34). Hence, 34% of the variance in teamwork is due to within branch dynamics (Hollenbeck, Ilgen, & Sego, 1994).

Once this is accomplished, a repeated measures regression technique is used (Cohen & Cohen, 1983). Specifically, the proposed independent variables are entered hierarchically, with each of the steps arranged from the lowest-level indicator to the highest-level indicator. In the example listed above, individual-level teamwork would be entered first and branch-level teamwork would follow. The output is not only important from a statistical/investigative view, it has tremendous practical implications, as well. The combination of variance coefficients and beta weights derived from the regression equations identify where (the appropriate level) in the organization,

improvement activities should be targeted.

Generally speaking, the literature on multi- and cross-level research addresses primarily the theoretical and empirical issues. Very few studies have been published that include true organizational dynamics and measures. Yet, when actual studies are produced, the academic and practitioner communities are exposed to a "deeper, richer portrait of organizational life, one that acknowledges the influence of the organizational context on individuals' actions and perceptions and the influence of individuals' actions and perceptions on the organizational context" (Klein, Tosi, & Cannella, 1999: p. 243).

A literature review targeted on cross-level studies that included the use of climate and outcome measures revealed only one study. This finding alone highlights the difficulty that researchers encounter while attempting to conduct these types of studies.

Ostroff (1993) conducted a cross-level investigation to determine the extent to which organizational-level climate and personal orientation may affect individual-level outcome measures in an educational environment. She developed a survey that assessed 12 dimensions of climate and 12 dimensions of teachers' personal orientation. Additionally, Ostroff collected data on the following individual-level outcome measures: 1) Satisfaction with Climate; 2) Personal Commitment; 3) Personal Involvement; 4) Personal Adjustment; 5) Stress; 6) Absenteeism; and 7) Perceptions of Individual Performance.

Ostroff calculated the mean response on the individual-level climate perceptions. That value was used to represent organizational-level climate in the supporting analyses. For the Satisfaction with Climate outcome variables, a series of 12 hierarchical regressions was completed with the school-level climate variables entered

first. The results indicated that for each of the 12 satisfaction dimensions, school-level climate was a significant predictor of satisfaction ($p \leq .01$). Moreover, the individual-level personal orientation variables explained an additional amount of variance in the individual-level satisfaction indices ($p \leq .01$). Specifically, school-level climate indices had an influence upon individual-level satisfaction with the schools' facilitation of: 1) Participative Climates; 2) Cooperation; 3) Warmth; 4) Opportunities for Growth; 5) Innovation; 6) Autonomy; 7) Achievement; 8) Levels of Hierarchy; 9) Structure; 10) Social Reward; 11) Intrinsic Reward; and 12) Extrinsic Reward. School-level climate measures accounted for an average of nine percent of the variance in satisfaction while personal orientation accounted for an additional two percent. The regressions included interaction terms (school-level climate dimension x personal orientation dimension), however, none of these achieved statistical significance with the facet job satisfaction measures.

Ostroff's results also showed that school-level climate variables were significant predictors ($p \leq .01$) of all but two (Involvement with School Activities and Performance Perceptions) of the additional outcome measures. Thus, organizational-level climate does have an influence on commitment, adjustment, stress, turnover and absenteeism. Ostroff also reported that each of the personal orientation variables were significant predictors ($p \leq .01$) of the outcome measures, as well. Again, the school-level variables were entered first in the regression equation while the individual-level variables were entered second. Thus, once the variance associated with school-level climate is removed, any remaining variance is attributable to the individual-level variables. Finally, like the results reported for the interaction terms when satisfaction was the dependent variable, none of the school-level climate x personal orientation interaction

terms was a significant predictor of the remaining outcome variables.

In summary, Ostroff's research demonstrated the cross-level effects of organization-level climate and individual-level personal orientations when predicting organizational outcomes. These results serve as a strong initiative for the cross-level hypotheses generated in this study:

Hypothesis 3a: Squadron climate will explain a significant amount of the variance in squadron members' job satisfaction over and above individual-level climate perceptions.

Hypothesis 3b: Squadron climate will explain a significant amount of the variance in squadron members' perceptions of performance over and above individual-level climate perceptions.

This concludes the literature review and presentation of the hypotheses that support the present study. Chapter Three describes the research agenda and the methodology used to test each of the hypotheses.

CHAPTER THREE

RESEARCH METHODOLOGY

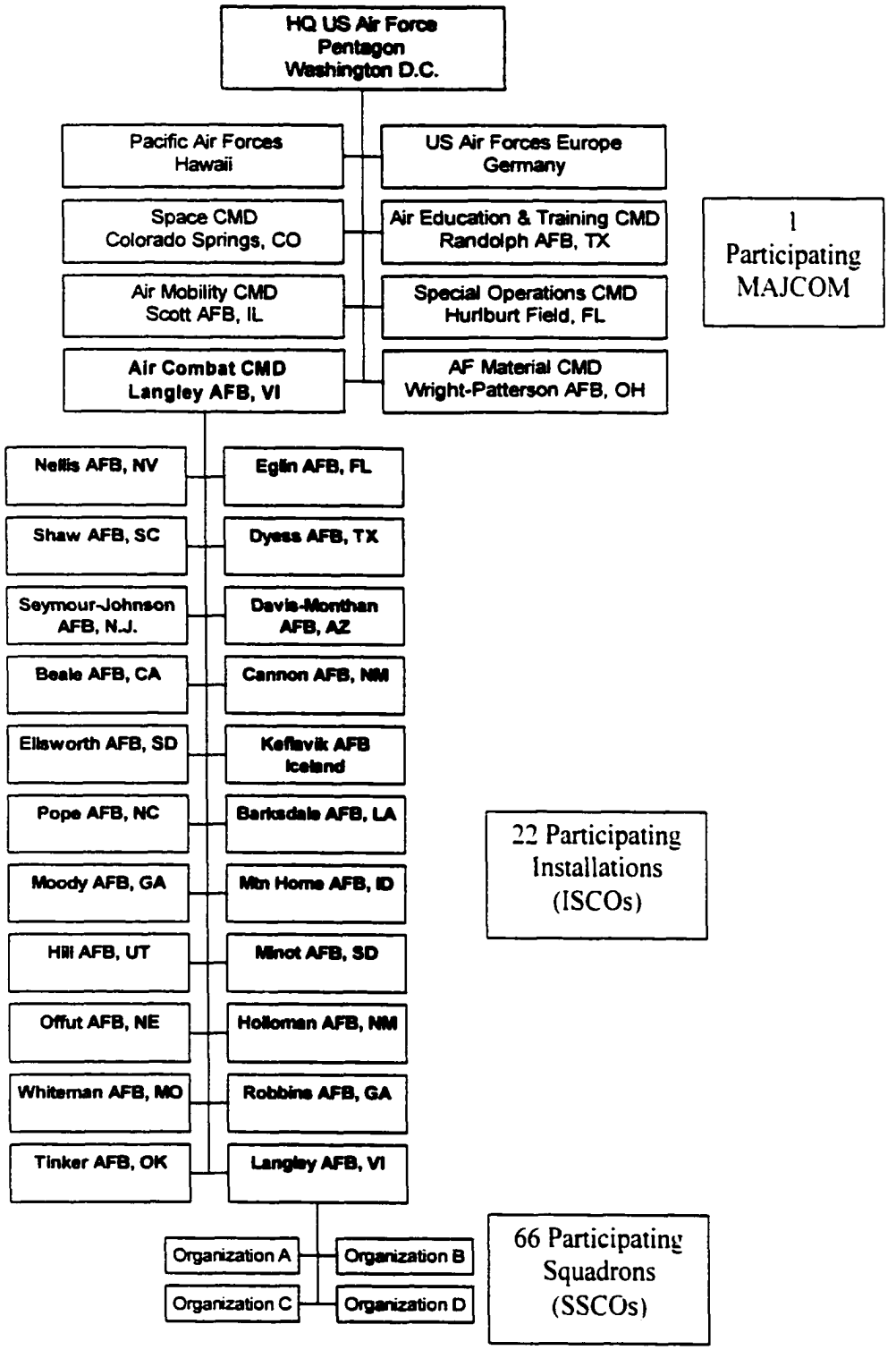
This chapter discusses information about the locations for data collection, procedures for data collection, the sample, operationalization of the variables, and data analysis procedures.

Data Collection Locations

Two sources were used in this study. First, all survey data were collected as part of the "1997 Chief of Staff of the Air Force (CSAF) Survey." The researcher, who served as the project officer for the survey, was employed by the Air Force Center for Quality and Management Innovation (AFCQMI). This Center was appointed as the lead agency for executing the survey and reporting the results to the Air Force Chief of Staff (the highest ranking general officer in the U.S. Air Force), and to commanders throughout the service. For a brief history about how the survey was chartered see Appendix A.

Over 235,000 Air Force members participated in the survey. These individuals represented 8 major commands (MAJCOMs); 109 installations; and in excess of 16,000 organizations (squadrons). However, because performance data were available from only a very limited number of Air Force organizations, this study focuses on data from only 1 MAJCOM, 22 installations, and 66 squadrons. Figure 3.1 shows the organizational structure and lists the installations from which data were obtained. The researcher retained the Air Force (AF) master data file and the data for this study were extracted from that file for analysis.

Figure 3.1: USAF Organizational Structure and Participating Levels



Next, performance data were collected in much the same fashion. The researcher visited Headquarters, Air Combat Command (Langley AFB, Virginia) and briefed the Commander of the Quality and Management Innovation Squadron about the proposed study. In essence, the researcher was looking for performance metrics that were collected as part of normal monthly reporting processes and were available at differing levels of the organization. The researcher knew data would be available from the CSAF Survey at the individual-, squadron-, and wing- levels; hence, he was looking for a similar structure of performance metrics. During the meeting, flying squadrons were identified as the best candidate community in which all squadrons and wings collected and reported the same performance metrics on a monthly basis. At that time, the researcher also received permission from the commander to obtain the data from the flying squadrons.

During each of the three months in which the CSAF Survey was administered, officials at Langley AFB, Virginia, e-mailed performance data from each of the 66 squadrons that were identified to participate in the survey to the researchers at AFCQMI.

Data Collection Procedures

Independent Variables

Twelve weeks prior to the survey initiation date, the researcher and an associate began identifying survey control officers at each Air Force installation located around the world. A memorandum was sent to all MAJCOM headquarters requesting the name of one primary and one alternate installation survey control officer (ISCO) to be

responsible for survey administration at their respective installations. During the next eight weeks, personnel were identified to oversee the entire survey process: that is, loading survey files on all squadrons' servers at their installations, monitoring the process while the survey was active, ensuring all files were collected and backed-up, and finally, ensuring all subjects' (Ss') data files were forwarded to the researcher.

Four weeks prior to the implementation date, the researcher and his associate personally hosted nine worldwide teleconferences with ISCOs for the purpose of training these individuals in proper electronic survey administration procedures. The entire survey process was briefed, from the point at which the survey would be initially delivered to the installations, down to the point at which survey results would be returned to the commanders of the squadrons that participated in the survey. A demonstration of the electronic survey was provided to teleconference attendees.

Despite the fact many of the traditional requirements for survey "proctors" are removed when electronic media are employed, ISCOs were briefed about the importance of ensuring all Ss were provided information about voluntary participation, conditions of anonymity, debriefing, and confidentiality of their surveys. Another significant part of the training curricula focused on the technical requirements for loading and downloading Ss' data files. During the teleconference, ISCOs were instructed to enlist help from squadron-level survey control officers (SSCOs) to assist with executing the survey in their respective squadrons.

One week prior to the survey implementation date, the researcher and his associate e-mailed the survey file to 109 ISCOs around the world. The goal for the mass pre-survey distribution of files was for the survey control officers to have an opportunity to test the survey on their local electronic platforms prior to the survey

being made available for participation. Survey officials also wanted the ISCOs to become proficient in the use of the survey so they could be the first line consultants to their SSCOs, should administration problems arise. Detailed instructions were provided about how to properly load and test the survey to ensure proper encryption of the data. In essence, the survey file was a zipped file that, upon activation, guided ISCOs through the process of installing the survey on a dedicated server/directory. This did not require significant technical expertise. Also, ISCOs were instructed about how to properly protect the servers/directories in which the survey files were located.

During the ensuing week, the researcher and his associate were available to answer questions from ISCOs. Surprisingly few questions were raised. This can be attributed to excellent software designed by a team of experts located at AFCQMI and with the contractor who tailored existing software code to specifically execute the CSAF survey.

Installation survey control officers were instructed to pass the survey file to each of their SSCOs so they too could load the survey on their squadron's servers/directories. They were asked to follow the same process and to test the software to ensure the survey file was working properly. Special emphasis was placed on validating that all data would be properly encrypted and protected from potential users' intrusion or sabotage.

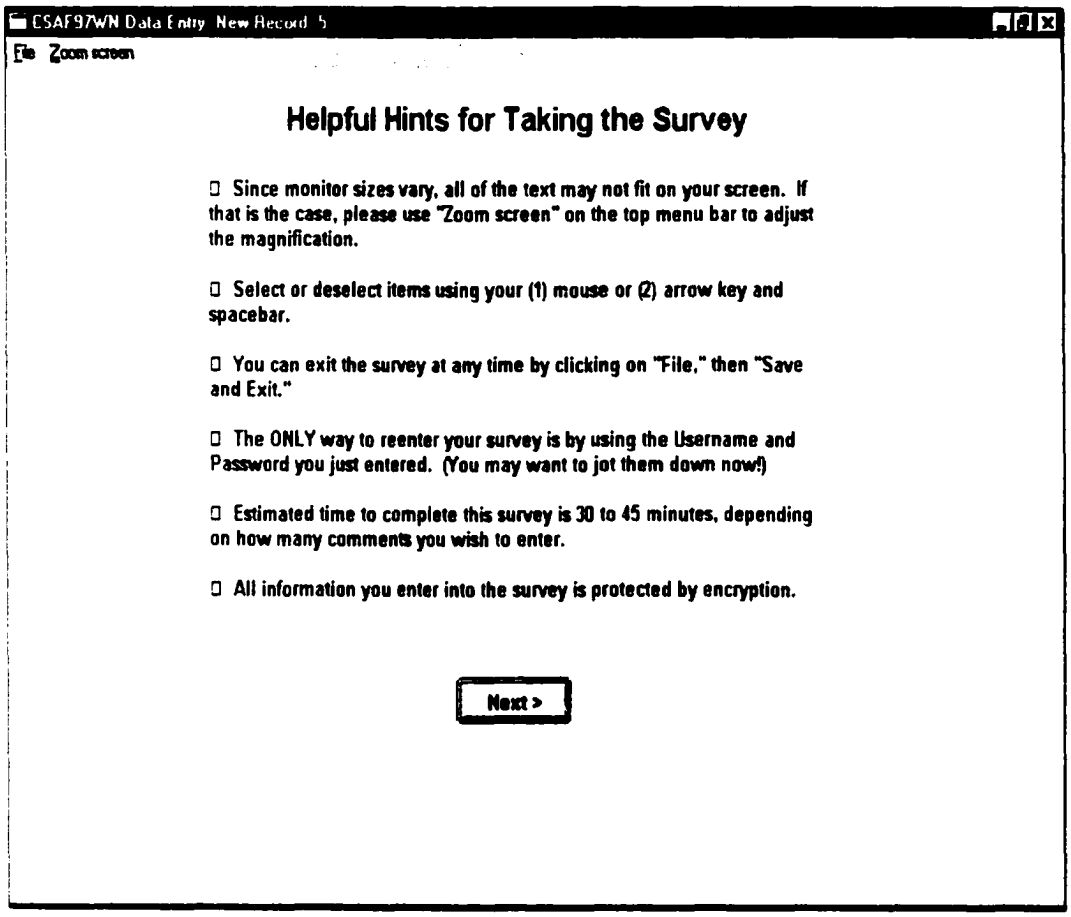
One day prior to survey initiation, all Air Force installations published a "must run" article that described the survey, explained the intended uses of the results and contained a message from the Vice Chief of Staff of the Air Force encouraging all members to "let their voice be heard" (See Appendix B). Also, the Air Force Homepage, "AF Link" contained the survey announcement as its lead article for

approximately four days (See Appendix C).

Then, on the date of survey initiation, SSCOs sent a squadron-wide memo informing members that the CSAF Survey was now available. Also, the correct server, directory, folder, and file were identified. At this point, survey participation was entirely dependent upon Ss' willingness to voluntarily participate. If an S decided to complete the questionnaire, she simply found the appropriate file in the identified directory, double-clicked on the file name and began experiencing the sequence of screens leading her through the survey. Figures 3.2 – 3.4 show the screen presentations that were shown to all Ss upon entry into the electronic survey file.

Figure 3.2 shows the first screen, which contained information about viewing the file, ways in which Ss may exit the survey, the amount of time required to complete the survey and assurance that Ss' responses were encrypted.

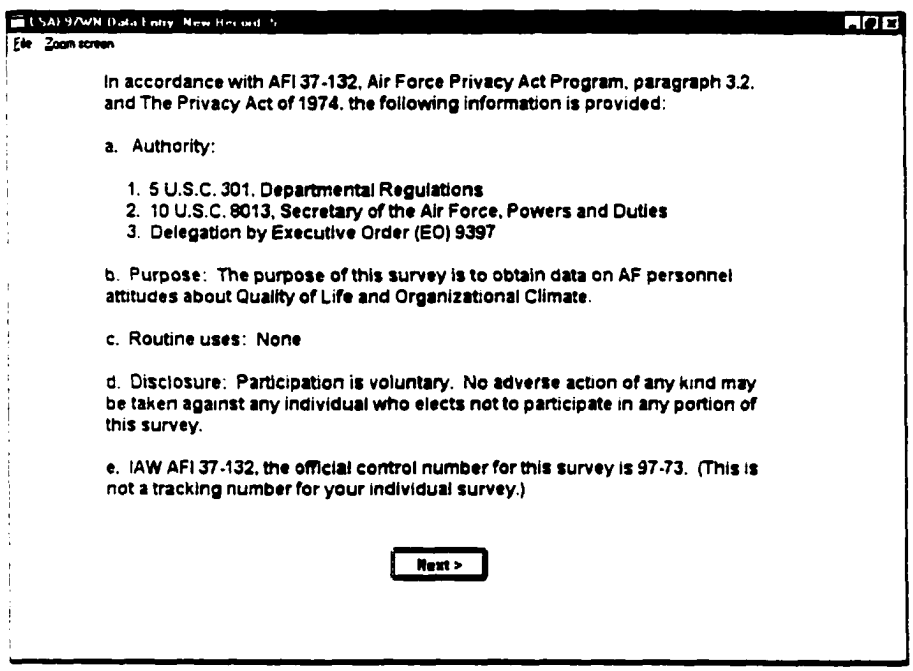
Figure 3.2: Introductory Survey Screen



Current Air Force policy, Air Force Instruction (AFI) 36-2601, Air Force Personnel Survey Program (February 1996), requires that all surveys administered to Air Force personnel must be reviewed by the Air Force Personnel Center, Directorate of Operations, Survey Branch. The survey branch ensures that questions do not violate human subjects' rights and that the purpose of the survey will provide some benefit to the Air Force. Also, the survey branch mandates that specific information is presented to all potential survey participants prior to initiating any survey. Figure 3.3 shows Screen #2 from the electronic survey and the elements deemed necessary according to AFI 36-2601. Specifically, Ss were made aware of the purpose of the survey, that their

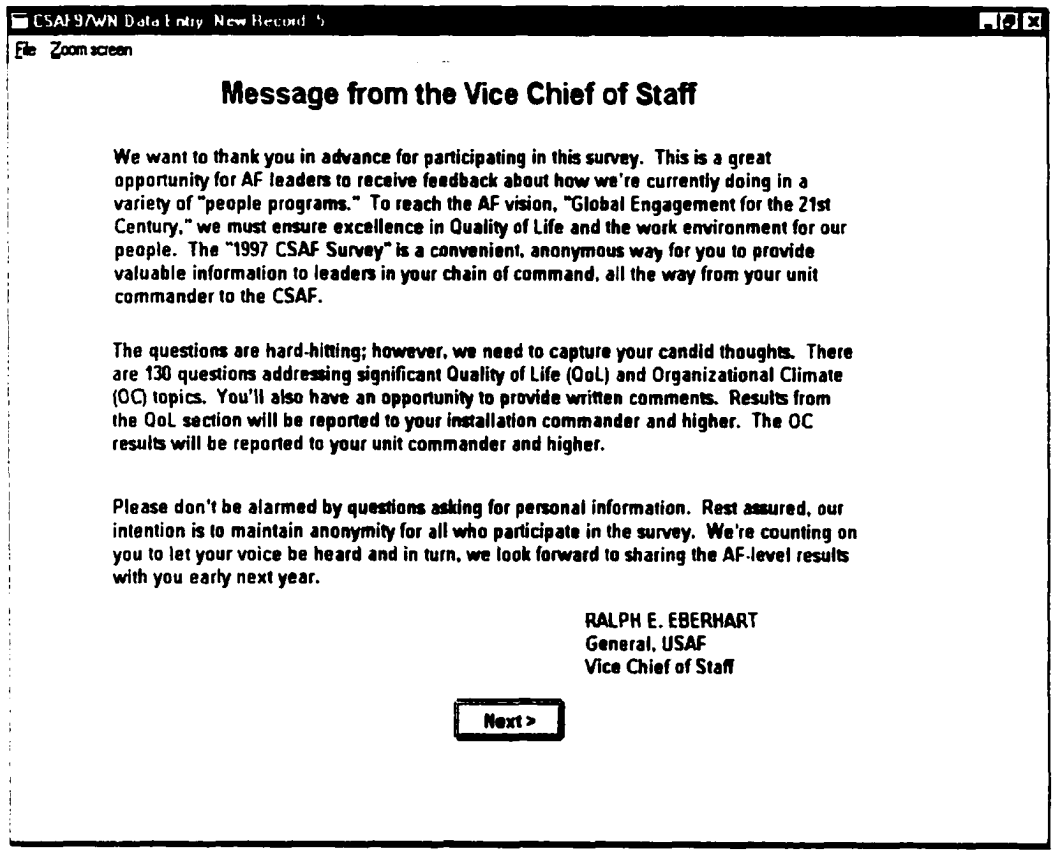
participation was voluntary, that their anonymity would be protected, and that adverse action for their choice to not participate in the survey would not be tolerated. Finally, AFI 36-2601 requires that the survey control number be published along with each survey.

Figure 3.3: Mandatory Language for All Air Force Surveys



The final introductory screen was a message from the Vice Chief of Staff of the Air Force, General Ralph Eberhart, thanking Ss for their participation in the survey. The general also explained the purpose of the survey and assured Ss their anonymity would be protected. Further, General Eberhart told Ss that he would share the survey results at the beginning of 1998. Figure 3.4 shows the message that was displayed in the electronic survey file.

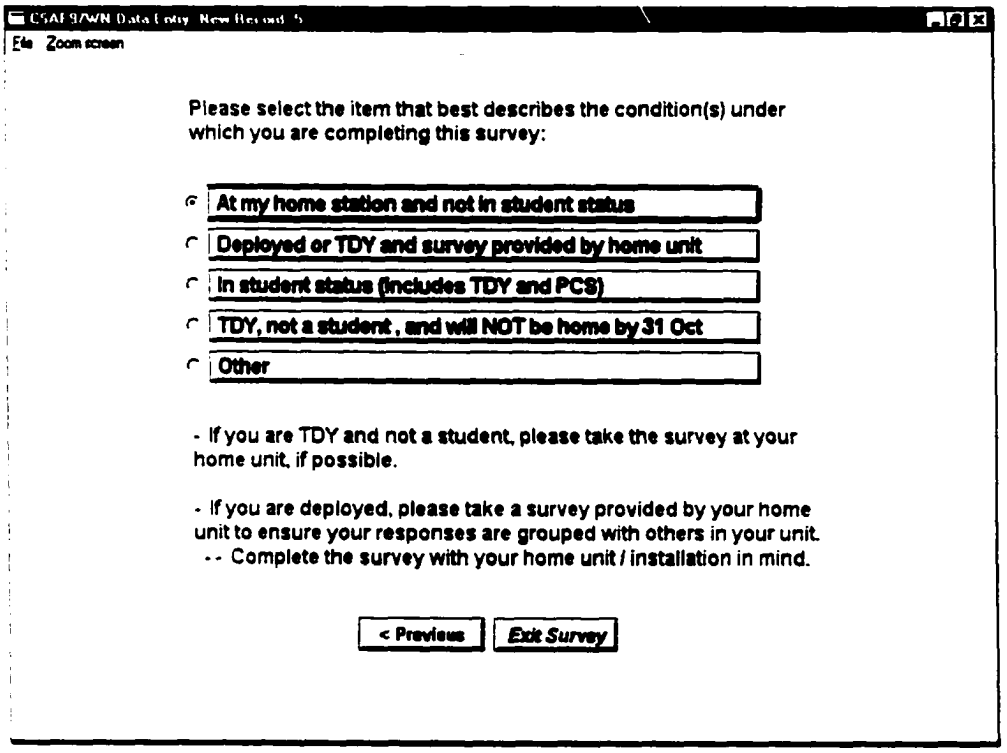
Figure 3.4: Vice Chief of Staff Message to Survey Participants



After reviewing these three screens, Ss were ready to begin answering questions. The first screen in which Ss actually entered data is shown in Figure 3.5. Survey officials knew it was important to identify the circumstances (locations) upon which Ss were completing the survey. The survey developers knew most participants would choose Option A because they would be at their home duty station, completing the survey in their work environment. However, three additional conditions were important to consider. First, if an S was deployed (located at a duty installation different than her home installation), survey designers were interested in collecting data from him. Anecdotal information predisposes military personnel to believe the Quality of Life and Organizational Climate for deployed members is inferior to those who remain in the

U.S. Second, identifying students was an important condition because they were not required to complete the organizational climate and MAJCOM sections of the survey. "Students" are Air Force members currently not assigned to a typical Air Force job. Instead, they are in some facet of training that ranges from basic training to senior academic schools designed to enhance officer, enlisted, and civilian professional military education. They are not exposed to the range of organizational dynamics highlighted in the questions and, they are not truly assigned to an operational MAJCOM. Third, if Ss were not completing the survey at their home station and they were in Temporary Duty status (TDY), thus requiring better tracking of their responses to ensure their data were returned to their home location for aggregation and analysis.

Figure 3.5: Subject's Location Conditions

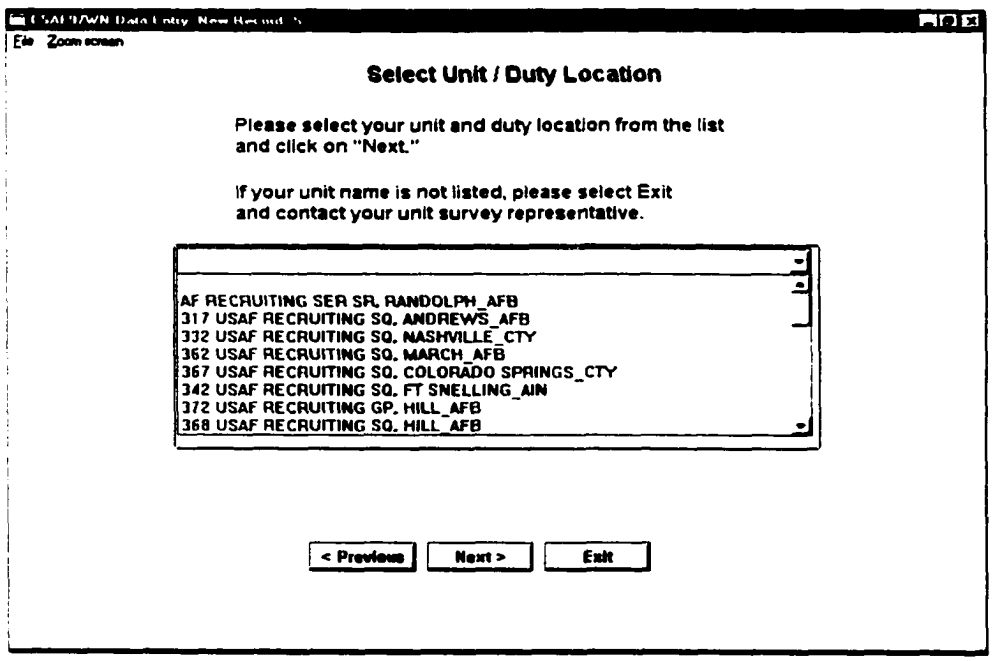


Subjects simply used the pointing device (mouse or arrow) on their computer to identify their chosen answer to the questions. Note that Ss were allowed the option to

exit the survey. Upon selection, Ss' responses were recorded in two separate databases, one for the Organizational Climate section (database used for this study) and one for the Quality of Life section. Appendix A contains a brief discussion about the evolution of the CSAF Survey and the mandate for two sections. Rather than combine databases and work in collaboration, survey officials preferred to keep the two data bases, analyses, and reporting mechanisms distinct processes.

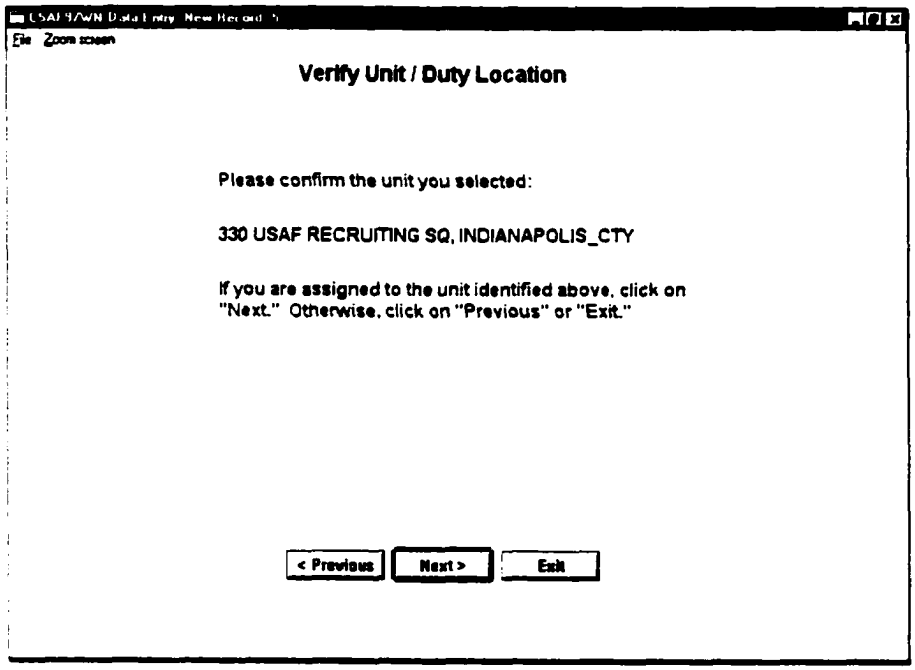
After identifying their current status, Ss were asked to identify the installation and the squadron to which they were assigned. Survey officials compiled a master list of all Air Force assignment locations/squadrons in the world. This list was made available to all Ss for their entry. Figures 3.6 and 3.7 show how this was accomplished.

Figure 3.6: Identify Squadron and Installation of Assignment



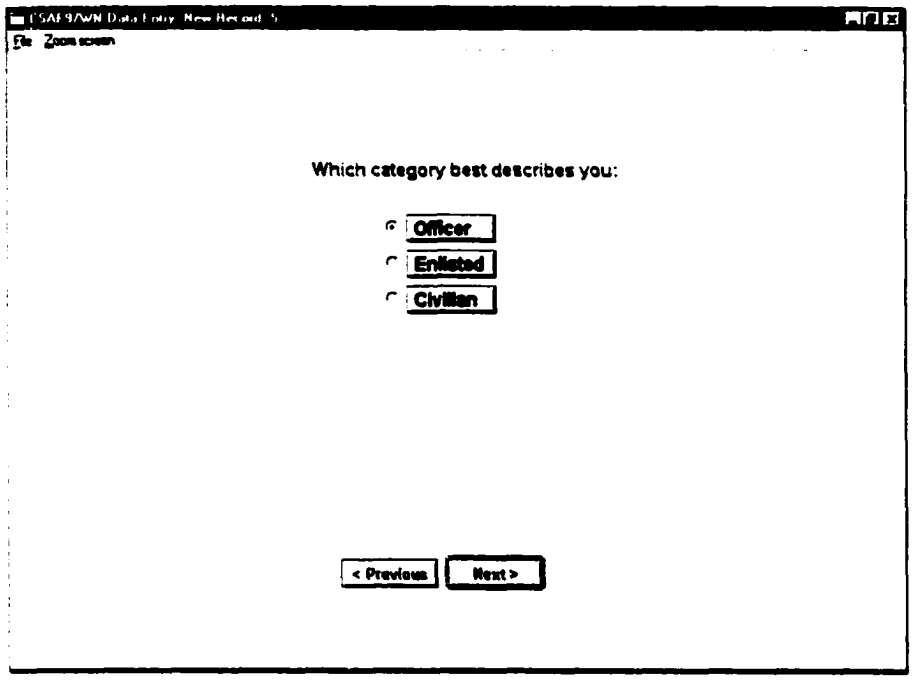
Because this was such an important variable, Ss were asked to verify their selection (see Figure 3.7).

Figure 3.7: Verify Squadron and Installation of Assignment



Next, Ss were asked to identify their rank/grade status, e.g., officer, enlisted, or civilian (see Figure 3.8). Besides installation/squadron of assignment, this is the only other demographic variable that was mapped into the Organizational Climate database. Subjects' responses also served the purpose of "triggering" additional demographic variable questions designed for the Quality of Life section and concomitant analyses.

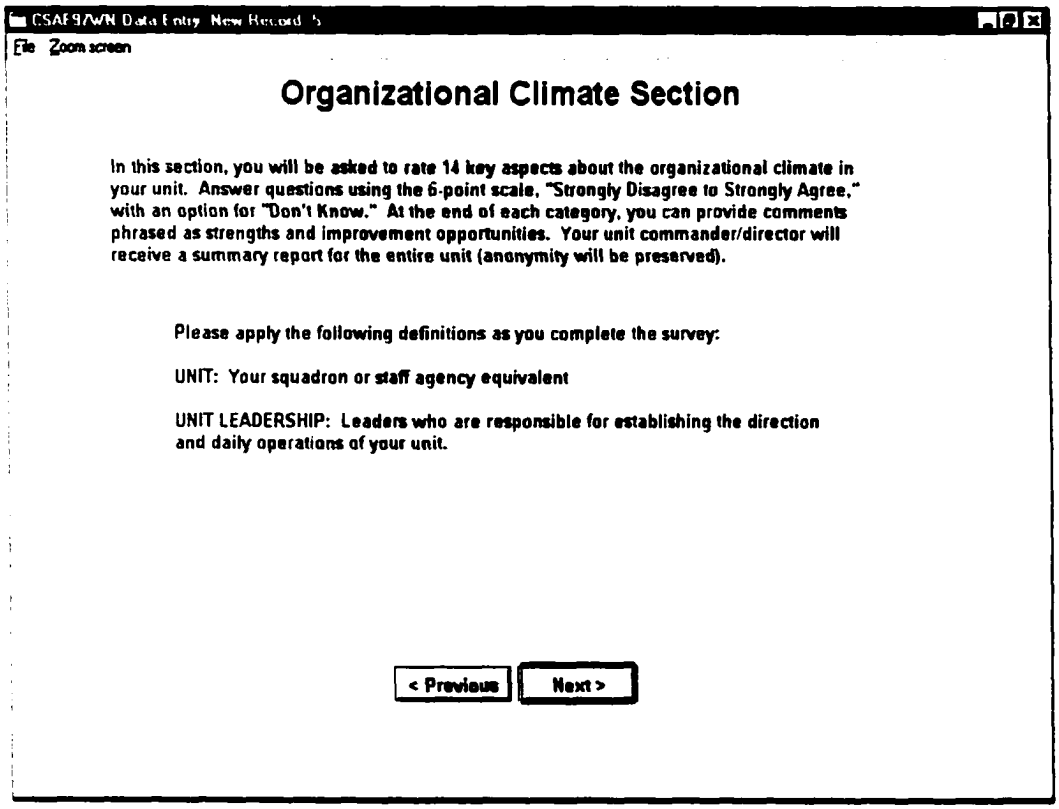
Figure 3.8: Rank/Grade of Survey Participant



Because there were two primary sections to this survey, survey designers were cognizant of the need to counterbalance the order of administration. Thus, at this point in the survey, the software was designed to search immediately for the last occurrence of survey administration for each rank/grade category. If the previous S received the Quality of Life section first, then the next S received the Organizational Climate section first. This practice helps alleviate the temporal effects of participating in longer surveys.

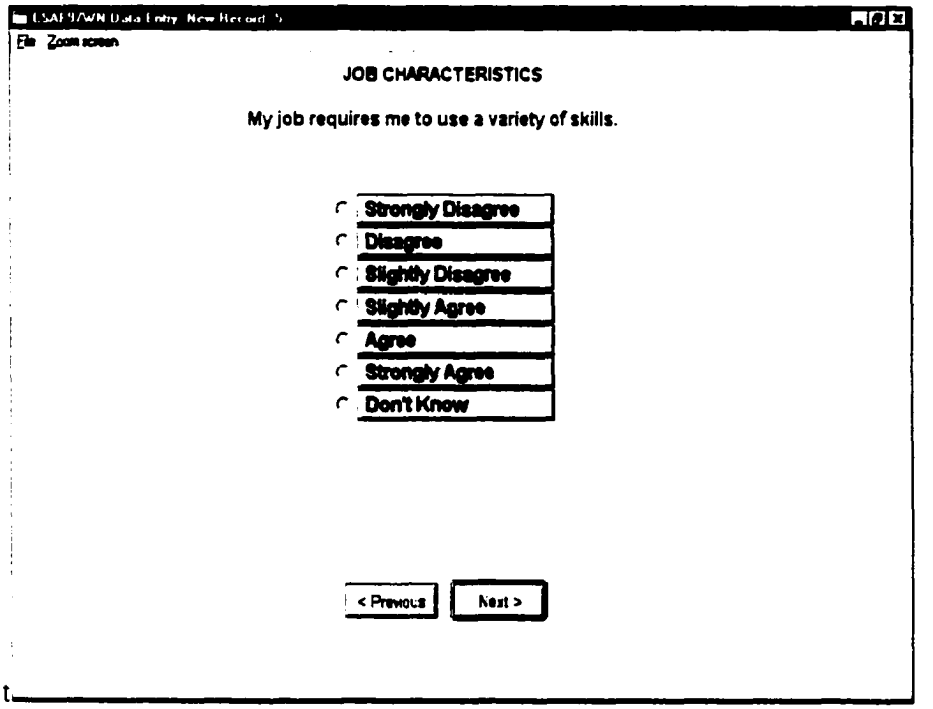
Assuming the current S was identified to receive the Organizational Climate section initially, Figure 3.9 shows the introductory message that framed the way in which Ss were asked to cognitively approach completing questions in this section.

Figure 3.9: Introduction to Organizational Climate Section



Immediately after this screen, Ss began answering the 72 questions designed to assess Organizational Climate. Figure 3.10 demonstrates how the questions were presented to Ss, with one question per screen and all potential responses established on a six-point scale (Strongly Disagree to Strongly Agree) with a "Don't Know" option.

Figure 3.10: Example of Question Presentation



Subjects completed the Organizational Climate and Quality of Life sections in the counterbalanced fashion. Next, they answered ten MAJCOM-specific questions (see Appendix A for explanation) and finally, the remainder of demographic questions for the Quality of Life section. The total number of questions was 147. A copy of the Organizational Climate Survey can be found in Appendix D.

At the conclusion of the survey, each participant was asked if he was sure he had completed the questionnaire. Subjects were instructed to use the "Save and Exit" option in the upper left hand corner of the screen. At this point Ss' responses were written to the respective databases within an encrypted file that was stored separately on a server/directory accessible to only the SSCO and her alternate. There was no residual information remaining on computers used by Ss who completed the survey.

During their training sessions and via several e-mails from the researcher and his

associate. ISCOs were instructed to remind their SSCOs to make duplicate copies. Thus, at the close of each business day, SSCOs saved Ss' files into a different backup directory.

At the mid-point in the survey process, ISCOs were instructed to collect all data files from their SSCOs. Once this was accomplished, ISCOs aggregated all survey responses from their locations and forwarded them to the researcher and his associate for storage. These two individuals then created a master file containing the records for all Ss who had participated in the survey up to this point. This process was intended to be a safety mechanism should anomalies occur during the remainder of the time the survey was available for participation. The mid-point exercise also served as a trial run for the final aggregation that would take place at the conclusion of the survey. There were no major errors discovered during the mid-point exercise.

The final aggregation process went almost as smoothly. Only one of the 109 participating installations reported major problems. In fact, over 50 percent of the data from that location was lost. After the researcher and his associate retrieved all data files, a master file was constructed and sent to the contractor who, in turn, decrypted the data file and returned the clean data in .dbf format. Several months later, survey responses from the 66 participating squadrons was extracted from the master data file and saved to the data file used for this study.

Dependent Variables- Operational Performance Measures

Reporting of the operational dependent measures began at the squadron level. Squadron officers logged mission capable rates and flying schedule effectiveness on a daily basis. At the end of each month, the performance indices were summarized into a

monthly report. The report was forwarded to a functional representative who was responsible for collecting these data from all flying squadrons at that installation. Installation-level officers computed installation statistics based on the aggregate performance of the squadrons located at that installation. These data were next forwarded to MAJCOM functional officers who prepared the information for MAJCOM leaders to review. Major command leaders are presented with three levels of reports: MAJCOM, installations, and squadrons. All reporting was accomplished in this "roll-up" fashion.

Data for the 66 squadrons that participated in the survey were e-mailed to the researcher and his associate at the conclusion of each month in which the survey was available to AF personnel. These files were saved in MS EXCEL and MS WORD formats.

The Sample of Subjects

Individual-level Sample

The original sample from the 66 squadrons was 7,635. However, 523 participants' records were omitted due to: 1) missing data; 2) repeated consistent response patterns (holding down the same key when responding); 3) "Christmas-tree" response patterns; and 4) duplicate records. Thus, the sample for this study was initially reduced to 7,112 usable surveys.

These 7,112 records are traceable to the specific installations and squadrons at which Ss are employed. However, squadron-level staffing data, such as numbers of officer, enlisted, and civilian members assigned, were available for only 59 of the 66 squadrons that participated. Seven squadrons' staffing information is considered.

"Sensitive" and could not be used for comparison statistics in this study. Thus, Ss from these seven squadrons (121 officers; 527 enlisted; 3 civilians) were omitted when calculating participation rates.

That leads to analyses based on what *is* known about the numbers and rank/grade of participants. The population in the 59 organizations for which manpower data are available is 18,900. There were 6,461 respondents, which represents a 34 percent response rate overall. There is no reason to expect that the seven organizations for which manpower data are not available would yield abnormalities.

When the profile of respondents is compared to the profile of available respondents, analyses show no difference between the overall compositions of the two groups (X^2 (2, N=6392) = .537; p>.05). Table 3.1 shows the breakouts between the different categories of rank/grade. The composition of 18 percent officer; 81 percent enlisted; and 1 percent civilian is consistent for the sample and for the population. Further inspection of the data showed that 12 of the 83 civilian Ss (or 16 percent of the authorized number of civilians for the study) were from one squadron when in fact, that squadron had only two authorized civilian positions. Similar examples were noted for three of the remaining squadrons. Therefore, a decision was made to eliminate the 83 civilians from this study. Thus, the final sample was composed of 7,029 officer and enlisted personnel.

Squadron-level Sample

Data were collected from 22 Air Force installations, worldwide. Among the 22 installations, a total of 66 squadrons, whose charter was to prepare and to fly U.S. Air Force airplanes, participated in the organizational climate survey. Participation rates

among these organizations ranged from five to 73 percent.

Table 3.1
Demographic Profile of Survey Respondents and Available Workforce Between Rank/Grade Categories

Variable	Survey Respondents	Available Workforce
Employee Category:		
Officer	1.157 (18%)	3.390 (18%)
Enlisted	5.272 (81%)	15.427 (81%)
Civilian	32 (1%)	83 (1%)
	6.461	18.900

Within groups analysis for the military members (officers and enlisted members) shows an acceptable representation of the rank structure. Table 3.2 shows the breakouts within the categories. Sample percentages of 34 percent for each of the two groups provide a healthy replica of the officer and enlisted populations at large.

Table 3.2
Demographic Profile of Survey Respondents and Available Workforce Within Rank/Grade Categories

Variable	Survey Respondents	Available Workforce
Employee Category:		
Officer	1.157 (34%)	3.390
Enlisted	5.272 (34%)	15.427
	6.429	18.817

Operationalization of Variables

Overview

The researcher commissioned a team of survey developers who were members of the Air Force to construct the organizational climate survey used in the present study. The group was composed of persons possessing doctorates in industrial/organizational psychology, experimental psychology, and management/organizational behavior. The researcher participated in the development of the questions, as well. Four additional representatives from the MAJCOMs who had experience administering organizational surveys were also part of the team.

The survey development team responded to a number of political scenarios during the instrument construction phase. Several high-ranking officers mandated that the survey include specific scales and specific questions. However, the general officer who chartered the development team provided tremendous support in telling the development team, "design the best survey you can and ignore all the political pressure to keep others' surveys intact." This statement is quite telling in that the pressure was largely due to the fact several major commands had at least three years of data from the surveys they were administering at that time. Senior leaders of these commands were quite satisfied with the content of their surveys. Moreover, they were concerned with losing their three years of "trend data" and being forced to start the data collection effort from the outset one more time.

The survey development team reviewed a number of existing surveys: The Department of Defense Climate Survey, Officer of Personnel Management Survey, Air Combat Command Culture and Leadership Survey, United States Army Climate Survey, Federal Express Management Evaluation Survey, and an instrument from the

Mayflower Group. The goal for this exercise was to gain an understanding of how organizational climate is operationally defined in existing surveys. Team members compared this information to organizational measurement theory in order to achieve the final charter of developing an instrument that would provide a valid assessment of key Air Force organizational climate indicators. There was no predetermined number of scales prior to the team convening.

The survey development and approval process was completed under a very tight timeframe. The development team was allowed only one week to construct the organizational climate scales and questions. Once that was accomplished, the survey was pilot tested and revised so that an empirically sound instrument could be presented to the CSAF for final approval. The pilot survey consisted of 82 items and 15 scales. Each of the team members asked workers from their home organization to complete the survey and provide responses to the researcher. A sample size of 184 Air Force personnel completed the pilot instrument. Principal components factor analyses with varimax rotation were conducted on the data. A moderately stable factor structure was present with 72 questions and 14 constructs (eigen values $\geq$ .93).

Independent Variables

In this section, the 11 independent variables (scales) are identified along with a brief discussion about the intended measurement topics, means, standard deviations, and corresponding alpha coefficients. Finally, questions comprising the scales are presented.

The Job. Assesses the extent to which the S's job is motivating, important, interesting and challenging. Questions address skill variety, task identity, task

significance. autonomy. and feedback from the job. Figure 3.11 contains the five questions used in this scale. Reliability analysis of the five items yielded a coefficient alpha of .82 (mean=5.63; s.d.=1.1).

Figure 3.11: The Job Questions

1. My job requires me to use a variety of skills.
2. My job allows me to see the finished products of my work
3. Doing my job well affects others in some important way.
4. My job is designed so that I know when I have performed well.
5. My job allows me freedom to work with minimum supervision.

Unit Resources. Assesses management's effective use of the unit's resources (time. personnel. funds. and equipment) to accomplish its mission. Respondents rate their ability to accomplish tasks in a typical workday. availability of supplies. and the appropriateness of the size of the work group needed to complete the tasks. Figure 3.12 contains the four questions used in this scale. Reliability analysis yielded a coefficient alpha of .82 (mean=4.53; s.d.=1.45).

Figure 3.12: Resources Questions

6. I have adequate time to do my job well.
7. We have enough people in my work group to accomplish the job.
8. I have the right tools. equipment. and materials to accomplish the job.
9. I have enough time to accomplish my daily workload during my duty hours.

Core Values. Assesses the extent to which the Air Force Core Values are understood and demonstrated by squadron personnel. Behavioral dimensions of the Air Force's Core Values: 1) "Integrity First." 2) "Service Before Self." and 3) "Excellence in All We Do" are evaluated. Figure 3.13 contains the seven questions used in this scale. Reliability analysis of the five interval scale items yielded a coefficient alpha of

.78 (mean=5.45: s.d.=.94).

Figure 3.13: Core Values Questions

10. I received a copy of. United States Air Force Core Values.
11. I have been briefed on the contents of. United States Air Force Core Values.
    *** Questions 10 and 11 were dichotomous questions. "Yes" or "No"
12. I am able to do my job without compromising my integrity.
13. Overall. people in my unit uphold high standards of excellence.
14. I understand how the AF core values apply to my job and daily activities.
15. Overall. people in my unit demonstrate that duty takes precedence over desires.
16. Overall. people in my unit are held accountable for behavior that contradicts the core values.

Communication. Assesses how well information flows throughout the unit and whether workers are well informed about important issues. Questions tap leaders' communication of the squadron's mission. goals. and objectives. Figure 3.14 contains the five questions used in this scale. Reliability analysis yielded a coefficient alpha of .83 (mean=5.39: s.d.=1.22).

Figure 3.14: Communication Questions

17. Leadership in this unit listens to my ideas.
18. My unit makes me aware of important events and situations.
19. I am comfortable discussing my ideas with the leadership in this unit.
20. Leaders in my unit are easily accessible.
21. Leadership in this unit effectively communicates the mission. goals. and objectives.

Leadership. Assesses the extent to which leadership positively influences the direction. people. and culture of the squadron. Transformational/charismatic leadership traits are evaluated. Ss also report whether squadron leaders are exemplifying the same behaviors they openly espouse. Figure 3.15 contains the ten questions used in this scale. Reliability analysis yielded a coefficient alpha of .95 (mean=5.24: s.d.=1.1).

Figure 3.15: Leadership Questions

22. I trust the leadership in my unit.
23. My unit leadership is inspirational.
24. I am proud of the leadership in my unit.
25. My unit leadership sets challenging goals.
26. My unit leadership provides a clear vision.
27. My unit leadership motivates me to do my best.
28. My unit leadership makes decisions based on facts.
29. My unit leadership motivates me to achieve our goals.
30. My unit leadership encourages me to look for ways to cut costs in my job.
31. I see my unit leaders doing the same things they publicly promote.

Supervision. Assesses the extent to which S's supervisor is perceived to be skilled at planning, organizing, directing and providing feedback. Also, questions address how well supervisors care for workers, establish challenging goals, and serve as role models for workers. Figure 3.16 contains the nine questions used in this scale. Reliability analysis yielded a coefficient alpha of .94 (mean =5.46; s.d.=1.1).

Figure 3.16: Supervision Questions

32. My supervisor is good at planning my work.
33. My supervisor sets high performance standards.
34. My supervisor is concerned with my development.
35. My supervisor models the core values of the Air Force.
36. My supervisor corrects poor performers in my work group.
37. My supervisor looks out for the best interests of my work group.
38. My supervisor keeps me up-to-date on what is happening in my unit.
39. My supervisor provides instructions that help me meet his/her expectations.
40. My supervisor helps me understand how my job contributes to my unit's mission.

Training and Development. Assesses the extent to which workers have the necessary training required to do their jobs and are provided opportunities and support for professional development. Figure 3.17 contains the four questions used in this scale.

Reliability analysis yielded a coefficient alpha of .83 (mean =5.27; s.d.=1.21).

Figure 3.17: Training and Development Questions

41. I am given opportunities to improve my skills.
42. I am encouraged by my unit leadership to learn new things.
43. I have been adequately trained for the job I am expected to do.
44. I am allowed to attend continuing professional training.

Teamwork. Assesses the extent to which team members work together to accomplish the squadron's mission. Sharing information, resolving conflicts, respect for team members, and cooperation among teams in the squadron are evaluated. Figure 3.18 contains the five questions used in this scale. Reliability analysis yielded a coefficient alpha of .87 (mean=5.49; s.d.= 94).

Figure 3.18: Teamwork Questions

45. People in my work group respect each other.
46. My work group adequately resolves conflicts.
47. There is cooperation among work groups in my unit.
48. Members of my work group willingly share information.
49. People in my work group cooperate to get the work done.

Participation/Involvement. Assesses the extent to which squadron personnel have a voice in defining what work gets done and how it is accomplished. Ss rate their comfort level in recommending innovative ways to complete work and the efficacy of organizational practices that elicit novel ideas. Figure 3.19 contains the four questions used in this scale. Reliability analysis yielded a coefficient alpha of .90 (mean =5.37; s.d.=1.19).

Figure 3.19: Participation/Involvement Questions

50. I feel free to suggest new and better ways of doing things
51. I am asked how we can improve the way my work group operates.
52. Sufficient effort is made to get the opinions and ideas of people in this work unit.
53. Suggestions made by unit personnel are implemented in our daily work activities.

Recognition. Assesses the extent to which leaders provide public recognition for exceptional performance. Individual and team acknowledgement as well as equity of rewards are evaluated. Figure 3.20 contains the three questions used in this scale. Reliability analysis yielded a coefficient alpha of .93 (mean =4.97; s.d.=1.51).

Figure 3.20: Recognition Questions

54. My unit leadership rewards team performance fairly.
55. My unit leadership rewards individual performance fairly.
56. My unit leadership does a good job of recognizing people in all grades and types of jobs.

Unit Flexibility. Assesses the extent to which the unit successfully responds to changes in the environment. Risk taking, trying new ways of doing business, and ability to respond to environmental influences are assessed. Figure 3.21 contains the three questions used in this scale. Reliability analysis yielded a coefficient alpha of .85 (mean =5.01; s.d.=1.27).

Figure 3.21: Unit Flexibility Questions

57. My unit adapts to changes quickly.
58. My unit encourages appropriate risk taking.
59. My unit challenges old ways of doing business.

Dependent Variables

In this section, five variables are presented. The first two are flying squadron

operational measures collected from the 66 squadrons independent of the CSAF Survey. A definition, brief discussion, mean, standard deviation, and reliability coefficient is available for both measures. The remaining three variables were classified as outcomes of organizational climate and were included in the CSAF Survey. For each of these, the scale is identified along with a brief discussion about the intended measurement topic, mean, standard deviation, and corresponding alpha coefficient. Finally, questions comprising the scales are presented.

Mission-Capable Rate (MCR). For this variable, a difference score will be calculated: MCR – MAJCOM standard for the specific aircraft flown. The MCR is defined as the ratio of actual to projected number of hours that aircraft are available to fly missions during a month. This value is multiplied by 100 to calculate the percentage of time a squadron's aircraft are "fully mission capable." Highly skilled maintenance workers are employed primarily to ensure aircraft are available for use by pilots and navigators. These personnel work independently and in teams to guarantee routine aircraft maintenance. They also work diligently to repair anomalies that occur with the aircraft. When flying hours are lost due to non-mission capable aircraft, leaders become upset.

The MCR – MCR MAJCOM standard calculation allows for standardization across the different types of aircraft. Because each weapon system experiences differing anomalies and because some are more aged than others, maintenance leaders establish a MAJCOM standard for each aircraft. This statistic provides a relative comparison to the MCR. That is, an MCR of 70 percent for both an F-16 and a B-52 has different implications about performance. The MAJCOM MCR standard for an F-

16 may be 80 percent and for the B-52 it may be 60 percent. Hence, the F-16 squadron had a MCR 10 percentage points below the standard: the B-52 squadron was 10 percentage points above the standard. These results would cause installation leaders to praise the leaders of the B-52 squadron. Conversely, installation leaders would ask the F-16 squadron commander about the reasons he did not meet his monthly performance objectives. Descriptive statistics for MCR showed mean = 79.90 and standard deviation = 6.62. Reliability analysis for the MCR statistic yielded a coefficient alpha of .66 (mean =-5.73; s.d.=10.78).

Flying Schedule Effectiveness (FSE). For this variable, a difference score will be calculated: FSE – FSE MAJCOM standard for the specific aircraft flown. FSE is defined as the squadron's ability to respond to the monthly flying schedule. The performance criterion is calculated: (number of scheduled flights – number of deviations from the schedule due to maintenance, weather, supply, air traffic control, commander-directed, etc.) / number of scheduled flights. This value is multiplied by 100 to determine the FSER. Operations officers are responsible for launching airplanes. Thus, they work very closely with maintenance, training, and scheduling officers to ensure all missions are flown each month. Pilots and navigators are closely monitored with regard to the numbers and types of missions they are required to fly each month. Thus, the schedule plays a critical role in ensuring each of these officers is prepared to go to war. A great deal of time is invested in designing a flying schedule that maximizes mission capable aircraft and the availability of pilots and navigators to fly intended missions.

Like the MCR, a FSE – MAJCOM standard calculation allows for a comparison

of the squadron's monthly performance relative to an established MAJCOM standard for all aircraft. Descriptive statistics for FSE mean = 73.71 and standard deviation = 8.52. Reliability analysis yielded an alpha coefficient of .78 (mean=-8.23: s.d =7.89)

Job Satisfaction. Assesses S's sense of personal accomplishment and fulfillment from work related tasks and from the work environment. A general measure of job satisfaction is also included. Figure 3.22 contains the three questions used in this scale. Reliability analysis yielded a coefficient alpha of .93 (mean=5.09: s.d.=1.43).

Figure 3.22: Job Satisfaction Questions

60. In general, I am satisfied with my job.
61. I have a sense of personal fulfillment at the end of the day.
62. The tasks I perform provide me with a sense of accomplishment.

Performance Perceptions. Assesses the extent to which the squadron is perceived to be satisfying its mission. Subjects rate quality and quantity of output, cost effectiveness, and external perceptions of squadron performance. Figure 3.23 contains the five questions used in this scale. Reliability analysis yielded a coefficient alpha of .88 (mean =5.52: s.d.=1.02).

Figure 3.23: Perceptions of Performance Questions

63. The quality of work in my unit is high.
64. The quantity of work accomplished in my unit is high.
65. My unit is known as one that gets the job done.
66. My unit is successfully accomplishing its mission.
67. My unit accomplishes its mission in a cost-effective manner.

General Organizational Climate. Assesses generalized issues related to the squadron. A collage of questions addressing morale, organizational citizenship behaviors, perceived value of worker to unit, and expectation about feedback is presented. Figure 3.24 contains the five questions used in this scale. Reliability analysis yielded a coefficient alpha of .82 (mean =5.04; s.d.=1.23).

Figure 3.24: General Organizational Climate Questions

68. Morale is high in my unit.
69. I am a valued member of my unit.
70. I would recommend an assignment in my unit to a friend.
71. People in my unit are charitable with their time, talents, or money.
72. My unit will be briefed about the results of this survey.

Data Analysis Procedures

In this section, the methods of data analysis are outlined for each of the hypotheses presented in Chapter 2.

Overview

Testing the hypotheses in this study requires that the variables of interest are identified and analyzed correctly with respect to the appropriate levels of interest. This must be accomplished with care because, "levels issues create particular problems when the level of theory, the level of measurement, and statistical analysis are incongruent." (Klein, Dansereau, & Hall, 1994; p. 198). This statement is particularly germane because the hypothesis testing strategy in this study includes individual-, squadron-, and cross-levels analyses. In order to test the hypotheses articulated in Chapter 2, a

prescribed order was followed. First, factor analysis was used to reduce the number of constructs (scales) that were included in the "1997 CSAF Survey." Second, multiple regression was used to test the each of the hypotheses.

Factor Analysis

At the outset, there were 14 independent variables included in the study. Thus, in an attempt to gain a more parsimonious set of constructs and to establish a set of factors that were more independent of each other (Kerlinger, 1992; Tabachnick & Fidell, 1989), a Principal Components Analysis with a Varimax Rotation was performed on the data. Factor analysis yielded a mathematical solution that must be inspected carefully. Actually, the solution makes no reference to construct integrity. Therefore, careful attention was taken in reviewing and validating the "interpretability" of the revised scales after the factor analysis was completed.

Multiple Regressions

Hierarchical regression analysis was used to test each of the hypotheses. This technique is a very useful tool for determining significant effects primarily because the researcher may specify the independent variables in the expected causal priority. Such an approach affords the opportunity to "control" for variables that may result in spurious relationships between key variables of interest. In fact, hierarchical regression also allows for sets of factors to be entered simultaneously, as we shall see in the procedures used in this study. The real value of this technique is in the interpretability of the output. At each step in the process, "the R^2 and the partial coefficients are determined as each independent variable joins the others" (Cohen & Cohen, 1983).

Individual-level Hypotheses

Hypothesis 1a: Individual climate perceptions will explain a significant amount of variance in squadron members' job satisfaction.

Hypothesis 1b: Individual climate perceptions will explain a significant amount of variance in squadron members' perceptions of performance.

Because the level of analysis that supports these hypotheses is at the individual level, all 7,029 cases were used. Two equations were established to correspond with the two dependent variables. Here, rank (the only appropriate control variable) was entered on the first block followed by the squadron climate measures on the second block. Figures 3.25 and 3.26 depict the process.

Figure 3.25: Research Model for Hypothesis 1a.

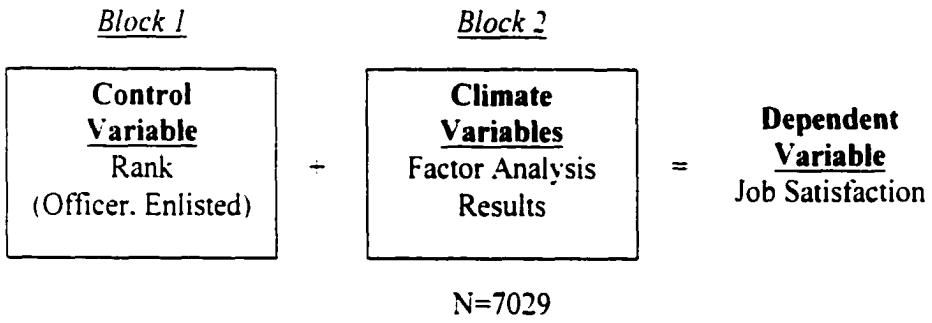
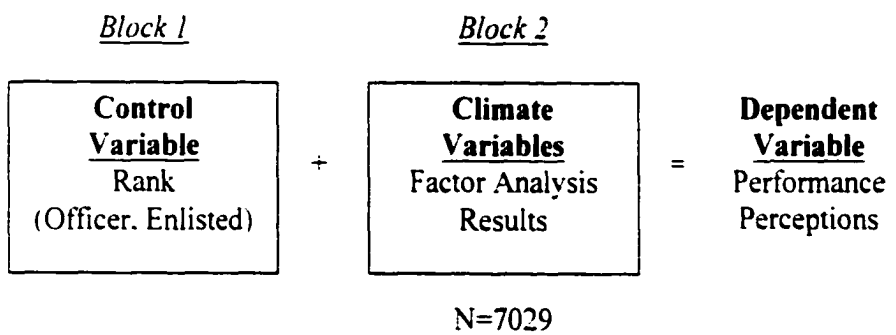


Figure 3.26: Research Model for Hypothesis 1b.



Squadron-level Hypotheses

HYPOTHESIS 2a. Squadron climate will explain a significant amount of variance in the Squadron Flying Schedule Effectiveness (FSE) Rates.

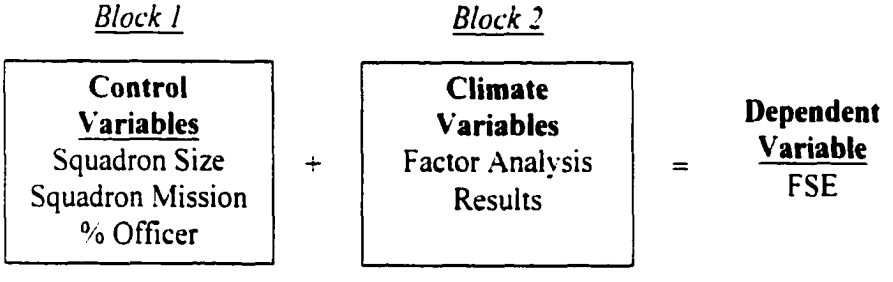
HYPOTHESIS 2b. Squadron climate will explain a significant amount of variance in the Squadron Mission Capable Rates (MCR).

HYPOTHESIS 2c. Squadron climate will explain a significant amount of variance in the Squadron-level Job Satisfaction.

HYPOTHESIS 2d. Squadron climate will explain a significant amount of variance in the Squadron-level Performance Perceptions.

Because these hypotheses assess squadron-level phenomena, the level of analysis is appropriately fixed at the squadron-level. Therefore, mean scores were calculated on each of the variables for each squadron that participated in the study. Four equations were established to correspond with the hypotheses. In all cases, the control variables (Squadron Size, Type of Mission, and Percent of Officers Assigned) were entered in the first block followed by the squadron climate measures on the second block. Figures 3.27 – 3.30 depict the process.

Figure 3.27: Research Model for Hypothesis 2a.



N=66

Figure 3.28: Research Model for Hypothesis 2b.

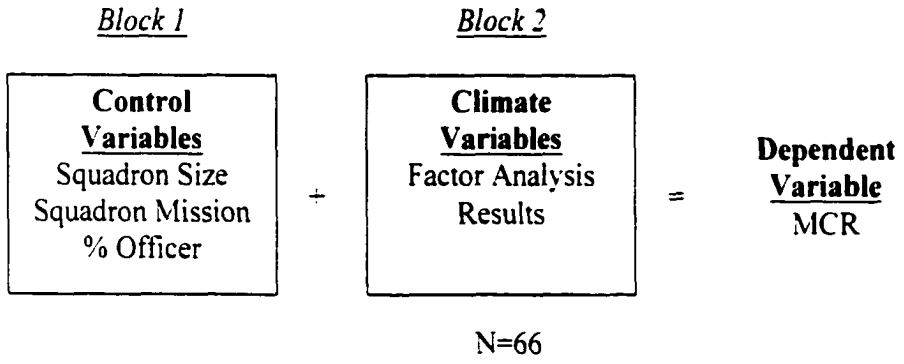


Figure 3.29: Research Model for Hypothesis 2c.

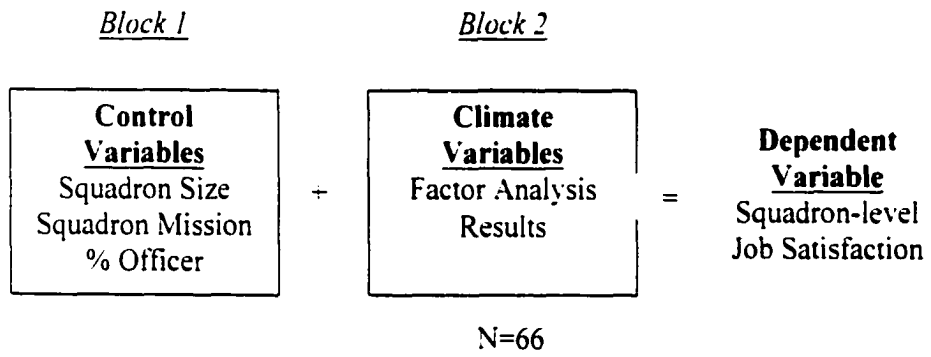
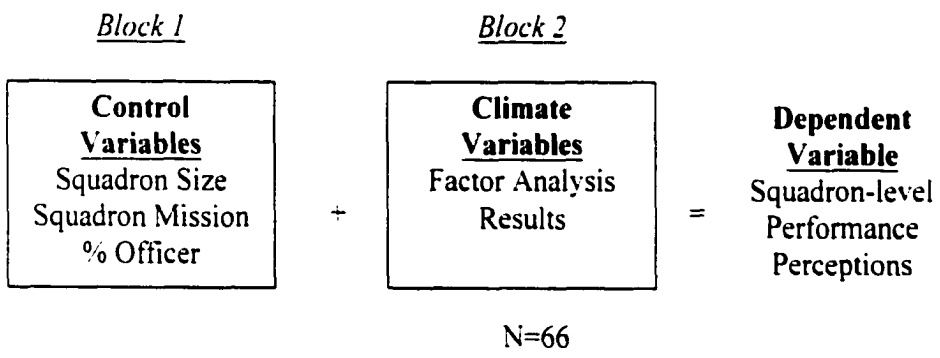


Figure 3.30: Research Model for Hypothesis 2d.

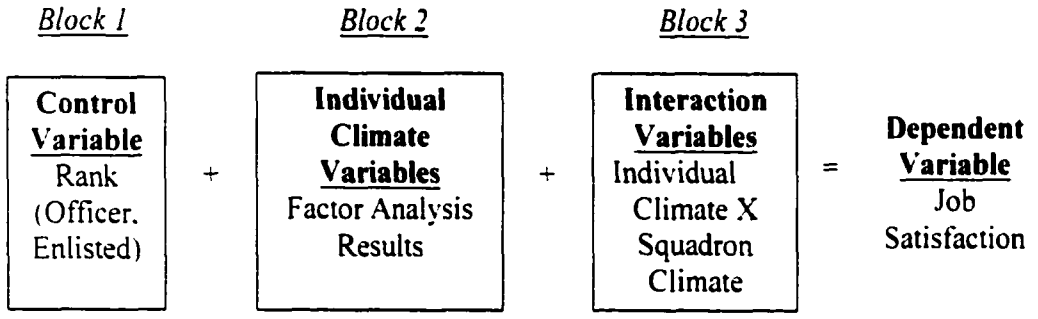


Cross-level Hypotheses

These hypotheses represent the need for a cross-level hierarchical regression. Following Ostroff (1993), interactions were computed (individual-level climate scores

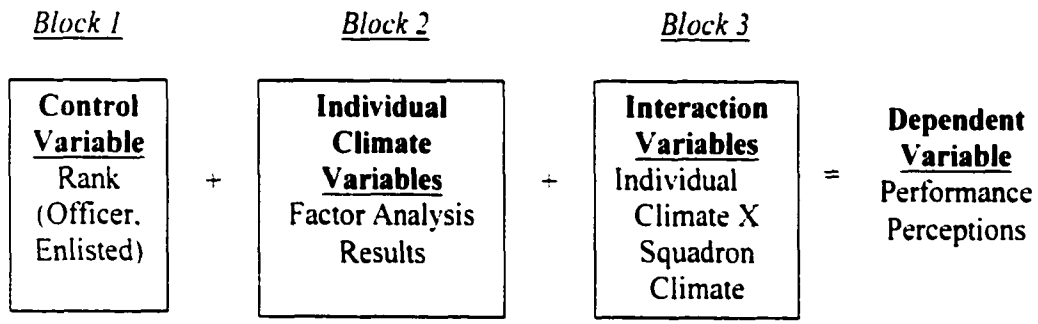
X squadron-level climate scores), thus producing a unique cross-level score for each climate variable and each of the 2,069 cases. Blocks 1 and 2 represent the individual level effects are removed, therefore remaining significant effects are attributable to squadron-level effects.

Figure 3.31: Research Model for Hypothesis 3a.



N=7,029

Figure 3.32: Research Model for Hypothesis 3b.



N=7,029

This concludes the Data Analysis section. Chapter Four contains the results from each of the analyses that were conducted for the Hypotheses articulated above.

CHAPTER FOUR

RESULTS

In Chapter Four, the first section addresses the results of the factor analysis. The second section corresponds to the analyses that supported the testing of the eight hypotheses.

Factor Analysis

The factor analysis achieved the goal of reducing the original 14 scales to a more parsimonious number of germane constructs. In fact, the principal components analysis yielded eight scales. The original Leadership, Communication, Participation, and Recognition factors loaded most heavily on the first component that was reproduced in the factor analysis. Therefore, one scale (ten questions) was derived from the items that loaded on this factor. Because each of these questions essentially addressed leadership behaviors, the title, "Leadership" was retained. In addition to the four scales mentioned above, Core Values and Unit Flexibility were removed from further investigation in this study because in most cases, the variables comprising these scales loaded on the other constructs. The independent variables: Job Characteristics, Resources, Training, and Teamwork remained as strong factors. Similarly, Job Satisfaction and Performance Perceptions held up well in the factor analysis and were retained as dependent variables. Table 4.1 shows the eight remaining factors (six independent variables and two dependent variables), questions, and corresponding factor/item loadings. Two tables of means, standard deviations, correlations, and reliability coefficients were prepared for the analyses. Table 4.2 cites data used while testing both individual-level effects (Hypothesis 1) and cross-level effects (Hypothesis

3). Table 4.3 shows the information used while testing squadron-level effects (Hypothesis 2).

Individual and Cross-level Descriptive Statistics, Correlations, and Reliabilities

Table 4.2 shows the information used in support of testing Hypothesis 1 (individual-level effects) and Hypothesis 3 (cross-level effects). At the individual level, correlations among the climate variables were smaller than at the squadron-level. The range of Pierson r's was from .23 to .62 (avg = .45), thus showing less mulitcollinearity than the squadron-level variables. All values were significant at the $p \leq .01$ level. Reliabilities ranged between .73 and .95 (avg. = .87). The pattern of correlations is quite similar to those described for the squadron-level variables. Resources was least correlated with the other climate variables.

At the individual-level, military rank (whether or not a person was officer or enlisted) was included in the analyses. This variable was significantly ($p \leq .01$) correlated with all climate variables. The variables with which the magnitude of the correlations was highest were Leadership and Teamwork. Thus, officers very clearly rate their leaders' behavior and teamwork activities within their units more favorably than enlisted members. In fact, that pattern holds true for each of the climate variables except Resources in which case, enlisted members responded more favorably about the equipment, number of personnel, and amount of time they have to complete their tasks.

The remainder of the information in Table 4.2 shows correlations among the interactions that were computed by creating cross products (individual-level x squadron-level) for each of the climate variables. Analyses and variables used in this case were the same as those used while testing Hypothesis 1. Operational performance

values were not available for individuals, therefore Job Satisfaction and Performance Perceptions were the only two dependent variables used in the cross-level analyses. Here the entire data set (N=7029) was used. The alpha coefficients remained consistent and the absolute values of the intercorrelations averaged $\pm$ .04 points with the data used for the N=66 analyses. In the cross-level analysis, the role of military rank remained essentially the same as in the individual analyses. However, the magnitude of the correlations increased slightly.

When squadron type was correlated with the dependent variables, the data showed significant correlations ($p \leq .01$) with both job satisfaction and performance perceptions. This implies that among those squadrons that actually go to war, their members appear to be more satisfied with their jobs and they rate their squadrons' performance more favorably than those squadrons whose members support the warfighters.

Squadron-level Descriptive Statistics, Correlations, and Reliabilities

Table 4.3 shows the information used in support of testing Hypothesis 2 (squadron-level effects. Squadron members' responses were aggregated and averaged to determine a squadron score for each of the climate variables. Thus, the sample size for testing squadron-level effects was 66.

The decision to use squadron-level scores was based on Hollenbeck, Ilgen, and Sego's (1994) and Hollenbeck, Colquitt and Gulley's (1995) recommended approach for partitioning variance. Total variance (individual-level) was calculated for each of the survey scales. Next, the amount of variance in the each of the squadron-level scores

was derived. Variance in the squadron-level variables ranged from .003 to .13. Only two of the scales achieved an acceptable threshold for aggregation. Resources and Leadership.

However, as a matter of practical convenience, the remaining six constructs were used in the study. Internal consistency reliability for each of the constructs was computed. Alpha coefficients ranged from .83 to .98 (avg. = .93). Twenty-three of the possible 28 relationships were significant at the $p \leq .01$ level. Three additional correlations were significant at the $p \leq .05$ level. Yet, three of the relationships appear to be relatively independent of each other: Resources and Job Characteristics, Resources and Supervision, and Resources and Teamwork. Conversely, Job Characteristics, Leadership, Teamwork, and Training produced the highest correlations with the other variables. Among all possible relationships, the correlation coefficients ranged from .17 (Job Characteristics-Resources) to .74 (Job Satisfaction-Training). The average correlation between the squadron-level climate variables was .53. Thus, there was a moderately high degree of mulitcollinearity among the constructs.

Inspection of correlations among the climate and squadron-level operational performance indicators, flying schedule effectiveness and mission capability, yielded no significant relationships. However, flying schedule effectiveness was significantly correlated with both of the dependent measures, Job Satisfaction ($p \leq .05$) and Performance Perceptions ($p \leq .05$). Thus, it appears as though, at the squadron-level, squadrons that report the highest levels of job satisfaction are also the squadrons that do better at meeting their monthly flying schedules. The Performance Perceptions-Flying Schedule Effectiveness correlation implies that squadrons are quite accurate at judging how well their units are meeting their monthly flying schedule.

When the climate variables are viewed in concert with the dependent measures included in the CSAF Survey, the data showed all possible correlations significant at $p \leq .01$ level. The strongest correlations with Job Satisfaction were Training, Job Characteristics, and Leadership. Performance Perceptions was correlated most highly with Job Characteristics, Training, and Leadership. Another relationship was uncovered between these dependent measures and the control variables. Squadron Mission Type (warfighting vs support mission) was significantly correlated with both Job Satisfaction and with Performance Perceptions. Therefore, it appears as though squadrons that have a warfighting mission, report higher job satisfaction. Also, these squadrons see the quality, quantity, and efficacy of their outputs more positively than squadrons that fly support missions. Because all of the reported significant relationships are correlations, it cannot be determined whether one variable in the relationship may have a predictive capability with the other.

Table 4.1
Factors, Corresponding Questions, and Factor Loadings

SQUADRON LEADERSHIP (factor 1)	1	2	3	4	5	6	7	8
My unit leadership is inspirational.	**.80**	.23	.15	.15	.13	.08	.18	.06
I trust the leadership in my unit.	**.79**	.22	.19	.17	.11	.09	.16	.08
My unit leadership makes decisions based on facts.	**.78**	.22	.18	.20	.15	.06	.09	.06
My unit leadership motivates me to do my best.	**.78**	.26	.16	.18	.13	.09	.16	.11
I see my unit leaders doing the same things they publicly promote.	**.76**	.23	.22	.18	.11	.07	.09	.07
Leadership in this unit listens to my ideas.	**.74**	.19	.22	.07	.10	.14	.18	.05
Leaders in my unit are easily accessible.	**.72**	.19	.17	.12	.11	.13	.08	.12
Leadership in this unit effectively communicates the mission, goals, and objectives.	**.72**	.21	.15	.19	.15	.11	.08	.12
My unit leadership does a good job of recognizing people in all grades and types of jobs.	**.65**	.22	.26	.11	.12	.03	.14	.17
My unit leadership sets challenging goals.	**.61**	.26	.08	.30	-.01	.13	.04	.11
SUPERVISOR SUPPORT (factor 2)								
My supervisor provides instructions that help me meet his/her expectations.	.20	**.83**	.13	.09	.09	.08	.07	.12
My supervisor is concerned with my development.	.20	**.82**	.12	.09	.07	.07	.10	.14
My supervisor looks out for the best interests of my work group.	.24	**.82**	.18	.11	.10	.06	.10	.07
My supervisor models the core values of the Air Force.	.25	**.79**	.18	.12	.07	.06	.10	.07
My supervisor keeps me up-to-date on what is happening in my unit	.27	**.77**	.17	.09	.08	.08	.10	.12
My supervisor helps me understand how my job contributes to my unit's mission.	.27	**.76**	.16	.11	.05	.10	.12	.15
My supervisor sets high performance standards.	.17	**.75**	.10	.21	.01	.14	.03	.04
My supervisor is good at planning my work.	.15	**.74**	.11	.11	.15	.04	.13	.09
My supervisor corrects poor performers in my work group.	.16	**.74**	.17	.13	.10	.09	.04	.09
TEAMWORK (factor 3)								
My work group adequately resolves conflicts.	.27	.25	**.79**	.14	.05	.08	.14	.06
People in my work group respect each other.	.28	.20	**.79**	.10	.03	.10	.17	.02
Members of my work group willingly share information.	.24	.25	**.77**	.16	.07	.11	.07	.13
People in my work group cooperate to get the work done.	.21	.26	**.75**	.23	.10	.11	.06	.13
There is cooperation among work groups in my unit.	.34	.20	**.73**	.19	.11	.07	.10	.10

Table 4.1
Factors, Corresponding Questions, and Factor Loadings (cont.)

PERFORMANCE PERCEPTIONS (factor 4)	1	2	3	4	5	6	7	8
My unit is known as one that gets the job done.	.25	.18	.14	**.79**	.06	.10	.08	.05
My unit is successfully accomplishing its mission.	.24	.17	.12	**.78**	.14	.08	.10	.10
The quantity of work accomplished in my unit is high.	.17	.17	.18	**.73**	-.03	.12	.11	.07
The quality of work in my unit is high.	.31	.22	.26	**.62**	.15	.12	.17	.12
My unit accomplishes its mission in a cost-effective manner.	.41	.19	.16	**.53**	.20	.04	.14	.13
RESOURCES (factor 5)								
I have enough time to accomplish my daily workload during my duty hours.	.08	.10	.02	.06	**.86**	-.03	.05	.08
I have adequate time to do my job well.	.12	.13	.06	.05	**.80**	.08	.17	.06
We have enough people in my work group to accomplish the job.	.17	.07	.10	.04	**.76**	-.02	.05	.06
I have the right tools, equipment, and materials to accomplish the job.	.21	.10	.05	.14	**.65**	.06	.01	.17
JOB CHARACTERISTICS (factor 6)								
Doing my job well affects others in some important way.	.10	.11	.06	.15	.01	**.79**	.03	.02
My job allows me to see the finished products of my work.	.11	.12	.10	.10	.12	**.75**	.17	.07
My job requires me to use a variety of skills.	.06	.05	.07	.07	-.15	**.72**	.04	.13
My job is designed so that I know when I have performed well.	.29	.18	.12	.02	.20	**.56**	.25	.09
My job allows me freedom to work with minimum supervision.	.30	.14	.13	-.03	.23	**.33**	.34	-.23
JOB SATISFACTION (factor 7)								
I have a sense of personal fulfillment at the end of the day.	.29	.20	.18	.19	.13	.18	**.79**	.18
In general, I am satisfied with my job.	.26	.20	.16	.18	.15	.15	**.77**	.17
The tasks I perform provide me with a sense of accomplishment.	.28	.19	.16	.22	.08	.21	**.74**	.21

Table 4.1
Factors, Corresponding Questions, and Factor Loadings (cont.)

TRAINING (factor 8)	1	2	3	4	5	6	7	8
I have been adequately trained for the job I am expected to do.	.09	.23	.13	.14	.19	.15	.15	**.63**
I am allowed to attend continuing professional training (conferences, workshops, etc.).	.33	.22	.14	.08	.22	.04	.15	**.60**
I am given opportunities to improve my skills.	.33	.32	.12	.15	.14	.18	.21	**.59**
I am encouraged by my unit leadership to learn new things.	.50	.33	.13	.18	.06	.15	.12	**.49**

Table 4.2
Individual and Cross-Level Variables: Descriptive Statistics, Correlations, and Reliabilities

Scale	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Military Rank	.18	.39	1																	
2. Warfigter/Support	.79	.41	-.04**	1																
3. Ind Job Characteristics	4.90	.81	.11**	.06**	(.73)															
4. Ind Resources	3.58	1.2	-.13**	-.03**	.23*	(.82)														
5. Ind Leadership	3.97	1.18	.24**	.07**	.47*	.36*	(.95)													
6. Ind Supervision	4.50	1.06	.09**	.04**	.38*	.28*	.55*	(.95)												
7. Ind Training	4.37	1.01	.10**	.09**	.45*	.39*	.62*	.56*	(.79)											
8. Ind Teamwork	4.30	1.08	.27**	.01**	.38*	.26*	.58*	.50*	.47*	(.92)										
9. Ind Job Satisfaction	4.02	1.37	.11**	.08**	.53*	.31*	.56*	.45*	.57*	.47*	(.92)									
10. Ind Performance Perceptions	4.68	.99	.14**	.11**	.38*	.30*	.60*	.45*	.52*	.52*	.51*	(.87)								
11. Cross Lvl Job Characteristics	24.05	4.16	.11**	.11**	.99*	.23*	.48*	.37*	.45*	.39*	.53*	.40*	1							
12. Cross Lvl Resources	12.94	4.75	-.14**	-.06**	.21*	.97*	.35*	.26*	.36*	.24*	.30*	.29*	.23*	1						
13. Cross Lvl Leadership	15.86	5.15	.23**	.12**	.46*	.35*	.97*	.52*	.60*	.57*	.54*	.59*	.50*	.36*	1					
14. Cross Lvl Supervision	20.31	4.94	.09	.07**	.38*	.28*	.56*	.98*	.56*	.51*	.45*	.45*	.39*	.27*	.56*	1				
15. Cross Lvl Training	19.13	4.63	.09	.16**	.45*	.39*	.63*	.56*	.98*	.47*	.57*	.53*	.48*	.38*	.64*	.57*	1			
16. Cross Lvl Teamwork	18.56	4.93	.28**	.02**	.38*	.25*	.59*	.50*	.47*	.98*	.46*	.52*	.40*	.25*	.61*	.52*	.48*	1		
17. Cross Lvl Job Satisfaction	16.29	5.80	.11	.15**	.53*	.33*	.57*	.44*	.57*	.47*	.98*	.52*	.56*	.33*	.58*	.45*	.60*	.47*	1	
18. Cross Lvl Performance Perceptions	21.88	5.02	.13	.18**	.37*	.29*	.58*	.41*	.49*	.49*	.48*	.96*	.42*	.31*	.62*	.43*	.53*	.51*	.52**	1

Note:
1. Coefficient alpha in parentheses; N=6751 (listwise case deletion)
2. All values significant at p≤ .01, two-tailed test
3. Variables 3-10 rated on Six-point scale; Variables 11-18 are cross products Ind Lvl x Squadron Lv Variable
4. Enlisted or Officer coded 1= Officer; 0= Enlisted;
5. Warfighter/ Squadron Role coded 1= Warfighter; 0=Support

Table 4.3
Squadron-Level Variables: Descriptive Statistics, Correlations, and Reliabilities

Scale	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. SQ Size	286.36	112.56	1.00												
2. SQ Officer %	.21	.17	-.14	1.00											
3. SQ Mission	.73	.45	-.29*	-.18	1.00										
4. Job Characteristics	4.92	.17	.06	-.05	.24	(.83)									
5. Resources	3.62	.35	.11	-.03	-.23	.17	(.88)								
6. Leadership	4.02	.34	.02	.03	.12	.74**	.31*	(.98)							
7. Supervision	4.51	.19	.06	.00	.08	.47**	.24	.69**	(.96)						
8. Training	4.37	.22	-.03	.06	.29*	.72**	.40**	.74**	.62**	(.87)					
9. Teamwork	4.33	.25	.07	.08	-.04	.57**	.21	.78**	.68**	.54**	(.98)				
10. Job Satisfaction	4.05	.32	.01	-.09	.31*	.82**	.44**	.69**	.47**	.89**	.49**	(.98)			
11. Performance Perceptions	4.71	0.29	-.12	-.07	.27*	.68**	.30*	.65**	.47**	.67**	.56**	.71**	(.93)		
12. FSE Deviation	-2.95	12.38	.00	-.03	.18	.15	.03	.16	.17	.24	.15	.28*	.31*	(.78)	
13. MCR-Deviation	-8.39	7.86	.13	.08	-.05	-.14	.14	-.09	.02	-.06	.02	-.04	.07	.11	(.66)

Note: 1. Coefficient alpha in parentheses; N=66
2. ** p< .01; * p< .05; two-tailed test
3. Variables 4-11 rated on Six-point scale
4. Squadron Mission is coded 1=warfighter mission, 0=support mission
5. Flying Schedule Effectiveness (FSE) Deviation expressed as monthly average deviation from established standard
6. Mission Capable Rate (MCR) Deviation expressed as monthly average deviation from established standard

Results of Analyses by Hypothesis

Individual-Level Climate and Outcome Measures

Hypothesis 1a. Hypothesis 1a stated that individual climate perceptions would explain a significant amount of variance in squadron members' job satisfaction. Table 4.4 shows the results of the regression analyses. In the first block, military rank was entered as a control variable. Although the results indicate officers are more satisfied than enlisted members ($p \leq .001$), this variable only accounted for one percent of the total variance. The sheer sample size (N=7029) enhances the power to detect very small effects.

As predicted, the largest amount of variance is clearly associated with the climate variables. In fact, these variables accounted for an additional 45 percent of the variance in individual-level job satisfaction. The most significant climate variables in the regression equation were Job Characteristics (B = .27), Training (B = .23), Leadership

(B = .18), and Teamwork (B = .12). Each of these is significant at the $p \leq .001$ level. Thus, individual-level climate does play a major role in determining flying squadron members' job satisfaction. When individuals perceive their jobs as enriching, they have the necessary training to do their jobs, their leaders are good leaders, and teamwork is high; their job satisfaction is likely to be high as well. Hypothesis 1a was supported.

Table 4.4
Regression Model: Dependent Variable – Individual-level Job Satisfaction

VARIABLE	MODEL 1[a]	MODEL 2[a]
1. Rank (Enlisted/Officer)	.11****	-.02
2. Job Characteristics		.27****
3. Resources		.05****
4. Leadership		.18****
5. Supervision		.04****
6. Training		.23****
7. Teamwork		.12****
- Overall Model F	83.72****	858.15****
- Adjusted R^2	.01	.46
- (R^2 Change)	----	(.45)

*p≤.10. **p≤.05. ***p≤.01
****p≤.001
[a] Standardized reg. coef.

Hypothesis 1b. Hypothesis 1b stated that individual climate perceptions would explain a significant amount of variance in squadron members' perceptions of performance. Table 4.5 shows the results of the regression analysis. Once again, military rank was entered as a control variable. The results were similar to the analysis using Job Satisfaction as the dependent variable. The R^2 value for military rank doubled to .02.

As predicted, the climate variables explained a significant amount of the variance in individual-level performance perceptions. In fact, climate explained an additional 41 percent of the total variance in the dependent variable. The most significant climate variables in the regression equation were Leadership (B = .31), Teamwork (B = .20), and Training (B = .15). Each of these is significant at the p≤.001 level. The magnitude of the beta weights show that Leadership is the strongest

predictor of the climate factors. Hence, as leaders effectively communicate the squadron's mission, goals, and objectives, elicit trust, and model their own rhetoric, squadron members are more likely to perceive their squadron's performance in a better light. Similarly, when squadron members perceive that teamwork is high and they have the necessary training to complete their jobs, they are more likely to perceive that their squadrons are performing highly. Hypothesis 1b was supported.

Table 4.5
Regression Model: Dependent Variable – Individual-level Performance Perceptions

VARIABLE	MODEL 1 [a]	MODEL 2 [a]
1. Rank (Enlisted/Officer)	.03****	-.01
2. Job Characteristics 3. Resources 4. Leadership 5. Supervision 6. Training 7. Teamwork		.06**** .05**** .31**** .05**** .15**** .20****
- Overall Model F - Adjusted R^2 - (R^2 Change)	142.88**** .02 ----	748.93**** .41 (.43)
*p≤.10, **p≤.05, **p≤.01 **** p≤.001 [a] Standardized reg. coef.		

Squadron-level Climate and Outcome Measures

HYPOTHESIS 2a. Hypothesis 2a stated that squadron climate would explain a significant amount of variance in the squadrons' Flying Schedule Effectiveness Rates.

Table 4.6 shows the results of the regression analyses. Neither of the two models revealed statistical significance. The control variables, which were entered in the first block, were not significant predictors of the dependent variable. Similarly, the climate variables also failed to show a significant relationship in the second block. The total amount of variance accounted for by the complete model (Model 2) only reached approximately six percent. Hypothesis 2a was not supported.

Because the correlation analyses showed Job Satisfaction and Performance Perceptions were significantly related to flying schedule effectiveness, a post-hoc regression analysis was conducted to see if either of these variables have a predictive relationship with the dependent variable. Neither of the two independent variables reached statistical significance.

Table 4.6
Regression Model: Dependent Variable – Flying Schedule Effectiveness Rate

VARIABLE	MODEL 1	MODEL 2
1. Squadron % Officer	.01	-.03
2. Squadron Size	.06	.05
3. Squadron Mission (Warfighter Y/N)	.20	.14
4. Job Characteristics		-.11
5. Resources		-.04
6. Leadership		-.07
7. Supervision		.13
8. Training		.27
9. Teamwork		.12
- Overall Model F	.78	.57
- Adjusted R^2	-.01	-.06
- (R^2 Change)	----	(-.05)
[a] Standardized reg. coef.		

HYPOTHESIS 2b. Hypothesis 2b stated that squadron climate would explain a significant amount of variance in the squadrons' Mission Capable Rate. Table 4.7 shows the results of the regression analysis. Consistent with Hypothesis 2a. neither the control nor climate factors proved to be significant predictors of the dependent variable. In fact. the control variables only consumed two percent of the total variance in predicting squadrons' Mission Capable Rate. Similarly. the climate variables contributed marginally by consuming only an additional one percent of the variance. Thus. Hypothesis 2b was not supported.

Table 4.7
Regression Model: Dependent Variable – Mission Capable Rate

VARIABLE	MODEL 1 [a]	MODEL 2 [a]
1. Squadron % Officer	.10	.13
2. Squadron Size	.15	.16
3. Squadron Mission (Warfighter Y/N)	.01	.17
4. Job Characteristics		-.14
5. Resources		.24
6. Leadership		-.26
7. Supervision		.09
8. Training		-.10
9. Teamwork		.23
- Overall Model F	.57	.80
- Adjusted R^2	-.02	-.03
- (R^2 Change)		(-.01)
[a] Standardized reg. coef.		

Hypothesis 2c. Hypothesis 2c stated that squadron climate would explain a significant amount of variance in squadron-level Job Satisfaction. Table 4.8 shows the results of the regression analysis. Approximately six percent of the variance in job satisfaction was due to the control variables. However. only one of these variables.

squadron mission, appears to be a significant predictor of Job Satisfaction. The same relationship that was described earlier in the correlation analysis was confirmed in the regression analysis. Thus, squadrons that have warfighting missions may be predicted to also have higher rates of Job Satisfaction.

The climate variables account for approximately 83 percent of the total variance associated with Job Satisfaction. While controlling for the squadron mission effects, Training (B = .61), Job Characteristics (B = .42), and Resources (B = .19) proved to be significant predictors of Job Satisfaction. Each of these variables is significant at the $p \leq .001$ level. Thus, those squadrons providing their members with the training required to do their jobs and providing enriched work environments (skill variety, task identify, task significance, autonomy and feedback) are affecting their members in a very positive way. Similarly, squadron-level job satisfaction is higher when the unit provides its members with the necessary people, time, equipment, and training to perform their tasks.

The next finding presents some cognitive dissonance. That is, the results indicate Supervision (B = -.14) is also a strong predictor of squadron members' Job Satisfaction ($p \leq .05$). However, the uncertainty arises from the fact that the data indicate these two variables are negatively related to each other. These items are not reverse scored, thus, one would expect that as one score increased, so would the other. However, flying squadrons reported just the opposite. Supervisory behaviors described in the survey actually decreased job satisfaction. The items are intended to measure characteristics that typify good supervisors. One possible interpretation may be that the components measured in the Supervision scale tend to migrate toward the "micro-management" or "too personal" behaviors and the resulting perception is a negative

connotation. In other words, survey participants may actually feel that the behaviors measured in the Supervisor scale border on activities that somehow take away from their freedom and autonomy.

The final model accounted for a respectable 89 percent of the variance associated with Job Satisfaction. Therefore, Hypothesis 2c was supported.

Table 4.8
Regression Model: Dependent Variable – Squadron-level Job Satisfaction

VARIABLE	MODEL 1 [a]	MODEL 2 [a]
1. Squadron % Officer	-.01	-.09*
2. Squadron Size	.11	.00
3. Squadron Mission (Warfighter Y/N)	.34***	.08
4. Job Characteristics		.42****
5. Resources		.19****
6. Leadership		-.09
7. Supervision		-.14**
8. Training		.61****
9. Teamwork		.06
- Overall Model F	2.46*	57.28****
- Adjusted R^2	.06	.89
- (R^2 Change)	---	(.83)****
*p≤.10. **p≤.05. ***p≤.01. **** p≤.001		
[a] Standardized reg. coef.		

Hypothesis 2d. Hypothesis 2d stated that squadron climate would explain a significant amount of variance in the squadron-level Performance Perceptions. Table 4.9 shows the results of the regression analysis. Once again the control variable, Squadron Mission, was a predictor of the dependent variable. Here, the data indicate that warfighting squadrons typically report higher perceived levels of performance. These results accounted for approximately three percent of the variance in the dependent

variable.

Concomitantly, the climate variables explained an additional 52 percent ($p \leq .001$) of the variance. The number of climate variables found to be significant predictors of the dependent variable was reduced to two in the case of Performance Perceptions. Here, Job Characteristics ($B = .35$, $p \leq .05$) and Teamwork ($B = .26$, $p \leq .10$) were the significant variables in the equation. Thus, at the squadron level, it appears as if squadrons that rate their jobs and teamwork in their units favorably, may be predicted to also rate the performance of their squadrons strongly.

The climate variables did, in fact, explain a significant amount of the variance in Performance Perceptions. Therefore, Hypothesis 2d was supported.

Table 4.9
Regression Model: Dependent Variable – Squadron-level Performance Perceptions

VARIABLE	MODEL 1 [a]	MODEL 2 [a]
1. Squadron % Officer	-.03	-.08
2. Squadron Size	-.06	-.15
3. Squadron Mission (Warfighter Y/N)	.25*	.12
4. Job Characteristics		.35**
5. Resources		.16
6. Leadership		.03
7. Supervision		-.05
8. Training		.19
9. Teamwork		.26*
- Overall Model F	1.68	9.82****
- Adjusted R^2	.03	.55
- (R^2 Change)	---	(.52)****
*p≤.10, **p≤.05, ***p≤.01. [a] Standardized reg. coef.		

Cross-Level Climate and Outcome Measures

Hypothesis 3a. Hypothesis 3a stated that squadron climate would explain a significant amount of variance in squadron members' job satisfaction over and above individual-level climate effects. Results of the regression analysis are presented in Table 4.10. Blocks 1 and 2 are the same as Hypothesis 2a.

Consistent with Ostroff (1993), cross-level interactions were computed using individual-level scores x squadron-level scores (mean values). This process was repeated for each of the climate variables in the present study. The cross-level climate variables were entered in Block 3. This step was intended to prove that squadron-level climate possesses additional explanatory power in squadron members' job satisfaction that is beyond that of the individual-level climate effects. The amount of variance for which the interaction terms accounted was significant, but minimal (R^2 change = .01). Also, the mixed directions of the beta weights are somewhat confusing (Training, B = .34; Supervision, B = -.18; Job Characteristics, B = .18; and Leadership, B = -.16). This dynamic makes interpretation somewhat difficult. When these interaction terms are plotted using Job Satisfaction as the dependent variable, there are indications that behaviors typically thought to produce positive effects on Job Satisfaction actually do not have the intended effect.

Hypothesis 2c demonstrated that with data aggregated to the squadron-level (N=66), Squadron Mission Type was a significant predictor of Job Satisfaction. Thus, a post-hoc analysis that included this variable in the regression equation for this hypothesis was conducted. Squadron Mission Type was entered in Block 1 along with military rank. The results of adding the additional control variable were very similar to the effects of the cross-level variables. The R^2 value increased by one percent and

squadron mission type was significant at the p≤.01 level. Hypothesis 3a was supported.

Table 4.10
Regression Model: Dependent Variable – Individual-level Job Satisfaction

VARIABLE	MODEL 1 [a]	MODEL 2 [a]	MODEL 3 [a]
1. Rank (Enlisted/Officer)	.11***	-.02	-.01
2. Ind Job Characteristics		.27****	.10
3. Ind Resources		.05****	.02
4. Ind Leadership		.18****	.32****
5. Ind Supervision		.04****	.22****
6. Ind Training		.23****	-.11
7. Ind Teamwork		.12****	.25****
8. Ind x Sq Job Characteristics			.18***
9. Ind x Sq Resource			.03
10. Ind x Sq Leadership			-.16***
11. Ind x Sq Supervision			-.18***
12. Ind x Sq Training			.34****
13. Ind x Sq Teamwork			-.13*
- Overall Model F	83.72****	858.15****	469.51***
- Adjusted R^2	.01	.46	.47
- (R^2 Change)	----	(.45)	(.01)

*p≤.10, **p≤.05, ***p≤.01
[a] Standardized reg. coef.

Hypothesis 3b. Hypothesis 3b stated that squadron climate would explain a significant amount of variance in squadron members' performance perceptions over and above individual-level climate effects. Table 4.11 shows the results of the regression analysis.

Blocks 1 and 2 are identical to Hypothesis 2b. Cross-level climate variables (interaction terms) were entered into the regression on Block 3. Consistent with results in Hypothesis 3a, the cross-level variables explained only an additional one percent of variance in the dependent variable. Two interactions were identified as significant

predictors of members' performance perceptions: Job Characteristics (B = .32, p≤.01) and Training (B = .18, p≤.05).

The same post-hoc analysis that was performed while testing Hypothesis 3a was performed here. That is, Squadron Mission Type was included as a control variable and the regression was executed again. The results of this analysis were the same as the post-hoc analysis for Hypothesis 3a. The R^2 value increased by one percent and was significant at p≤.01. Hypothesis 3b was supported.

Table 4.11
Regression Model: Dependent Variable–Individual-level Performance Perceptions

VARIABLE	MODEL 1 [a]	MODEL 2 [a]	MODEL 3 [a]
1. Rank (Enlisted/Officer)	.14***	-.01	-.01
2. Ind Job Characteristics		.06****	-.26****
3. Ind Resources		.05****	.03
4. Ind Leadership		.31****	.42****
5. Ind Supervision		.05****	.18***
6. Ind Training		.15****	-.02
7. Ind Teamwork		.20****	.08
8. Ind x Sq Job Characteristics			.32***
9. Ind x Sq Resources			.02
10. Ind x Sq Leadership			-.13
11. Ind x Sq Supervision			-.12
12. Ind x Sq Training			.18**
13. Ind x Sq Teamwork			... .13
- Overall Model F	142.89****	748.93****	410.88****
- Adjusted R^2	.02	.43	.44
- (R^2 Change)	----	(.41)	(.01)

*p≤.10, **p≤.05,***p≤.01
****p≤.001
[a] Standardized reg. coef.

Table 4.12 summarizes the findings shown in this chapter.

Table 4.12
Summary of Results

Hypothesis	Supported/Not Supported	Dependent Variable
Individual-Level		
1a	Supported	Job Satisfaction
1b	Supported	Performance Perceptions
Squadron-Level		
2a	Not Supported	Flying Schedule Effectiveness
2b	Not Supported	Mission Capable Rate
2c	Supported	Job Satisfaction
2d	Supported	Performance Perceptions
Cross-Level		
3a	Supported	Job Satisfaction
3b	Supported	Performance Perceptions

CONCLUSIONS

Six of the eight hypotheses were supported. The dependent variables for all supported hypotheses were either Job Satisfaction or Performance Perceptions. In both cases, data were collected along with the climate variables from the CSAF Survey. The first two hypotheses, which included the operational performance measures, Flying Schedule Effectiveness and Mission Capable Rates, were not supported. Explanations for all findings will be discussed in Chapter Five.

CHAPTER FIVE

DISCUSSION

This chapter presents a review of the most important findings in this dissertation research. The discussion presents a summary of the results identified in Chapter Four. Also included in this chapter are sections that address the limitations of this study, implications for future research and theory, and implications for practice.

Summary

Over the past ten years, the academic literature that addressed organizational climate and culture evolved beyond descriptive treatises and case studies. The focus shifted toward understanding how various climate dimensions may be linked to both performance and members' affective measures in organizations. This paradigm shift stimulated a research agenda that led to attempts to link climate and performance in the service, technical, and health-care industries. The U.S. States military has traditionally served as a vast proving ground for basic and practical research topics. However, a thorough review of the organizational climate and culture literatures revealed there is no current research that addresses organizational climate either in a descriptive format or in a research design that attempts to establish a climate-performance linkage in military work environments.

This dissertation addressed a very important issue facing the American military. During the 1990s, social, political, and economic changes occurred in the United States. The Cold War ended and competition with other military superpowers was reduced significantly. Reductions in fiscal strength and numbers of personnel in the military followed. Also, the baby boomer era ushered in a generation of Americans who no

longer had personal ties to the military. Parents, who throughout history have proven to be a very significant impetus for military service, did not serve in the military. Interest in and a passion for military service waned in American minds. At the same time, the economy and employment rates have grown increasingly stronger. These dynamics contributed to the military experiencing declines in recruiting success as well as increased attrition.

No longer can the U.S. military depend upon duty, honor, and country as a set of core values that energizes American women and men to choose military service as an occupation. Additionally, the reduction of military personnel and budget strength led to increased numbers of work hours, time away from home (deployed to foreign locations), decreased predictability in military members' lives, fewer spare parts to repair equipment, and salaries generally not thought to be competitive with American market wages. Stated simply, the American military is having difficulties recruiting and maintaining enough people to answer the call for protecting the security of this country.

There is an urgent need to identify and to understand the major issues that affect military members' decisions about serving their country. At the same time, it is the stated mission of the military to deter war and to protect our national interests. Thus, the present study was intended to look at both the people (organizational climate) and outcome (performance and affective) measures in one context of the American military, flying squadrons in the U.S. Air Force.

A factor analysis was conducted to identify the most relevant military climate constructs in the flying community. The results yielded a reduced number of dimensions from the original CSAF Survey. Also, the output showed significant correlations among several key variables of interest. Finally, regression analyses at the

individual-, squadron-, and cross-levels produced results that generally supported the proposition, understanding military climate and outcome measures are key ingredients to a successful future for the military.

The key findings of this study are a follows:

1. The factor analysis yielded a very stable set of six climate dimensions (independent variables) and two outcome measures (dependent variables) that describe Air Force flying squadrons. The six climate variables were Job Characteristics, Resources, Leadership, Supervision, Training, and Teamwork. The two outcome measures that resulted from the factor analysis were Job Satisfaction and Performance Perceptions. These variables can be used to provide accurate descriptions of a military climate and its effects on affective responses of squadron members.

2. The correlation analyses showed a moderately high degree of mulitcollinearity among the climate variables and outcome measures that were measured in the CSAF Survey. This finding is typical of organizational climate research (Lindell & Brandt, 2000; Ryan, et al., 1996; Ostroff, 1992; Kozlowski & Hults, 1987). While there were no significant correlations between the climate variables and the performance measures obtained from the squadrons, Flying Schedule Effectiveness was significantly correlated with both Job Satisfaction (Ostroff, 1992; Tornow & Wiley, 1991) and Performance Perceptions. Thus, squadrons that reported higher levels of job satisfaction and performance perceptions were also doing well at meeting their monthly flying schedules.

3. Another finding that supports the approach taken in this study is the significant relationship between Flying Schedule Effectiveness and Performance Perceptions. This demonstrates that, in lieu of pure performance data, organization members' perceptions of performance may serve as an acceptable surrogate. The implications of these findings shows that flying squadron members were accurate judges of how well their squadrons were meeting their flying schedule objectives (Schneider et al., 1996).

4. The correlation analyses also identified one contextual and one demographic dimension associated with both climate and performance measures. Squadron-level analyses showed that warfighting squadrons report higher levels of Job Satisfaction and see their squadrons' performance in a more favorable light than flying squadrons that perform refueling, reconnaissance, and cargo missions for the Air Force. Also, individual-level analyses showed that with the exception of one dimension, officers rate climate much more favorably than enlisted members. This may be an artifact of the "leadership" role that officers play in the squadron. Moreover, officers are responsible for setting the direction of the squadron, ensuring that training agendas are met, and establishing the framework for how teams will be employed in the work setting. Finally, officers serve primarily in supervisory roles. Therefore, it is expected that they would rate the programs over which they have responsibility more favorably than enlisted members (Johnson, 2000). Yet, enlisted members were sending a message as well. That is, their perception of "how good things are around here" was not in concert with the officers' perceptions.

5. At the individual-level, predictions of squadron members' Job Satisfaction and Performance Perceptions are tied to four climate variables. Regression analyses showed two job-related and two process-related variables appear to be the largest influences upon squadron members' Job Satisfaction. With reference to the job, workers prefer tasks that permit them to use different types of skills, allow for autonomy, and offer feedback mechanisms. They also want to possess the requisite knowledge to do their jobs or to be allowed and encouraged to attend training to reach acceptable levels of proficiency. It appears flying squadron members prefer that their leaders are out in front leading the unit by example, articulating a clear vision for success, inspiring trust, and rewarding excellent performance. Finally, the results indicated that Teamwork is a predictor of squadron members' Job Satisfaction. There is something appealing and reinforcing to squadron members who see themselves working in teams where the members have respect for one another and cooperate to accomplish the unit's mission.

6. Flying squadron members' Performance Perceptions can also be predicted by the military climate variables. The results indicate that Leadership, as described above, had a rather large influence upon the ways in which squadron members view their units' performance. Similarly, it was observed that squadron members who rate their units' training and teamwork programs high, also rate their squadrons' products favorably.

7. Prior to assessing the squadron-level effects, the researcher considered the extent to which the climate and dependent variables passed an acceptable aggregation criterion measure. Variance partitioning was the technique that was used. The decision to aggregate rests on the extent to which climate scores at the squadron level can be

explained by the amount of variance in the scores at that level. In this dissertation, two of the climate variables passed the test. Approximately 12 percent of the observed effects in Leadership and 13 percent of the observed effects in Resources can be attributed to the squadron level.

The immediate implication of these findings is that only these two variables should be aggregated to the next level and included in the squadron-level analyses. However, as the remaining sections in this chapter will show, this study did produce significant findings at the squadron level, even with the climate variables that did not pass the threshold for acceptable aggregation. In regression analyses, squadron-level climate was a significant predictor for two of the dependent measures.

One potential explanation for these findings is that the climate variables may be operative at a level between the individual and squadron. If this is true, residual effects may be captured at the squadron level. In fact, there is an intermediate level in each of the squadrons used in this study, the flight level. Unfortunately, flight level data were not available.

8. Squadron-level regression analyses failed to show military climate as a significant predictor of the operational performance measures, Flying Schedule Effectiveness and Mission Capable Rate. Four plausible explanations are offered. First, is the issue of power. The sample size (N=66) may have been too small to detect significant effects with these two performance metrics. Second, range restriction in the dependent variables may have impinged upon the ability to detect significances. Both of these measures are highly visible to commanders and senior leaders in the flying community. Commanders manage these numbers very carefully to 1) ensure they meet

their flying missions and 2) avoid being chastised for poor leadership. That is, if either of these measures is not at an acceptable rate, then the perception is that the squadron cannot possibly be performing its mission. Third, the measures themselves may be confounded by other factors. In both cases, the metric is based not only on an absolute sum of the number of missions flown or the number of hours aircraft are available to fly; but, several types of "deviations" such as weather, control tower problems, and unavailable spare parts are subtracted from the top-line counts. It is possible that different measures less laden with "controls" would yield significant effects. Finally, the direction of causality is germane. Ryan et al. (1996) found that performance measures in a financial institution setting actually caused morale to increase rather than the converse. A post-hoc analysis was conducted to test for these relations in the present data set. Flying Schedule Effectiveness only predicted one of the climate variables, Training. The implication is that when the squadron is meeting/exceeding its flying goals, one would predict that squadron members' perceptions of their training would be high as well.

9. Squadron-level regression analyses did show that military climate explains a significant amount of the variance in both squadron-level Job Satisfaction and Performance Perceptions. This relationship holds true, while controlling for differences in squadron missions (warfighter vs support mission). Among flying squadrons, the best way to improve job satisfaction is through training, improving job designs and providing enough time, people, and equipment for members to complete their work tasks.

As stated in Chapter 4, the squadron-level analysis revealed an unexpected

finding. Supervisory behaviors typically thought to be positive actions (setting goals, explaining the mission, taking care of workers' personal needs) are actually a deterrent to job satisfaction at the squadron-level. A general officer responded to these results in the following way, "Remember, crew members and single seat weapon system pilots think of their primary work setting as the cockpit, not the squadron building or the office/desk where they spend their time when they're not flying... their mentality leads to a thought process that less supervision is good." Because the primary mission of these squadrons is performed in the air and most of the social exchange that occurs between squadron members is completed while flying, there is little time for mentoring and supervisory behaviors to occur. The majority of communications between pilots, navigators, and crewmembers revolve around the mission itself. There is little time for, nor will Air Force regulations permit, professional counseling to occur while squadron members are flying.

Another potential explanation for the Supervisory factor possessing a negative beta weight may be in the self-reinforcing roles of single-seat fighter aircraft. Pilots learn to rely on their own judgments to help them succeed and to mature as professional military members. They may perceive the supervisory behaviors measured in the CSAF Survey as an insult to their individualistic nature and thus intrusive. When asked about this finding, one fighter pilot responded, "we pilots tend to be very independent, we would indicate more job satisfaction when the boss keeps his nose out of our business... in other words, give me the desired results and I will perform the mission, but, don't tell me how to suck eggs." It is a well-known fact that many pilots simply love to fly and the tasks they perform provide high levels of intrinsic motivation.

10 The results from the squadron-level analysis showed that military climate factors can be used to predict how flying squadron members will judge their squadrons' performance, as well. When squadrons provide enriching jobs for their members and when teamwork is perceived to be high, squadron members see their organizations performing at very high efficiency and effectiveness levels. Moreover, they believe others judge their units as, "a squadron that gets the job done."

11. Cross-level analyses demonstrated that over and above individual-level climate effects, squadron-level climate does have additional explanatory power in squadron members' job satisfaction and perceptions of performance. The regression analysis with Job Satisfaction as the dependent variable (military rank was used as a control variable) showed the amount of variance associated with the interaction terms was minimal, but significant (R^2 change = .01). Four of the interaction terms: Training, Supervision, Job Characteristics and Leadership. These interactions were plotted. The graphs show there are no real interpretable effects despite the fact statistical significance was achieved

12. Very similar results were produced by the cross-level analysis when Performance Perceptions was regressed on member's rank (control), individual-level climate variables and the climate interaction terms. The interaction terms only accounted for an additional one percent of the variance in the dependent variable. Yet, the Job Characteristics and Training interaction terms were significant predictors of Performance Perceptions. However, once again the plots showed there is no easily discernible interpretation of these interactions.

Limitations of This Study

There are a few limitations associated with this study. First, although there were 7,029 usable surveys at the individual-level, when the focus was shifted to identifying squadron-level effects on organizational outcomes, all analyses were conducted with a much smaller sample size (N = 66). There may be actual squadron-level effects that exist, but went unrecognized in the present analyses due to the small sample size.

Second, for the findings that were identified, we must recognize that the 7,029 participants were from a very homogeneous sector of the U.S. Air Force. Civilian records were eliminated from consideration; therefore, the only records that were available for analysis were from officers and enlisted members of the service. Also, the entire sample was taken from flying squadrons that belong to one major command, Air Combat Command. While the Air Force certainly exists to fly airplanes, there are several other communities (medical, logistics, support, and training) that perform critical missions in concert with the flying community. Therefore, we should be conservative in our attempts to generalize the findings reported here to all communities in the military and the Air Force.

A third limitation is based upon the method by which the CSAF Survey data were collected. Prior to the initiation of the survey, a rather aggressive media effort was launched to announce the dates when the questionnaire would be available. Air Force members were informed that while the CSAF wanted everyone to have the opportunity to participate, members' agreement to do so was entirely voluntary. Anecdotes made available to the researcher made him aware that some Air Force members took the position, "if it isn't mandatory, then I won't take the survey." Therefore, unless senior leaders intervened and asked squadron members to participate, it is possible the sample

was mostly composed of persons who typically participate in survey activities, thus biasing the survey in favor of more sophisticated respondents. However, the fact that 34 percent of the population participated in the survey indicates this consideration may be of minimal concern.

A fourth limitation lies in the collection of the operational performance measures. The researcher had no ability to control the methods by which the data were collected. Moreover, the researcher did not have an opportunity to train those who collected and reported the performance measures in good data collection techniques. There may be some contamination in the performance measures. Yet, there was no available means to detect this artifact if it existed in the data. The researcher was too far removed from this portion of the research to ensure the purity of the performance metrics. Finally, common method variance (CMV) may be somewhat of a limitation. When all responses are collected at the same time and through the same response medium, it is possible that bias may be entered as a measurement consideration. (Podsakoff & Organ, 1986; Williams & Brown, 1994). However, the fact that the findings consistently showed differential effects on the dependent variables provides evidence that CMV may not have interfered with the findings reported in this dissertation.

Implications for Future Research and Theory

This dissertation contributes a number of relevant findings that advance the knowledge in the climate research field. Moreover, given the findings mentioned in this study, there are a number of potential areas for continued research.

First, the present study extends the organizational climate literature by validating that the construct, military climate, exists in the U.S. military. In fact, the analyses produced six very stable climate dimensions and two organizational outcome measures that accurately provide a thorough description of military organizational processes. Similar studies by Roberts, Rousseau, & La Porte (1994) and Rousseau and Cooke (1988) identified differing "cultures" on board U.S. Navy aircraft carriers. Rather than describing the organizational dynamics through a list of organizational processes, these researchers completed "culture profiles" that described what they termed, "high reliability organizations." Their studies showed the extent to which the resulting profiles were correlated with such outcome measures as Job Satisfaction, Career Intentions, Behavior Incompatibility, and whether or not the job incumbent would recommend a job on the aircraft carrier to another person. Officers and enlisted members of the U.S. Navy served as subjects.

In the purest sense, the correct typology for this dissertation is in the "climate" domain, while the studies conducted onboard naval aircraft carriers are classified as "culture" studies. Yet, a review of the predominant characteristics and dimensions studied in these works shows there is a significant amount of overlap among the constructs. Dennison (1996) stated, "these two research traditions should be viewed as differences in *interpretation* rather than differences in *phenomenon*" (p. 645).

Future climate and culture studies should explore ways to synthesize the knowledge from these initiatives. The research should focus on deriving a more parsimonious and empirically sound method for assessing military work environments. Findings from the naval studies show there are three primary work styles (Satisfaction, Task Security, and Self Protection). These dimensions are rooted in the traditional

approach used in studying organizational culture. They assess assumptions and values that organizations impose upon workers. Thus, the results of the studies address deeper, more fundamental organizational dynamics (Schein, 1992; Schneider, 1990). Conversely, the variables of interest in this dissertation attempt to describe surface-level, active processes that are visible to organizational members. This approach is very much in line with traditional climate studies.

Combining the climate and culture knowledge bases in both public and private sector studies would facilitate a much better understanding of diverse social contexts in work environments. Also, combined research efforts would allow for better specification of phenomena acting at differing levels of organizations. For example, this study used three different levels analyses: individual-, organizational-, and cross-levels. Defining organizational climate and culture in the military is still a concept. Researchers are encouraged to use this proposition as an opportunity to bridge the gap between the organizational climate and culture literatures.

This study added to the current literature by demonstrating that organizational climate is related to organizational outcomes in the military. Each of the six military climate dimensions was a significant predictor of individual-, organizational-(squadron), and cross-levels of members' Job Satisfaction and Performance Perceptions. However, this study failed to produce evidence that military climate has direct linkages to operational flying squadron measures in the U. S. Air Force. More research is needed to identify true performance measures at the work unit and ascending levels of organizations so that we may continue to explore the possibility that organizational climate has an effect upon organizations' productivity measures. Researchers are encouraged to explore the conceptual reasons for choosing the variables

of interest. This will require a much greater understanding of the measures that are selected for analysis.

This study did produce one finding that perhaps additional research will help to explain. That is, while the military climate variables were not related to the operational performance measures, one of the affective outcome measures, Job Satisfaction, was significantly correlated with Flying Schedule Effectiveness. Yet, regression analyses showed military climate variables were predictors of Job Satisfaction. Empirical tests using Job Satisfaction as a mediator between military climate and Flying Schedule Effectiveness produced no empirical evidence for this effect. However, the existence of the triad of constructs (Military Climate, Job Satisfaction, and Flying Schedule Effectiveness) presents an interesting topic for further study. The seeds for producing evidence that military climate does affect performance outcomes are present. Perhaps a better explanation of the theory (to include mediating and moderating variables) and the potential performance indicators could lead to findings that validate the existence of the linkages.

Appropriateness for aggregation often appears in climate research. Here, only two of the climate variables passed the criterion for analysis at the squadron level. For investigative purposes, the remaining variables were retained. Surprisingly, correlation and regression analyses yielded significant findings for all the climate variables. Some of these effects may be related to an intermediate level of analysis, the flight level. Another potential explanation may be in the amount of consensus about the variables at the squadron-level. Variance partitioning can produce an entirely different estimate than consensus.

Therefore, one interesting research study may be to calculate climate consensus

(r_{wg}) for each of the climate dimensions and to use that index as an independent measure in predicting organizational outcomes. Lindell and Brandt (2000) provide an excellent model for this approach. They found relatively small significant correlations between climate consensus and organizational-level outcomes. Regression analyses failed to show that consensus is a predictor of the same outcome measures. However, this is an area that warrants further investigation. The present data set lends itself nicely to such a study.

Finally, this dissertation adds to the field of multi-level research. Individual-, organizational- (squadron), and cross-levels were addressed. There is clear evidence that differing effects occur at each of the levels studied and that the differing climate variables had significant effects on two organizational outcomes: Job Satisfaction and Performance Perceptions. Klein et al. (1999) said, "multi-level theories may illuminate the steps organizational actors may take, individually and collectively to yield organizational benefits" (p. 243). That is precisely the theory tested by Hypotheses 3a and 3b. The results of the cross-level analysis, while minimal and difficult to interpret, demonstrated that the squadron-level climate does have effects on its members that are over and above the effects that are present at the individual level. However, more effort needs to be focused on specifying the theories that address multi-level constructs.

Implications for Practice

The findings in this dissertation advance practitioners' knowledge about the operationalization of the construct, "military climate. However, the implications are certainly not limited to the military work environment. Rather, the findings generalize to other public institutions as well as the private sector.

The six climate dimensions (Job Characteristics, Resources, Leadership, Supervision, Training, and Teamwork) and two organizational outcome measures (Job Satisfaction and Performance Perceptions) that were identified serve as reliable indicators of the processes that are active in military organizations. These eight dimensions provide a robust description of the work environment. Also, they provide practitioners with a set of parsimonious, understandable, and actionable dimensions upon which organizational change efforts may be initiated. Thus, practitioners seeking to conduct organizational assessment and change activities are encouraged to continue using the climate variables identified in this study.

This suggestion may have tremendous impact upon the current CSAF Survey, as well. Since the inception of the survey in 1997, Air Force leaders have commented repeatedly that the survey contains too many questions and takes far too long to complete. Yet, they have defaulted to internal organizational consultants' expert opinion that the survey should contain the 13 factors used previously. This study may provide the impetus for survey officials to consider reducing the number of questions and factors to only the ones used here. These eight dimensions provide a thorough picture of organizational processes and outcomes, particularly as they relate to the "people" who comprise the organization. Refining the survey, while continuing to ensure both theoretical and practical concerns are met, will pay benefits for the survey's longevity and ultimately its inclusion as a key component in the Air Force culture.

Another important implication is that practitioners must be cognizant of climate effects at different levels of the organization. This is particularly germane for organizational change efforts. The present study showed military climate's differing effects on the individual-, squadron-, and cross-levels. For example, approximately

twelve percent of the variance associated with both Leadership and Resources was attributed to the squadron-level. The variance in the remaining variables was mostly due to individual-level effects. If the practitioner's goal is organizational-level improvement (vs. individual-level climate improvements), then change activities should be designed to address organizational-level phenomena.

However, using the current study as an example, most of the variance in the climate variables exists at the individual level. Thus, the best opportunity to effect positive change rests in individuals. Given the opportunity to work with the lowest performing individuals or the 20 lowest performing squadrons, the best intervention would be at the individual level. Change efforts designed around job enrichment or teamwork would have far less effect on the organization as a whole. Most likely, the outcome of the intervention would not be nearly as dramatic as if the focus remained on the variables that appear to have the most organizational-level dependency. Practitioners would be wise to consider how levels' effects are operationalized in the work environment and address the issues where the most improvements can be achieved.

Also, this dissertation showed that flying squadron members perceive military climate and its affect on outcomes differently depending upon the mission of their squadron and depending upon their military rank. Warfighting squadrons responded more favorably to the military climate and outcome variables than squadrons that fly support missions. Also, this study indicated that officers were more positive about these dimensions than enlisted personnel. Therefore, it is important to take these contextual and demographic conditions into account when reporting results to senior leaders and when designing follow-on change efforts. Knowledge about all these

"contingencies" may be somewhat overwhelming and to a certain extent, confusing to the practitioner and the sponsors. However, awareness of all the relevant issues will enable wise choices about how change efforts may be implemented such that organization leaders' desired end state might be achieved.

Finally, this dissertation indicates that practitioners should encourage clients to describe the intentions for conducting organizational climate surveys and interventions. If the goal is to use climate assessments to affect an organizational product or members' affective responses, we need to ensure we collect data that helps achieve that objective. The military conducts thousands of surveys every year. However, the end product is usually the final statistical report. Typically, there is no other goal for the output than simply reporting univariate and very minor multivariate results. The military should use these surveys in much the same fashion as other public and corporate institutions. That is, the data can be linked to intentions to turnover, quality of life, absenteeism, and performance results. The academic literature certainly supports the assertion that organizational climate affects these variables. Perhaps the military should consider looking at this possibility within its squadrons/units.

In this study, the researcher attempted to link organizational climate dimensions to four organizational outcomes from flying squadrons in the U.S. Air Force. The topic, "military climate," was chosen in an effort to the military climate up to date with the current literature. The Air Force and other services can serve as a proving ground to demonstrate ways in which climate dimensions affect performance and affect military members' perceptions about their work environment. Practitioners should capitalize on every opportunity to use performance data that are collected entirely independent of the climate instrument. Often, senior leaders are reluctant to provide this data because they

are uncertain about how it may be used. However, the real payoff is in demonstrating ways in which climate variables may influence these performance data. When practitioners are providing this type of information to clients, they are helping organizations with their bottom line and ultimately their continued success.

APPENDICES

APPENDIX A

APPENDIX A

Survey Background

The 1997 Chief of Staff of the Air Force (CSAF) Survey was the inaugural organizational climate survey completed for the highest-ranking general officer in the United States Air Force. During the mid-1990s, there were several independent organizational climate surveys being administered across the Air Force. A review of these instruments was conducted in 1996. While there was significant overlap among the major constructs (themes) measured by these instruments, there was also a concomitant list of approximately twenty-five variables that were not common across the surveys. Along with the measurement inconsistencies, there was also a great deal of disparity in: 1) the reliabilities and validities of the instruments of choice; 2) reasons for administering the surveys; 3) uses of the survey results, such as action planning for leaders, debriefing survey participants, etc., and 4) the protection of individuals' anonymity and confidentiality.

With this information as the basis for a decision, the CSAF requested the development of one survey for the purpose of assessing organizational climate at all levels of the Air Force. Also, he wanted survey results distributed to the lowest possible levels in the organization. Finally, he specified the administration platform would be via computer (electronic media) and that the instrument would be available for voluntary participation by all active duty enlisted and officer personnel, as well as all civilians currently employed by the Air Force. Along with these policy statements, the CSAF named the Air Force Center for Quality and Management Innovation (AFCQMI), Randolph Air Force Base (AFB) as the lead agency for this survey.

Guidance was also provided that the organizational climate survey should be

combined with the annual Air Force Quality of Life (QoL) Survey and that both would be administered through the same medium. Each year, the Air Force Personnel Center issues the QoL Survey in an effort to gain feedback from Air Force members about six strategically important issues associated with military life: 1) Community Programs; 2) Pay and Benefits; 3) Working Hours/Days Away from Home (PERSTEMPO); 4) Housing; 5) Educational Opportunities; and 6) Health Care. The results of the QoL survey are often used to address Congress about ways to improve the lives of Air Force members. The information is also used to support initiatives that enhance recruiting and retention of military personnel.

Finally, in an effort to ensure that general officers had an opportunity to collect answers to questions germane to their major commands (MAJCOMs), the CSAF allowed each of his subordinate four-star generals to ask ten questions addressing issues most important to them. Therefore, each of the MAJCOM commanders appointed a point of contact to coordinate with personnel at AFCQMI to ensure their questions were included in the 1997 CSAF Survey. Consolidation of the three independent sections of the surveys was accomplished by AFCQMI personnel and then included in the final electronic data file.

APPENDIX B

Quality of life, organizational climate assessed with survey

WASHINGTON — An Air Force survey unlike any before arrives in October at bases worldwide for all active-duty and civilian members.

Base points of contact will administer an entirely new Chief of Staff of the Air Force Survey assessing both quality of life and organizational climate in a single, combined format.

"To reach the Air Force vision, 'Global Engagement: A Vision for the 21st Century Air Force,' we must ensure excellence in quality of life and the work environment for our people," said Air Force Vice Chief of Staff Gen. Ralph Eberhart. "The survey is a convenient, anonymous way for members to provide valuable information to leaders in the chain of command — all the way from unit commanders to the chief of staff."

The survey is composed of two sections: quality of life and organizational climate, which total about 130 questions. Separate versions are tailored for civilian and active-duty members.

The Pentagon Quality of Life Office, along with functional representatives responsible for planning and executing major programs at the Air Force level, prepared the quality-of-life section. Key areas addressed are base-level community and educational programs, personnel tempo, compensation, medical care, housing and retirement programs. Survey results will be reported to all wing, numbered air force and major command commanders.

The organizational climate section addresses 14 major themes such as leadership, communication, supervision, teamwork, job satisfaction and general climate. Organizational climate results will be delivered to all unit-level commanders to debrief their organizations and design appropriate actions for addressing major issues.

Safeguards are in place to protect individual identities. "All active-duty and civilian members must have an opportunity to participate," Eberhart said in a letter to all commanders. "We are seeking maximum participation in order for the results to be most effective."

The Air Force Center for Quality and Management Innovation will compile the quality-of-life and organizational climate results in cooperation with the Air Force Personnel Center and U.S. Air Force Academy Office of Institutional Research. Commanders at all levels will receive survey results in January.

In a message to participants, Eberhart emphasized the influence the survey will have on key decisions that will directly impact the future of the Air Force. "We're counting on you to let your voice be heard," he said. "In turn, we look forward to sharing the Air Force-level results early next year."

For more information, a list of installation points of contact and frequently asked questions about the survey, see the Air Force Center for Quality and Management Innovation home page at http://www.afcqmi.randolph af.mil/survey/survey.htm. *(AFNS)*

APPENDIX C

APPENDIX C

1997 chief of staff survey launches in October

Released: Oct. 2. 1997

WASHINGTON (AFNS) – An Air Force survey unlike any before arrives in October at bases worldwide for all active-duty and civilian members.
Base points of contact will administer an entirely new Chief of Staff of the Air Force Survey <http://www.afcqmi.randolp.af.mil/survey/survey.htm> assessing both quality of life and organizational climate in a single. combined format.

"To reach the Air Force vision. 'Global Engagement: A Vision for the 21st Century Air Force <http://www.xp.hq.af.mil/xpx/21/nuvis.htm>', we must ensure excellence in quality of life and the work environment for out people." said Air force Vice Chief of Staff Gen. Ralph E. Eberharthttp://www.af.mil/news/biographies/eberhart_re.html. "the survey is a convenient. anonymous way for members to provide valuable information to leaders in the chain of command – all the way from unit commanders to the chief of staff." Participation by active duty AF members and civilians is entirely voluntary.

The survey is composed of two sections: quality of life and organizational climate. which total about 130 questions. Separate versions are tailored for civilian and active-duty members. The Pentagon Quality of Live Office. along with functional representatives responsible for planning and executing major programs at the Air Force level. prepared the quality-of-life section. Key areas addressed are base-level community and educational programs personnel tempo. compensation. medical care. housing and retirement programs. Survey results will be reported to all wing. numbered air force and major command commanders.

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"All active-duty and civilian members must have an opportunity to participate." Eberhart said in a letter to all commanders. "We are seeking maximum participation in order for the results to be most effective."

The Air Force Center for Quality and Management Innovation <http://www.afcqmi.randolph.af.mil> will compile the quality-of-life and organizational climate results in cooperation with the Air Force Personnel Center <http://www.afpc.af.mil> and U.S. Air force Academy <http://www.usafa.af.mil/> Office of Institutional Research. Commanders at all levels will receive survey results in January.

In a message to survey participants. Eberhart emphasized the influence the survey will have on key decisions that will directly impact the future of the Air Force.

APPENDIX D

APPENDIX D
1997

Chief of Staff

of the Air Force

Survey

(Military Form)

In accordance with AFI 37-132, Air Force Privacy Act Program, paragraph 3.2, and The Privacy Act of 1974, the following information is provided:

a. Authority:

1. 5 U.S.C. 301, Departmental Regulations
2. 10 U.S.C. 8013, Secretary of the Air Force, Powers and Duties
3. Delegation by Executive Order (EO) 9397

b. Purpose: The purpose of this survey is to obtain data on AF personnel attitudes about Quality of Life and Organizational Climate.

c. Routine uses: None

d. Disclosure: Participation is voluntary. No adverse action of any kind may be taken against any individual who elects not to participate in any portion of this survey.

e. IAW AFI 37-132, the official AF Control Number for this survey is 97-73. (This is not a tracking number for your individual survey data.)

OPRs

1997 CSAF Survey/Organizational Climate Section

Major Chuck Capps
Air Force Center for Quality and Management Innovation
DSN: 487-2833

Quality of Life Section

Air Force Quality of Life Office
DSN: 225-8418

DEPARTMENT OF THE AIR FORCE
OFFICE OF THE CHIEF OF STAFF
WASHINGTON DC

25 Sep 97

MEMORANDUM FOR ALL AIR FORCE PERSONNEL

FROM: HQ USAF CV
1670 Air Force Pentagon
Washington, DC 20330-1670

SUBJECT: Chief of Staff of the Air Force (CASF) Organizational Climate and Quality of Life Survey

I want to thank you in advance for participating in this survey. This is a great opportunity for your leaders to receive feedback about how we're currently doing in a variety of "people programs." To reach the AF vision, "Global Engagement for the 21st Century," we must ensure excellence in Quality of Life and the work environment for our people. The "1997 CSAF Survey" is a convenient, anonymous way for you to provide valuable information to leaders in your chain of command, all the way from your unit commander to the CSAF.

The questions are hard-hitting; however, we need to capture your candid thoughts. There are 130 questions addressing significant Quality of Life (QoL) and Organizational Climate (OC) topics. You'll also have an opportunity to provide written comments. Results from the QoL section will be reported to your wing commander and higher. The OC results will be reported to your unit commander and higher.

Please don't be alarmed by questions asking for personal information. We aren't looking to target individuals. We're far more interested in continually improving areas where we can have significant impact. I'm counting on you to let your voice be heard and in turn, I look forward to sharing the AF-level results early next year.

/SIGNED/
RALPH E. EBERHART
General, USAF
Vice Chief of Staff

Golden Legacy, Boundless Future...Your Nation's Air Force

Organizational Climate Section
(Military Form)

The survey is designed to reflect a system-wide analysis of your unit's organizational climate. You will see indicators for inputs (things about the job, unit-level resources, and core values), organizational processes (leadership, communication, supervision, teamwork, training and development, recognition, participation involvement, and unit flexibility), and outcomes which result from a combination of these factors.

You will be asked to rate each of these on a 6-point scale (strongly disagree to strongly agree) with an option for, "Don't Know." Throughout the survey, you will be asked to answer questions which address differing groups of people in the hierarchy of your unit. Please use the definitions presented below as your reference points for these questions.

Supervisor:	The person to whom you report directly. Typically, this is the person who writes your performance report appraisal.
Work Group:	All persons who report to the same supervisor you do.
Unit Leadership:	A reference to the leaders who are responsible for the direction and the daily operations of your unit.
Unit:	Your squadron- or your staff agency- equivalent

Thanks again for your participation. Your answers and comments will be extremely helpful!

1. Please select the item that best describes the condition(s) under which you are completing this survey

a) At my home station and not in student status
b) Deployed or TDY and survey provided by home unit (Complete survey with your home unit installation in mind)
c) In student status, includes TDY and PCS (After answering questions 2. and 3. please skip to question 73 for the QoL Section.)
d) TDY, not a student, and will NOT be home 31 Oct
e) Other

- If you are TDY and not a student, please take the survey at your home unit if possible
- If you are deployed, please take a survey provided by your home unit to ensure your responses are grouped with others in your unit

2. Assignment Location

2a. To which MAJCOM/DRU/FOA are you assigned?

a) Air Combat Command (ACC)	b) Air Education and Training Command (AETC)
c) Air Force Materiel Command (AFMC)	d) Air Force Space Command (AFSC)
e) Air Force Special Operations Command (AFSOC)	f) Air Mobility Command (AMC)
g) Headquarters Air Force Reserve	h) Headquarters United States Air Force
i) Office of the Secretary of Defense (OSD)	j) Pacific Air Forces (PACAF)
k) United States Air Forces, Europe (USAFE)	l) United States Strategic Command
m) 11th Wing	n) Air Force Communications and Information Center
o) Air Force Doctrine Center	p) Air Force Operational Test and Evaluation Center
q) Air Force Security Forces Center	r) United States Air Force Academy
s) Air Force Agency for Modeling and Simulation	t) Air Force Base Conversion Agency
u) Air Force Audit Agency	v) Air Force Base Disposal Agency
w) Air Force Center for Environmental Excellence	x) Air Force Civil Engineer Support Agency
y) Air Force Studies and Analysis Agency	z) Air Force Communications Agency
aa) Air Force Cost Analysis Agency	bb) Air Force Flight Standards Agency
cc) Air Force Historical Research Agency	dd) Air Force History Support Office
ee) Air Force Inspection Agency	ff) Air Force Legal Services Agency
gg) Air Force Logistics Management Agency	hh) Air Force Medical Operations Agency
ii) Air Force Medical Support Agency	jj) Air Force News Agency
kk) Air Force Operations Group	ll) Air Force Pentagon Communications Agency
mm) Air Force Personnel Center	nn) Air Force Personnel Operations Agency
oo) Air Force Program Executive Office	pp) Air Force Real Estate Agency
qq) Air Force Review Boards Agency	rr) Air Force Safety Center
ss) Air Force Security Police Agency	tt) Air Force Technical Applications Center
uu) Air Intelligence Agency	vv) Air Reserve Personnel Agency
ww) Air Weather Service	xx) Combat Rescue Agency
yy) Center for Air Force History	zz) Center for Quality and Management Innovation
aaa) HQ Air Forces Services Agency	bbb) Joint Services SERE
ccc) Technical Operations	ddd) Other

2b. To which installation are you assigned?

a)
b) AFDW PENTAGON WASHINGTON DC
c) ALTUS AFB OK
d) ANDERSEN AFB GUAM
e) ANDREWS AFB MD
f) ARNOLD
g) AVIANO AB ITALY
h) BARKSDALE AFB LA
i) BATTLECREEK
j) BEALE AFB CA
k) BOLLING AFB DC (AFOSI)
l) BOLLING AFB DC (AFDW)
m) BROOKS AFB TX
n) BUCKLEY AGB CO
o) CANNON AFB NM
p) CHARLESTON AFB SC
q) COLUMBUS AFB MS
r) DAVIS-MONTHAN AFB AZ
s) DOVER AFB DE
t) DYESS AFB TX
u) EDWARDS AFB CA
v) EGLIN AFB FL
w) EIELSON AFB AK
x) ELLSWORTH AFB SD
y) ELMENDORF AFB AK
z) FAIRCHILD AFB WA
aa) FALCON AFB CO
bb) FRANCIS E. WARREN AFB WY
cc) FT GEORGE G. MEADE MD 694 MSN SPT
dd) GOODFELLOW AFB TX
ee) GRAND FORKS AFB ND
ff) HANSCOM AFB MA
gg) HICKAM AFB HI
hh) HILL AFB UT
ii) HOLLOMAN AFB NM
jj) HOWARD AFB PANAMA
kk) HURLBURT FIELD FL
ll) INCIRLIK TURKEY
mm) KADENA AB OKINAWA
nn) KEESLER AFB MS
oo) KEFLAVIK NYI ICELAND
pp) KELLY AFB TX
qq) KIRTLAND AFB NM AFMC
rr) KIRTLAND AFB NM OSB
ss) KUNSAN AB KOREA
tt) LACKLAND AFB TX (ATC)
uu) LACKLAND AFB TX (ATC-PIPELINE)
vv) LAJES FLD AZORES
ww) LAKENHEATH RAF STA UK
xx) LANGLEY AFB VA
yy) LAUGHLIN AFB TX
zz) LITTLE ROCK AFB AR

aaa) MAXWELL AFB AL
bbb) MCCHORD AFB WA
ccc) MCCLELLAN AFB CA
ddd) MCCONNELL AFB KS
eee) MCGUIRE AFB NJ
fff) MILDENHALL RAF STA UK
ggg) MINOT AFB ND
hhh) MISAWA ABS JAPAN
iii) MOODY AFB GA
jjj) MT HOME AFB ID
kkk) NELLIS AFB NV
lll) OFFUTT AFB NE
mmm) OSAN AB KOREA
nnn) PATRICK AFB FL
ooo) PETERSON AFB CO
ppp) POPE AFB NC
qqq) RAMSTEIN AB GERMANY
rrr) RANDOLPH AFB TX
sss) REESE AFB TX
ttt) ROBINS AFB GA
uuu) SCOTT AFB IL
vvv) SEYMOUR JOHNSON AFB NC
www) SHAW AFB SC
xxx) SHEPPARD AFB TX
yyy) SPANGDAHLEM AB GERMANY
zzz) STUTTGART GERMANY (1141)
aaaa) TINKER AFB OK
bbbb) TRAVIS AFB CA
cccc) TYNDALL AFB FL
dddd) USAF ACADEMY CO
eeee) VANCE AFB OK
ffff) VANDENBERG AFB CA
gggg) WHITEMAN AFB MO
hhhh) WRIGHT-PATTERSON AFB OH
iiii) YOKOTA AB JAPAN

2c. Please write in your unit name.

3. Which category best describes you?

a) Officer
b) Enlisted

The Job

Extent to which your job is motivating, important, interesting, and challenging.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree	DK
1. My job requires me to use a variety of skills.	1	2	3	4	5	6	7
2. My job allows me to see the finished products of my work.	1	2	3	4	5	6	7

3. Doing my job well affects others in some important way.	1	2	3	4	5	6	7
4. My job is designed so that I know when I have performed well.	1	2	3	4	5	6	7
5. My job allows me freedom to work with minimum supervision.	1	2	3	4	5	6	7

Resources

Effective management of your unit's resources (time, personnel, funds, and equipment) to accomplish the mission.

	Strongly Disagree	Slightly Disagree	Disagree	Slightl Agree	Agree	Strongly Agree	DK
6. I have adequate time to do my job well.	1	2	3	4	5	6	7
7. We have enough people in my work group to accomplish the job	1	2	3	4	5	6	7
8. I have the right tools, equipment, and materials to accomplish the job.	1	2	3	4	5	6	7
9. I have enough time to accomplish my daily workload during my duty hours.	1	2	3	4	5	6	7

Core Values

Extent to which the Air Force core values are understood & demonstrated by unit personnel. The AF core values are "Integrity First", "Service Before Self", and "Excellence in All We Do."

10. I received a copy of. United States Air Force Core Values. ("The Little Blue Book").

    a. Yes
    b. No
    c.

11. I have been briefed on the contents of. United States Air Force Core Values. ("The Little Blue Book").

    a. Yes
    b. No

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree	DK
12. I am able to do my job without compromising my integrity.	1	2	3	4	5	6	7
13. Overall, people in my unit uphold high standards of excellence.	1	2	3	4	5	6	7
14. I understand how the AF core values apply to my job and daily activities.	1	2	3	4	5	6	7

15. Overall, people in my unit demonstrate that duty takes precedence over personal desires.	1	2	3	4	5	6	7
16. Overall, people in my unit are held accountable for behavior which contradicts the AF core values.	1	2	3	4	5	6	7

Communication

Extent to which information flows throughout the unit & workers are well-informed about impt issues.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree	DK
17. Leadership in this unit listens to my ideas.	1	2	3	4	5	6	7
18. My unit makes me aware of important events and situations.	1	2	3	4	5	6	7
19 I am comfortable discussing my ideas with the leadership in this unit.	1	2	3	4	5	6	7
20. Leaders in my unit are easily accessible.	1	2	3	4	5	6	7
21. Leadership in this unit effectively communicates the mission, goals, and objectives.	1	2	3	4	5	6	7

Leadership

Extent to which leadership is influencing the direction, people, and culture of the unit.

A reference to the leaders who are responsible for the direction and the daily operations of your unit.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree	DK
22. I trust the leadership in my unit.	1	2	3	4	5	6	7
23. My unit leadership is inspirational.	1	2	3	4	5	6	7
24. I am proud of the leadership in my unit.	1	2	3	4	5	6	7
25. My unit leadership sets challenging goals.	1	2	3	4	5	6	7
26. My unit leadership provides a clear vision.	1	2	3	4	5	6	7
27. My unit leadership motivates me to do my best.	1	2	3	4	5	6	7
28. My unit leadership makes decisions based on facts.	1	2	3	4	5	6	7
29. My unit leadership motivates me to achieve our goals.	1	2	3	4	5	6	7

30 My unit leadership encourages me to look for ways to cut costs in my job.	1	2	3	4	5	6	7
31 I see my unit leaders doing the same things they publicly promote.	1	2	3	4	5	6	7

Supervision

Extent to which your supervisor is perceived to be skilled at planning, organizing, directing, and providing feedback.

The person to whom you report directly. Typically, this is the person who writes your performancereport.appraisal.

	Strongly Disagree	Slightly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree	Strongly Agree	DK
32. My supervisor is good at planning my work.	1	2	3	4	5	6	7
33. My supervisor sets high performance standards.	1	2	3	4	5	6	7
34. My supervisor is concerned with my development.	1	2	3	4	5	6	7
35. My supervisor models the core values of the Air Force.	1	2	3	4	5	6	7
36. My supervisor corrects poor performers in my work group.	1	2	3	4	5	6	7

Supervision (continued)

Extent to which your supervisor is perceived to be skilled at planning, organizing, directing, and providing feedback.

The person to whom you report directly. Typically, this is the person who writes your performance report appraisal.

	Strongly Disagree	Slightly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree	Strongly Agree	DK
37. My supervisor looks out for the best interests of my work group.	1	2	3	4	5	6	7
38. My supervisor keeps me up-to-date on what is happening in my unit	1	2	3	4	5	6	7
39. My supervisor provides instructions that help me meet his/her expectations.	1	2	3	4	5	6	7
40. My supervisor helps me understand how my job contributes to my unit's mission.	1	2	3	4	5	6	7

Training and Development

Extent to which you have the training required to do your job and you are provided opportunities and support for advancement.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Strongly Agree	Agree	DK
41. I am given opportunities to improve my skills.	1	2	3	4	5	6	7
42. I am encouraged by my unit leadership to learn new things.	1	2	3	4	5	6	7
43. I have been adequately trained for the job I am expected to do.	1	2	3	4	5	6	7
44. I am allowed to attend continuing professional training	1	2	3	4	5	6	7

Teamwork

Extent to which people cooperate to accomplish the mission of your unit.

All persons who report to the same supervisor you do.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Strongly Agree	Agree	DK
45. People in my work group respect each other.	1	2	3	4	5	6	7
46. My work group adequately resolves conflicts.	1	2	3	4	5	6	7
47. There is cooperation among work groups in my unit.	1	2	3	4	5	6	7
48. Members of my work group willingly share information.	1	2	3	4	5	6	7
49. People in my work group cooperate to get the work done.	1	2	3	4	5	6	7

Participation / Involvement

Extent to which unit personnel participate in defining what work gets done and how it is accomplished.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Strongly Agree	Agree	DK
50. I feel free to suggest new and better ways of doing things.	1	2	3	4	5	6	7
51. I am asked how we can improve the way my work group operates.	1	2	3	4	5	6	7

52. Sufficient effort is made to get the opinions and ideas of people in this work unit.	1	2	3	4	5	6	7
53. Suggestions made by unit personnel are implemented in our daily work activities.	1	2	3	4	5	6	7

Recognition

Extent to which leadership provides public/private acknowledgment for exceptional performance.

A reference to the leaders who are responsible for the direction and the daily operations of your unit.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree	DK
54. My unit leadership rewards team performance fairly.	1	2	3	4	5	6	7
55. My unit leadership rewards individual performance fairly.	1	2	3	4	5	6	7
56. My unit leadership does a good job of recognizing people in all grades and types of jobs.	1	2	3	4	5	6	7

Unit Flexibility

Extent to which the unit responds to changes in the environment and is willing to try new things.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree	DK
57. My unit adapts to changes quickly.	1	2	3	4	5	6	7
58. My unit encourages appropriate risk taking.	1	2	3	4	5	6	7
59. My unit challenges old ways of doing business.	1	2	3	4	5	6	7

Job Satisfaction

Sense of accomplishment and personal fulfillment you receive from the work you do and from the environment that surrounds you.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree	DK
60. In general, I am satisfied with my job.	1	2	3	4	5	6	7
61. I have a sense of personal fulfillment at the end of the day.	1	2	3	4	5	6	7
62. The tasks I perform provide me with a sense of accomplishment.	1	2	3	4	5	6	7

Unit Performance Outcomes

Extent to which your unit is satisfying its mission, goals, and objectives.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree	DK
63. The quality of work in my unit is high.	1	2	3	4	5	6	7
64. The quantity of work accomplished in my unit is high.	1	2	3	4	5	6	7
65. My unit is known as one that gets the job done.	1	2	3	4	5	6	7
66. My unit is successfully accomplishing its mission.	1	2	3	4	5	6	7
67. My unit accomplishes its mission in a cost-effective manner.	1	2	3	4	5	6	7

General Climate

General perceptions about your unit.

	Strongly Disagree	Slightly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree	DK
68. Morale is high in my unit.	1	2	3	4	5	6	7
69. I am a valued member of my unit.	1	2	3	4	5	6	7
70. I would recommend an assignment in my unit to a friend.	1	2	3	4	5	6	7
71. People in my unit are charitable with their time, talents, or money.	1	2	3	4	5	6	7
72. My Unit will be briefed about the results of this survey.	1	2	3	4	5	6	7

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