

AD-A258 247



2

WOMEN IN COMBAT:
ARE THE RISKS TO COMBAT EFFECTIVENESS
TOO GREAT?

A Monograph
by
Major Vickie J. Saimons
USAF

DTIC
ELECTE
DEC 21 1992
S A D



School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

First Term AY 91-92

Approved for Public Release; Distribution is Unlimited

92-32412



92 12 18 102

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED MONOGRAPH
4. TITLE AND SUBTITLE WOMEN IN COMBAT: ARE THE RISKS TO COMBAT EFFECTIVENESS TOO GREAT? (U)		5. FUNDING NUMBERS
6. AUTHOR(S) SAJ VICKIE J. SAIMONS, USAF		8. PERFORMING ORGANIZATION REPORT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) SCHOOL OF ADVANCED MILITARY STUDIES ATTN: ATZL-SWV FORT LEAVENWORTH, KANSAS 66027-6900 DPM (913) 684-3437 AUTOVON 552-3437		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSORING/MONITORING AGENCY REPORT NUMBER

SUPPLEMENTARY NOTES

11. DISTRIBUTION/AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED	12b. DISTRIBUTION CODE
--	------------------------

ABSTRACT (Maximum 200 words)

~~BE ATTACHED~~

13. SUBJECT TERMS WOMEN IN COMBAT COHESION MORAL DOMAIN COMBAT EFFECTIVENESS			15. NUMBER OF PAGES 48
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED

47540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. Z39-18
298-102

SCHOOL OF ADVANCED MILITARY STUDIES
MONOGRAPH APPROVAL

Major Vickie J. Saimons, MS

Title of Monograph: Women in Combat: Are the Risks to
Combat Effectiveness Too Great?

Approved by:

LTC James M. Dubik Monograph Director
LTC James M. Dubik, MA

James R. McDonough Director, School of
COL James R. McDonough, MS Advanced Military
Studies

Philip J. Brookes Director, Graduate
Philip J. Brookes, Ph.D. Degree Program

Accepted this 20th day of December 1991

ABSTRACT

WOMEN IN COMBAT: ARE THE RISKS TO COMBAT EFFECTIVENESS TOO GREAT? By Major Vickie J. Saimons, USAF, 48 pages.

This monograph examines whether introducing women into combat units would negatively affect unit cohesion and subsequently combat effectiveness. It describes the physical, cybernetic, and moral domains of war and shows the relevance of the moral domain with cohesion as a subelement and its effect on combat effectiveness.

The monograph describes a model for building cohesion and then cites conclusions from studies on cohesion and combat effectiveness. The cohesion model and the studies indicate that cohesion is too complex a phenomenon to be able to isolate one factor, i.e. gender of unit members, as the cause of any change in unit cohesion.

The monograph then examines two professions similar to combat with respect to cohesion--firefighting and police work--to see if introducing women into these units reduced cohesion. No evidence was found to indicate women's presence in these units decreased cohesion.

Finally, the arguments against fully integrating Blacks in the military were compared to similar arguments against introducing women into combat units. Just as the fears of integrating Blacks were found to be groundless, so too were the fears of declining cohesion simply by introducing women into combat units.

Accession For	
NTIS CRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

TABLE OF CONTENTS

TITLE PAGE.....	i
APPROVAL SHEET.....	ii
ABSTRACT.....	iii
TABLE OF CONTENTS.....	iv
INTRODUCTION.....	1
THE DOMAINS OF WAR.....	2
COHESION AND WAR.....	7
A MODEL FOR BUILDING COHESION.....	13
INDUCTIVE ARGUMENT.....	18
ANALOGOUS CASES.....	23
ARGUMENT FROM ANALOGY-CASE II.....	28
CONCLUSIONS.....	37
RECOMMENDATIONS.....	38
ENDNOTES.....	41
BIBLIOGRAPHY.....	46

INTRODUCTION

With the emergence of women in the workplace, their entrance into non-traditional roles, and the women's rights movement, the question of whether or not to allow women in combat roles continues to surface. Both houses of Congress have recently voted to remove the legal obstacles to women in combat and leave the decision up to the services.¹ Although a law does not preclude the Army from assigning women to combat, Army policy does.

If the exclusion laws which apply to the Air Force and Navy are repealed, members of Congress may pressure the Army to change its combat exclusion policy. One of the concerns of such a policy change (forced or not) concerns the assumption that including women in combat units will result in a degradation of combat effectiveness. In testifying before the House, several command-level officers spoke of their concern that women in combat units would ". . . compromise the strength and cohesion of the fighting forces."²

Although there are many arguments for and against allowing women in combat roles, this monograph will address whether introducing women into combat roles would reduce unit cohesion to such an extent to warrant women's continued exclusion by the Department of the Army combat exclusion policy.

Thus, the first portion of this monograph will address a literature review of the domains of war with particular emphasis on the moral domain, specifically its impact on the

battlefield and the role of cohesion within that domain. From this discussion of cohesion, as well as other sources, will emerge a model describing the nature of cohesion and what is required to create it. The monograph will use this model to evaluate an inductive argument against women in combat.

Next, the monograph will look at two traditionally male-dominated career fields that have characteristics similar to combat units--police and fire fighting--to determine whether cohesion eroded as a result of women entering these fields.

Finally, although the situation of integrating blacks into the military and that of allowing women in combat are not totally analogous, there are several striking similarities in the arguments against both actions. These similarities warrant evaluation.

Based upon the results of the foregoing analysis and evaluation, the monograph will determine whether there is sufficient evidence to conclude decisively as to women's impact on the cohesion of combat units, then make recommendations based upon this conclusion.

DOMAINS OF WAR

Before addressing women's impact on unit cohesion, it is important to understand how cohesion fits into the overall theory of war. War can be described by three fundamental domains: the physical, the cybernetic, and the moral. Most individuals are quite familiar with the physical domain; however, the cybernetic and moral domains are less familiar.

The physical domain of war includes those aspects which are relatively constant, objective, and measurable. Physical domain factors include numbers and type of equipment, terrain features in the area of operations, and equipment capabilities and limitations. Of significance is the fact that most of these physical features can be measured and known prior to the beginning of war.

For instance, the M-1 tank is made after a particular design, by the same company, under certain specifications. All M-1s are relatively alike with standard capabilities and limitations. These measurable physical elements allow the commander to know ahead of time factors such as how fast a company of M-1s can move from point A to point B, how much fuel the tanks will use during the move, under what conditions and how far the tanks will be able to see, and maximum effective range under a variety of conditions. The ability to measure these physical factors probably accounts for the propensity to rely on them when comparing force ratios between opposing forces.

The second domain of war, the cybernetic, is just as important as the physical since it encompasses those processes and systems which leaders use to command and control their forces. Ultimately, the cybernetic factors enable leaders to mass combat power at the decisive point and win. Elements of the cybernetic domain facilitate the commander's decision-making cycle and his ability to execute those decisions. The cybernetic domain includes such factors as reporting

procedures and equipment, intelligence gathering systems, voice and data link communications, and operation planning systems. All these systems help the commander in his quest for certainty, enabling him to "see the battlefield," (albeit never with 100 percent certainty), make a decision, and implement that decision.

What makes the cybernetic domain so complex is the very nature of war. The commander must command and control his unit based upon what he knows; however, within the context of war there is always a significant amount of uncertainty, ambiguity, fear, and friction. A commander is never certain what the enemy will do; nor does he always know the disposition of his own forces. Fear may invade the whole decision making cycle and C² system, from those who are reporting information to the commander who has to make decisions and issue instructions. Last, even when good plans are made, friction can surface in many forms (weather, communication breakdowns, saboteurs) which can cause the plan to go awry. When a commander pays attention to the cybernetic domain, he ensures that he has a system, the equipment, and properly trained staff and troops, all of which help to reduce the level and effects of uncertainty, ambiguity, fear, and friction.

The third domain of war, the moral, includes the human element in war. Some of the factors which make up the moral domain include courage, fear, leadership, cohesion, morale, discipline, motivation, nationalism, and patriotism. Unlike the

M-1 tank, in which all are designed alike, human beings are all different. They all have different personalities, upbringings, cultural backgrounds, and motivations. Some show fear at the slightest thing, while others never display fear even when it seems appropriate. Because of the nature of the human element in the moral domain, it is significantly less concrete and measurable compared to the physical domain. In spite of this inability to accurately measure and predict in the moral domain, it is no less important than the physical or cybernetic domains.

Although the preponderance of military literature seems to stress the physical domain of war, several military theorists have also discussed the moral domain in their writings. Not only is their recognition of the moral domain significant, but also the relative weight they give it compared to the physical domain. "The results of a battle," Jomini explains, "generally depend upon a union of causes which are not always within the scope of the military art . . . , but it is the morale of armies, as well as of nations, more than any thing [sic] else, which makes victories, and their results decisive."³

Ardant du Picq in his studies on war also recognized that elements of the moral domain could overcome inadequacies in the physical domain. "With equal or even inferior power of destruction," Du Picq claimed, "he will win who has the resolution to advance, who by his formations and maneuvers can continually threaten his adversary with a new phase of material action, who in a word has the moral ascendancy.

Moral effect inspires fear."⁴ Additionally, Du Picq understood the moral domain to actually be the essence of battle. "In battle," Du Picq believed, "two moral forces, even more than two material forces, are in conflict."⁵

Another major, if not the premier, military theorist, Carl von Clausewitz, realized the moral domain in war could not be ignored. He claimed that, "It is paltry philosophy if in the old-fashioned way one lays down rules and principles in total disregard of moral values."⁶ Additionally, Clausewitz held that the physical and moral domains, two important elements of strategy, were closely tied to one another. "The effects of physical and psychological factors," he explained, "form an organic whole which, unlike a metal alloy, is inseparable by chemical processes."⁷ Expanding his vision of the moral domain, Clausewitz realized, regardless of the weapon available, the human behind the gun or artillery piece is the real weapon in war. He stated, "One might say that physical seem little more than the wooden hilt, while the moral factors are the precious metal, the real weapon, the finely-honed blade."⁸ Lastly, Clausewitz aptly put the moral domain in its proper place in relation to war. Agreeing with Jomini and du Picq on the moral domain's priority Clausewitz asserts, "Moral elements are among the most important in war."⁹

All of these military theorists and many more tend to agree that the moral domain cannot be ignored in war. Further, it often plays the dominant role in the outcome of battle. The human element is what gives each weapons system

its actual, as opposed to potential, combat power. Each system must be used by a human, and how that human uses that system is not automatic, particularly in varying environments. One element of the moral domain which demonstrates its influence on how the human element uses its weapons systems is cohesion.

COHESION AND WAR

Cohesion is a major element of the moral domain of war. As such, it ranks in importance with courage, morale, and esprit de corps in its ability to influence human behavior on the battlefield. Webster defines cohesion as, "... the act or state of sticking together tightly."¹⁰ A second definition from William Hauser, former commander of the U.S. Army Research Institute for the Behavioral and Social Sciences and author of the essay "Will to Fight" is "... the ability of a military unit to hold together, to sustain mission effectiveness despite combat stress."¹¹ Colonel Francis Kish in his study on cohesion as a vital ingredient for a successful Army provides a third description as follows: "Cohesion is the result of forces acting on soldiers that attract and bind them together, producing a commitment to other unit members and the unit as a whole to accomplish the mission."¹²

The reason unit cohesion is essential in war is its ability to affect combat power. Without unit cohesion an army supplied with even the most sophisticated weapons is at a distinct disadvantage. One contemporary author, Sam Sarkesian, editor of Combat Effectiveness: Cohesion, Stress, and

the Volunteer Military, reflects this same sentiment when he states, "For a unit to be combat effective, it must demonstrate readiness and cohesion."¹³ Likewise, in classical war, an army could not fight well without cohesion. Reiterating the necessity of cohesion, Du Picq claimed, "combat requires . . . in order to give the best results, a moral cohesion, a unity more binding than at any other time."¹⁴

Some might argue that unit cohesion was more important in du Picq's time because of the manner in which wars were fought. When one thinks of masses of men charging in unison, the combat power was derived from a concerted, cohesive effort. However, as weapons became more sophisticated the need for cohesion increased rather than decreased. Soldiers were no longer charging en masse, but were distributed throughout the battlefield. In the following table Trevor Dupuy shows the historical Army dispersion of troops from antiquity to the October War of 1973.¹⁵ Note that in antiquity a force of 100,000 men occupied a square kilometer, while in the October War, only 25 men occupied the same space.

Historical Army Dispersion Patterns
(Army or Corps of 100,000 Troops)¹⁶

Area Occupied by Deployed Force, 100,000 Strong (sq km)	<u>Antiquity</u>	<u>Napole- onic Wars</u>	<u>American Civil War</u>	<u>World War I</u>	<u>World War II</u>	<u>October War</u>
	1.00	20.12	25.75	248	2,750	4,000
Front (km)	6.67	8.05	8.58	14	48	57
Depth (km)	0.15	2.50	3.0	17	57	70
Men per Sq. km	100,000	4,970	3,883	404	36	25
Sq meters per man	10.00	200	257.5	2,475	27,500	40,000

The reasons behind the dispersion are due to improvements in technology which began with the rifled musket, breech-loading needle gun, and the ammunition magazine and have advanced ever since. The combination of these advances allowed each individual soldier to cover more area on the battlefield with his weapon and to do so from a more survivable (prone) position. Since each soldier could cover more area than before these innovations, less density was required on the battlefield for the same effect. However, whether en masse or dispersed throughout the battlefield, combat power can only be realized when soldiers use their weapons.

S.L.A. Marshall demonstrated that cohesion has a direct impact on whether soldiers will use their weapons. He found during World War II a propensity for units to have only a 25 to 30 percent weapons use rate among their soldiers. Marshall attributed this low rate to soldiers' inability to overcome fear and the difference in supervision during training and what occurred in actual combat.¹⁷

Whatever the cause, however, Marshall saw the cure for this inability to fight as getting the frightened soldier to do something, particularly in the company of other soldiers. Thus the importance of comradeship and cohesion begins to reveal itself. The task could be as simple as digging a foxhole or rendering first-aid. Marshall found that putting the soldier, ". . . at a job which he can share with other men, may become the first step toward getting him to make appropriate use of his weapons under combat conditions." ¹⁸ Likewise, Marshall found that the location of other soldiers had a direct correlation with their ability to use their weapons. "Men working in groups or in teams," Marshall explains, "do not have the same tendency to default of fire as do single riflemen. . . . the thing which enables an infantry soldier to keep going with his weapons is the near presence or the presumed presence of a comrade."¹⁹

The effect of cohesion seems to be two-fold. In one sense when close to comrades, a soldier may either want to fight for his buddy, or he may feel a kind of peer pressure to do the right thing--particularly if another member of the unit is doing

so. Secondly, the presence of a comrade may enable the soldier to overcome his fear just enough to allow him to fight.

Marshall found that cohesion affects not only the weapons use rate, but once used, how effective the fire is. In looking at tactical actions Marshall discovered that soldiers firing their weapons, but not in a mutually supportive manner, did not realize the unit's full combat power potential. Tactical cohesion as Marshall described it meant that through communication soldiers became aware of the position of their comrades, developed the situation, and provided mutual support to each other. The more a soldier realized that he was an essential element in this mutual support, and that this mutual support was helping him and his buddies to stay alive, the more he was likely to stay and fight.²⁰

Cohesion, as well as getting soldiers to use their weapons, and use them in a mutually supportive manner, has also been proven to be a hedge against psychiatric casualties in war. G.L. Belenky in his Walter Reed Army Institute of Research paper summarizes the Israeli experience and finds that, ". . . small-unit leadership and cohesion are of great importance in maximizing military performance and in minimizing psychiatric casualties; elite units had the lowest incidence of combat reactions during the 1973 war."²¹

In addition to alleviating psychiatric casualties, group cohesion can enable people to go beyond their normal limits and withstand more physical discomfort. In War on the Mind: The Military Uses and Abuses of Psychology by P. Watson,

researchers Buss and Portney found that, ". . . men will actually stand more physical pain (the experiments utilized electric shocks) when they feel they are members of a tightly knit group than when they are alone."²²

Cohesion has not only been included in theories of war and current studies, but has taken its place in modern U.S. Army doctrine, as well. With regards to personnel estimates, G-1s must be aware of and able to measure unit cohesion. According to FM 101-5, G-1s are responsible for: "monitoring, collecting, and analyzing data affecting soldier readiness, such as morale, organizational climate, commitment and cohesion."²³

Among the three domains of war--physical, cybernetic, and moral--the physical domain is written about most frequently; however the moral domain often has as decisive a role on the outcome of battle as does the physical. Cohesion is an integral portion of the moral domain; thus, cohesion has a critical impact on combat effectiveness. Units without cohesion can have the best equipment in the world and still be combat ineffective. "The Will to Fight," an essay that distills 25 years of observation in the U.S. Army states, ". . . the nature of the future battlefield makes that unit's aggregate will to fight the crucially important factor of readiness."²⁴ Again, here lies the crux of this monograph's question: If women negatively impact unit cohesion, that lack of cohesion will decrease combat effectiveness, and ultimately national security. However, before assessing women's impact on cohesion it is necessary to identify the factors that build cohesion. Then, use those factors

as criteria to evaluate those arguments that claim the presence of women in combat units will result in loss of cohesion.

A MODEL FOR BUILDING COHESION

A literature review on the subject of cohesion reveals that although not every author agrees on exactly the same factors which build cohesion, there are seven predominant cohesion building factors which consistently appear. Those seven factors are: a definite unit mission, interdependence, training, unit identity, personnel stability, communications, and leadership.

One of the primary cohesion building factors is for the unit to have a definite mission or objective. Anthony Kellett, author of Combat Motivation: The Behavior of Soldiers in Combat, claims, ". . . a group's cohesion is very much dependent on its having a mission or an objective." Further, he finds that during wartime the primary objective or mission is normally individual and unit survival and task accomplishment.²⁵

The common goal works to bring the unit together in two ways. First, all members of the unit are focusing toward the same end. Second, to achieve this end the unit members probably have to rely on each other to accomplish the goal. If individuals could accomplish these tasks alone, the cohesive effect would likely be diminished.

This unit mission demands that the members become interactive and that the behavior of one affects the group as a whole. The more the unit works together, the more they know of their own ability as a unit to accomplish the mission. They

begin to understand that particular unit's group dynamics, and the strengths and weaknesses of each individual member.

A second cohesion building factor tied closely to unit mission is interdependence. Interdependence is implemented in different ways. It is built into particular weapons systems such as those labelled "crew served weapons" like machine guns, artillery pieces, tanks, or infantry fighting vehicles. Additionally, interdependence is designed into unit tactics or composition such that each person fulfills a position crucial to mission accomplishment. This was particularly true with regards to the Green Beret during the Vietnam War. Anne Hoiberg, a research psychologist currently with the Naval Health Research Center found,

Each member of this highly skilled group had an essential, group-sustaining job to perform which contributed to the sense of teamwork and mutual respect among members, but added little to promoting a closeness among individuals. Although the ultimate in group cohesion and effectiveness, this group consisted of men who seemed to maintain a certain distance from others, to insulate themselves from developing interpersonal relationships.²⁶

In fact, in this instance the cohesion developed by interdependence seemed to outweigh the need to actually have a buddy on the battlefield.

A third common theme among factors which build cohesion is training. Training produces a set of shared experiences from which cohesion can evolve. In discussing steps to enhance unit cohesiveness within the Army, Colonel

William Hauser asserts, ". . . more (and more vigorous) training would be the very best approach to enhancing unit cohesiveness. Organization theory holds that shared experience is the best source of group solidarity."²⁷

Although individuals may come from different backgrounds, shared experience tends to give group members a common base--a starting place. For example, anyone having gone through boot camp seems to be able to strike up a conversation quite readily with anyone else having gone through the same experience, even if not at the same exact time. Similarly, units which deploy on difficult training missions return, not only more competent because of the demanding training, but also more cohesive as a unit because of the intense interaction required of them during the training. Training can build cohesion because it offers the opportunity to practice interdependence in achieving a unit mission and to build a certain degree of confidence in the unit.

Promoting unit identity and elitism also builds unit cohesion. Unit identity helps the individual have something concrete with which to identify. Rather than viewing himself only as an individual, the soldier sees himself as part of the group and is proud to be a part of it.

Besides a unit nickname, distinctive uniform items, such as patches, scarves, berets, and flags can also promote elitism. Uniform items which seem to have the most effect are those which must be earned. To have a bonding effect, there must be some significance and unit pride behind the symbol.

Conversely, if a particular unit is well known for consistently failing evaluations, then the symbol takes on a negative connotation and may negatively affect unit cohesion.

Personnel stability also builds unit cohesion. Stability of the troops means unit members know the capabilities and limitations of each individual member because they have had time to train with each other. An interdependent relationship has developed as well as a distinctive unit identity.

Of particular importance is the fact that cohesion is not built over a short period of time. For cohesion to develop it takes time for soldiers to train together and to begin to view themselves not individually, but as a whole. Hauser finds with regards to time that, "short association limits the soldier's loyalty to his immediate buddies, and even a year or two suffices only to broaden his loyalties to include his company and perhaps battalion."²⁸ The more time the soldier spends with other soldiers, the more his bonding to the group is enhanced.

The U.S. Army is interested in increasing the time soldiers spend together as evidenced by its COHORT program. This program is aimed at reducing personnel turbulence and its effect on unit cohesion. The program experimented with unit rotation as opposed to individual rotations with the intent of keeping unit integrity at least at the company level. Although there are definite trade-offs and difficulties encountered with this system of rotation, few contest the value of reducing turbulence. In addition, some would not limit unit rotations to

troops but also extend tenure for commanders and their key staff, as well.

Another cohesion building factor is communications within the unit. As noted earlier, S.L.A. Marshall found that individual soldiers who communicated with each other could more accurately assess the situation and thus provide maximum mutual support to each other. Sometimes, as Kish found, ". . . weapons systems which maintain close physical proximity and enhance the process of communication contribute to primary group cohesion."²⁹ No matter how communications are enhanced on the battlefield it is difficult to imagine a cohesive unit without good communications.

Finally, leadership is key to building cohesion. "Leadership is," as Sarkesian claims, "a crucial factor in determining the degree to which soldiers will maintain cohesion and reinforce their will to fight."³⁰ Leaders are the individuals who identify the unit mission and how it is to be accomplished. Leaders provide the training environment which builds cohesion. They give the unit a challenging goal requiring all members to perform to complete the task. Leaders set the conditions for success, enabling units through their training to develop their skills and confidence in themselves and each other. Additionally, a leader can be a major portion of the unit identity if the leadership is something in which the unit can take pride. Finally, the leader may recognize more than anyone, the interdependence of the unit

members, and lead in such a way to maximize that interdependency.

Thus, there are at least seven predominant factors which build cohesion. They are a definite unit mission, interdependence between unit members, unit training, unit identity, personnel stability within the unit, communications, and leadership. The more one looks at these factors, the more apparent it becomes that they all interact. Interdependence cannot be built without personnel stability. Good training cannot be effected without personnel stability and good leadership. Unit identity is seldom formed without a unit purpose or mission. Again, although not all inclusive, this model on building cohesion encompasses the predominant themes found throughout the literature. Using this model on building cohesion as criteria, the next section of this monograph will analyze a U.S. Army study on women in combat.

INDUCTIVE ARGUMENT

In 1985 the Commanding General, U.S. Army Training and Doctrine Command initiated the Women in Combat Task Force (WCTF) study group. Its purpose was ". . . to determine if changes are required to current Army policy governing utilization of women in combat."³¹ The study was performed by the Combined Arms Integration Directorate of the Combined Arms Combat Developments Activity, Fort Leavenworth.

To make its determination the WCTF study group gathered information from several sources of data. Information was gathered from research of published and

unpublished studies and reports. The study group conducted field visits to obtain the assessments of five division commanders and two major Army command commanders as well as their staffs regarding the study group's initial findings and the overall performance of women within their commands. The study group surveyed by questionnaire 1,102 personnel at the Command and General Staff College, Combined Arms Service Staff School, and the Sergeants Major Academy as well as conducted interviews with selected groups of Army personnel. Finally, the study group conducted workshops with TRADOC proponent offices and branches and visited FORSCOM and TRADOC posts and units.³²

In devising their own study parameters, the study group developed three criteria to measure the validity of their findings. They determined that their findings must support combat effectiveness, be consistent throughout the Army in the assignment policies of women, and be consistent not only with the tenets of AirLand Battle but with the threat assessment, as well.³³

One of the study group's more significant findings states that:

Except for this combat exclusion policy, there are no sound reasons--practical or cultural--to categorically deny women assignments anywhere on the AirLand Battlefield as long as they are qualified to perform the required duties.³⁴

This conclusion, in light of their own criteria to support combat effectiveness, suggests women would not negatively affect cohesion in combat units.

Although the study group found little research data on male/female soldier bonding, it did address several factors relating to the cohesion building model already presented in this monograph. The study group compiled a list of combat effectiveness components, most of which are related, in some way, to the factors of the cohesion building model presented above. Interdependence is affected by job skills, tactical skills, strength, stamina, aggression, and protectionism. Likewise, unit stability is affected by the combat effectiveness components of deployability and attrition. Leadership, esprit, and morale were listed, as well. The chart below depicts the WCTF study group's components of combat effectiveness which in some way affect one or more of the seven factors for building cohesion.³⁵

<u>Seven Factors for Building Cohesion</u>	<u>WCTF Study's Components of Combat Effectiveness</u> ³⁶	
Definite Unit Mission	Leadership Motivation	
Interdependence	Job skills Survival skills Tactical skills Strength Stamina Aggression	Bonding Male bias Protectionism Stress support Systems
Training	Job skills Tactical skills Stamina Malutilization	Survival skills Strength Intelligence
Unit Identity	Leadership Esprit, morale Motivation Male perceptions Machismo image	Bonding Aggression Male bias Protectionism
Personnel Stability	Deployability Attrition	
Communications	Job skills Tactical skills	
Leadership	Leadership Stamina Protectionism Male bias Stress support systems Motivation	Strength Bonding Machismo Image Male perceptions Esprit/morale

Each of the combat effectiveness components listed had been argued in the literature reviewed by the WCTF study group as a matter in which women would have a negative impact on combat effectiveness. Again, the study group's finding is quite significant. "For nearly every point on which women are described as having a deleterious impact on combat effectiveness," the study group discovered, "another argument can be found describing that point as an area in which women will either excel in building combat effectiveness or have a

neutral impact."³⁷ In other words, the results were inconclusive.

Likewise, a review of the data on the effects of homogeneity on unit cohesion is inconclusive. One author suggests, "The similarity of race, ethnicity, occupation and age . . . contributes to group cohesion primarily through normative integration."³⁸ Similarly, another author claims that, "A common social background assists soldiers in developing intimate personal relationships."³⁹

One might argue that women would decrease the homogeneity of the group and counter group cohesion. However, after further study one finds that heterogeneous groups tend to perform better. One study found that, "Heterogeneity has favorable effects on performance when a variety of resources are required for performance, and when the exact requirements of the task are not obvious."⁴⁰

The results of the study seem to conflict. On one hand, homogeneity increases cohesion which would, in turn, enhance unit performance. On the other hand, studies have shown that heterogeneity increases group performance. Thus, the results of the study are inconclusive.

What one quickly realizes is that an inductive argument cannot work when drawing conclusions about women and their effect on cohesion. The difficulty in using an inductive argument lies in the nature of cohesion itself.

Cohesion is a very complex phenomenon which cannot be explained by one or two factors, for cohesion consists of at least

seven major factors and many others, depending upon which sources one quotes.

The problem with an inductive argument in this situation lies with attempting to isolate a single cause for the given effect, particularly with such a complex issue. For example, if a study were conducted placing women in a combat unit and the cohesion of that unit deteriorated, one would have to isolate all other factors affecting cohesion to state conclusively that women were the cause of the declining cohesion. Considering the fact that the women were just introduced into the unit, one could make a case that it was simply the personnel turbulence at the time which caused a temporary decline in cohesion.

Likewise, if the combat effectiveness decreased in the unit, one would have to isolate all other factors which contribute to combat effectiveness (the WCTF study listed 19 factors) to categorically conclude the decline was caused by women. The important point with regard to this monograph's research question is this: because of the complexity of cohesion, using an inductive argument to "prove" that the presence of women in combat units will decrease cohesion will never lead to conclusive results.

ANALOGOUS CASES

An analysis of the impact of women on cohesion in professions similar to combat may help clarify the argument against women in combat. There are two fairly similar career fields presently open to women, fire fighting and police work.

The similarities between these two professions and combat with respect to cohesion derive from three factors. Combat soldiers face life threatening situations; they must overcome immense fear and act appropriately in the face of danger; and they are dependent on one another to accomplish the mission. The danger, the fear, and the dependence make cohesion an absolute necessity in battle. As has been shown earlier, cohesion is key to combat effectiveness in the battlefield environment.

Likewise, fire fighters and police officers face life threatening situations, must overcome fear in the face of danger, and are also dependent on their teammates or partners to accomplish the job. Just as the combat soldier requires cohesion on the battlefield, so do fire fighters and police officers in their environment.

The fire fighting environment is extremely dangerous. Although fire fighters take as many safety precautions as possible, while inside a burning building they may still be struck by falling structural debris, overcome by smoke, or burned by a flare-up of the fire itself. Fire fighters depend on their fellow fire fighters to get them out when they cannot assist themselves in these situations. The fact that fire fighters work as a team in fighting the fire helps them to face the dangers inherent in their profession.

Police officers work in a similar life threatening environment and are also dependent on one another. A police officer may be confronted with one or more armed assailants in

a life threatening situation. That officer requires the psychological support of another officer's presence every bit as much as the soldier on the battlefield needs the reassurance of another soldier's company. Likewise, just as the soldier in the combat environment faces uncertainty, ambiguity, fear, and friction, so does the police officer arriving at the scene of the crime. Just as cohesion helps the soldier function in the combat environment, it similarly assists the police officer to function in a dangerous and frightening situation.

No intention is meant to infer these professions are exactly alike. A cursory study of the annual killed in action for previous wars and killed in the line of duty rates for police officers and firefighters illustrates that while the latter two professions are dangerous their annual death rates do not begin to approximate the dangers of combat.

ANNUAL KILLED IN ACTION PER 100,000 PERSONNEL ⁴¹

WWI	7580
WWII	3890
KOREAN WAR	2930
VIETNAM WAR	2600
18-24 YR OLD MALE ACCIDENTAL DEATHS - US, 1973	110
FIRE FIGHTERS - 1987	55
POLICE - 1980	24
POLICE - 1989	10

Although the risk of death in fire fighting and police work is not comparable to combat, the need for cohesion is. Janowitz,

as quoted in Combat Motivation claims that, "any profession which is continually preoccupied with the threat of danger requires a strong sense of solidarity if it is to operate effectively."⁴² Vincent also quoted in Combat Motivation recognized the need for cohesion in the police force. "The policeman's dependency on his 'in-group' for physical and psychological support," Vincent claims, "is much more intense than the dependency of most people in most other occupations (save the armed forces)."⁴³ Cohesion is essential in fire fighting and police work.

Women have been employed in these two professions which require cohesion for several years. They have performed as full members of these professions facing the same risks and dangers as any fire fighter or police officer. In 1989 there were 8,000 women on the fire fighting force nationwide, approximately 3.9 percent of the force. One thousand were employed in inspections and fire prevention while clearly the majority, 7,000, were employed in actual fire fighting.⁴⁴ As early as 1976 the AFL-CIO International Association of Fire Fighters helped fire departments nationwide to actively recruit and hire women through their labor recruitment program.⁴⁵ One must conclude that women fire fighters do not have a negative impact on cohesion, otherwise fire departments would neither recruit or retain them as fire fighters.

Likewise, women police officers have been on the force for several years and are a significant portion of that force.

Women have died in the line of duty. In 1974, as a result of a shooting in midtown Washington D.C., Gail A. Cobb became the first policewoman killed in the line of duty.⁴⁶ The following table shows the percent of female sworn officers in the 25 largest municipal police departments in 1987.

Female and minority representation among full-time sworn officers in the 25 largest municipal police departments, United States - 1987.⁴⁷

City	Full-time sworn officers	Female % of sworn officers
New York City	27,478	10.7
Chicago	12,478	10.6
Los Angeles	7,032	8.6
Philadelphia	6,809	10.3
Detroit	5,132	18.9
Houston	4,506	9.2
Washington, DC	3,878	14.0
Baltimore	2,919	9.4
Dallas	2,280	11.8
Milwaukee	1,941	8.6
Boston	1,939	7.0
San Francisco	1,870	10.2
Phoenix	1,850	7.5
Cleveland	1,700	10.5
San Diego	1,612	12.2
St. Louis	1,573	5.3
San Antonio	1,374	5.6
Denver	1,335	8.6
New Orleans	1,330	9.0
Atlanta	1,317	13.4
Columbus, OH	1,245	11.4
Seattle	1,117	9.5
Kansas City, MO	1,085	9.2
Newark	1,056	1.0
Pittsburgh	1,055	15.4

There are a total of 10,141 women police officers in these 25 municipalities, comprising an average of 10.6 percent of the combined force. Again it is hard to understand that over 10 percent of the police force would be retained if they were a

detriment to cohesion which is so essential. The conclusion the reasonable reader must come to is that women as a whole do not negatively impact cohesion in police departments.

The performance and continued employment of women fire fighters and police officers has not substantiated the argument that women, just because they are women, would negatively affect cohesion. There is virtually no proof that women in these jobs cause cohesion to degenerate. In fact, to the contrary, women and men can form cohesive groups needed under the dangerous, stressful, and interdependent conditions prevalent in these professions.

In light of this argument from analogy, the evidence suggests that the mere presence of women in combat units would not adversely affect cohesion. Just as cohesion did not decline in police or fire fighting units just because women were introduced into these forces, it will not necessarily decline in combat units. The exclusion policy by the Department of the Army cannot be justified on the basis of cohesion alone.

ARGUMENT FROM ANALOGY - CASE II

Although the issue of women in combat and the integration of blacks in the military are not exactly the same, like the police and fire fighter situation, they are similar enough to warrant examination. Both situations involved minority groups seeking equal rights, significant cultural values and perceptions, intense emotionalism, military caution, and changes born of necessity or political pressure.

Both blacks and women have sought and are seeking equal rights. These groups merely want to be able to hold particular jobs anywhere within the military, when qualified, regardless of their race in the case concerning blacks or gender in the case concerning women.

Second, both the integration of blacks and the women in combat issue concern significant cultural values and perceptions. When blacks were integrated into the military, the nation itself was not yet integrated. Further, attitudes varied significantly from one region of the country to another. To prevent racial disturbances from erupting some posts were forced to adopt racially biased policies in consonance with the local civilian population's attitudes. Any significant change in the military policy regarding the integration of blacks would also demand some significant cultural adjustments not just within the Army, but among the nation as a whole.

Likewise, the integration of women in combat concerns significant cultural issues. One issue is the traditional role men and women have had in American society. Men have traditionally been the "protectors" while women have been the "protected." Women in combat units would disrupt this cultural framework opening up a plethora of required cultural adjustments that, at best, would be difficult to address.

Another cultural issue which ties into the "protector and protected" framework is not so much whether American society can accept women being killed in combat, but whether society can accept women killing. Women will be killed on the

battlefield whether they are in combat units or not. The WCTF study group found that "to eliminate or even minimize the risk of harm to any group of soldiers will require that group be kept out of the theater of operations."⁴⁸ With women comprising over 10 percent of today's Army, to keep them out of the theater of operations would threaten national security, unless replaced by men.

In both the black integration and women in combat situations, the Army was cautious of being an engine of social change. With regards to integrating blacks in the military, prior to 1940, studies showed an attitude cautioning that, "Negroes should be segregated into separate units . . . because any other policy would have social repercussions and the Army cannot 'get ahead of' the country on this issue."⁴⁹ Likewise, regarding recreational facilities the Army felt that, "The Army is not the testing ground for social experiments, nor is it a spearhead for the social advancement of any minority group."⁵⁰ Just as the Army displayed a cautious attitude in integrating blacks, it has shown a similar attitude regarding the integration of women in combat units. If the military had waited until everyone was ready to integrate blacks, it is likely that blacks would still be segregated to this day. The same holds true for women in combat. If the Army resists change merely because the thought of women in combat is unsettling to some portion of society, the Army has, in effect, placed its own good secondary to that of only a portion of the society it is charged to protect.

Both minority groups, blacks and women, benefited more from necessity and political pressure than from any push for equal rights within the military. In the matter of the integration of blacks, change was born out of necessity. In 1945 a board of officers, called the Gillem board after its chairman, Lt. Gen. Alvan C. Gillem, was established to report on the utilization of Negro manpower in the post-war Army. Of significance were two issues: first, a forecasted shortage in qualified white manpower, and secondly, the realization that the black population (10 per cent of the whole) would play a significant role in the next war. The Army realized it could not afford to waste this kind of national resource.⁵¹

Prior to and during World War II segregation of blacks in the Army was accepted as the norm, not only militarily but culturally, as well. However, the performance of black units during World War II demanded an examination of the manner in which blacks were used, not only during peacetime, but also during mobilization. The Gillem board, in its efforts to overcome some of the previous deficiencies in the utilization of blacks, was willing to question the correctness of the current segregation policy.⁵² Although the Gillem board's recommendations were not totally accepted or immediately implemented, they did open the door for the later implementation of integration.

In the women in combat issue, as with the black issue, the military's primary concern is not the promotion of equal rights, but national security. However, even the concern for

national security can take a secondary role to necessity born of demographics or political pressure. The volunteer Army, to be successful, had to induct women to meet recruiting quotas. The following table illustrates the forecasted shortage of highly qualified males entering military service. Somewhat of a misnomer, "highly qualified" males are those who have completed high school and who score above the 30th percentile on standardized tests.⁵³

Comparison of Male Enlistment Requirements and Projected Enlistments of Highly Qualified Males, Fiscal Years 1976-82 (Numbers in thousands)
54

Year	Estimated requirements for highly qualified males	Projected enlistments of highly qualified males	
		Number	Percent of requirements for highly qualified males
1976	225	225	100.0
1977	236	220	93.2
1978	236	215	91.1
1979	240	211	87.9
1980	247	203	82.2
1981	241	191	79.3
1982	238	178	74.8

The services had three choices. They could accept the shortage, enlist a lower quality recruit, or more fully utilize women. Martin Binkin and Shirley Bach in Women and the Military claim, "the Department of Defense realized that it had to further expand the role of women."⁵⁵

Although the services may desire combat units closed to women, pressure from Congress may force the services to open them to women. However, whether change is born out of

demographics, political pressure, or necessity, military professionals remain, rightly, primarily concerned about the change's effect on national security.

As one can see, the above demonstrates significant similarities between the situation of the integration of blacks and the issue of women in combat. Both situations involved minorities seeking equal rights, significant cultural values and perceptions, intense emotionalism, military caution, and changes born of necessity and political pressure. Arguments against the integration of blacks and against women in combat are also quite similar.

One of the major arguments against the integration of blacks was that it would be a threat to national security. Of particular concern was the fear that the Negro presence would negatively impact the white soldier's morale and cause a subsequent decline in combat effectiveness. Similarly, it was thought that integration would negatively impact the Negroes' performance.⁵⁶

The Operational Research Office of John Hopkins University conducted a 1951 study on the utilization of Negro manpower in the Army. One of the questions asked was, "Is it true . . . that the presence of Negroes will lower the morale of whites in mixed units, weaken their personal adjustment to Army life and therefore presumably their combat effectiveness?"⁵⁷ This question has two sides--one attitudinal, the other qualitative. On the attitudinal side, the question was important first because many soldiers were not used to being

around blacks, and second because those who were used to being around blacks, were not necessarily used to living, eating, and socializing with them. Integration meant a certain equality which was quite different from what they had experienced in society.

Specifically, the study found that there was a significant difference between the perception of blacks and their effect on unit cohesion, and the reality born out by those who actually participated in integrated units. The fear was that integrating blacks would cause unit cohesion to decline. The reality was, this did not occur. Further the study found that integration had a positive effect on attitudinal perceptions which, in turn, facilitated the integration process.⁵⁸ As can be seen from the table, half the men in all-white infantry units thought it better, in combat, to keep Negroes segregated; only one in three soldiers in mixed units agreed.⁵⁹

OPINIONS ON WHETHER IT IS BETTER IN COMBAT TO PUT WHITE AND NEGRO SOLDIERS TOGETHER IN SAME OUTFIT OR IN SEPARATE OUTFITS ⁶⁰

White Respondents	Unit Assignments			Recommended
	Better in same outfits, %	About same either way, %	Better in separate outfits, %	
195 in all-white units	22	24	51	3
1024 in integrated units	34	33	31	2

On the qualitative side, concern arose over the performance of some black units during WWII. If this performance was strictly attributed to race, there was fear the integration of blacks would cause performance to decline in all integrated units. Again, national security would be at risk if this were the case.

There were four significant factors which affected black performance. First, cohesion within black units was good; however, a more encompassing cohesion, one in which black units supported Army goals (called vertical and organizational cohesion) was found lacking. The reason this larger organizational cohesion did not develop was due to the alienation caused by segregation.⁶¹ Second, the Gillem study found the overall education levels of blacks were lower prior to entering military service. Third, black leadership was not as good, not because of race, but because of previous opportunities to develop leadership. Last, the overall training for black soldiers was not as good.⁶² Beginning to emerge was the fact that segregation, not race, had contributed to the poor performance of black units.

The second argument was that integration would negatively impact on the Negroes' performance. The Gillem board's investigations were based on how to best employ the black soldier and maintain national security. The John Hopkins study found that, "Negro morale in all-Negro units is decidedly lower than it is in mixed units."⁶³ Thus, integration would

benefit the Negroes' performance through an increase in morale.

As can be seen since integration, the arguments that concluded the integration of blacks would threaten national security are simply unfounded. Blacks did not degrade the white soldier's performance; the black soldier's performance was not degraded by integration. Further, most of the poor performance of blacks during WWII has further been attributed not to mixed units or even to segregated units, but to more tangible and fixable factors such as training, leadership opportunities, and unit stability. Additionally, national security has not been threatened by integration.

Interestingly enough, arguments similar to those made against the integration of blacks in the military have also been made against allowing women in combat. Noteworthy are the arguments that women in combat will reduce unit cohesion, subsequently diminish combat effectiveness, and ultimately threaten national security. It is reasonable to suggest that just as the military and society at large overcame cultural biases, attitudes, and perceptions concerning integration of blacks, they will overcome them concerning women in combat units. Further, just as the arguments against the integration of blacks proved to be groundless in reality, so will the arguments against introducing women in combat units. This is especially true of those arguments claiming women will reduce unit cohesion.

CONCLUSION

This monograph asked the question, "Would introducing women into combat roles reduce unit cohesion and therefore, combat effectiveness to such an extent to warrant women's continued exclusion by the Department of the Army combat exclusion policy?" Three arguments were examined, one inductive and two from analogy, to determine if any of these decisively conclude that introducing women into combat units would reduce unit cohesion.

Prior to analyzing the inductive argument, a model for building cohesion was developed. The model consists of seven major cohesion building factors: unit mission, interdependence, training, unit identity and elitism, personnel stability, communications, and leadership. Then an Army study on women in combat was examined and found to have inconclusive results. One could not reasonably conclude using inductive arguments that women as a whole would in all cases negatively impact unit cohesion. Nor could one conclude that women would never cause a negative impact on unit cohesion. Although the cohesion model narrowed the major cohesion building factors down to seven, after further examination one could reasonably conclude that unit cohesion is no less complex a phenomenon, than each of the individuals within a particular unit.

The second argument, one from analogy, compared women in combat with women police and fire fighters. The case was made that cohesion is just as essential in these civilian

professions as it is in combat units. Virtually, no evidence has come to light demonstrating that women simply by virtue of their being women have had a negative impact on cohesion in police and fire fighting units. Further, these professions have not closed their ranks to women and are, in fact, still actively recruiting women. From this argument one could reasonably conclude that just as women have not reduced cohesion in these similar professions, they will not reduce cohesion in combat units.

The last argument, another from analogy, compared the resistance of the integration of blacks and women into combat by the Army, particularly with regards to the similarity of their situations and the similar arguments made against integrating both groups. There was fear that the integration of blacks would reduce unit cohesion, and therefore, combat effectiveness and ultimately national security. Just as this argument, appealing in theory, was found groundless in reality, and based more on perceptions than fact, one could conclude the similar argument against women in combat units will also be found groundless.

RECOMMENDATIONS

The women in combat issue has many facets. This monograph has addressed only one--women's impact on unit cohesion. From the three arguments, one could not conclude that women would, in fact, reduce unit cohesion and therefore, combat effectiveness to such an extent to warrant their

continued exclusion by Department of the Army combat exclusion policy. The Department of the Army must seek other justification for this policy.

Additionally, whenever faced with a major change, particularly involving cultural issues, one should examine the tendency towards resisting change. Invariably it is easier and more comfortable to leave things as they are. No one enjoys change just for change's sake.

Coinciding with a certain amount of resistivity is that constant fear of threatening national security. No one would ever fault the military for being concerned about national security. However, some of the arguments which have been presented to demonstrate the expected decline in national security are unsubstantiated.

Likewise, the concern for national security with women in combat seems to surface as consistently as it did with the integration of blacks. Even in the matter of removing grade ceilings for women the military, national security was a major issue. Major General Jeanne Holm, former Special Assistant for Women to the President explains, "Any attempt to remove grade ceilings inevitably would lead to pressures to promote women to general and admiral, a prospect regarded in some circles as unthinkable and a threat to national security."⁶⁴ Although national security is very important, the reasons attributed to its decline must always be carefully examined.

The fear that women in combat will reduce unit cohesion and combat effectiveness, and ultimately national security is

groundless. That fear should not be used to justify the continued exclusion of women in combat by the Department of the Army.

ENDNOTES

¹Joe West, "Loh backs women's ability to fly combat," Air Force Times, (September 9, 1991): 4.

²Pamela H. Sacks, "Should women fight?" Worcester (Mass.) Telegram, (July 14, 1991) : 1.

³Baron de Jomini, The Art of War (Westport, Connecticut: Greenwood Press, 1862), 162,163.

⁴Ardant du Picq, Battle Studies: Ancient and Modern Battle (Harrisburg, Pennsylvania: Stackpole Books, 1987), 150.

⁵Du Picq, Battle Studies, 149.

⁶Carl Von Clausewitz, On War (Princeton, New Jersey: Princeton University Press, 1976), 184.

⁷Clausewitz, On War, 184.

⁸Clausewitz, On War, 185.

⁹Clausewitz, On War, 184.

¹⁰Merriam Webster Inc., Webster's Ninth New Collegiate Dictionary (Springfield, Massachusetts: Meriam-Webster Inc., 1984), 257.

¹¹William L. Hauser, "The Will to Fight" in Combat Effectiveness: Cohesion, Stress, and the Volunteer Military, ed. Sam C. Sarkesian, (Beverly Hills: Sage Publications, 1980), 204.

¹²Francis B. Kish, "Cohesion: The Vital Ingredient for Successful Army Units," (Research paper, U.S. Army War College, 1982), 4.

¹³Sam C. Sarkesian, ed., Combat Effectiveness: Cohesion, Stress, and the Volunteer Military (Beverly Hills: Sage Publications, 1980), 11.

- ¹⁴Du Picq, Battle Studies, 128.
- ¹⁵Trevor N. Dupuy, The Evolution of Weapons and Warfare (New York: Da Capo Press, Inc., 1984), 312.
- ¹⁶Dupuy, Evolution of Weapons, 312.
- ¹⁷S.L.A. Marshall, Men Against Fire (Gloucester, Massachusetts: Peter Smith, pub., 1947), 74.
- ¹⁸Marshall, Men Against Fire, 71.
- ¹⁹Marshall, Men Against Fire, 42,75,76.
- ²⁰Marshall, Men Against Fire, 125.
- ²¹Anthony Kellett, Combat Motivation: The Behavior of Soldiers in Battle (Boston, Massachusetts: Kluwer*Nijhoff Publishing, 1982), 278.
- ²²Kellett, Combat Motivation, 45.
- ²³U.S. Army, FM 101-5, Staff Organization and Operations (Washington DC: Department of the Army, 1984), 3-2.
- ²⁴Hauser, "Will to Fight," 200.
- ²⁵Kellett, Combat Motivation, 251,320.
- ²⁶Anne Hoiberg, "Military Staying Power" in Combat Effectiveness: Cohesion, Stress, and the Volunteer Military, Sam C. Sarkesian, ed., (Beverly Hills: Sage Publications, 1980), 231,232.
- ²⁷Hauser, "Will to Fight," 206.
- ²⁸Hauser, "Will to Fight," 192.
- ²⁹Kish, "Vital Ingredient," 13.

- 30 Sarkesian, Combat Effectiveness, 14.
- 31 U.S. Army, Women in Combat. Final Report (Fort Monroe, Virginia: Training and Doctrine Command, 1986), v.
- 32 U.S. Army, Women in Combat, v.
- 33 U.S. Army, Women in Combat, viii.
- 34 U.S. Army, Women in Combat, x.
- 35 U.S. Army, Women in Combat, IV-2.
- 36 U.S. Army, Women in Combat, IV-2.
- 37 U.S. Army, Women in Combat, IV-1.
- 38 Stephen D. Westbrook, "The Potential for Military Disintegration," in Combat Effectiveness: Cohesion, Stress, and the Volunteer Military, Sam C. Sarkesian, ed., (Beverly Hills: Sage Publications, 1980), 267.
- 39 Kish, "Vital Ingredient," 40.
- 40 U.S. Army Research Institute for the Behavioral and Social Sciences, Team Dimensions: Their Identity, Their Measurement, and their Relationships with Veronica Nieva, Edwin A. Fleishman, and Angela Reick (Bethesda, Maryland: Advanced Research Resources Organization, 1985), 32.
- 41 Trevor N. Dupuy, Attrition: Forecasting Battle Casualties and Equipment Losses in Modern War (Fairfax, Virginia: Hero Books, 1990), 138,141. Also Kellett, Combat Motivation, xviii, and U.S. Department of Justice (Federal Bureau of Investigations) Uniform Crime Reports for the United States - 1989, (Washington DC: Department of Justice, 1990), 236.
- 42 Kellett, Combat Motivation, xviii.

- 43 Kellett, Combat Motivation, xix.
- 44 Ken Taylor of the National Fire Protection Association, Quincy, Massachusetts, telephone interview by author, 3 December, 1991.
- 45 Stephen Brown, "Changing the Images of Firefighters," Worklife (July 1976): 11.
- 46 Lois Decker O'Neill, ed., The Women's Book of World Records and Achievements (Garden City, New York: Doubleday, 1979), 374.
- 47 U.S. Department of Justice, Uniform Crime Reports, 45.
- 48 U.S. Army, Women in Combat, II-9.
- 49 War Department, Policy for Utilization of Negro Manpower in the Post-War Army. Report of War Department Special Board on Negro Manpower (Washington, DC: War Department, 1945), 2.
- 50 War Department, Policy for Utilization, Tab G-10.
- 51 War Department, Policy for Utilization, Memorandum for Chief of Staff, 3.
- 52 War Department, Policy for Utilization, Memorandum to the Secretary of War, 3.
- 53 Martin Binkin and Shirley Bach, Women and the Military (Washington DC: The Brookings Institution, 1977), 68.
- 54 Binkin and Bach, Women and the Military, 68.
- 55 Binkin and Bach, Women and the Military, 14.
- 56 Johns Hopkins University Operations Research Office, The Utilization of Negro Manpower in the Army, H. S. Milton,

ed., (Chevy Chase, Maryland: Operations Research Office, Johns Hopkins University, 1955), A-IV-65.

57 Johns Hopkins University, Negro Manpower, A-IV-65.

58 Johns Hopkins University, Negro Manpower, A-IV-61.

59 Johns Hopkins University, Negro Manpower, A-III-7.

60 Johns Hopkins University, Negro Manpower, A-III-7.

61 Morris Janowitz, Society and the Military Establishment (New York: Russell Sage Foundation, 1965), 72,73.

62 War Department, Policy for Utilization, Facts-8.

63 Johns Hopkins University, Negro Manpower, A-IV-66.

64 Jeanne Holm, Women in the Military: An Unfinished Revolution (Novato, California: Presidio Press, 1982), 195.

BIBLIOGRAPHY

BOOKS

- Binkin, Martin and Shirley Bach. Women and the Military. Washington, DC: The Brookings Institution, 1977.
- Clausewitz, Carl von. On War. Michael Howard and Peter Paret (ed. and trans.) Princeton, New Jersey: Princeton University Press, 1976.
- Du Picq, Ardant. Battle Studies: Ancient and Modern Battle. Colonel John N. Greely and Major Robert C. Cotton (trans) Harrisburg, Pennsylvania: Stackpole Books, 1987.
- Dupuy, Trevor N. Attrition: Forecasting Battle Casualties and Equipment Losses in Modern War. Fairfax, Virginia: Hero Books, 1990.
- Dupuy, Trevor N. The Evolution of Weapons and Warfare. New York: Da Capo Press, Inc., 1984.
- Holm, Jeanne, Maj Gen, USAF (Ret). Women in the Military: An Unfinished Revolution. Novato, California: Presidio Press, 1982.
- Janowitz, Morris. Society and the Military Establishment. New York: Russell Sage Foundation, 1965.
- Johns Hopkins University Operations Research Office. The Utilization of negro Manpower in the Army. H.S. Milton, ed. Chevy Chase, Maryland: Operations Research Office, Johns Hopkins University, 1955.
- Jomini, Baron de. The Art of War. Colonel Thomas E. Griess and Professor Jay Luvaas (eds.) and Capt. G.H. Mendell and Lt. W. P. Craighill (trans.). Westport, Connecticut: Greenwood Press, 1862.
- Kellett, Anthony. Combat Motivation: The Behavior of Soldiers in Battle. Boston, Massachusetts: Kluwer*Nijhoff Publishing, 1982.

Marshall, S. L. A. Men Against Fire. Gloucester, Massachusetts: Peter Smith (pub), 1947.

O'Neill, Lois Decker, ed. The Women's Book of World Records and Achievements. Garden City, New York: Doubleday, 1979.

Sarkesian, Sam C. (ed.). Combat Effectiveness: Cohesion, Stress, and the Volunteer Military. Beverly Hills: Sage Publications, 1980.

Webster, Merriam, Inc. Webster's Ninth New Collegiate Dictionary. Springfield, Massachusetts: Merriam-Webster Inc., 1984.

GOVERNMENT PUBLICATIONS

US Army. FM 101-5, Staff Organization and Operations. Washington, DC: Department of the Army, 1984.

US Army. Women in Combat. Final Report. Ft. Monroe, Virginia: Training and Doctrine Command, 1986.

U.S. Army Research Institute for the Behavioral and Social Sciences. Team Dimensions: Their Identity, Their Measurement, and the Relationships. Veronica Nieva, Edwin A. Fleishman, and Angela Reick. Bethesda, Maryland: Advanced Research Resources Organization, 1985.

U.S. Department of Justice (Federal Bureau of Investigations). Uniform Crime Reports for the United States-1989. Washington, DC: Department of Justice, 1990.

War Department. Policy for Utilization of Negro Manpower in the Post-War Army. Report of War Department Special Board on Negro Manpower. Washington, DC: War Department, 1945.

UNPUBLISHED DISSERTATION, THESES, AND PAPERS

Kish, Francis B. "Cohesion: The Vital Ingredient for Successful Army Units. Research paper, U.S. Army War College, 1982.

ARTICLES

Brown, Stephen. "Changing the Images of Firefighters." Worklife (July 1976): 11.

Sacks, Pamela H. "Should women fight?" Worcester (Mass.) Telegram (July 14, 1991) : 1.

West, Joe. "Loh backs women's ability to fly combat." Air Force Times (September 9, 1991): 4.

INTERVIEWS

Taylor, Ken of the National Fire Protection Association, Quincy, Massachusetts, interview by author, 3 December, 1991.