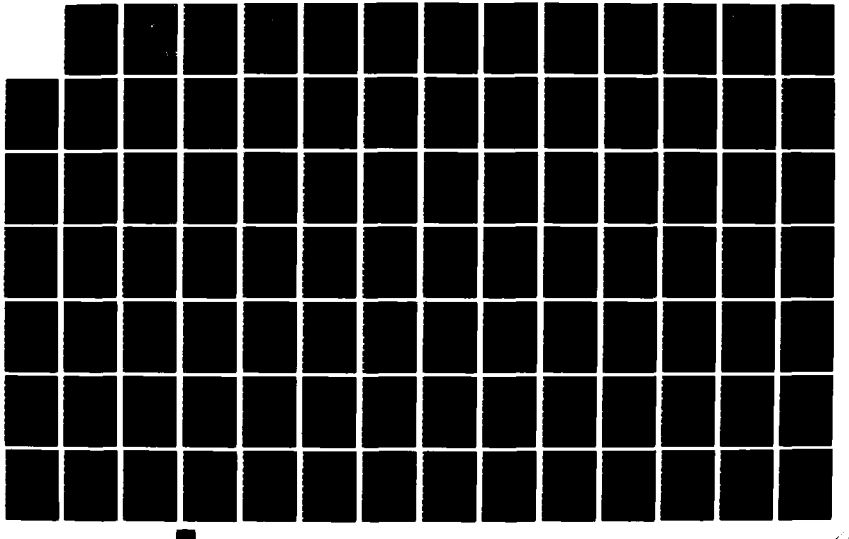
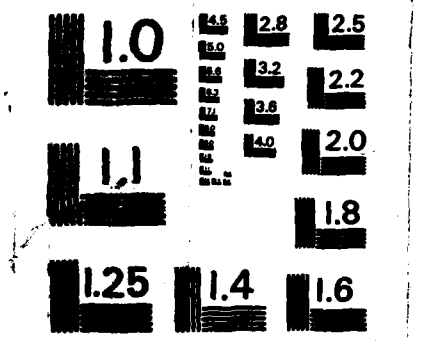
AD-A166 722 COMBAT ATTITUDES OF USAFE PERSONNEL(U) AIR COMMAND AND STAFF COLL MAXWELL AFB AL H M CALCUTT APR 86 ACSC-86-0450 1/2

UNCLASSIFIED F/G 5/9 NL





AIR COMMAND AND STAFF COLLEGE

STUDENT REPORT

COMBAT ATTITUDES OF USAFE PERSONNEL

MAJ HARRY M. CALCUTT, JR., 86-0450

"insights into tomorrow"

DISCLAIMER

The views and conclusions expressed in this document are those of the author. They are not intended and should not be thought to represent official ideas, attitudes, or policies of any agency of the United States Government. The author has not had special access to official information or ideas and has employed only open-source material available to any writer on this subject.

This document is the property of the United States Government. It is available for distribution to the general public. A loan copy of the document may be obtained from the Air University Interlibrary Loan Service (AUL/LDEX, Maxwell AFB, Alabama, 36112) or the Defense Technical Information Center. Request must include the author's name and complete title of the study.

This document may be reproduced for use in other research reports or educational pursuits contingent upon the following stipulations:

-- Reproduction rights do not extend to any copyrighted material that may be contained in the research report.

-- All reproduced copies must contain the following credit line: "Reprinted by permission of the Air Command and Staff College."

-- All reproduced copies must contain the name(s) of the report's author(s).

-- If format modification is necessary to better serve the user's needs, adjustments may be made to this report--this authorization does not extend to copyrighted information or material. The following statement must accompany the modified document: "Adapted from Air Command and Staff Research Report (number) entitled (title) by (author) ."

-- This notice must be included with any reproduced or adapted portions of this document.

REPORT NUMBER 86-0450

TITLE COMBAT ATTITUDES OF USAFE PERSONNEL

AUTHOR(S) MAJOR HARRY M. CALCUTT, JR., USAF

FACULTY ADVISOR CAPTAIN RICHARD H. BROWN, LMDC/AN

SPONSOR MAJOR MICKEY R. DANSBY, LMDC/AN

Submitted to the faculty in partial fulfillment of
requirements for graduation.

AIR COMMAND AND STAFF COLLEGE
AIR UNIVERSITY
MAXWELL AFB, AL 36112

UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE

AD-A166722

REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
2a SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION/AVAILABILITY OF REPORT **STATEMENT "A"** **Approved for public release;** **Distribution is unlimited.**
2b DECLASSIFICATION/DOWNGRADING SCHEDULE	
4 PERFORMING ORGANIZATION REPORT NUMBER(S) 86-0450	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a NAME OF PERFORMING ORGANIZATION ACSC/EDCC 6b. OFFICE SYMBOL *(If applicable)*	7a. NAME OF MONITORING ORGANIZATION
6c. ADDRESS *(City, State and ZIP Code)* Maxwell AFB AL 36112-5542	7b. ADDRESS *(City, State and ZIP Code)*
8a. NAME OF FUNDING/SPONSORING ORGANIZATION 8b. OFFICE SYMBOL *(If applicable)*	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c ADDRESS *(City, State and ZIP Code)*	10. SOURCE OF FUNDING NOS. PROGRAM ELEMENT NO. / PROJECT NO. / TASK NO. / WORK UNIT NO
11 TITLE *(Include Security Classification)* COMBAT ATTITUDES OF USAFE PERSONNEL (U)	
12 PERSONAL AUTHOR(S) Calcutt, Harry M., Jr., Major, USAF	
13a. TYPE OF REPORT 13b. TIME COVERED FROM ___ TO ___	14. DATE OF REPORT *(Yr., Mo., Day)* 1986 April 15 PAGE COUNT 105
16 SUPPLEMENTARY NOTATION	
17 COSATI CODES FIELD / GROUP / SUB. GR.	18 SUBJECT TERMS *(Continue on reverse if necessary and identify by block number)*

19 ABSTRACT *(Continue on reverse if necessary and identify by block number)*

This research project provides insight into the mental aspects of combat effectiveness by examining USAFE personnel's combat attitudes. The perceptions of USAFE personnel were compared to those of other Air Force personnel in different major commands. Specific comparisons between officers and enlisted personnel in both groups were made to provide greater insight into the results. Additionally, within USAFE, rated officers' combat attitudes were compared to those of non-rated officers'. At the 95% confidence level, the results indicate that USAFE personnel have a less positive view of their overall potential for combat effectiveness than their counterparts in the rest of the Air Force. This report provides possible explanations for the results and makes recommendations that USAFE leaders can implement to improve the potential for combat effectiveness of the command.

20 DISTRIBUTION/AVAILABILITY OF ABSTRACT UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☒ DTIC USERS ☐	21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED
22a NAME OF RESPONSIBLE INDIVIDUAL ACSC/EDCC Maxwell AFB 36112-5542	22b TELEPHONE NUMBER *(Include Area Code)* (205) 293-2483 22c OFFICE SYMBOL

DD FORM 1473, 83 APR EDITION OF 1 JAN 73 IS OBSOLETE.

UNCLASSIFIED

PREFACE

This is a Research Associate project for the Leadership and Management Development Center (LMDC); therefore, it does not follow the standard ACSC study format. The paper is written using LMDC guidelines, which generally follow the American Psychological Association format and reference system.

The Potential for Combat Effectiveness Model was used in this project as the evaluation tool for comparing combat attitudes. The model is composed of four components and seven sub-components. Whenever these components or sub-components are referred to in this paper, they are capitalized.

Special thanks to Lt Col Robert Gregory, Maj Mickey Dansby, and Capt Richard Brown for their invaluable assistance in completing this project.

ABOUT THE AUTHOR

Major Calcutt graduated from the USAF Academy in 1972 with a B. S. in Electrical Engineering. He attended Undergraduate Navigator Training and Electronic Warfare Officer Training at Mather AFB, CA. His first operational assignment was as an electronic warfare officer (EWO) on a B-52G at Blytheville AFB, AR. In his 2 years at Blytheville, Major Calcutt upgraded to instructor EWO and served 9 months as a wing standardization/evaluation EWO. He was then assigned back to Mather AFB as an Undergraduate Navigator Training instructor. While at Mather, Major Calcutt was selected as an instructor in the 323 FTW Instructor Training School. In 1980, he was selected to attend graduate school under the Senior Commander Sponsor Program. He earned a M. S. in Industrial Engineering (Operations Research specialty) from the University of Illinois. Following graduation, he received a directed-duty assignment to the Air Staff as an electronic combat systems analyst in the Directorate of Electronic Combat. Major Calcutt is a Squadron Officers School distinguished graduate and is currently attending the Air Command and Staff College.

TABLE OF CONTENTS

CONTINUED

LIST OF ILLUSTRATIONS

TABLES

CONTINUED

FIGURE

EXECUTIVE SUMMARY

Part of our College mission is distribution of the students' problem solving products to DoD sponsors and other interested agencies to enhance insight into contemporary, defense related issues. While the College has accepted this product as meeting academic requirements for graduation, the views and opinions expressed or implied are solely those of the author and should not be construed as carrying official sanction.

"insights into tomorrow"

REPORT NUMBER 86-0450

AUTHOR(S) MAJOR HARRY M. CALCUTT, JR., USAF

TITLE COMBAT ATTITUDES OF USAFE PERSONNEL

I. Purpose: To provide insight into the mental aspects of combat effectiveness by comparing the combat attitudes of United States Air Forces in Europe (USAFE) personnel (officers and enlisted) to those of personnel (officers and enlisted) in other Air Force commands. Within USAFE, the combat attitudes are further delineated by examining the differences between combatants (rated officers) and support personnel (non-rated officers).

II. Background: In 1982, the Leadership and Management Development Center (LMDC) developed the Potential for Combat Effectiveness Model (PCEM) to provide a measure of potential combat effectiveness. The model is composed of four components: Cohesion, Morale, Combat Motivation, and Leadership. The inputs for this model come from the initial administrations of the Combat Attitude Survey (CAS) and the Organizational Assessment Package (OAP) survey. The data from linked CAS and OAP administrations are stored in a cumulative data base containing over 44,000 records. For this report, data collected from January 1982 to September 1985 were used as the data base.

III. Procedures & Results: Several steps were taken to achieve the goals of this research project:

(1) Current research and theory on the potential for combat effectiveness were reviewed. This review focused on the four

components of the PCEM: Cohesion, Morale, Combat Motivation, and Leadership.

(2) The data base was divided into two independent groups: USAFE personnel and other Air Force personnel. Both groups were further subdivided into officer and enlisted responses. A demographic comparison of the personnel categories (officers and enlisted) revealed very little difference between either the officers or enlisted members in USAFE and their counterparts in other commands in the Air Force.

(3) To compare attitudinal differences, four combat attitude comparisons were accomplished using the PCEM:

(a) USAFE personnel vs. other Data Base personnel

(b) USAFE officers vs. other Data Base officers

(c) USAFE enlisted personnel vs. other Data Base enlisted personnel

(d) USAFE rated officers vs. USAFE non-rated officers.

Two-tailed t-tests were performed to discern if attitudinal differences existed between the groups. The level of significance for all t-tests was alpha = .05, which equates to a 95% confidence level that a reliable difference exists between the compared groups. The results of the analyses indicate that Data Base personnel as a whole expressed significantly more positive views on their combat attitudes than USAFE personnel. The comparison of USAFE officers to Data Base officers revealed no significant difference in their overall potential for combat effectiveness scores, while Data Base enlisted personnel expressed a significantly more positive view than their counterparts in USAFE. Within USAFE, rated officers expressed a significantly more positive view than non-rated officers.

IV. Conclusions:

(1) The fact USAFE must operate in the more stressful European environment was postulated to be the primary cause for the results from the PCEM. They are less than 15 minutes of flying time from Warsaw Pact nations; therefore, they probably have a greater appreciation for the capabilities of enemy forces. Their living environment, family ties, and off-base recreation are different than they were accustomed to in the United States. All of these factors could impact their responses to the linked OAP-CAS surveys resulting in lower perceptions of Cohesion, Morale, Combat Motivation, and Leadership--the components of the PCEM.

(2) The results indicate these lower perceptions were

primarily limited to USAFE enlisted personnel, so this is where USAFE must focus its attention. Since enlisted members constitute the majority of the personnel within the command, it is important for USAFE to take some steps to improve their combat attitudes.

(3) USAFE combat personnel (rated officers) expressed a significantly more positive view of their potential for combat effectiveness than support personnel (non-rated officers). The two components of the PCEM impacting these results were Cohesion and Combat Motivation. These results were attributed to organizational patterns and the increased emphasis the Air Force places on combat training for rated officers. Since these patterns are characteristic of all Air Force flying commands, it may be difficult for USAFE to alter the perceptions of its non-rated officers.

V. Recommendations:

(1) USAFE supervisors at all levels should be made aware of the enlisted members' lower perceptions of the organizational climate within USAFE. Armed with this knowledge, supervisors will be in a better position to employ the necessary leadership and management techniques to deal with the problem.

(2) In an attempt to give as many people command experience as possible, the Air Force tends to move commanders in and out rather quickly; however, this is detrimental to unit morale and cohesion, and its effects could be aggravated in USAFE by the more stressful environment. USAFE should conduct a study to determine how long its unit commanders remain in their position and compare the results with other commands in the Air Force. If necessary, USAFE should attempt to keep commanders in position for longer periods to improve unit morale and cohesion.

(3) USAFE should try to stress the importance of support personnel's role to the war effort at every opportunity. This should improve the combat attitudes of support personnel by reinforcing their contribution to USAFE's wartime mission, but it is doubtful if their combat attitudes will ever be as high as combat personnel.

(4) USAFE's stress on realistic training seems to be paying dividends. Both USAFE officers and enlisted personnel expressed a significantly more positive view than Data Base personnel on Combat Training, a sub-component of Combat Motivation. This is an area USAFE should continue to stress. The addition of training facilities, such as the Warrior Preparation Center and the

CONTINUED

Spadeadam Electronic Combat Training Range, should further improve USAFE personnel's attitudes in this area.

(5) USAFE is on the right track in making people its number one priority. The command's initiatives to improve the quality of life for USAFE personnel should help improve the overall combat attitude of the command. A study similar to this should be accomplished several years from now. The results of the two studies can be compared to determine the benefit of USAFE's emphasis on people-programs.

(6) Accomplish additional research to determine if Pacific Air Forces (PACAF) personnel's combat attitudes follow the same trend as USAFE's. If their combat attitudes are also significantly less positive than other Air Force personnel in the Data Base, it would support the hypothesis that the main factor influencing USAFE personnel's responses is the external environment. Although the PACAF and USAFE environments are not identical, they possess the common characteristic that Air Force personnel stationed there must face a foreign environment.

Chapter One

INTRODUCTION

Over the course of history, many military leaders have observed the relationship between victory and the combat attitudes of the soldier. Xenophen, an ancient Greek mercenary, stated, "Whichever army goes into battle stronger in soul, their enemies generally cannot withstand them" (Kellett, 1982, p. 3). Napoleon observed the mental is to the physical as three to one (Kellett, 1982). And, Field Marshall Montgomery noted, "The morale of the soldier is the greatest single factor in war" (Richardson, 1978, p. 21).

Background

Today, the Air Force places considerable emphasis on measuring the physical aspects of combat readiness; however, it seems to neglect the mental aspects, which many observers have noted to be the most important factor in achieving victory. This report provides some insight into the mental aspects of combat readiness by comparing the combat attitudes of United States Air Forces in Europe (USAFE) personnel (officers and enlisted) to those of personnel (officers and enlisted) in other Air Force commands. Within USAFE itself, the combat attitudes are further delineated by examining the differences in attitudes between rated officers

and non-rated officers. This was done to determine if there are significant attitudinal differences between combatants (rated officers) and support personnel (non-rated officers).

The traditional measures of combat readiness are (a) performance on formal training exercises, (b) availability of personnel, and (c) operational maintenance status (Marashian, 1982). In AFR 55-15, Combat Readiness Reporting (1982), four areas are used to determine the combat readiness of a unit: (a) personnel strength, (b) equipment and supplies on hand, (c) readiness of equipment, and (d) training. The regulation also calls for consideration of subjective factors. However, Sarkesian (1980) believes commanders are unable to make an honest evaluation of these factors because of their built-in bias. He attributes this to the career pressure to succeed as well as the "can do" attitude in the military. Sarkesian (1980) calls for the "need to develop more valid indicators of combat effectiveness, those that are particularly important in identifying political-psychological factors and the motivators that are essential for military cohesion in terms of the individual soldier, leaders, and unit integrity" (p. 16).

In 1982, the Leadership and Management Development Center (LMDC) developed the Combat Attitude Survey (CAS) to measure some of the qualitative and sociopolitical factors that impact combat effectiveness, such as those suggested by Sarkesian (1980). Based on Waller's (1982) review of military studies, LMDC developed the Potential for Combat Effectiveness Model (PCEM) to

provide a measure of potential combat effectiveness. The inputs for this model come from the results of the CAS and selected items from the Organizational Assessment Package (OAP), another survey administered by LMDC. This assessment avoids the inherent bias of a commander in judging the status of his organization because the results are based on the perceptions of the individuals within the organization.

Goals

This study uses the PCEM to examine USAFE personnel's perceptions of their potential for combat effectiveness and compares them to the perceptions of personnel in other Air Force commands. To achieve the objective, the report pursues four goals:

(1) To conduct a literature review of current research and theory on combat attitudes in general and determine if any specific research has been accomplished on USAFE combat attitudes;

(2) To compare PCEM-measured demographic characteristics and combat attitudes of officers and enlisted personnel in USAFE with the attitudes of corresponding personnel throughout the Air Force, and to compare PCEM-measured combat attitudes of rated and non-rated officers within USAFE;

(3) To analyze significant attitudinal differences between USAFE personnel and other Air Force personnel, as well as differences between rated and non-rated officers within USAFE; and

(4) To develop recommendations USAFE leaders can implement to improve potential combat effectiveness in the command.

Organization

In pursuit of those goals, this report is organized into six chapters. Chapter Two highlights the results of the literature review, identifies those variables showing significant impact on potential combat effectiveness, and briefly reviews significant aspects of USAFE. Chapter Three provides an overview of the PCEM, discusses the collection of input data for the model, and describes how the data were analyzed. In Chapter Four, the results of the analysis are presented, to include demographic as well as attitudinal differences. Chapter Five discusses the results. Finally, the conclusions and recommendations are presented in Chapter Six.

Chapter Two

LITERATURE REVIEW

Most literature on combat effectiveness deals with the entire scope of the subject--precombat factors through the factors affecting performance in actual combat. This project focuses on the potential for combat effectiveness or the precombat factors. Therefore, the literature review does not address in-combat factors such as fatigue, shock, etc. Based on past research, many factors have been identified as influencing the potential combat effectiveness of the soldier. However, for the purposes of this review, only four factors are discussed: (a) leadership, (b) cohesion, (c) morale, and (d) combat motivation. These are also the four primary components of the Potential for Combat Effectiveness Model (PCEM). For the interested reader, Kellett (1982) and Sarkesian (1980) provide in-depth reviews of major factors impacting combat effectiveness.

The first section of this review is a general discussion of combat effectiveness. It is followed by a discussion of each of the four factors, with the primary focus on how each factor affects potential combat effectiveness. Finally, there is a brief description of significant aspects of USAFE to provide some background information on the environment in which USAFE personnel must operate.

Combat Effectiveness

Chodoff (1983) observed, "While the most accurate measure of potential combat effectiveness is not certain or readily apparent (outside of actual combat), it is clear that something more than simply filling recruitment quotas is required in order to have an effective military organization" (p. 591). In other words, any military organization must take specific, calculated steps to ensure its soldiers are ready to fight. This could be more critical today than at any other time in history because of the projected high-technology environment of the next war. Hauser (1980) believes "the battlefield of tomorrow will be bewildering, complex, fluid, and incredibly violent. The technology will be ultramodern; the psychological stresses on soldiers, as terrible and lonely as any in the history of warfare" (p. 200). In preparing troops for this environment, human motivation and behavior will be the keys to combat effectiveness (Kellett, 1982).

Leadership

Probably the most critical factor in preparing troops for combat is leadership. It is an elusive term which is difficult to define; however, its importance is unquestioned. Numerous studies and research efforts (Blanck, 1977; Clark, 1969; Dupuy & Hammerman, 1980; Hoiberg, 1980; Koman, 1971; Marshall, 1947) have documented the importance of leadership in an effective combat unit. Leadership is probably the one factor which has an impact

on all the other factors affecting potential combat effectiveness. However, when viewed in the narrow context of a single contributor to combat potential, its major contribution is confidence. Leadership inspires the confidence in a soldier to know he is prepared for combat. General George S. Patton summed up the importance of leadership in a simple statement--"Leadership is what wins battles" (Weigley, 1981, p.566).

Cohesion

Like leadership, cohesion also has a major impact on the potential combat effectiveness of a unit. In simple terms, cohesion is the ability of a group to hold together. Cohesion is a function of group dynamics where the primary group provides the individual soldier with basic organic needs, affection, esteem from both peers and superiors, and a definition of his purpose in battle (Marashian, 1982). Chodoff (1983) argues that the minimum requirement for maintaining cohesion prior to battle and the motivation to engage the enemy is a soldier's belief that his role as a soldier is indispensable to the well-being of his social system and that his actions will have some impact on the conflict. He observes that patriotism and ideological beliefs are potentially powerful precombat motivating forces.

Numerous other studies (Downey, Duffy, & Shiflett, 1975; Dupuy & Hammerman, 1980; Marashian, 1982; Marshall, 1947; Shils & Janowitz, 1948; Stouffer, Suchman, DeVinney, Star, & Williams, 1949; Torrence, Rush, Kohn, & Doughty, 1957) have documented the

importance of cohesion to combat effectiveness. Savage and Gabriel (1978) argue that low unit cohesion at virtually all organizational levels was a major factor in the ineffectiveness of the US Army in Vietnam. Former Army Chief of Staff, General E. C. Meyer (1982), observed that in today's environment where the emphasis is on the individual, it is more difficult for a commander to develop a cohesive unit than in the past. Therefore, a commander must be prepared to work harder to achieve cohesion because its importance has not diminished over time. Cohesion cannot be achieved overnight--it takes time. Stability is a crucial factor in the development of cohesion. The officers and enlisted members of a unit must have time to interact under a variety of situations so they can meld together as a team. General Meyer (1982) stated, "Units with the best fighting qualities are likely to reflect strong cohesion throughout the entire organization" (p. 8).

Morale

The third factor affecting potential combat effectiveness is morale. There are many definitions of morale; however, Baynes (1967) uses a straightforward, easy-to-comprehend definition: "It is a quality of mind and spirit which combines courage, self-discipline, and endurance" (p. 18). Richardson (1978) identified three elements of morale: individual morale, small group morale, and unit morale. Individual morale is a function of physical and mental factors. Small group morale is developed

through confidence in leaders and comrades. The morale of a unit comes from the traditions associated with the unit.

The development of morale must be fostered and nurtured over time. Lieutenant General Ewell (1982) listed eight steps to instill and develop morale:

(1) Don't micromanage.
(2) Encourage innovation.
(3) Run an aggressive outfit.
(4) Get a good team.
(5) Keep up unit fighting strength.
(6) Institute an aggressive awards program.
(7) Take care of your people.
(8) Build unit esprit. (p. 21)

Numerous other studies (Bigelman, 1978; Downey et al., 1975; Dupuy & Hammerman, 1980; Torrence et al., 1957) have identified the importance of morale to combat effectiveness. The morale of a group is a reflection of its confidence, enthusiasm, and zeal for persevering towards a goal--all important factors in preparation for combat. General Thomas M. Ryan, Jr. (1982) captured the essence of morale when he stated it "is the heart and soul of any military organization. Its impact simply cannot be overstated" (p. 2).

Combat Motivation

The final factor to be discussed is combat motivation, which is defined as the willingness to fight. Personal philosophies determine the combat motivation of the individual soldier. These philosophies are based on patriotism, ideology, religion, hatred, and the perceived threat (Kellett, 1982). They provide a reason for placing oneself in danger, and they set the standard for

individual and group behavior norms.

Two studies (Dupuy & Hammerman, 1980; Marashian, 1982) have documented the combat motivation of the soldier as a key factor in combat effectiveness. Hauser (1980) developed a 4-factor model to explain why soldiers fight. The first factor is submission. When a soldier enlists, he submits to legitimate military authority. The second factor is pride. It is developed through training, praise for a job well-done, and recognition of one's role in a unit. The third factor is loyalty, which is divided among comrades, unit, country, and cause. It is an emotional phenomenon, not a rational one; therefore, the longer a soldier remains in a unit, the more loyalty he develops. The final factor is fear, which includes both fear of punishment and fear of disgrace. All of these factors combine to motivate a soldier to enter combat despite the terror, disorganization, and possibility of death.

USAFE

For purposes of this report, the inputs to the PCEM must be viewed in the context of the USAFE environment. USAFE is an Air Force major command with its headquarters at Ramstein Air Base, Germany. It has over 61,000 officers and enlisted personnel, their families, and about 11,000 civilians at 29 major installations in 17 countries. USAFE must maintain a high state of readiness because many of its installations are less than a 15-minute flight from Warsaw Pact nations. As USAFE enters its

most dangerous decade," the emphasis is on realistic training. The current USAFE philosophy is "right people, right mission, right now." The command's number one priority is to improve the quality of life for its personnel (Air Force Association, 1985, p. 112). Based on the results of the CAS, May (1983) reported the combat attitudes of USAFE personnel were significantly lower when compared to the rest of the Air Force. This report will determine if the perceptions of USAFE personnel have changed in the last two years.

Summary

This review focused on four factors which impact potential combat effectiveness: leadership, cohesion, morale, and combat motivation. Each of these factors is also a component of the PCEM. Although each factor was discussed separately, they are not completely independent. For example, both Ewell (1982) and Ryan (1982) state morale is a function of leadership. However, the evidence points to the fact that each of these factors is important to the potential combat effectiveness of a unit which in turn directly impacts its effectiveness once in combat. The next chapter discusses the methodology used to compare the combat attitudes of USAFE personnel with those of personnel in other Air Force commands.

Chapter Three

METHODOLOGY

This chapter describes the data gathering process for the inputs to the Potential for Combat Effectiveness Model (PCEM) and how the results were used to compare USAFE with the rest of the Air Force. There are four sections in this chapter. The first section, Instrumentation, describes the development of the PCEM and defines the various elements of the model. Second is a discussion of the data collection procedures used to obtain the inputs for the model. The third section is a brief description of the subjects that supplied the inputs to the PCEM. The final section describes the procedures used to analyze the data.

Instrumentation

In early 1982, the Leadership and Management Development Center (LMDC) developed the Combat Attitude Survey (CAS) to measure perceptions of potential combat effectiveness of Air Force units. Based on Waller's (1982) review of psychosocial components related to combat effectiveness, LMDC researchers hypothesized a 4-component model of potential combat effectiveness: Cohesion, Morale, Readiness, and Leadership. Brown (1985) used a 4-step statistical process to construct the components of the model: (a) factor analysis, (b) cluster analysis, (c) reliability testing,

and (d) second order factor analysis. These analyses revealed some flaws in the hypothesized model, and as a result, both the CAS and the PCEM were revised. The major change in the model was the deletion of the Readiness component. This was necessary because neither the Organizational Assessment Package (OAP) nor the CAS actually measures readiness. Rather, the surveys measure perceptions of various elements that are related to readiness. The realignment of the PCEM with its four major components and seven sub-components is shown in Figure 1. Each of the components and sub-components of the model is defined in Appendix C.

The input items that define the components and sub-components of the model come from both the CAS and OAP. Twenty-four items from the 70-item CAS and 28 items from the 109-item OAP are used as inputs to the PCEM. The OAP items provide many of the general organizational measures. The items from the CAS were designed to measure the remaining organizational factors as well as the combat portion. Appendix D shows the specific items from the surveys which were used as inputs for the various components and sub-components of the PCEM. The identifier in front of each item depicts the survey from which the input originated. The letter prefix refers to the survey ("C" for CAS and "O" for OAP), and the number correlates to the specific item from the respective survey.

Data Collection

Data for the inputs to the PCEM were collected as a result of the LMDC consultation process, which must be requested by an

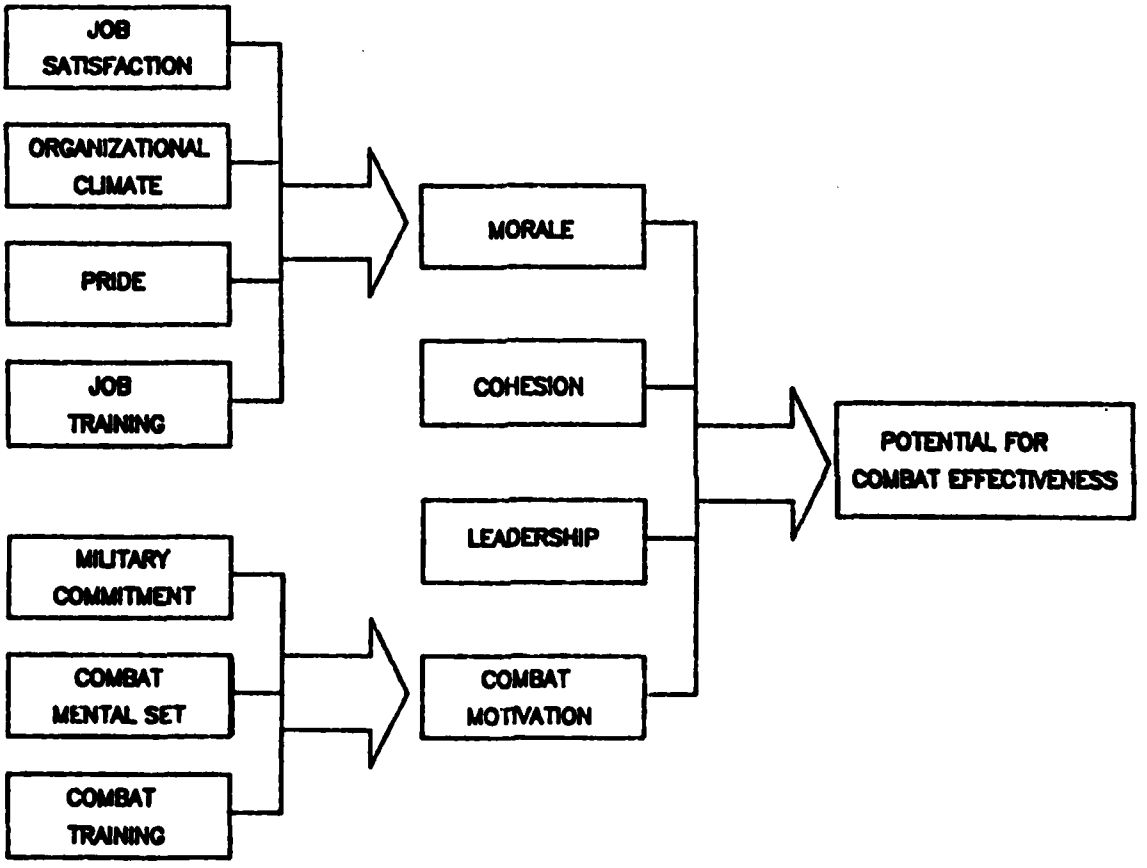


Figure 1

Potential for Combat Effectiveness Model

organization's commander. Therefore, the data were gathered from a number of samples of opportunity as opposed to an Air Force-wide random sample. Since data gathering at each organization is a census of that organization, the results are representative of the organizations visited. The cumulative data base, therefore, represents a large portion of the Air Force.

The initial administration of the CAS and OAP surveys in an organization begins the consultation process. The CAS is only given to those organizations desiring feedback on their potential combat effectiveness (historically about one fifth of the organizations visited). The actual administration of the surveys is handled by LMDC personnel. The surveys are given in group sessions lasting about 90 minutes to all organization personnel present for duty, and individuals are assured of the confidentiality of their responses.

Approximately 6 weeks after the initial surveys, the analysis of data is complete, and LMDC consultants return to the organization for a tailored visit to provide feedback. The results of the surveys are given to the commander and supervisors in the organization. These results are treated in a confidential manner between LMDC and the client commander. When specific problems are identified, a consultant and supervisor develop a management action plan to resolve the problem at the appropriate level within the organization. Other methods of solving problems include workshops and training sessions.

Between 4 and 7 months after the tailored visit, the

consulting team returns to the organization to re-administer the OAP. During this visit, the results of the two OAP administrations are used as evaluation tools to assess the impact of the consulting process. After the analysis is complete, a final report comparing pre- and post-OAP survey results is mailed to the client organization.

The data from linked OAP and CAS administrations are stored in a cumulative data base containing over 44,000 records. In addition to the 16 demographic questions on the OAP, other demographics are collected from the response sheets of both the OAP and CAS. They are stored on each record and include: work group code, personnel category and pay grade, age, sex, Air Force specialty code (AFSC), base, and major command. The data base contains information collected from January 1982 through September 1985. The linked OAP-CAS data base used for this report only contains information from the pre-tailored visit administrations (pre-intervention).

Subjects

To examine the perceptions of USAFE personnel, responses from the linked OAP-CAS data base were divided into two independent groups: USAFE personnel and the rest of the Air Force personnel in the LMDC Data Base. Both groups were further subdivided into officer and enlisted responses. Civilian responses were not considered since civilians do not normally perform a direct combat role. Sample sizes of the officer and enlisted groups are shown

in Table 1. The data were taken from survey administrations at 27 bases or organizations (9 from USAFE) in 9 major commands, direct reporting units, or special operating agencies. The USAFE officer group was further divided into two subgroups: 624 rated officers and 874 non-rated officers. This was done to examine the perceptions of USAFE combat personnel (rated officers) versus a similar group of USAFE support personnel (non-rated officers).

Table 1

Sample Sizes of Comparison Groups

	Officers	Enlisted
USAFE	1,501	16,278
Data Base	3,067	23,227

Procedures

Analyses of the survey responses of USAFE personnel versus the rest of the Air Force (Data Base) were conducted using two separate procedures: (a) Analysis of Demographic Information and (b) Comparison of Combat Attitudes. The number (n) shown throughout this study is the total number of valid responses in the linked OAP-CAS data base for the item or component being examined. Statistical analyses were performed using the

appropriate procedures contained in the SPSSX User's Guide (1983).

Analysis of Demographic Information

This analysis provides a demographic profile of the officers and enlisted members in both of the independent groups: USAFE personnel and the Data Base. The SPSSX subprogram "Crosstabs" was used to analyze the data in 21 demographic categories.

Comparison of Combat Attitudes

For these analyses, OAP-CAS attitudinal responses of USAFE personnel were separately compared to those of the Data Base by personnel category (officer and enlisted). Within the USAFE group, rated officers were also compared to non-rated officers. Two-tailed t-tests were performed to discern any attitudinal differences between groups within each personnel category. The level of significance for all t-tests was alpha = .05, which equates to a 95% confidence level that a reliable difference exists between the compared groups. An F-test was performed to check the assumption of equal variance in the comparison groups. Where appropriate, t-tests for unequal variance groups were used. These procedures were followed to identify variables in which USAFE personnel's attitudes significantly varied from those of Data Base personnel, and USAFE rated officers' attitudes from those of USAFE non-rated officers'. A total of 64 separate comparisons were made between groups, with results presented in the four categories (Cohesion, Morale, Combat Motivation, and Leadership) representing the major components of the PCEM. Responses in these categories were combined to determine an

overall potential combat effectiveness assessment for each group. The next chapter presents the results of the analyses.

Chapter Four

RESULTS

This chapter examines the results of the research from two perspectives. First is a summary of the demographic information on personnel who responded to the linked OAP-CAS surveys. Second is a summary of the combat attitudinal differences between USAFE personnel and other Air Force personnel (Data Base) as well as the differences between USAFE rated and non-rated officers.

Demographic Comparison

Appendix A, Tables A-1 through A-21, provides detailed, descriptive information about USAFE personnel and Data Base personnel who have responded to the linked OAP-CAS surveys. These tables depict 21 demographic characteristics of both officers and enlisted members in each group. The following sections provide demographic summaries of "typical" USAFE officers and "typical" USAFE enlisted members as contrasted with "typical" officers and enlisted members from the Data Base.

USAFE Officers vs. Data Base Officers

"Typical" USAFE officer respondents have more than 8 years in the Air Force, 18 to 36 months at their present duty stations, more than 36 months in their career fields, but less than 12 months in their present positions. More than 86% are White.

"Typical" USAFE officer respondents are married with 35% of their spouses employed outside of the home. More than 47% of the officers hold advanced academic degrees. Approximately 64% are supervisors; however, less than 30% supervise five or more people. Seventy-four percent indicate they either will, or likely will, make the Air Force a career.

A demographic comparison between "typical" Data Base officer respondents and "typical" USAFE officer respondents reveals only minor differences. In fact, the largest difference is that 9% more USAFE officers have non-employed spouses who are not geographically separated. Most of the differences tend to be 3% or less. There are five differences worth highlighting: (a) Data Base officers tend to have been in the Air Force slightly longer, (b) USAFE officers (12%) have almost twice the Data Base percentage of PhD's (or professional degrees), (c) proportionately more USAFE officers are supervisors, (d) Data Base officers have a higher proportion of civilian employed spouses, and (e) 8% more Data Base officers have been on station longer than 36 months.

USAFE Enlisted Members vs. Data Base Members

"Typical" USAFE enlisted respondents have more than 4 years service with 33% having 8 or more years in the Air Force. Nearly 40% have between 18 and 36 months on station. Almost 60% have more than 36 months in their career fields; however, less than 47% have been in their present positions more than 1 year. Slightly over 70% are White, 17% are Black, and 6% are Hispanic. Nearly 58% of the "typical" USAFE enlisted members are married, with 50%

of their spouses employed outside the home. Less than 3% have undergraduate degrees, but 51% have some college credit. More than 62% of the enlisted member respondents are not supervisors. Just over 51% indicated they will either definitely or likely make the Air Force a career; 19% indicated maybe, and 9% reported they are probably not career-minded.

As in the case of the officers, the demographic profiles of "typical" Data Base enlisted respondents and "typical" USAFE enlisted respondents are very similar. The largest difference between the two is that 9% more USAFE enlisted members have non-employed spouses who are geographically separated. Once again, most of the differences are 3% or less. There are only four differences worth highlighting: (a) 3% more of the Data Base enlisted members have been in the Air Force longer than 12 years, (b) 5% more of the Data Base enlisted members are married, (c) slightly more (3%) of the Data Base enlisted members definitely plan to make the Air Force a career, and (d) 6% more Data Base enlisted members have been on station longer than 36 months. Thus, there is very little demographic difference between the "typical" officer or enlisted member in the two groups. Next, their combat attitudes are examined.

Combat Attitude Comparison

Unlike the demographic comparison, there are significant differences in the combat attitudes of USAFE respondents as compared to those of the Data Base respondents. These differences

are examined in greater detail by comparing the attitudes of USAFE officers to Data Base officers and USAFE enlisted members to Data Base enlisted members. Additionally, USAFE rated officers are compared to USAFE non-rated officers. A summary of the overall potential for combat effectiveness scores from the PCEM for these comparison groups is shown in Table 2. Detailed results showing the combat attitude scores of the comparison groups are provided in Appendix B, Tables B-1 through B-4.

Table 2

Overall Potential for Combat Effectiveness

Comparison Groups	Mean	Difference
USAFE Personnel	4.86	.09*
Data Base Personnel	4.95	
USAFE Officers	5.31	.05
Data Base Officers	5.36	
USAFE Enlisted	4.82	.09*
Data Base Enlisted	4.91	
USAFE Rated Officers	5.39	.14*
USAFE Non-rated Officers	5.25	

Note. Responses are on a 7-point scale (1 = Most negative; 7 = Most positive).

* Significant difference at 95% level.

USAFE Personnel vs. Data Base Personnel

The overall potential for combat effectiveness score of USAFE respondents (see Table 3) was found to be significantly different from that of the Data Base respondents, with Data Base personnel expressing a more positive view of their combat effectiveness. In fact, there were significant differences on all four components and seven sub-components of the PCEM. Of these components and sub-components, USAFE personnel expressed a more positive view on one sub-component, Combat Training. Of the 52 items which are inputs to the PCEM, USAFE personnel only expressed a significantly more positive view on one item, Chemical Warfare Preparation (see Appendix E, Table E-1). The following paragraphs present these results in greater detail by comparing the differences between officers and the differences between enlisted personnel in the two groups.

Table 3

USAFE Personnel vs. Data Base Personnel:
Mean Combat Attitude Scores

	USAFE	Data Base	Difference
OVERALL PCEM SCORE	4.86	4.95	.09*
Cohesion	4.95	5.13	.18*
Morale	4.61	4.78	.17*
Combat Motivation	4.99	5.03	.04*
Leadership	4.72	4.82	.10*

* Significant difference at 95% level.

USAFE Officers vs. Data Base Officers. A comparison of the combat attitudes of USAFE officer respondents to those of Data Base officer respondents revealed a completely different picture (see Table 4). There was no significant difference in the overall combat attitude score of the two groups. Of the four components in the PCEM, there was only a significant difference in Cohesion, with the Data Base officers expressing a more positive view. USAFE officers had a more positive view of Pride, a sub-component of Morale, while Data Base officers had more positive views on two of the sub-components, Job Training and Military Commitment. There were no significant differences on the other four sub-components. Of the 52 inputs to the PCEM, USAFE officers had significantly more positive views on 6 items, Data Base officers on 19 items, and for 27 items there were no significant differences (see Appendix E, Table E-2).

Table 4

USAFE Officers vs. Data Base Officers:
Mean Combat Attitude Scores

	USAFE	Data Base	Difference
OVERALL PCEM SCORE	5.31	5.36	.05
Cohesion	5.60	5.72	.12*
Morale	5.20	5.24	.04
Combat Motivation	5.33	5.37	.04
Leadership	5.18	5.22	.04

* Significant difference at 95% level.

USAFE Enlisted vs. Data Base Enlisted. There was a significant difference between the overall potential for combat effectiveness score of USAFE enlisted respondents and that of the Data Base enlisted respondents, with the Data Base personnel expressing a more positive view. The Data Base enlisted personnel expressed significantly more positive views on all four components of the PCEM (see Table 5). Of the seven sub-components of the PCEM, Data Base respondents expressed a significantly more positive view on five, there was no significant difference on one (Combat Mental Set), and USAFE enlisted personnel expressed a significantly more positive view on one (Combat Training). USAFE enlisted personnel expressed a significantly more positive view on only 1 of the 52 input items to the PCEM: Chemical Warfare Preparation. There were no significant differences on 5 of the

Table 5

USAFE Enlisted vs. Data Base Enlisted:
Mean Combat Attitude Scores

	USAFE	Data Base	Difference
OVERALL PCEM SCORES	4.82	4.91	.09*
Cohesion	4.88	5.05	.17*
Morale	4.56	4.73	.17*
Combat Motivation	4.96	4.98	.02*
Leadership	4.67	4.76	.09*

* Significant difference at 95% level

input items, while Data Base personnel expressed significantly more positive views on the remaining 46 items (see Appendix E, Table E-3).

An area that requires highlighting is the Morale component. There was not a single input item in this component where USAFE enlisted members expressed a significantly more positive view than their Data Base counterparts. In fact, the items from the linked OAP-CAS surveys that make-up this component received the lowest ratings among USAFE enlisted member responses (see Appendix E, Table E-3). The four survey items receiving the lowest scores are listed in Table 6. The final section of this chapter highlights the results of comparing rated and non-rated officers within USAFE.

Table 6

Enlisted Responses: Items Receiving Low Mean Scores

		USAFE	Data Base	Difference
O98	Org. rewards people based on performance	3.76	3.94	.18*
O82	Work group ideas readily accepted by mgmt.	3.78	3.88	.10*
O86	Complaints aired satisfactorily	3.85	3.97	.12*
O88	Strong org. interest in welfare of people	3.90	4.07	.17*

* Significant difference at 95% level

USAFE Rated Officers vs. USAFE Non-rated Officers

USAFE rated officer respondents expressed a significantly more positive view than USAFE non-rated officer respondents on their overall potential for combat effectiveness score (see Table 7). Of the four components in the PCEM, there were no significant differences on two components (Morale and Leadership), but rated officers expressed significantly more positive views on the other two components (Cohesion and Combat Motivation). In comparing the scores of the seven sub-components of the PCEM, rated officers expressed significantly more positive views on five sub-components, non-rated officers on one, and there was no significant difference on one. Non-rated officers expressed significantly more positive views on only 4 of the 52 input items

---

Table 7

USAFE Rated Officers vs. USAFE Non-rated Officers:
Mean Combat Attitude Scores

	USAFE Rated	USAFE Non-rated	Difference
OVERALL PCEM SCORES	5.39	5.25	.14*
Cohesion	5.69	5.54	.15*
Morale	5.21	5.19	.02
Combat Motivation	5.53	5.18	.35*
Leadership	5.24	5.14	.10

* Significant difference at 95% level

---

to the PCEM. Rated officers expressed a significantly more positive view on 21 input items, and there were no significant differences on the remaining 27 input items (see Appendix E, Table E-4).

Summary

Thus, Data Base personnel on the whole expressed a significantly more positive view than USAFE respondents on their overall potential for combat effectiveness. A comparison of USAFE officers to Data Base officers revealed no significant difference in their overall combat attitude, while Data Base enlisted personnel expressed a significantly more positive view than their counterparts in USAFE. Within USAFE, rated officers expressed a significantly more positive view than non-rated officers. The next chapter discusses these results.

Chapter Five

DISCUSSION

The results presented in Chapter Four indicate USAFE personnel have a less positive view of their overall potential for combat effectiveness than other Air Force personnel in the LMDC Data Base. This is the same result May reported in 1983. This chapter provides some possible insights into those results. The first section is a discussion of the results of comparing USAFE personnel with the Data Base personnel. The second section discusses the results of comparing rated and non-rated officers within USAFE.

USAFE Personnel vs. Data Base Personnel

Data Base personnel exhibited not only a significantly more positive view on their overall potential for combat effectiveness, but also on all four components (Cohesion, Morale, Combat Motivation, and Leadership) of the Potential for Combat Effectiveness Model (PCEM). It is, however, important to put these differences in perspective. Table 3 compares the mean scores of the two groups. The range of means is 4.61 to 5.13 where a "4" equates to a response of "neither agree nor disagree" and a "5" equates to "slightly agree." Thus, there are not large variations in the combat attitudes of the two groups. However,

the differences in the mean scores are reliable at the 95% confidence level. Insight into possible causes of these differences can be gained by individually examining the results of the officer comparisons and the results of the enlisted comparisons.

USAFE Officers vs. Data Base Officers

Based on the PCEM results, there is no difference in the overall combat attitude of USAFE officers and Data Base officers. In fact, of the four components in the model, there was only one significant difference: USAFE officers reported lower scores on Cohesion. A possible explanation of this result is USAFE officers may have a healthier respect for their adversary. According to Meyers (1982), one of the tenets for developing cohesion is confidence in a unit's power. Since USAFE officers must deal with the threat posed by the Warsaw Pact forces on a daily basis, it would be reasonable to assume they have a greater appreciation for their enemy's capabilities than officers based in other areas of the world facing a less formidable threat. Responses from two items on the CAS seem to lend credence to this hypothesis. Data Base officers' responses to items "I'll do all right if sent into a combat situation" and "My organization is combat ready" were significantly more positive than USAFE officers' responses. Grill (1984) provides additional support for this hypothesis in his report on the effects of REFORGER (REturn of FORces to GERmany) particpation. He found that soldiers who had participated in multiple REFORGER deployments perceived the enemy to be a more

competent adversary. Thus, if USAFE officers perceive a greater threat, they would naturally have less confidence in the power of their unit, which would affect their perceptions of unit cohesion. However, on the whole USAFE officers' combat attitudes are very similar to Data Base officers' attitudes and are not a major factor in explaining the overall difference in combat attitudes between USAFE personnel and Data Base personnel. The overall difference is mainly due to the differences in the attitudes between the enlisted personnel groups.

USAFE Enlisted Personnel vs. Data Base Enlisted Personnel

The results of comparing USAFE enlisted respondents' scores and those of Data Base enlisted respondents are almost identical to the results of comparing USAFE personnel's overall scores to those of the Data Base personnel. Since USAFE enlisted personnel account for 92% of USAFE responses to the linked OAP-CAS surveys, the enlisted responses are the driving factor in determining overall USAFE combat attitude scores. Therefore, an understanding of why USAFE enlisted members had a significantly less positive view on the components of the PCEM will also explain the results for USAFE personnel as a whole. The same explanation for the difference in perceptions on the Cohesion component that was discussed in the officer comparisons should also hold for enlisted members: enlisted members in close proximity to enemy forces may have a healthier respect for the enemy's capability and less confidence in their own. Although Data Base enlisted members expressed a significantly more positive view on the Combat

Motivation component, the difference in the two mean scores is small (only .02) and will not be discussed. The other two components, Morale and Leadership, are discussed in the remainder of this section.

In the Morale component, there was not a single input item where USAFE enlisted members expressed a significantly more positive view than their Data Base counterparts. Their responses to the input items for the Morale component were lower than any other component. Table 6 lists the four items from the linked OAP-CAS surveys that received the lowest USAFE enlisted member ratings. All these items fall under the Organizational Climate sub-component, which indicates this is an area USAFE needs to improve. It is interesting to note that this is also the area Data Base enlisted personnel rated the lowest. These responses seem to indicate a general dissatisfaction with the management or leadership within an organization. However, the USAFE Organizational Climate responses do not seem to correlate with USAFE enlisted members' perceptions of their supervisors. Their Leadership component mean was 4.67 as compared to their Organizational Climate mean of 4.04, a rather large difference of .63. This indicates that leadership problems may not be the main cause of the low perception of the organizational climate within USAFE. A plausible explanation for the lower mean scores in Organizational Climate and Morale in general is that USAFE enlisted members are in Europe instead of the United States. By being overseas, they are isolated from their families, probably

have less desirable living quarters, and are subject to foreign customs and mores off base. All of these factors impact morale. One demographic characteristic might also affect this result: compared to Data Base enlisted members, 5% more USAFE enlisted members are single. Thus, they do not have the support of an immediate family in USAFE, which could reduce their morale and affect their perceptions of the organizational climate within their organization. This combination of factors could account for the lower perception of morale among USAFE enlisted members.

The discussion of the Morale component revealed that USAFE enlisted members rated the Leadership component fairly high in relation to the Organizational Climate sub-component. However, Data Base enlisted members still had a significantly more positive view of the Leadership component than USAFE enlisted members. This difference is difficult to explain because the demographic profiles of USAFE officers and Data Base officers are almost identical, which leads one to postulate they would have similar leadership capabilities. Additionally, the percentage of USAFE enlisted members (35%) who are supervisors is almost identical to the percentage of Data Base enlisted members (34%) who are supervisors. As in the case of the officers, there is very little difference in the demographic profiles of the two enlisted groups, indicating the probability of similar leadership capabilities among enlisted supervisors. A plausible explanation for the different perceptions in leadership was highlighted in the discussion on the Morale component: it is simply more difficult

to be an effective leader in USAFE because of the external environment. The final section of this chapter discusses the differences between rated officers and non-rated officers within USAFE.

USAFE Rated Officers vs. USAFE Non-rated Officers

This comparison was done to determine if there are significant combat attitude differences between combatants (rated officers) and support personnel (non-rated officers) within USAFE. The results indicate rated officers have a significantly more positive view of their overall potential for combat effectiveness. This difference is a result of their significantly higher scores on two components (Cohesion and Combat Motivation) in the PCEM.

A factor that could account for rated officers expressing a significantly more positive view of the Cohesion component than non-rated officers is the difference in organizational patterns between the two groups. Flying squadrons are composed mostly of rated officers, whereas non-rated officers are often spread out among many organizations with large enlisted populations. Thus, rated officers have the advantage of being in a fairly homogeneous squadron. Additionally, within that squadron, the rated officers are performing very similar duties. Kellett (1982) observed that greater cohesion results from groups founded on the basis of mutual attraction, common tactical requirements, and shared values and goals. Clearly, rated officers have an advantage over their non-rated counterparts in this respect. Thus, existing

organizational patterns could account for the higher Cohesion scores among rated officers.

Rated officers also expressed a significantly more positive view than non-rated officers on the Combat Motivation component. A key input in this perception is the fact rated officers believe they receive better combat training and as a result are better prepared to be in combat. This result is not surprising when the duties of rated officers are compared to those of non-rated officers. Rated officers' daily duties entail preparation for war. They fly missions, participate in operational readiness inspections, study war plans, etc. Although some non-rated officers have jobs that are directly related to a wartime mission, others do not. Thus, more diversity is found among non-rated officers: one might be an intelligence officer supporting a flying outfit, while another is a lawyer working legal problems that have no impact on USAFE's war plans. Therefore, it seems only natural that rated officers reported higher Combat Motivation scores. Grill's findings (1984) also support this position. He found soldiers with combat duty positions tend to view their units in a more positive manner and have higher morale. Both of these factors are items on the CAS which help determine the Combat Motivation component of the PCEM.

Summary

This chapter provided possible explanations for the results obtained in this study. No attempt was made to explain every

significant difference, rather only major trends were discussed. The explanations are based on the results of the study and the environmental factors within USAFE. They were presented to provide some possible insights into the results of this study. More research would have to be accomplished before these explanations could be verified as actual causes of the results. The final chapter provides the conclusions of this project, highlights areas requiring further study, and makes recommendations on steps USAFE leaders could take to improve the overall combat attitudes of the command.

Chapter Six

CONCLUSIONS/RECOMMENDATIONS

This report has examined the combat attitudes of USAFE personnel by comparing their responses to the linked OAP-CAS surveys to those of other Air Force personnel in the LMDC Data Base. It also employed the same methodology to further examine combat attitudes within USAFE by comparing the responses of combat personnel (rated officers) to those of support personnel (non-rated officers). This chapter briefly summarizes the results of this research project, makes recommendations for further study, and lists possible steps USAFE can implement to improve its personnel's combat attitudes.

Conclusions

The results of this research indicate, at the 95% confidence level, there is a significant difference between the overall potential for combat effectiveness score of USAFE personnel and other members of the Air Force in the LMDC Data Base. Based on the Potential for Combat Effectiveness Model (PCEM), Data Base personnel have a more positive view of their overall potential for combat effectiveness. In fact, Data Base personnel expressed a significantly more positive view on all four components of the PCEM (Cohesion, Morale, Combat Motivation, and Leadership). These

differences are a result of USAFE enlisted personnel's generally less positive responses to the linked OAP-CAS surveys.

The fact USAFE must operate in the more stressful European environment was postulated to be the primary cause of the results from the PCEM. They are less than 15 minutes of flying time from Warsaw Pact nations; therefore, they probably have a greater appreciation than their Data Base counterparts for the capabilities of enemy forces. Their living environment, family ties, and off-base recreation are different than they were accustomed to in the United States. All of these factors could impact their responses to the linked OAP-CAS surveys resulting in lower perceptions of Cohesion, Morale, Combat Motivation, and Leadership--the components of the PCEM. The results indicate these lower perceptions were primarily limited to USAFE enlisted personnel, so this is where USAFE must focus its attention. Since enlisted members constitute the majority of the personnel within the command, it is important for USAFE to take some steps to improve their perceptions of their overall combat attitude.

At the 95% confidence level, USAFE combat personnel (rated officers) expressed a significantly more positive view of their overall potential for combat effectiveness than support personnel (non-rated officers). The two components of the PCEM impacting these results were Cohesion and Combat Motivation. These results were attributed to organizational patterns and the increased emphasis the Air Force places on combat training for rated officers. Since these patterns are characteristic of all Air

Force flying commands, it may be difficult for USAFE to alter the perceptions of its non-rated officers.

Recommendations

Based on the results of this research, the following recommendations are made:

1. USAFE supervisors at all levels should be made aware of the enlisted members' low perceptions of the organizational climate within USAFE. Armed with this knowledge, supervisors will be in a better position to employ the necessary leadership and management techniques to deal with the problem.

2. In an attempt to give as many people command experience as possible, the Air Force tends to move commanders in and out rather quickly; however, this is detrimental to unit morale and cohesion, and its effects could be aggravated in USAFE by the more stressful environment. USAFE should conduct a study to determine how long its unit commanders remain in their positions and compare the results with other commands in the Air Force. If necessary, USAFE should attempt to keep commanders in position for longer periods to improve unit morale and cohesion.

3. USAFE should try to stress the importance of support personnel's role to the war effort at every opportunity. This should improve the combat attitudes of support personnel by reinforcing their contribution to USAFE's wartime mission, but it is doubtful if their combat attitudes will ever be as high as combat personnel.

4. USAFE's emphasis on realistic training seems to be paying dividends. Both USAFE officers and enlisted personnel expressed a significantly more positive view than Data Base personnel on Combat Training, a sub-component of Combat Motivation. This is an area USAFE should continue to stress. The addition of training facilities, such as the Warrior Preparation Center and the Spadeadam Electronic Combat Training Range, should further improve USAFE personnel's attitudes in this area.

5. USAFE is on the right track in making people its number one priority. The command's initiatives to improve the quality of life for USAFE personnel cannot help but improve the overall combat attitudes of the command. A study similar to this should be accomplished several years from now. The results of the two studies can be compared to determine the benefit of USAFE's emphasis on people programs.

6. Additional research should be accomplished to determine if Pacific Air Forces (PACAF) personnel's combat attitudes follow the same trend as USAFE's. If their combat attitudes are also significantly less positive than other Air Force personnel in the LMDC Data Base, it would support the hypothesis that the main factor influencing USAFE personnel's responses is the external environment. Although the PACAF and USAFE environments are not identical, they possess the common characteristic that Air Force personnel stationed there must face a foreign environment.

Summary

The purpose of this research project was to provide some insight into the mental aspects of the combat effectiveness of USAFE personnel. The findings indicate USAFE personnel have a less positive view of their overall potential for combat effectiveness than the other members of the Air Force in the LMDC Data Base. Since the Air Force professes that people are its most important asset, it is important for Air Force leaders to have a better understanding of their personnel. This report provides USAFE leaders with greater insight into the perceptions of personnel within the command and some recommendations to improve their combat effectiveness.

REFERENCES

Air Force Association. (1985, May). A major command: USAFE. Air Force Magazine, pp. 112-113.

Baynes, J. (1967). Morale: A study of men and courage. New York: Praeger.

Bigelman, P. (1978). An analysis of a Lanchester-type combat model reflecting attrition due to unit deterioration and ineffective combatants. Unpublished master's thesis, Naval Post Graduate School, Monterey, CA.

Blanck, J. (1977). A leadership pattern for army combat arms commanders. Unpublished research report No. 8, Maxwell AFB, AL: Air War College.

Brown, R. (1985). Revision of the Combat Attitude Survey. Unpublished technical report, Maxwell AFB, AL: Leadership and Management Development Center.

Chodoff, E. (1983, Summer). Ideology and primary groups. Armed Forces and Society, 9(4), 569-593.

Clark, R. (1969). Developing a functional theory of leadership (Professional paper 8-69). Alexandria, VA: George Washington University.

Downey, R. G., Duffy, P. J., & Shiflett, S. (1975, August). Criterion performance measures of leadership and unit effectiveness in small combat units (Research memorandum 75-9). Alexandria, VA: US Army Research Institute for Behavioral and Social Sciences.

Dupuy, T. N., & Hammerman, G. M. (1980). Soldier capability--Army combat effectiveness (scale) (Vol III, Historical combat data analysis). Unpublished research report No. ACN 64024, Ft. Benjamin Harrison, IN: US Army Soldier Support Center.

Ewell, J. J. (1982, June). High morale in combat. Military Review, 62(6), 19-33.

CONTINUED

Grill, D. J. (1984). The effects of REFORGER exercise participation on soldiers' attitudes. In G. E. Lee & T. E. Ulrich (Eds.), Procedings of the Ninth Symposium of Psychology in the Department of Defense (USAFA TR 84-2, pp. 122-126). Colorado Springs, CO: USAF Academy.

Hauser, W. L. (1980). The will to fight. In S. C. Sarkesian (Ed.), Combat effectiveness: Cohesion, stress, and the all volunteer army (pp. 186-211). Beverly Hills, CA: Sage.

Hoiberg, A. (1980). Military staying power. In S. C. Sarkesian (Ed.), Combat effectiveness: Cohesion, stress, and the all volunteer army (pp. 212-243). Beverly Hills, CA: Sage.

Kellett, A. (1982). Combat motivation. Boston, MA: Kluwer.

Koman, P. (1971). Combat and battle effectiveness (Technical translation No. 23-522-72). Charlottesville, VA: US Army Foreign Science and Technology Center.

Marashian, C. D. (1982). A study of human factors that affect combat readiness on the battlefield. Master's thesis (ADA121951), Naval Postgraduate School, Monterey, CA.

Marshall, S. L. A. (1947). Men against fire. New York: Morrow.

May, J. P. (1983). An examination of the attitudes of military personnel in USAFE as measured by the Organizational Assessment Package (Report No. LMDC-WP-83-2). Maxwell AFB, AL: Leadership and Management Development Center.

Meyer, E. C. (1982, February). The unit. Defense, pp. 2-9.

Richardson, F. M. (1978). Fighting spirit. New York: Crane and Russak.

Ryan, T. M. (1982, May). The winning combination. TIG Brief, p. 2.

CONTINUED

Sarkesian, S. C. (1980). Combat effectiveness: Cohesion, stress, and the all volunteer army. Beverly Hills, CA: Sage.

Savage P. L., & Gabriel, R. A. (1978). Crisis in command: Mismanagement in the army. New York: Hill and Wang.

Shils, E. A., & Janowitz, M. (1948, Summer). Cohesion and disintegration in the Wehrmacht in World War II. Public Opinion Quarterly, 12, 280-315.

SPSSX user's guide. (1983). New York: McGraw-Hill.

Stouffer, S. A., Suchman, E. A., DeVinney, L. C., Star, S.A., & Williams, R. M. (1949). The American soldier: Adjustment during army life (Vol. I). Princeton, NJ: Princeton University Press.

Torrence, P. E., Rush, C. H., Kohn, H. B., & Doughty, J. M. (1957). Factors in fighter-interceptor pilot combat effectiveness (Technical report No. AFPTRC-TR-57-11). Lackland AFB, TX: Air Force Personnel and Training Research Center, Air Research and Development Command.

US Department of the Air Force. (1982, November 22). Combat readiness reporting (AFR 55-15). Washington, DC: Government Printing Office.

Waller, S. D. (1982). An evaluation of an attitudinal model to measure the potential for combat effectiveness of USAF organizations. Master's thesis (LSSR 39-82), Department of Communications and Humanities, Air Force Institute of Technology, Wright-Patterson AFB, OH.

Weigley, R. F. (1981). Eisenhower's lieutenants. Bloomington, IN: Indiana University Press.

APPENDICES

APPENDIX

APPENDIX A

Demographic Information

Table A-1

Number of Respondents by Personnel Category

	USAFE (17,779)	Air Force (26,294)
Officers	1,501	3,067
Enlisted	16,278	23,227

Table A-2

Sex by Personnel Category

	USAFE		Air Force	
	Male (%)	Female (%)	Male (%)	Female (%)
n =	15,491	2,269	23,099	3,124
Officers	8.3	9.5	11.7	11.5
Enlisted	91.7	90.5	88.3	88.5

Table A-3

Age by Personnel Category

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,494	16,225	3,047	23,083
17 to 20 Yrs	0.0	16.5	0.0	13.0
21 to 25 Yrs	9.8	39.6	9.5	40.0
26 to 30 Yrs	30.3	20.4	28.5	19.2
31 to 35 Yrs	26.3	13.2	24.4	14.1
36 to 40 Yrs	20.4	7.8	20.6	9.9
41 to 45 Yrs	9.2	2.1	12.2	2.8
46 to 50 Yrs	2.3	0.4	3.7	0.7
> 50 Yrs	1.7	0.0	1.2	0.2

Table A-4

Time in Air Force

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,499	16,218	3,059	23,154
< 1 Yr	0.6	6.8	2.3	7.0
1 to 2 Yrs	2.7	13.4	3.3	12.1
2 to 3 Yrs	8.3	14.1	7.5	12.2
3 to 4 Yrs	10.1	11.4	6.7	11.8
4 to 8 Yrs	25.4	21.0	22.9	21.6
8 to 12 Yrs	17.6	13.2	16.7	12.6
> 12 Yrs	35.3	20.1	40.7	22.7

Table A-5

Months in Present Career Field

	USAFE		Air Force	
	Off (%)	Enl (%)	Off (%)	Enl (%)
n =	258	4,315	801	6,481
< 6 Mos	2.1	4.3	4.7	4.9
6 to 12 Mos	3.7	6.8	7.2	8.0
12 to 18 Mos	5.1	7.9	7.0	8.3
18 to 36 Mos	20.4	21.6	19.2	20.4
> 36 Mos	68.7	59.4	61.9	58.4

Table A-6

Months on Present Duty Station

	USAFE		Air Force	
	Off (%)	Enl (%)	Off (%9	Enl (%)
n =	1,007	10,790	1,885	14,588
< 6 Mos	15.3	15.5	13.3	15.2
6 to 12 Mos	19.4	18.0	16.9	18.1
12 to 18 Mos	17.5	16.7	15.9	16.1
18 to 36 Mos	38.4	38.3	36.3	32.8
> 36 Mos	9.3	11.5	17.6	17.7

Table A-7

Months in Present Position

	USAFE		Air Force	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,211	13,305	2,459	18,120
< 6 Mos	28.3	28.3	26.3	27.1
6 to 12 Mos	25.2	24.6	26.2	23.9
12 to 18 Mos	16.2	17.5	16.1	16.6
18 to 36 Mos	24.6	23.3	24.3	23.5
> 36 Mos	5.8	6.3	7.2	8.9

Table A-8

Ethnic Group

	USAFE		Air Force	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,492	16,129	3,051	23,067
Indian/Alaskan	0.9	1.5	0.6	1.2
Asian/Pacific	1.0	1.3	1.7	2.2
Black	4.2	16.7	6.0	16.9
Hispanic	2.8	5.8	2.2	5.0
White	88.5	70.6	86.7	71.4
Other	2.6	4.0	2.7	3.3

Table A-9

Marital Status

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,500	16,248	3,065	23,173
Not Married	20.3	40.5	20.1	35.3
Married	78.4	57.9	78.2	62.5
Single Parent	1.3	1.6	1.7	2.2

Table A-10

Spouse Status: Air Force

	Geographically Separated		Not Geo. Separated	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	102	1,178	2,295	13,306
Civ Employed	55.9	59.6	32.2	35.5
Not Employed	23.5	23.9	58.0	50.0
Military Member	20.6	16.6	9.8	14.5

Table A-11

Spouse Status: USAFE

	Geographically Separated		Not Geo. Separated	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	50	902	1,126	8,506
Civ Employed	54.0	52.7	22.4	31.2
Not Employed	20.0	32.7	67.1	50.6
Military Member	26.0	14.6	10.5	18.2

Table A-12

Educational Level

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,496	16,212	3,063	23,132
Non HS Grad	0.0	0.9	0.0	0.7
HS Grad or GED	0.2	48.0	0.3	45.7
< 2 Yrs College	0.1	34.5	0.3	34.5
> 2 Yrs College	1.2	13.7	1.6	15.4
Bachelor's	51.3	2.5	55.8	3.2
Master's	34.8	0.4	35.6	0.5
Doctoral	12.4	0.0	6.4	0.0

Table A-13

Professional Military Education

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,498	16,252	3,061	23,146
None	36.9	34.0	28.9	31.6
Phase 1 or 2	0.7	31.1	1.1	30.7
Phase 3	0.7	18.9	1.1	19.4
Phase 4	0.7	9.2	1.1	10.5
SNCO/Phase 5	0.3	3.8	0.3	4.8
SOS	28.9	0.2	28.4	0.1
Int Svc School	23.0	2.7	27.2	2.8
Sen Svc School	8.9	0.1	12.2	0.1

Table A-14

Number People Directly Supervised

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,491	16,178	3,042	22,999
None	35.9	62.5	42.5	62.9
1 Person	8.2	7.0	7.2	7.4
2 People	7.8	7.7	6.2	6.7
3 People	7.2	5.5	7.4	5.4
4 to 5 People	13.1	7.7	14.3	7.6
6 to 8 People	12.1	4.1	10.2	4.5
9 or > People	15.6	5.5	12.2	5.5

Table A-15

Number People for Whom Respondent Writes APR/OER/Appraisal

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,497	16,233	3,052	23,121
None	45.4	65.2	49.7	66.2
1 Person	11.9	8.9	10.5	9.2
2 People	8.9	9.2	7.3	8.3
3 People	6.3	6.4	7.2	6.2
4 to 5 People	11.6	7.5	12.1	7.2
6 to 8 People	9.9	2.2	9.3	2.3
9 or > People	6.0	0.6	3.9	0.6

Table A-16

Supervisor Writes Respondent's APR/OER

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,477	16,072	3,029	22,907
Yes	83.8	69.7	75.6	68.3
No	9.7	19.5	16.0	20.8
Not Sure	6.4	10.8	8.4	10.9

Table A-17

Work Schedule

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,485	16,103	3,043	23,001
Day Shift	52.1	55.7	54.1	58.6
Swing Shift	0.3	8.4	0.3	7.2
Mid Shift	0.0	3.7	0.1	3.1
Rotating Shift	5.0	15.9	3.8	14.9
Irregular	13.7	14.3	11.2	11.6
Freq TDY	5.9	1.4	8.6	3.0
Crew Schedule	23.1	0.5	22.0	1.6

Table A-18

Supervisor Holds Group Meetings

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,489	15,995	3,029	22,851
Never	4.4	16.6	6.4	16.8
Occasionally	18.1	32.0	22.3	35.0
Monthly	23.0	5.7	14.0	7.7
Weekly	42.2	29.3	41.5	26.7
Daily	10.8	14.1	14.0	11.8
Continuously	1.5	2.3	1.9	2.0

Table A-19

Meetings Solve Problems

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,478	15,855	3,009	22,691
Never	13.9	25.5	14.3	25.5
Occasionally	41.8	39.7	43.4	40.5
Half the Time	22.7	17.1	22.5	16.4
Always	21.5	17.6	19.8	17.5

Table A-20

Aeronautical Rating and Current Status

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,498	16,190	3,062	23,063
Nonrated	58.1	91.4	52.8	90.1
Nonrated Crew	0.2	0.8	2.2	2.5
Rated - Ops	34.0	1.5	35.9	1.7
Rated - Support	7.7	6.2	9.0	5.7

Table A-21

Career Intent

	-----USAFE-----		---Air Force---	
	Off(%)	Enl(%)	Off(%)	Enl(%)
n =	1,497	16,178	3,053	23,083
Retire 12 Mos	1.1	1.9	3.3	3.1
Definite Career	52.6	31.9	53.4	34.7
Probably Career	21.4	19.4	23.6	19.2
Undecided	16.1	22.6	12.4	20.9
Probably not Car	5.5	14.8	4.4	13.3
Separate Likely	3.2	9.4	2.8	8.8

APPENDIX

APPENDIX B

Combat Attitude Comparison of

USAFE Personnel to the LMDC Data Base

Table B-1

USAFE Personnel vs. Data Base Personnel

	Mean	SD	df[a]	t
POTENTIAL FOR COMBAT EFFECTIVENESS			25690	8.26***
USAFE Personnel	4.86	0.93		
Data Base Personnel	4.95	0.92		
COHESION			35012	14.77***
USAFE Personnel	4.95	1.24		
Data Base Personnel	5.13	1.22		
MORALE			27089	13.33***
USAFE Personnel	4.61	1.16		
Data Base Personnel	4.78	1.13		
Job Satisfaction			31373	12.99***
USAFE Personnel	4.85	1.28		
Data Base Personnel	5.02	1.23		
Organizational Climate			35054	11.83***
USAFE Personnel	4.12	1.48		
Data Base Personnel	4.30	1.44		
Pride			36792	7.71***
USAFE Personnel	4.84	1.65		
Data Base Personnel	4.96	1.61		
Job Training			34171	12.38***
USAFE Personnel	4.61	1.39		
Data Base Personnel	4.78	1.37		

[a] Approximate degrees of freedom are given when t-test for groups with unequal variances is used.

*Probability <.05 **Probability <.01 ***Probability <.001

Table B-1 (Continued)

	Mean	SD	df[a]	t
COMBAT MOTIVATION			35730	3.64***
USAFE Personnel	4.99	0.98		
Data Base Personnel	5.03	0.98		
Military Commitment			33298	15.47***
USAFE Personnel	5.33	0.98		
Data Base Personnel	5.48	0.94		
Combat Mental Set			42840	2.06*
USAFE Personnel	5.22	1.55		
Data Base Personnel	5.25	1.55		
Combat Training			39527	-5.91***
USAFE Personnel	4.37	1.20		
Data Base Personnel	4.30	1.20		
LEADERSHIP			40199	6.35***
USAFE Personnel	4.72	1.55		
Data Base Personnel	4.82	1.53		

[a] Approximate degrees of freedom are given when t-test for groups with unequal variances is used.

*Probability <.05 **Probability <.01 ***Probability <.001

Table B-2

USAFE Officers vs. Data Base Officers

	Mean	SD	df[a]	t
POTENTIAL FOR COMBAT EFFECTIVENESS			2445	1.43
USAFE Officers	5.31	0.84		
Data Base Officers	5.36	0.82		
COHESION			2684	3.41**
USAFE Officers	5.60	1.04		
Data Base Officers	5.72	0.99		
MORALE			3231	1.05
USAFE Officers	5.20	1.04		
Data Base Officers	5.24	1.03		
Job Satisfaction			4075	0.20
USAFE Officers	5.34	1.12		
Data Base Officers	5.35	1.13		
Organizational Climate			2645	0.60
USAFE Officers	4.98	1.39		
Data Base Officers	5.01	1.32		
Pride			3059	-2.81**
USAFE Officers	5.66	1.30		
Data Base Officers	5.55	1.36		
Job Training			3736	2.48*
USAFE Officers	4.89	1.35		
Data Base Officers	5.00	1.33		

[a] Approximate degrees of freedom are given when t-test for groups with unequal variances is used.

*Probability <.05 **Probability <.01 ***Probability <.001

Table B-2 (Continued)

	Mean	SD	df[a]	t
COMBAT MOTIVATION			3630	1.23
USAFE Officers	5.33	0.92		
Data Base Officers	5.37	0.89		
Military Commitment			2542	2.59*
USAFE Officers	5.88	0.81		
Data Base Officers	5.96	0.76		
Combat Mental Set			4449	1.89
USAFE Officers	5.63	1.40		
Data Base Officers	5.71	1.38		
Combat Training			3918	-1.19
USAFE Officers	4.42	1.15		
Data Base Officers	4.38	1.16		
LEADERSHIP			4102	1.02
USAFE Officers	5.18	1.33		
Data Base Officers	5.22	1.31		

[a] Approximate degrees of freedom are given when t-test for groups with unequal variances is used.

*Probability <.05 **Probability <.01 ***Probability <.001

Table B-3

USAFE Enlisted vs. Data Base Enlisted

	Mean	SD	df[a]	t
POTENTIAL FOR COMBAT EFFECTIVENESS			23243	7.17***
USAFE Enlisted	4.82	0.93		
Data Base Enlisted	4.91	0.91		
COHESION			32260	12.67***
USAFE Enlisted	4.88	1.24		
Data Base Enlisted	5.05	1.22		
MORALE			25168	12.30***
USAFE Enlisted	4.56	1.16		
Data Base Enlisted	4.73	1.13		
Job Satisfaction			28859	12.45***
USAFE Enlisted	4.81	1.28		
Data Base Enlisted	4.98	1.24		
Organizational Climate			32325	10.36***
USAFE Enlisted	4.05	1.46		
Data Base Enlisted	4.20	1.43		
Pride			33886	7.21***
USAFE Enlisted	4.76	1.66		
Data Base Enlisted	4.88	1.62		
Job Training			31784	11.58***
USAFE Enlisted	4.58	1.39		
Data Base Enlisted	4.75	1.37		

[a] Approximate degrees of freedom are given when t-test for groups with unequal variances is used.

*Probability <.05 **Probability <.01 ***Probability <.001

Table B-3 (Continued)

	Mean	SD	df[a]	t
COMBAT MOTIVATION			32098	2.45**
USAFE Enlisted	4.96	0.98		
Data Base Enlisted	4.98	0.98		
Military Commitment			30729	13.59***
USAFE Enlisted	5.28	0.98		
Data Base Enlisted	5.42	0.94		
Combat Mental Set			38389	0.49
USAFE Enlisted	5.18	1.55		
Data Base Enlisted	5.19	1.56		
Combat Training			35607	-5.97***
USAFE Enlisted	4.37	1.21		
Data Base Enlisted	4.29	1.21		
LEADERSHIP			36095	5.29***
USAFE Enlisted	4.67	1.56		
Data Base Enlisted	4.76	1.55		

[a] Approximate degrees of freedom are given when t-test for groups with unequal variances is used.

*Probability <.05 **Probability <.01 ***Probability <.001

Table B-4

USAFE Rated Officers vs. USAFE Non-rated Officers

	Mean	SD	df[a]	t
POTENTIAL FOR COMBAT EFFECTIVENESS			820	-2.29*
USAFE Rated	5.39	0.79		
USAFE Non-rated	5.25	0.88		
COHESION			1381	-2.65**
USAFE Rated	5.69	0.94		
USAFE Non-rated	5.54	1.10		
MORALE			992	-0.31
USAFE Rated	5.21	0.99		
USAFE Non-rated	5.19	1.08		
Job Satisfaction			1303	6.46***
USAFE Rated	5.11	1.07		
USAFE Non-rated	5.51	1.13		
Organizational Climate			1399	-0.50
USAFE Rated	5.01	1.33		
USAFE Non-rated	4.97	1.43		
Pride			1443	-4.40***
USAFE Rated	5.84	1.14		
USAFE Non-rated	5.55	1.39		
Job Training			1194	-4.94***
USAFE Rated	5.10	1.29		
USAFE Non-rated	4.72	1.38		

[a] Approximate degrees of freedom are given when t-test for groups with unequal variances is used.

*Probability <.05 **Probability <.01 ***Probability <.001

Table B-4 (Continued)

	Mean	SD	df[a]	t
COMBAT MOTIVATION			1264	-7.14***
USAFE Rated	5.53	0.81		
USAFE Non-rated	5.18	0.96		
Military Commitment			1343	-3.91***
USAFE Rated	5.98	0.71		
USAFE Non-rated	5.81	0.87		
Combat Mental Set			1444	-7.77*
USAFE Rated	5.95	1.18		
USAFE Non-rated	5.41	1.49		
Combat Training			1367	-7.06***
USAFE Rated	4.67	1.05		
USAFE Non-rated	4.25	1.19		
LEADERSHIP			1288	-1.50
USAFE Rated	5.24	1.22		
USAFE Non-rated	5.14	1.40		

[a] Approximate degrees of freedom are given when t-test for groups with unequal variances is used.

*Probability <.05 **Probability <.01 ***Probability <.001

APPENDIX

APPENDIX C

Definitions of Components in PCEM

Definitions of Components in PCEM

I. **COHESION**. Cohesion measures the individual's desire to remain in the group and the commitment to group needs and standards.

II. **MORALE**. Morale measures general satisfaction with life. It is a combination of Job Satisfaction, Organizational Climate, Pride, and Job Training.

A. **JOB SATISFACTION**. Job Satisfaction assesses the individual's satisfaction with specific aspects of his or her present job.

B. **ORGANIZATIONAL CLIMATE**. Organizational Climate measures the individual's perception of the organizational environment as a whole, such as spirit of teamwork, communications, and organizational pride.

C. **PRIDE**. Pride measures the individual's pride in one's work or group achievements.

D. **JOB TRAINING**. Job Training measures the extent to which the individual is satisfied with the technical training and on-the-job training he or she has received.

III. **COMBAT MOTIVATION**. Combat Motivation is the individual's willingness to fight and is measured from three sub-components: Military Commitment, Combat Mental Set, and Combat Training.

A. **MILITARY COMMITMENT.** Military Commitment measures responsibility to the organization and military as well as adjustment to Air Force lifestyle.

B. **COMBAT MENTAL SET.** Combat Mental Set measures general attitude towards war and combat.

C. **COMBAT TRAINING.** Combat Training measures the extent that combat drills or exercises enhance the individual's skills and the extent to which they enhance the unit's combat readiness for a potential threat.

IV. **LEADERSHIP.** Leadership measures support and guidance received, establishment of performance standards and good work procedures, and the overall quality of supervision.

APPENDIX

APPENDIX D

Inputs to PCEM

Inputs to PCEM

I. COHESION

C24 Morale of my work group is high*
C27 I feel loyal to others within my work group*
C29 I will not let my work group down*
C30 I trust others within my work group*
C33 People in my work group work together as a team*
O94 High spirit of teamwork among co-workers*
O102 Satisfaction with co-worker relationships***

II. MORALE

A. JOB SATISFACTION

O101 Feeling of helplessness***
O103 Family attitude toward job***
O106 Work schedule***
O107 Job security***
O108 Acquired valuable skills***
O109 My job as a whole***

B. ORGANIZATIONAL CLIMATE

O82 Work group ideas readily accepted by management*
O83 Organization provides information to do job effectively*
O85 Unit aware of important events/situations*
O86 Complaints are aired satisfactorily*
O88 Strong organizational interest in welfare of people*
O92 Outstanding performance recognized*
O98 Organization rewards people based on performance*

C. PRIDE

O32 Extent you are proud of your job**
O46 Extent your work gives you a feeling of pride**

D. JOB TRAINING

C2 Satisfied with technical training to perform job*
C5 Satisfied with training I received on the job*
C6 Confidence with OJT received by work group*
C7 OJT appropriate for job I'm expected to perform*
C52 Extent training has provided skills needed**

III. COMBAT MOTIVATION

A. MILITARY COMMITMENT

C9 I'm in good physical condition*
C17 Important to have clear understanding of mission*
C22 I'm usually in good spirits*
C23 I'm well adjusted to Air Force life*
C35 I realize my warfighting responsibilities*
C39 I put all I have into my Air Force duties*
C47 Important to be a good soldier*
O90 I feel responsible to organization and its mission*
O97 Motivated to give best effort to mission*

B. COMBAT MENTAL SET

C19 I'll do alright if sent into combat situation*
C20 I'm prepared to be involved in warfare*

C. COMBAT TRAINING

C50 Drills/exercises test my organization's combat readiness**
C51 My organization is combat ready**
C54 Training prepared me for potential combat mission**
C58 Chemical warfare preparation**

IV. LEADERSHIP

Supervisor:

C32 Is a good leader*
O58 Is a good planner*
O59 Sets high performance standards*
O60 Encourages teamwork*
O62 Establishes good work procedures*
O67 Asks members for ideas*
O68 Explains how job contributes to mission*
O72 Always helps me improve my performance*
O73 Ensures I get job training when I need it*
O64 Fully explains procedures to everyone*

* Response Scale

0 = Not applicable
1 = Strongly disagree
2 = Moderately disagree
3 = Slightly disagree
4 = Neither agree nor disagree
5 = Slightly agree
6 = Moderately agree
7 = Strongly agree

** Response Scale

0 = Not applicable
1 = Not at all
2 = To a very little extent
3 = To a little extent
4 = To a moderate extent
5 = To a fairly large extent
6 = To a great extent
7 = To a very great extent

*** Response Scale

1 = Extremely dissatisfied
2 = Moderately dissatisfied
3 = Slightly dissatisfied
4 = Neither satisfied nor dissatisfied
5 = Slightly satisfied
6 = Moderately satisfied
7 = Extremely satisfied

APPENDIX

APPENDIX E

Results of Inputs to PCEM

Table E-1

USAFE Personnel vs. Data Base Personnel

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
COHESION					
C24	4.12	4.36	1.89	1.88	12.84***
C27	5.42	5.57	1.43	1.38	10.73***
C29	6.00	6.13	1.15	1.07	12.17***
C30	5.15	5.31	1.59	1.54	10.59***
C33	4.88	5.08	1.66	1.61	12.06***
O94	4.27	4.48	1.90	1.88	11.38***
O102	4.73	4.90	1.76	1.71	10.31***
MORALE					
Job Sat.					
O101	5.07	5.14	1.55	1.50	4.83***
O103	4.88	5.04	1.72	1.65	9.22***
O106	4.50	4.85	2.01	1.92	18.25***
O107	5.17	5.32	1.67	1.64	9.37***
O108	4.58	4.70	1.90	1.87	6.73***
O109	4.80	4.98	1.87	1.80	9.76***
Org. Climate					
O82	3.86	3.98	1.77	1.76	6.63***
O83	4.31	4.49	1.85	1.81	9.77***
O85	4.65	4.83	1.75	1.71	10.73***
O86	3.93	4.07	1.83	1.82	7.88***
O88	3.99	4.19	2.01	1.97	9.98***
O91	4.31	4.49	1.85	1.81	9.77***
O98	3.85	4.05	1.90	1.86	10.62***

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-1 (continued)

USAFE Personnel vs. Data Base Personnel

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
Pride					
O32	5.03	5.16	1.73	1.68	7.25***
O46	4.63	4.76	1.78	1.74	7.46***
Job Tng.					
C2	4.46	4.68	1.80	1.76	12.19***
C5	4.50	4.68	1.73	1.69	10.53***
C6	4.57	4.75	1.64	1.61	11.03***
C7	4.67	4.82	1.73	1.71	9.01***
C52	4.81	4.94	1.46	1.43	9.32***
COMBAT MOTIVATION					
Mil. Com.					
C9	5.33	5.45	1.44	1.39	8.32***
C17	5.65	5.68	1.52	1.50	2.12*
C22	5.44	5.60	1.46	1.37	11.69***
C23	5.61	5.72	1.46	1.40	8.37***
C35	5.54	5.72	1.70	1.59	11.17***
C39	5.44	5.57	1.49	1.41	9.08***
C47	5.54	5.67	1.50	1.44	9.18***
O90	4.41	4.69	2.00	1.95	14.21***
O97	4.91	5.15	1.83	1.74	13.36***
Com. Men. Set					
C19	5.55	5.62	1.54	1.51	4.51***
C20	4.87	4.86	1.81	1.84	-0.12

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-1 (continued)

USAFE Personnel vs. Data Base Personnel

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
Com. Tng.					
C50	4.43	4.40	1.63	1.64	-1.67
C51	4.45	4.48	1.50	1.54	2.03*
C54	4.37	4.38	1.57	1.62	0.40
C58	4.22	3.89	1.57	1.72	-20.59***
LEADERSHIP					
C32	4.76	4.87	1.95	1.94	5.70***
O58	4.70	4.81	1.88	1.86	6.09***
O59	5.18	5.22	1.73	1.70	2.58*
O60	5.02	5.11	1.85	1.82	5.29***
O62	4.74	4.83	1.81	1.78	5.02***
O67	4.85	4.94	1.92	1.89	4.77***
O68	4.42	4.52	1.89	1.85	5.28***
O72	4.38	4.46	1.82	1.81	4.40***
O73	4.56	4.69	1.87	1.83	7.01***
O64	4.52	4.62	1.89	1.85	5.68***

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-2

USAFE Officers vs. Data Base Officers

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
COHESION					
C24	4.97	5.12	1.71	1.66	2.88**
C27	6.11	6.16	1.05	1.03	1.46
C29	6.43	6.49	0.80	0.80	2.63**
C30	5.87	5.96	1.21	1.18	2.34*
C33	5.43	5.55	1.39	1.36	2.86**
O94	5.09	5.26	1.66	1.57	3.28**
O102	5.30	5.44	1.52	1.46	2.97**
MORALE					
Job Sat.					
O101	5.73	5.58	1.33	1.35	-3.37**
O103	5.66	5.54	1.44	1.50	-2.56*
O106	4.39	4.89	2.06	1.85	7.94***
O107	5.48	5.39	1.56	1.67	-1.72
O108	5.15	5.12	1.71	1.72	-0.52
O109	5.57	5.51	1.57	1.59	-1.08
Org. Climate					
O82	4.72	4.74	1.63	1.59	0.26
O83	5.13	5.12	1.66	1.62	-0.28
O85	5.25	5.37	1.56	1.48	2.60*
O86	4.75	4.79	1.72	1.68	0.66
O88	5.04	5.11	1.85	1.77	1.22
O92	5.13	5.12	1.66	1.62	-0.28
O98	4.84	4.84	1.75	1.74	-0.04

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-2 (continued)

USAFE Officers vs. Data Base Officers

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
Pride					
O32	5.82	5.68	1.32	1.40	-3.37**
O46	5.50	5.41	1.41	1.46	-2.11*
Job Tng.					
C2	4.87	5.01	1.79	1.73	2.47*
C5	4.80	4.93	1.65	1.58	2.56*
C6	4.90	5.00	1.51	1.47	2.28*
C7	4.38	4.92	1.65	1.63	1.55
C52	5.00	5.06	1.49	1.44	1.42
COMBAT MOTIVATION					
Mil. Com.					
C9	5.46	5.60	1.36	1.34	3.31**
C17	6.00	5.89	1.43	1.52	-2.27*
C22	5.84	5.94	1.21	1.10	2.74**
C23	6.03	6.11	1.22	1.11	1.97*
C35	6.04	6.11	1.49	1.39	1.60
C39	6.06	6.01	1.12	1.18	-1.37
C47	5.96	6.09	1.29	1.22	3.40*
O90	5.60	5.75	1.62	1.50	2.95*
O97	5.92	6.01	1.42	1.35	1.96
Com. Men. Set					
C19	5.91	6.04	1.33	1.26	2.99*
C20	5.33	5.37	1.67	1.74	0.68

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-2 (continued)

USAFE Officers vs. Data Base Officers

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
Com. Tng.					
C50	4.43	4.44	1.57	1.61	0.21
C51	4.60	4.71	1.43	1.52	2.41*
C54	4.69	4.75	1.59	1.63	1.15
C58	3.98	3.47	1.46	1.63	-10.31***
LEADERSHIP					
C32	5.33	5.33	1.77	1.77	0.19
O58	5.23	5.26	1.70	1.63	0.57
O59	5.75	5.78	1.42	1.36	0.73
O60	5.49	5.57	1.59	1.54	1.55
O62	5.10	5.14	1.62	1.59	0.80
O67	5.51	5.52	1.56	1.58	0.07
O68	5.00	5.02	1.70	1.64	0.48
O72	4.69	4.77	1.67	1.61	1.47
O73	4.87	4.90	1.66	1.62	0.54
O64	4.78	4.83	1.69	1.66	0.88

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-3

USAFE Enlisted vs. Data Base Enlisted

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
COHESION					
C24	4.04	4.25	1.88	1.89	11.00***
C27	5.36	5.49	1.45	1.40	9.11***
C29	5.96	6.08	1.17	1.09	10.66***
C30	5.08	5.23	1.61	1.56	8.82***
C33	4.83	5.01	1.68	1.63	10.60***
O94	4.20	4.38	1.91	1.89	9.38***
O102	4.67	4.83	1.77	1.72	8.72***
MORALE					
Job Sat.					
O101	5.01	5.08	1.55	1.51	4.70***
O103	4.81	4.97	1.73	1.66	9.14***
O106	4.51	4.85	2.01	1.93	16.59***
O107	5.14	5.31	1.67	1.63	10.02***
O108	4.52	4.65	1.90	1.88	6.23***
O109	4.73	4.91	1.88	1.82	9.21***
Org. Climate					
O82	3.78	3.88	1.77	1.75	5.18***
O83	4.24	4.41	1.85	1.81	8.86***
O85	4.59	4.76	1.76	1.72	9.19***
O86	3.85	3.97	1.82	1.81	6.50***
O88	3.90	4.07	2.00	1.97	8.28***
O92	4.24	4.41	1.85	1.81	8.86***
O98	3.76	3.94	1.88	1.85	9.48***

* Probability <.05
** Probability <.01
*** Probability <.001

AD-A166 722 COMBAT ATTITUDES OF USAFE PERSONNEL(U) AIR COMMAND AND STAFF COLL MAXWELL AFB AL H M CALCUTT APR 86 ACSC-86-0450 2/2

UNCLASSIFIED F/G 5/9 NL

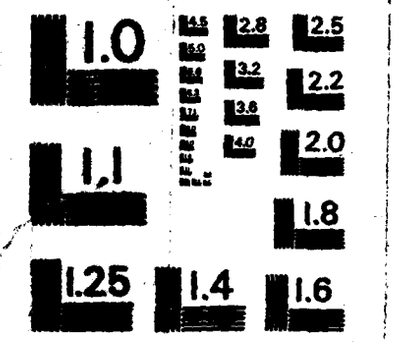


Table E-3 (continued)

USAFE Enlisted vs. Data Base Enlisted

Input	Mean: USAFE	Mean: Data Base	SD: USAFE	SD: Data Base	t
Pride					
O32	4.96	5.09	1.75	1.70	7.03***
O46	4.55	4.67	1.79	1.76	6.72***
Job Tng.					
C2	4.43	4.64	1.80	1.76	11.27***
C5	4.48	4.65	1.74	1.71	9.62***
C6	4.54	4.72	1.64	1.62	10.19***
C7	4.65	4.81	1.73	1.72	8.66***
C52	4.79	4.92	1.46	1.42	8.95***
COMBAT MOTIVATION					
Mil. Com.					
C9	5.32	5.43	1.44	1.40	7.30***
C17	5.62	5.65	1.52	1.50	2.29*
C22	5.40	5.56	1.48	1.39	10.41***
C23	5.57	5.67	1.48	1.43	7.10***
C35	5.50	5.66	1.71	1.60	10.17***
C39	5.38	5.51	1.51	1.42	8.46***
C47	5.50	5.61	1.51	1.46	7.50***
O90	4.30	4.55	1.99	1.95	11.97***
O97	4.82	5.03	1.84	1.76	11.51***
Com. Men. Set					
C19	5.52	5.57	1.55	1.54	2.87**
C20	4.82	4.80	1.81	1.84	-1.39

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-3 (continued)

USAFE Enlisted vs. Data Base Enlisted

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
Com. Tng.					
C50	4.43	4.40	1.64	1.65	-1.86
C51	4.43	4.45	1.51	1.54	0.93
C54	4.34	4.33	1.57	1.61	-0.77
C58	4.25	3.94	1.57	1.72	-17.71***
LEADERSHIP					
C32	4.71	4.84	1.96	1.96	4.92***
058	4.65	4.76	1.89	1.88	5.22***
059	5.13	5.15	1.75	1.73	1.24
060	4.97	5.05	1.87	1.84	4.10***
062	4.71	4.79	1.83	1.80	4.30***
067	4.79	4.86	1.94	1.92	3.69***
068	4.37	4.45	1.90	1.87	4.29***
072	4.35	4.42	1.83	1.83	3.49***
073	4.53	4.66	1.89	1.85	6.63***
064	4.50	4.60	1.90	1.87	5.18***

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-4

USAFE Rated Officers vs. USAFE Non-rated Officers

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
COHESION					
C24	5.08	4.90	1.60	1.78	-2.07*
C27	6.16	6.08	0.96	1.10	-1.51
C29	6.43	6.43	0.75	0.84	-0.08
C30	6.00	5.78	1.04	1.31	-3.65***
C33	5.51	5.38	1.25	1.48	-1.77
O94	5.26	4.97	1.55	1.72	-3.46*
O102	5.34	5.28	1.43	1.58	-0.75
MORALE					
Job Sat.					
O101	5.46	5.92	1.29	1.32	6.75***
O103	5.61	5.70	1.44	1.43	1.11
O106	3.50	5.02	1.96	1.88	15.11***
O107	5.35	5.57	1.55	1.56	2.68*
O108	5.08	5.20	1.66	1.75	1.28
O109	5.65	5.51	1.45	1.64	-1.75
Org. Climate					
O82	4.70	4.74	1.59	1.65	0.44
O83	5.21	5.08	1.57	1.71	-1.54
O85	5.27	5.23	1.50	1.60	-0.47
O86	4.72	4.77	1.70	1.73	0.47
O88	5.04	5.05	1.81	1.87	0.11
O92	5.21	5.08	1.57	1.71	-1.54
O98	4.90	4.80	1.65	1.82	-1.09

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-4 (continued)

USAFE Rated Officers vs. USAFE Non-rated Officers

Input	Mean: USAFE	Mean: Data Base	SD: USAFE	SD: Data Base	t
Pride					
O32	6.00	5.70	1.17	1.40	-4.23***
O46	5.68	5.39	1.24	1.51	-4.05***
Job Tng.					
C2	5.22	4.63	1.60	1.89	-6.33***
C5	4.96	4.68	1.59	1.67	-3.09**
C6	5.04	4.98	1.45	1.53	-2.92**
C7	5.01	4.71	1.59	1.69	-3.29**
C52	5.30	4.78	1.30	1.58	-6.80***
COMBAT MOTIVATION					
Mil. Com.					
C9	5.50	5.43	1.29	1.41	-1.05
C17	6.18	5.87	1.34	1.47	-4.28***
C22	5.79	5.88	1.18	1.23	1.49
C23	5.99	6.07	1.11	1.28	1.33
C35	6.47	5.73	1.08	1.66	-10.40***
C39	6.00	6.10	1.09	1.14	1.74
C47	6.13	5.84	1.09	1.39	-4.46***
O90	5.81	5.47	1.52	1.68	-4.05***
O97	5.96	5.89	1.35	1.47	-0.87
Com. Men. Set					
C19	6.13	5.76	1.10	1.44	-5.56***
C20	5.75	5.04	1.43	1.76	-8.52***

* Probability <.05
** Probability <.01
*** Probability <.001

Table E-4 (continued)

USAFE Rated Officers vs. USAFE Non-rated Officers

Input	Mean USAFE	Mean Data Base	SD USAFE	SD Data Base	t
Com. Tng.					
C50	4.70	4.23	1.41	1.65	-5.90***
C51	4.89	4.41	1.31	1.47	-6.58***
C54	5.25	4.29	1.31	1.65	-12.42***
C58	3.83	4.09	1.46	1.44	3.37**
LEADERSHIP					
C32	5.50	5.21	1.55	1.90	-3.29**
O58	5.29	5.19	1.56	1.79	-1.08
O59	5.75	5.75	1.33	1.47	0.07
O60	5.50	5.49	1.50	1.64	-0.05
O62	5.16	5.07	1.51	1.69	-0.98
O67	5.49	5.53	1.50	1.60	0.44
O68	5.07	4.95	1.59	1.77	-1.32
O72	4.79	4.63	1.54	1.75	-1.92
O73	4.95	4.82	1.56	1.72	-1.45
O64	4.89	4.71	1.58	1.77	-1.98*

* Probability <.05
** Probability <.01
*** Probability <.001

END

DTIC

5-86