

1

BATTLEFIELD STRESS: CAUSES, CURES AND COUNTERMEASURES

AD-A162 098

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE

by

DALE B. FLORA, MAJ, USA
B.S., Bowdoin College, 1972
M.A., Appalachian State University, 1983

Fort Leavenworth, Kansas
1985

DTIC
ELECTE
DEC 05 1985

S

D

D

DTIC FILE COPY

Approved for public release; distribution is unlimited.

Reproduced From
Best Available Copy

85-3232

84-3237.19

80000801250

10 5 002

BATTLEFIELD STRESS: CAUSES, CURES AND COUNTERMEASURES

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE

by

DALE B. FLORA, MAJ, USA
B.S., Bowdoin College, 1972.
M.A., Appalachian State University, 1983

Fort Leavenworth, Kansas
1985

Approved for public release; distribution is unlimited.


MASTER OF MILITARY ART AND SCIENCE

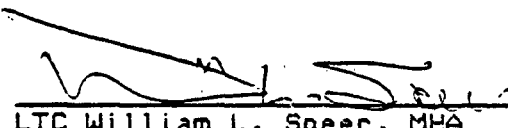
THESIS APPROVAL PAGE


Name of candidate: MAJ Dale Butler Flora

Title of Thesis: Battlefield Stress: Causes, Cures and Countermeasures

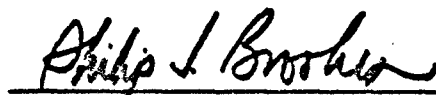
Approved by:


_____, Thesis Committee Chairman
LTC(P) Frederick W. Zimmerman, Jr., Ph.D.


_____, Member, Graduate Faculty
LTC William L. Speer, MHA


_____, Member, Graduate Faculty
LTC Henry L. Thompson, III, Ph.D.

Accepted this 24th day of May 1985 by:


_____, Director, Graduate Degree Programs
Philip J. Brookes, Ph.D.

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing Statement.)

ABSTRACT

BATTLEFIELD STRESS: CAUSES, CURES AND COUNTERMEASURES, by Major Dale B. Flora, USA, 149 pages.

This study identifies measures that can be taken by commanders to minimize the occurrence and impact of battlefield stress before and during combat. This is achieved through an examination of the writings of the classic military philosophers, articles on combat stress in the major military engagements of this century, and the conclusions of clinical studies on combat stress. Specific factors which affect the levels of combat stress on the battlefield are identified and discussed. A bridge from the past to the future is made by examining those characteristics of future war which may further contribute to the rate of combat stress casualties.

The study concludes that battlefield stress is an unavoidable consequence of man being exposed to the hostile environment of combat. Combat stress is specifically caused by man's fear of the dangers of combat, and is fueled and tempered by other variables such as morale, cohesion, fatigue, confidence, training and intensity of the combat. Positive actions can be taken to reduce the occurrence of stress casualties and minimize the effects of combat stress on the unit mission. These steps include education, training and building unit cohesion before entering combat; and active measures to ensure information is passed, confidence is built and maintained, and brief respite is obtained from the rigors of battle when actually in combat.



Accession For	
NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

ACKNOWLEDGEMENTS

I would like to express my gratitude to the staff and faculty of the Combined Arms Research Library, the Command and General Staff College, the School of Advanced Military Studies, and the members of my thesis committee for the tremendous assistance and support they have provided throughout the conduct of this study.

However, a very special mention of appreciation goes to Lenna, my wife, for her countless sacrifices, continuous support, and helpful assistance which she so willingly provided toward the completion of "THE THESIS."

TABLE OF CONTENTS

	Page
THESIS APPROVAL.....	ii
ABSTRACT.....	iii
ACKNOWLEDGEMENTS.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	viii
Chapter	
I INTRODUCTION.....	1
Problem Definition.....	1
Importance of the Study.....	2
The Human Dimension of War.....	4
Scope and Methodology.....	6
Structure of the Project.....	8
Endnotes.....	10
II WHAT IS BATTLEFIELD STRESS?.....	11
Combat Stress Defined.....	11
Stress Symptoms Versus Normal Reactions.....	13
Historical Summary of Battlefield Stress.....	20
World War I.....	20
World War II.....	23
Korean War.....	27
Vietnam War.....	27
Israel: 1973 and 1982.....	28
Battlefield Stress Casualty Rates.....	29

Treatment of Stress Casualties.....	31
Endnotes.....	36
III FACTORS AFFECTING LEVELS OF COMBAT STRESS.....	39
General.....	39
Individual Factors.....	41
Personal Situation.....	41
Belief in the Cause.....	43
Combat Experience.....	44
Morale Factors.....	46
General.....	46
Unit Cohesion.....	49
Level of Training Proficiency.....	56
Leadership.....	57
Confidence in Ability to Win.....	61
Physical Aspects of Combat.....	64
Intensity and Violence.....	64
Duration.....	66
Fatigue.....	69
Type of Action.....	72
Isolation.....	74
Fear.....	76
General.....	77
Causes of Fear.....	78
Responses to Fear.....	81
Defenses Against Fear.....	82
Summary.....	84
Endnotes.....	86
IV STRESS ON THE FUTURE BATTLEFIELD.....	92
The Modern Battlefield.....	92
Continuous Operations.....	96
Stress on the Chemical Battlefield.....	102
Treatment of Stress Casualties.....	105

Future Stress Casualty Rates.....	108
Endnotes.....	111
U MINIMIZING THE OCCURRENCE AND IMPACT OF BATTLEFIELD STRESS.....	114
Conclusions.....	114
Solutions.....	117
Before Combat.....	117
During Combat.....	123
Summary.....	131
Endnotes.....	133
BIBLIOGRAPHY.....	135
INITIAL DISTRIBUTION LIST.....	146

LIST OF TABLES

Table	Title	Page
1	Most frequent symptoms of combat reaction in World Wars I and II, Vietnam, and the 1973 Yom-Kippur War.....	16
2	Historical examples of battlefield stress rates.....	30

CHAPTER I

INTRODUCTION

Problem Definition

Battlefield stress and its related casualties are as much a reality of war as the physical wounds and death which result from combat. A key difference between the two is in their outward appearances. A physical wound is obvious from its characteristics. It can be seen, touched and even smelled at times. It is characterized by pain, blood and disfigurement. Battlefield stress, on the other hand, is less apparent in its outward appearance. There are no holes in a body to suggest a combat injury. There is no smell of burned flesh to indicate a wound. The two types of casualties are therefore very different. One is a physical, external casualty and the other is a mental, internal casualty.

The mental, internal casualty is the subject of this study. Knowing that battlefield stress is a reality of war, the specific question to be answered herein is "What measures

can be taken to minimize the occurrence and impact of battlefield stress in combat?"

In order to answer this specific research question, a myriad of other included topics must be addressed. Some of these are: definition and history of battlefield stress, factors which contribute to battlefield stress, identification and treatment of combat stress casualties, and the impact that characteristics of the next war may have on battlefield stress. These issues will be addressed in the conduct of this study as they pertain to answering the question of how to minimize the effects of stress on the battlefield.

Importance of the Study

The importance of military commanders and staff officers having an understanding of battlefield stress cannot be overemphasized. In a peacetime environment, military training tends to concentrate on tasks which are directly related to preparing for war. Such tasks are primarily oriented toward improving individual and unit proficiency in those areas specified in the appropriate unit Army Readiness and Training Evaluation Program (ARTEP). The problem with concentrating on these areas which can be measured, experienced, observed and improved, is the tendency to omit

those topics which cannot be so readily quantified, such as combat stress.

The shortcomings of such training priorities are not intuitively obvious. A danger exists in that prevention and defense against battlefield stress casualties in war are largely achieved by a conscious integration of the proper measures into a peacetime training program. Therefore, failure by commanders, staff officers and leaders to understand battlefield stress results in these critical measures not being fully integrated into peacetime training programs.

Further, without having studied battlefield stress and trained for its prevention in peacetime, commanders may not fully understand the causes and effects of it in case of war. This may be a drastic error considering the potential environment of the battlefield in future war. The advances of modern technology could make the next war more intense, more lethal, and overall more stressful to the soldier than any other war in history. Even if future war does not produce combat stress casualties at a higher rate than the previous wars of this century, history suggests that losses to combat stress will still be of such magnitude as to significantly degrade the combat power of an army. Thus, it is imperative to understand the causes, cures and countermeasures of battlefield stress. Armed with this

knowledge, it may be possible to minimize our losses to stress casualties and ensure a prompt return to duty of those casualties which do occur.

The Human Dimension of War

The importance of the human dimension of war has been recognized by many of the great military writers throughout history. War consists of far more than physical elements and hardware. Clausewitz clarified this point when he stated, "The effects of physical and psychological factors form an organic whole which, unlike a metal alloy, is inseparable by chemical processes." [1] Clearly, he did not believe it possible to separate the moral from the physical elements of war.

Not only is the human dimension of war inseparable from the physical, but many believe that the human dimension is the more important of the two. Clausewitz alluded to this when he wrote, "The moral elements are among the most important in war. They constitute the spirit that permeates war as a whole, and at an early stage they establish a close affinity with the will that moves and leads the whole mass of force." [2]

The view that the moral effect of war is often stronger than the physical is also shared by Ardant du Picq. He wrote,

In battle, two moral forces, even more than two material forces, are in conflict. The stronger conquers. . . Moral effect does not come entirely from destructive power, real and effective as it may be. It comes, above all, from its presumed, threatening power.[3]

The results of this threatening power are demonstrated in Ardant du Picq's comments on the battle of Cannae when he stated, "The physical pressure was unimportant. The ranks that they were fighting had not half their own depth. The moral pressure was enormous. Uneasiness, then terror, took hold of them . . ."[4] The cause of this terror in the superior Roman forces was an unexpected attack from an unexpected direction by Hannibal's forces. Ardant du Picq summarized his beliefs in the importance of the human element in war when he stated,

The art of war is subjected to many modifications by industrial and scientific progress. But one thing does not change, the heart of man. . . In all matters which pertain to an army, organization, discipline and tactics, the human heart in the supreme moment of battle is the basic factor.[5]

Belief in the importance of the moral dimension is further emphasized by de Saxe who succinctly wrote, "Without a knowledge of the human heart, one is dependent upon the favor of fortune, which sometimes is very inconsistent." He continued to discuss the relative instability of the human heart and alluded that it should not be depended upon.[6]

It is probably the variability in human nature that Clausewitz was primarily considering when he proposed his concept of friction in war. He was certainly referring to moral factors when he commented, "Countless minor incidents--the kind you can never really foresee--combine to lower the general level of performance, so that one always falls far short of the intended goal." [7]

In a somewhat more contemporary setting, S.L.A. Marshall pointed out the continuing fluctuations of the human dimension. "Morale in combat is never a steady current of force but a rapidly oscillating wave whose variations are both immeasurable and unpredictable." [8] These oscillations certainly contribute to the friction of war. The far reaching effects of the moral domain in war were explained by Marshall when he stated, "It should be well recognized that everything which touches the circumference of tactics bears sooner or later on the heart of the fighting man--his will to win, his courage to act and to endure." [9]

Scope and Methodology

Having established the importance of the human dimension in war, the balance of this project will focus on the specific topic of battlefield stress as a critical subset of the human dimension of war. Although only a subset, battlefield

stress is such a vast subject that it cannot be addressed in its totality within the confines of this project. Therefore, the material presented will be limited to that which is necessary to obtain a thorough understanding of the subject and to answer the question: "What measures can be taken to minimize the occurrence and impact of battlefield stress in combat?"

With the focus of the study as stated above, some limitations in subject matter are necessary to maintain the continuity and structure of the thesis. For example, although psychological warfare may impact as a stressor in combat, an elaboration of the general topic is not germane to this study. Other areas not included in detail in this project are those of leadership theory and the generation of morale and discipline. These subjects are of critical importance to the study of battlefield stress, but they are so broad as to require a separate thesis unto themselves. The impact of leadership, discipline and morale, in the form of unit cohesiveness, is important to the topic of combat stress and will be included. A third limitation on the content of the study is the orientation of the research toward the Army as opposed to all services. Generally, conditions affecting combat stress of ground forces are sufficiently different from those affecting the members of

the Navy and the Air Force, thus justifying a focus on the ground forces alone.

The research methodology used is a literary review of all entries listed in the selected bibliography. The sources listed in the bibliography were obtained by a review of the related materials contained in the Fort Leavenworth Combined Arms Research Library; an extensive topic search of the Defense Technical Information Center Documents; and follow-up of key references cited in other sources. This project is not a scientific study, nor are the results based on an extensive analysis of raw and statistical data dealing with combat casualties. In those cases where the conclusions of technical research are important to this study, the analysis of the publishing author is used.

Structure of the Project

In Chapter II, the concept of battlefield stress is described in general terms. A comparison and contrast of stress symptoms and normal reactions to combat is provided. The evolution of combat stress is traced in a historical summary of World War I through the present. Included are comparisons of stress casualty rates in various wars and theaters. Chapter II closes with a brief explanation of the established principles for treatment of stress casualties.

Chapter III provides a discussion of those factors which affect levels of combat stress on the battlefield. These factors generally include the individual dimension, morale factors, physical characteristics of combat, and fear.

Chapter IV focuses on possible effects of the future battlefield on stress casualties. This is addressed from the potentially increased influence of a combination of factors which may be found in future war. These factors include increased weapons lethality, the strain of continuous operations, the threat of chemical and nuclear weapons, modern technology, and the possible increased intensity of future war.

Finally, Chapter V consolidates the salient points of the previous chapters which are deemed critical to minimizing the occurrence and reducing the impact of battlefield stress in combat. It concludes with a discussion of those measures which can be taken by military commanders to counter the effects of combat stress before and during combat.

CHAPTER I

ENDNOTES

1. Carl von Clausewitz, On War, trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), p. 184.
2. Ibid.
3. Charles J. J. Ardant du Picq, Battle Studies, trans. John N. Greely and Robert C. Cotton (Harrisburg, Penn.: Military Service Publishing, 1946), p. 123-124.
4. Ibid., p. 66.
5. Ibid., p. 109.
6. Maurice Marshal de Saxe, Reveries on the Art of War (Harrisburg, Penn.: Military Service Publishing, 1944), p. 18-19.
7. Clausewitz, On War, p. 119.
8. Samuel L. A. Marshall, Men Against Fire (Gloucester, Mass.: Peter Smith, 1947), p. 179.
9. Ibid., p. 157.

CHAPTER II

WHAT IS BATTLEFIELD STRESS?

Before we can deal with the ultimate question of how to minimize the occurrence and impact of battlefield stress in combat, we must first obtain a degree of familiarity with the subject. Following a broad discussion about the phenomenon of combat stress, the text will transition to an explanation of the symptoms found in stress casualties and a comparison of these symptoms to those responses which are considered to be normal reactions to combat. A summary of battlefield stress as it has been viewed in the major military engagements from World War I through the 1982 Israeli action in Lebanon will trace the evolution of combat stress in the 20th Century. Finally, this chapter will outline the basic principles which have been developed for the treatment of stress casualties.

Combat Stress Defined

Battlefield stress is a difficult concept to define. Even its name has changed repeatedly since World War I. It has been called shell shock, war neurosis, psychoneurosis,

combat fatigue, combat reaction, stress reaction and battle stress reaction, to name a few.[1,2] Many of these terms will be used interchangeably to refer to combat stress in the remainder of this study. Although the name has changed frequently, the problem itself has not. In general terms, it is still a mental condition that results from man participating in combat and one which can make him combat ineffective even though he suffers no apparent organic damage.

An attempt to clearly define the idea can be as elusive as the attempt to accurately name it. Chermol defines battle fatigue as "a soldier's psychological and physical reaction to the fear and fatigue that are part of all combat." [3] Another description states that "a soldier who is a psychiatric casualty is one who becomes ineffective in his combat role for reasons other than wounds, organic disease, or ineptitude." [4]

Psychiatric is another term often used in describing stress casualties. Ingraham and Manning state that "these casualties are all 'psychiatric' in the sense they are physically and mentally unable to function as soldiers in the line although apparently suffering no organic damage." They continue to explain, however, that there is seldom a case where the casualty is "crazy", "schizoid", or "out of

their heads." [5] As such, the term psychiatric casualty is also appropriate in referring to combat stress casualties.

Another approach to defining the idea of battlefield stress was adopted by the Israelis after their experiences in the 1973 Yom Kippur War and the 1982 war in Lebanon: "B.S.R. [Battle Stress Reaction] is defined simply as Anxiety, Sleep Disturbance, Depression, and Fear." [6] This description of combat stress is based on the four symptoms which appeared most frequently in the Israeli stress casualties.

Succinctly stated, battlefield stress is man's reaction to the rigors of combat. Extreme reaction may even result in a combat stress casualty, at which time the soldier is considered unable to perform his combat role for reasons other than physical injury. Thus, a stress casualty is primarily induced mentally rather than physically.

Stress Symptoms Versus Normal Reactions

Having examined some very general statements and definitions about combat stress and stress casualties, the focus now shifts to more specific and tangible evidence of the battlefield stress phenomenon. This is accomplished by examining those symptoms commonly found in combat stress casualties. An interesting facet of this examination is a

comparison of the symptoms of a combat stress casualty with those normal responses of a person in combat.

An understanding of the symptoms of stress may appear to be very simple to grasp. However, even in the military there is a great deal of misunderstanding about the difference between a combat stress casualty and a person suffering from mental illness. This error is highlighted by the following example of a peacetime simulation of a combat stress casualty: "The role-playing patients babble incoherently, get violent and are physically subdued, strapped between two litters, and hustled from the field to the merriment of all." [7] In reality, combat stress patients rarely if ever act in this way.

Quite to the contrary, symptoms of battle fatigue may take a variety of other forms. Some may be exhibited with increasingly emotional responses such as crying easily, being irritable, or using excessive profanity. Others include sleep disturbances such as nightmares or insomnia. Finally, they often take the form of exaggerated responses to noise and movement. These are some of the more common symptoms of battle fatigue which result from participation in combat. They do not necessarily require medical attention except at more severe stages which tend to render the individual combat ineffective. [8]

The diversity found in symptoms of battle fatigue is further expanded by examining how combat stress affects two groups of combatants differently. The symptoms of those in combat for the first time will generally be more pronounced and dramatic than those veterans of combat who may acquire what is called Old Sergeants' Syndrome. Stress in the first-timers will more likely be exhibited by "severe tremors and shaking, hallucinations, uncontrollable panic, crying, or stupor, and hysterical muteness, blindness or paralysis (without actual physical injury.)"[9] Those who have experienced many months of combat, however, may show symptoms of which include more sedate responses:

apathy, slowness in thinking, responding, or moving; a lack of concern about their survival; dependence on others; confusion; mild tremors; vomiting or diarrhea; failure to eat; hypersensitivity to sounds or movements; sleep disturbances; open fearfulness; excessive smoking or noticeable reclusiveness; and depression or social withdrawal.[10]

A more all-inclusive list of symptoms associated with stress reaction to combat has been compiled based on data from the major military conflicts from World War I through the 1973 Yom-Kippur War. See Table 1 below.

TABLE 1. Most frequent symptoms of combat reaction in World Wars I and II, Vietnam, and the 1973 Yom-Kippur War.[11]

ANXIETY	SLEEP DISTURBANCES
IRRITABILITY	TREMORS
DEPRESSIVE AFFECT	PSYCHOMOTOR DISTURBANCES
GUILT	CONVERSIVE REACTIONS
CRYING	MEMORY IMPAIRMENT
FEAR, DIFFUSE AND FOCUSED	IMPAIRED CONCENTRATION
CONSTRICTED AFFECT	IMPAIRED FUNCTIONING
DISTURBING DREAMS AND MEMORIES	COMMUNICATION IMPAIRMENT
"FLASHBACKS"	SOCIAL DETACHMENT
EXHAUSTION, FATIGUE	DISSOCIATIVE STATES
DECREASED APPETITE	AVOIDANCE BEHAVIOR
GASTROINTESTINAL DISCOMFORT	DISCIPLINE PROBLEMS
HEADACHES	AGGRESSIVE BEHAVIOR
NOISE SENSITIVITY, STARTLE RESPONSE	SUBSTANCE ABUSE

In Table 1, there has been no attempt to order the symptoms in sequence by frequency of occurrence. Surprisingly enough, accurate data concerning frequency of observations through history are sadly lacking. However, more detailed study and more accurate observations of stress in combat by the Israelis during their participation in the 1982 war in Lebanon provide additional information. The most frequently reported symptoms observed in Lebanon are: anxiety (56%), depressive affect (38%), sleep disturbances (34%), and fear--diffuse, focused (34%). All other indicators of combat stress were noted in fewer than 25 percent of the cases.[12]

In examining the symptoms of combat stress reaction, the question must be asked: How do these reported indicators differ from a normal reaction to a combat environment. The

surprising answer is that they do not differ significantly!

This observation is supported in the following statement:

"Normal" somatic indicants of combat stress include: muscular tension, shaking and tremor, perspiration, digestive and urinary system reactions and circulatory and respiratory systems reactions. These may be accompanied by any of the following psychological reactions: fear and panic, sensitivity to noise, sleep difficulties, apathetic tendencies, irritability and resentment or extremely lethargic or euphoric post-combat mood states. These are normal combat reactions.[13]

A noted military psychiatrist, General William Menninger, stated "that in war, psychiatrists treat normal reactions to abnormal situations. Combat is not a normal environment... It is little wonder they have trouble interpreting what is going on inside their bodies." [14] Viewed in this context, it is not surprising that soldiers seek assistance in dealing with the unusual physical and psychological reactions they experience as a result of combat.

What then is the difference between a normal soldier in combat and a soldier classified as a battle stress casualty? The subtle difference appears to rest in the severity of the reaction. "A soldier reaching the breaking point may start to become mentally and physically sluggish. He then may lose powers of concentration and, eventually, lose all ability to function." [15] The specific difference then is that the stress casualty goes beyond the normal intensity of reaction and becomes combat ineffective and unable to

perform his required duties in battle. At this point, the casualty must receive treatment to restore his fighting capability.

In this discussion of combat stress indicators, it is important to note some potential mistakes in identifying the causes of some of these symptoms. In World War I, the symptoms of tightness in the chest, difficulty in breathing and pounding of the heart could have been a result of normal reaction to fear in combat, or a reaction to a chemical attack. In World War II, fever, weakness, and uncontrolled trembling could have been signs of a psychiatric casualty or, of malaria or heat exhaustion. Finally, in the Korean War, numbness of the feet and hands caused by reduced blood circulation could have been interpreted as early signs of frostbite or as a soldier approaching the breaking point from combat stress.[16] The examples given above are not limited to the context in which they are presented. All are still applicable to modern combat, and all could be symptoms of stress.

The comments concerning battle stress indicators have thus far been limited to those which are observed and experienced internal to an individual. There exists another category of signals which may be used to understand the magnitude of battle stress. These are external to the individual soldier and are referred to as being manifestations of failure in

combat caused by battle stress. There are three general categories of these other types of stress indicators: non-battle casualties, disciplinary infractions and non-aggression against the enemy.

The first, non-battle casualties, are found to increase in number over time in active combat. They are characterized by incidents of very mild disease or injury which are not normally considered incapacitating. The result is a series of minor medical conditions which disguise potential psychiatric breakdown. Included are subjective complaints such as headaches, backaches, urinary frequency and diarrhea--the usual discomforts of a soldier in combat. This category is further characterized by increases in self inflicted wounds, broken and lost dentures and eyeglasses to obtain relief from combat, and finally, actual cases of combat stress casualties.[17]

The second stress related manifestation of combat failure is the category of disciplinary infractions. Representative of this group are military crimes such as straggling, desertion, misconduct in the face of the enemy, disobedience and insubordination. The third and final group includes those soldiers who remain with their unit, but do not contribute aggressively toward the accomplishment of the mission. One such example is Marshall's discovery that only 15 to 20 per cent of a unit's personnel fire their weapons

in battle.[18] Trends in all three of these categories can serve as indicators of the magnitude of battle stress in a unit.

Historical Summary of Battlefield Stress

World War I

The existence of some sort of combat related stress disorder was recognized early in World War I. The term "shell shock" was adopted as being descriptive of the phenomenon because it was noted that "after intensive shelling, some soldiers were dazed, tremulous, confused, or blind, deaf or paralyzed with no neurological reason." [19] It was logically inferred that these symptoms were a result of damage to the brain caused by the concussion of the shells.

The frequency of mental disorders from combat exposure in World War I created a huge loss of manpower resources that had to be curbed. Trial and error testing of different techniques resulted in fairly effective treatment procedures early in the conduct of the war. The French and British medical services soon discovered that treatment therapy conducted in close proximity to the front was important in the recovery of these casualties. Those who were evacuated to hospitals in the rear tended to resist recovery, while those treated in close proximity to the front enjoyed a 60

to 75 per cent rate of return to full duty in less than seven days. World War I experience established that the best results in treating these non-organic casualties came from simple methods including "rest, food, encouragement, suggestion and persuasion." [20] When the United States committed forces to the war, American psychiatrists confirmed and used the treatment procedures developed by the British and French.

In time, all World War I allied medical authorities agreed that combat stress reaction was a defense and escape mechanism for the soldiers in the trenches. It provided a respite from an intolerable situation which could normally be obtained only by suffering organic wounds. Support of this idea is found in observations of "mild exhilaration so often seen among the wounded" also being seen in the stress casualties. [21]

Another important discovery that emerged from the experiences of World War I was the drastic affect that the name given to stress casualties could have on the numbers of casualties. Moran comments that "when the name shell-shock was coined, the number of men leaving the trenches with no bodily wound leapt up. The pressure of opinion in the battalion--the idea stronger than fear--was eased by giving fear a respectable name." [22]

Late in World War I, with incidents such as soldiers breathing differently when they thought they had been subjected to gas (but had not), it became clear that the phenomenon known as shell shock was a psychological not a neurological problem. The diagnosis in these cases was then changed to war neurosis. Although more accurate, this new term was not readily accepted by the non-medical community, for it carried a connotation of mental illness.[23]

As distasteful as the term war neurosis was, it was an accurate label for the problem. The acceptance of these casualties being a result of a psychological disorder instead of an organic cause was supported by several observations. First, there were very few incidents of neurosis among those who suffered organic wounds during the same shelling which resulted in stress casualties. Second, the same shell shock symptoms were not observed in other casualties with brain and spinal injuries. Third, there was a strong resemblance of war neurosis to civilian neurosis even though the civilians had not been subjected to any shock or injury. Finally, these casualties enjoyed a rapid improvement in their condition after a brief rest and psychological treatment well forward in the zone. The rapidity of the recovery was not compatible with the normal time to heal organic wounds.[24]

There were several lessons learned from World War I about battlefield stress. First, it was established that it was a psychological problem instead of an organic one. Second, quick, successful treatment was possible with simple measures such as rest, food, staying close to the front, and psychological counselling with the expectation of returning to combat. Finally, "every soldier, at some time or other, will experience a physical or psychological reaction (or both) to combat and that every soldier has a 'breaking point'." [25]

World War II

In preparation for World War II, the United States attempted to pre-identify and non-select those individuals who would break under the pressure of battle. Considering that over one and a half million Americans became psychiatric casualties during the war, this program enjoyed very limited success. One opinion of such an attempt to pre-identify potential stress casualties is that it is unreliable for accomplishing the stated purpose, and only able to identify those individuals who are "obviously unintelligent, unstable, or mentally disordered." [26]

In spite of the knowledge and experience gained from World War I in the treatment of war neuroses, the entry of the United States into World War II found the U.S. Medical

Service unprepared to implement a forward treatment psychiatric program. During the inter-war years, psychiatrists had been deleted from assignment with combat divisions, and no special psychiatric treatment units existed at the field army level or in the communications zone. Perhaps this giant leap backwards was a result of a mistaken belief that war neuroses was an affliction common only to the trench warfare of World War I and would not be a problem in the maneuver tactics of this war.

The consequences of such actions were quickly surfaced in the North African campaign in 1942-1943 where many U.S. soldiers became psychiatric casualties in their first large engagements of the war. Just as in the early stages of World War I, these stress casualties were evacuated to hospitals far to the rear, with the result that few ever recovered or returned to combat duty. Many were declared unfit for further overseas service and were returned to the states.[27]

Contributing to the problem of excessive psychiatric casualties in North Africa was the diagnosis of war neurosis carried over from World War I, and the even less understood term psychoneurosis. Both of these labels carried the idea of mental illness only--not a condition of combat induced injury. The reaction was such that,

true to their label, psychiatric casualties in North Africa showed dramatic and bizarre reactions, including terror states with gross tremors, marked startle reactions, tearing at the ground to obtain cover, frozen states and withdrawal into states of retardation or childlike excitement.[28]

The pre-1943 treatment of the battle stress casualties was conducted "as if a previously-hidden demonic possession had been suddenly revealed." [29] The use of conventional psychiatric theory early in the war called for withdrawal of the casualty to a long term treatment facility far away from the war zone, and enjoyed less than a 5 percent return to duty rate. It also resulted in a tremendous number of soldiers being discharged for psychiatric reasons. The staggering numbers of soldiers being lost to combat duty by these procedures escalated to the point that the war effort was endangered. Clearly, a change was needed.[30]

As World War II progressed, commanders began to insist on a slowing of the stream of psychiatric evacuations. The answer came with still another renaming of the condition and all psychiatric disorders in the combat zone were labeled exhaustion. This term, like the shell shock of World War I, was acceptable to "both the casualties and the combat group to which they returned following treatment. Similarly, it put the onus back on environmental stress and deemphasized the individual human weakness." [31] Along with the name change, came a significant change in the symptoms.

Casualties tended to display characteristics more in line with the idea of fatigue and exhaustion. The net result was a condition that was easier to treat without the adverse mental illness image connoted previously.

Tremendous strides were made from late 1943 on in the treatment of combat stress casualties. Much of the improvement was in relearning the forgotten lessons from World War I. Progress was also made in December 1943 when the War Department authorized the assignment of psychiatrists down to division level. This allowed the problem to be studied more closely which further enhanced the collection of relevant data. It became clear from these changes that "psychological breakdown in battle was not a simple phenomenon, but rather a complex resultant of multiple physical and psychic forces that struggle for emotional control.[32]

By the end of World War II, the military branch of American psychiatry had developed and refined treatment procedures which returned 70 to 80 percent of combat psychiatric casualties to full duty--undistinguishable from their peers. From the overall war experience, the principles of immediacy, proximity and expectancy were tested and validated in the treatment of combat stress casualties.[33] These principles continue to remain valid today and will be explained in more detail at the end of this chapter.

Korean War

The entry into the Korean War found the Army Medical Service much better prepared to handle psychiatric casualties than they had been going into the previous war. The lessons learned in World War II were carried forward and effectively applied within six to eight weeks after the start of the Korean conflict. Korean War stress casualty rates were relatively low compared to World War II because of short combat tours and a less intensive level of war. Special efforts were made toward treatment of mild cases well forward at battalion or regimental level which resulted in return to duty within 24-48 hours. This prompt treatment and return to their unit lessened the anxiety of the patients and helped to preserve and reinforce the emotional ties they had to their unit.[34]

Vietnam War

The United States involvement in Vietnam did not produce the immediate psychiatric casualties experienced in previous conflicts. This is understandable when the characteristics of that war are examined. In Vietnam, the intensity and lethality of the combat was low as measured by the relatively low killed and wounded in action rates. Other factors such as the unchallenged air superiority, brevity of contacts with the enemy, rapid medical evacuation for all

casualties, and twelve month combat tours combined to reduce the stress, fear and fatigue levels compared to other wars.[35]

Israel: 1973 and 1982

A few brief comments on the Israeli experiences in the 1973 Yom-Kippur War and 1982 experience in Lebanon are necessary to bring this historical overview of battlefield stress in major military encounters up to the present. In terms of psychiatric casualties, the October 1973 War was a disaster for the Israeli Defense Force. Although it was originally reported that only 10 percent of all casualties were a result of combat stress, it is now accepted that the initial reports grossly underestimated the true extent of the problem by only including the most severe cases. The intensity of combat in that war was the highest of the 20th century. What had taken months in World War II to cause men to break in combat was reached in days in 1973.[36]

Following the Yom-Kippur War, the Israeli Defense Force reorganized its mental health services based on the past successful experiences of the United States in handling combat stress casualties. They also instituted a system of preventive measures in their military structure which included forward psychologists, mental health teams, and an innovative method of assessing unit cohesion and morale both

before and after combat. The results of these unit assessments were integrated into command briefings and became a significant element in determining combat capabilities of units. These procedures did not necessarily reduce the combat stress casualties when Israel fought in Lebanon in 1982, but they did increase the return to combat rate up to the 80 percent range.[37]

Battlefield Stress Casualty Rates

A brief synopsis of the levels of stress casualties is necessary to complete this historical overview of the problem. Table 2 contains relative examples of combat stress casualties in different campaigns of different wars with various units. However, it is not the specific numbers that are important to this study, it is the trends and range of the casualty rates that are relevant.

In examining Table 2, note that stress casualties are usually (but not always) reported as a percentage of Wounded In Action (WIA) casualties. Throughout history, aggregated stress casualties have varied from 1 per 8 WIA to as high as 1 per 2 WIA, with some units in unusual situations experiencing stress casualties exceeding their wounded rates. The overall average stress casualty rate approaches 1 per 4 WIA.[38]

TABLE 2. Historical Examples of Battlefield Stress Rates. (Unless specified otherwise, rates are a percentage of Wounded In Action.)[39]

A. WORLD WAR II

1. Okinawa for 10 days: 48%
2. Gothic Line for 44 days
1st Armored Division: 54%
91st Division: 34%
3. Early North Africa: Stress Casualties exceeded theater Replacements
4. France, D-Day for 60 days
Overall: 40%
1st Army: 18%
Some Infantry Battalions had more stress casualties than wounded
5. South Pacific: Stress Casualties exceeded wounded
6. Total World War II: 23% of all evacuees were Battlefield Stress Casualties by present standards

B. KOREA: Only 6% of evacuees were Battlefield Stress Casualties

C. VIETNAM: Very low rates of the classical form of stress casualty

D. 1973 ARAB-ISRAELI WAR

1. Of Initial 1500 wounded: 60%
2. Overall: 30%

E. 1982 ISRAELIS IN LEBANON: 23% (Compares with WWII overall rate)

The logical question to ask at this point is what are the reasons for the tremendous range between high and low battle stress casualty rates over time? The answer to this question is complex. The casualties produced by the stresses of combat fluctuate with such variables as time in combat, intensity of the battle, lethality of the weapons, cohesiveness of the units and type of action engaged in. These factors are of such paramount importance to this study that Chapter III is devoted entirely to their discussion.

A final matter on rates of stress casualties is that the data is based primarily on medical statistics which may not capture the full extent of the problem. This statement is based on the previous discussion on manifestations of failure in combat. The hospital statistics simply do not capture all of these other indicators of soldiers succumbing to the stress of combat as being stress casualties. These incidents are reported as other events unrelated to stress, such as: absence without leave, self-inflicted wounds, other medical injury, or even as killed in action, although it may have been a result of a stress-driven mistake. The bottom line here is that even as high as the statistics are on combat stress casualties, they represent the low side of the true extent of the problem.

Treatment of Stress Casualties

Having seen the magnitude of the problem, a brief overview of the lessons which have been learned in treating these casualties will complete this chapter on the general characteristics of battlefield stress. A paradox has been discovered in the treatment of combat stress patients--the more you treat them like hospital patients, the worse their condition becomes and the less likely they are to recover. Chances of full recovery are highest when they are treated

like soldiers with a temporary disability who are expected to get well and quickly return to combat duty.

Succinctly stated, the end result of the United States' lessons learned about the treatment of combat stress through the end of the Korean War are found in the principles of immediacy, proximity and expectancy. This translates to say that the casualties are treated quickly, near the front and like soldiers. "Treatment consists of rest, organized work details or recreation and individual and group talk therapy. Talk therapy focuses on the immediate past (battle) and the immediate future (return to battle)."[40] There is minimum attention given to the distant past, family, or the distant future of the individual. "The object is to verbalize the horror and terror of battle and come to grips with normal, powerful emotions as grief, guilt and remorse." [41]

Dr. M.D. Parrish, a military psychiatrist, provides a concise explanation of the three basic treatment principles and suggests that bonding might be added as a fourth principle.[42] The crux of immediacy is to intervene as soon as possible after a person is identified as a combat stress casualty. This avoids letting the ailment set in and become a more chronic problem which is even more difficult to treat. The key to proximity is to manage and treat these casualties well forward in the battle sector and not to evacuate them to rear areas or hospitals. The principle of

expectancy is paramount in maintaining the atmosphere everywhere that each stress casualty will quickly improve his condition and go back to his original unit to combat duty. Not only does the patient himself come to expect this sequence of events, but so does the organization he is assigned to. This assists in his assimilation back into his unit without prejudice. Parrish's fourth principle, bonding, is closely tied to this discussion on expectancy. Bonding ensures that closer attention is given to returning the casualty back to his "original primary group--his squad or fire team." [43] All of this is accomplished with the main treatment consisting of rest, relaxation and support by everybody toward full return to duty.

Parrish provides some insight as to why the three primary principles of treatment and bonding have proven successful over time. [44] This insight is helpful in fully understanding the realm of battlefield stress. First, if the principle of immediacy is not followed, a stress casualty remains inappropriately in the midst of the physically wounded casualties. This tends to cause him to escalate his symptoms to the point where he is, or appears to be, as bad off as they are. Adhering to immediacy, there is no opportunity for this to occur. Prompt treatment by mental health personnel neither concur with or support a

stress casualty's illness. They only orient on his quick recovery and return to duty.

Expectancy is closely linked to the discussion of immediacy. With expectancy, the treatment is oriented toward his total, quick recovery, good health, and return to his duty position in his unit. He is informed that combat exhaustion is as normal as pain in athletes and as such, he will soon be better and back to work with his comrades.

The danger in violating the principle of proximity is that the stress casualty may be evacuated back where the medical personnel have not experienced combat up close and do not understand what he has been through. Therefore, he may receive the wrong treatment in the form of inappropriate sympathy, resulting in a more extensive illness rather than a quick recovery.

Finally, Parrish's fourth principle of bonding offers the casualty incentive toward a quick recovery and back to the unit before it moves out without him. This is strongly reinforced by encouragement from members of the unit telling him that he is needed and to come back quickly.

A true understanding of the workings of these simple principles of treating combat stress casualties comes with a comprehension of the ultimate purpose of the treatment procedures. "The goal of treatment for the purposes of

return to combat duty was the restoration of previous defenses instead of attempts to alter or reorganize personality structure." [45]

It is sometimes difficult to agree with the concept of taking a soldier who has broken under the stress of combat, provide him with a brief respite and short treatment, and then return him to the battlefield which was responsible for his incapacitation in the first place. Ingraham and Manning address this question when they point out that, "harsh and heartless as this may sound, it is well to remember that return to duty serves both the individual and the Army. History is clear; failure to return to duty leads to permanent disability." [46]

The validity of these time-honored principles of proximity, immediacy and expectancy has been proven again by the Israeli experiences in the 1973 Yom-Kippur War and in Lebanon in 1982. In the first case, the principles were not adhered to, and excessive battle stress casualties with few returns to duty were the result. In Lebanon, the principles were reinstated, and the Israelis enjoyed a 75 percent return to duty rate for the stress casualties. [47]

CHAPTER II

ENDNOTES

1. Edward V. Pierce, "Battle Stress" (unpublished paper, Division Psychiatrist, 9th Infantry Division, Fort Lewis, Washington, 1983), Slide 6.
2. Larry H. Ingraham and Frederick J. Manning, "Psychiatric Battle Casualties: The Missing Column in a War Without Replacements," Military Review, LX (August, 1980), p. 22.
3. Brian H. Chermol, "Battle Fatigue," Infantry, 74 (January-February, 1984), p. 13.
4. Richard P. Kendrick and Anne Shuman, Casualty Estimation Study, Part I (CES I), Study Report CAA-SR-81-21 (Bethesda, Maryland: U.S. Army Concepts Analysis Agency, 1981), p. H-52.
5. Ingraham and Manning, "Psychiatric Battle Casualties," p. 22.
6. Pierce, "Battle Stress," p. 2.
7. Ingraham and Manning, "Psychiatric Battle Casualties," p. 20.
8. Chermol, "Battle Fatigue," p. 13.
9. Ibid., p. 14.
10. Ibid.
11. Reuven Bar-On, Zahara Solomon, and Shabtai Noy, "War Related Stress: An Overview of the Clinical Picture in the 1982 Conflict in Lebanon," (paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983). p. 1.
12. Ibid., p. 4.
13. Ingraham and Manning, "Psychiatric Battle Casualties," p. 23.
14. Ibid.

15. Bill Branley, "Mind Over Battle," Soldiers, 36 (September, 1981), p. 23.
16. Ingraham and Manning, "Psychiatric Battle Casualties," p. 23.
17. Albert J. Glass, "The Problem of Stress in the Combat Zone," Symposium on Stress (16-18 March 1953), (Washington, D.C.: U.S. Army Medical Service Graduate School, Walter Reed Army Medical Center, 1953), pp. 90-91.
18. Ibid.
19. Ingraham and Manning, "Psychiatric Battle Casualties," p. 20.
20. Albert J. Glass, "Psychotherapy in the Combat Zone," Symposium on Stress (16-18 March 1953), (Washington, D.C.: U.S. Army Medical Service Graduate School, Walter Reed Army Medical Center, 1953), pp. 284-285.
21. Ibid.
22. Charles McMoran Wilson Moran, The Anatomy of Courage (Boston: Houghton Mifflin Company, 1967), p. 174.
23. Ingraham and Manning, "Psychiatric Battle Casualties," pp. 20-21.
24. Glass, "Psychotherapy in the Combat Zone," p. 285.
25. Chermol, "Battle Fatigue," p. 13.
26. T.S. Hart, "Determination In Battle," Armor, XXXIX (May-June, 1980), p. 34.
27. Glass, "Psychotherapy in the Combat Zone," pp. 286-287.
28. Ingraham and Manning, "Psychiatric Battle Casualties," p. 21.
29. Kenneth L. Artiss, "Human Behavior Under Stress - From Combat to Social Psychiatry," Military Medicine, 128 (October, 1963), p. 1011.
30. Ibid.
31. Ingraham and Manning, "Psychiatric Battle Casualties," pp. 21-22.

32. Glass, "Psychotherapy in the Combat Zone," p. 290.
33. Artiss, "Human Behavior Under Stress," pp. 1011-1012.
34. Glass, "Psychotherapy in the Combat Zone," pp. 291-292.
35. Brian H. Chermol, "Psychiatric Casualties in Combat," Military Review, LXII (July, 1983), p. 27.
36. David H. Marlow and Larry H. Ingraham, "Emphasizing Cohesion, Morale Can Help Prevent Battle Stress," Army, 33 (July, 1983), pp. 16-17.
37. Ibid.
38. Robert J. Schneider and Richard L. Luscomb, "Battle Stress Reaction and the United States Army," Military Medicine, 149 (February, 1984), p. 66.
39. Pierce, "Battle Stress," Slide 7.
40. Ingraham and Manning, "Psychiatric Battle Casualties," pp. 24-26.
41. Ibid.
42. Matthew D. Parrish, "Combat Psychiatry in Varied Settings," Collected Papers, 1970-1980, M.D. Parrish, M.D. (Washington, D.C.: U.S. Department of the Army, Office of the Surgeon General, 1981), p. 2.
43. Ibid., pp. 2-3.
44. Ibid.
45. Glass, "Psychotherapy in the Combat Zone," p. 291.
46. Ingraham and Manning, "Psychiatric Battle Casualties," p. 26.
47. Samuel K. Rock and Robert J. Schneider, "Battle Stress Reactions and the Israeli Experience in Lebanon: A Brief Summary," Medical Bulletin of the US Army, Europe, 41:1 (January, 1984), pp. 9-10.

CHAPTER III

FACTORS AFFECTING LEVELS OF COMBAT STRESS

Chapter III progresses from the abstractions and generalities of the previous chapter to a discussion of those specific factors which affect the levels of combat stress on the battlefield. Although these circumstances are addressed individually in the text, it is critical to understand that they do not exist in isolation from each other. In reality, these factors work in conjunction with each other and are so intertwined that it is difficult to separate the contribution of one from another.

General

A study was conducted in an attempt to identify those factors associated with bravery and valor in battle. The study showed that there were no unusual personality differences between heroes and other soldiers--only situational differences. Brave soldiers appeared to come from a stable family environment and belong to cohesive units which were in extreme danger.

It appears that the exact opposite is true for combat stress casualties--they are in a high threat situation, but belong to units with a low level of cohesion and seem to have some background of family instability. The responsible conditions in both cases are situational and not personality oriented. Other controlled studies support this observation in that they disclose no difference in personality factors between normal soldiers and those who suffer from combat stress reaction.[1]

What then are the situational conditions which contribute to an increase in stress casualty rates? These will be addressed in detail throughout the rest of the chapter, but in general, stress casualties are the result of both psychological and physiological conditions. Chermol expresses this idea when he states:

The dehydrated, hungry, tired soldier who has seen friends killed or dismembered, lacks confidence in his unit or leaders, or has had 'near-miss' experiences and fears for his own survival would be a typical candidate for psychiatric dysfunction.[2]

Chermol continues to explain that battle stress casualties are most likely to occur during or immediately following events where physical danger is greatest. He cites the examples of an amphibious assault or other situations when the soldier is helpless to respond with action such as occurs during intense artillery attacks.

For ease of discussion, the specific factors which contribute to combat stress have been grouped into four categories: individual factors, morale factors, physical aspects of combat, and fear. This is not to say that the effects of one factor in a category do not impact on the effects of another factor in a different category. To the contrary, there are significant cross-contributions as well as opposing effects between and among these factors and categories.

Individual Factors

The category of Individual Factors are those areas which are internal to the individual soldier as opposed to a group effect or a physical battlefield condition. The three sub-topics of this section are: personal situation, belief in cause, and combat experience.

Personal Situation

Even before entering the arena of combat, there are situational events which impact on the level of combat stress a soldier will be able to tolerate in battle. Noy addresses these factors as auxiliary stress. A main source of auxiliary stress is instability in the family. This may include any state of transition in the soldier's life, such

as a recent marriage, child birth, change of employment, or death in the family. The belief is that any such state of transition expends inner energy which is subsequently not available to the soldier to cope with the other stresses of battle. Therefore, individuals in this category are more vulnerable to combat stress reaction.[3]

Additional pre-combat stress factors were identified by Solomon and Noy who conducted a study to attempt to explain why some soldiers developed combat reaction and others appear to be relatively unaffected by combat experiences. The study compared and correlated data from the military records and military entrance examinations of Israeli Defense Force soldiers who were diagnosed as combat reaction casualties in Lebanon in June of 1982, to the records and tests of other soldiers of the same units in combat but who did not exhibit any psychological disturbances.[4]

The results of Solomon and Noy's study suggest that age is related to the risk of becoming a battle reaction casualty. Generally, risk increases with age up to age group 26-30, after which the risk lowers slightly. Second, education levels are inversely related to risk of becoming a stress casualty--the more years of education a soldier has, the lower his risk of becoming a combat stress casualty. Third, the results of a military performance prediction test were compared between the two groups. One test score, called a

motivation score, is a composite measure of personality features such as punctuality, independence, sociability and motivation. Analysis disclosed that the higher a soldier's motivation as measured by the military performance prediction test, the lower his risk of becoming a stress casualty in battle. A second test score, the performance prediction score, is a combined measure of intelligence, education and personality variables. Comparisons of the performance prediction scores of the two groups indicated that the higher the soldier's potential performance, the lower the risk for becoming a combat stress casualty. From these results, there is apparently more to combat stress than just the physical events in battle.

Belief in the Cause

How a soldier's belief in the cause for which he is fighting impacts upon battlefield stress is open to debate. Concerning the idea of the legitimacy of a war, Gal references a "general rule, known in social psychology, that the perceived legitimacy of goals affects the group's efforts to achieve them." [5] He notes that the legitimacy of the war on Yom Kippur Day in 1973 was easy for the Israelis to see. All that was necessary was to look over their shoulder from the Golan Heights and see their homes which they were risking their lives to defend. Gal further

notes that the legitimacy of the incursion into Lebanon in 1982 was not so easy for the soldiers to see. Their homes were not just over their shoulders, and they were not defending family and home from an attack. One would predict a drop in morale in this case, however, it did not occur. Gal concludes that there are many other factors at play here which tend to minimize some of the negative effects of belief in cause, such as unit cohesion and confidence in leadership.

Glass also addresses this debate on the true impact of belief in the mission on one's ability to defend against fear and the stresses of combat. He, too, minimizes its effect when he states "our motivation seems to be rather narrow. People fight for what is immediately present around them. They fight for their unit, for their officer, for their buddies. Belief in mission is not as important as one would think." [6] It seems, therefore, that belief in the cause is a factor of minimal importance in morale and ability to handle the stress of combat, because it is easily overpowered by other more significant factors.

Combat Experience

A third individual factor affecting a person's ability to deal with combat stress is whether he has had combat experience. On this issue, Marshall points out that,

The weaker ones will be shaken out of the company by this first numbing experience, adding fresh numbers to the statistics which show that more battle fatigue cases come from initial engagements than from all subsequent experience in the line.[7]

Clausewitz also recognizes the extreme difficulty faced by a soldier as he enters combat for the first time. He notes that "it is an exceptional man who keeps his powers of quick decision intact if he has never been through this experience before. It is true that (with habit) as we become accustomed to it the impression soon wears off." [8]

The idea that a person becomes hardened to the shock of combat is shared by Moran when he writes the following about his World War I experiences: "as the odds shortened, and it became plain that death was to be the common lot, I thought less of its coming until at last I saw no cruelty in its approach." [9]

A review of numerous past studies gives a more scientific summary on the effects of initial combat on soldiers and the resulting vulnerability to becoming a battle stress casualty. Those who experience battle for the first time are more likely to suffer battle reaction both qualitatively and quantitatively. This is evidenced by the high rates of psychiatric casualties experienced in new units and by new replacements to old veteran units. [10]

It is not only those entering combat for the first time who are vulnerable to becoming a stress casualty. Evidence from World War II Study Number 91 of the Theater General Board, U.S. Forces, European Theater indicates two types of combat exhaustion affected by a soldier's combat experience. The first is that which has been previously addressed--the high rate of stress casualties among those in combat for the first time. The second type occurs among experienced, battle-tested veterans after prolonged, continuous periods of severe combat.[11]

Morale Factors

Another set of factors contributing to battlefield stress may be grouped under the category of morale. There are certainly additional headings which could have been included in this section, however, they are more appropriately addressed in other areas of the paper. Those morale factors included in this section are: unit cohesion, level of training proficiency, leadership, and confidence in ability to win.

General

The importance of the morale of units in combat is not a new discovery of the 20th Century. Xenophon, a Greek military

leader (434-355 B.C.) wrote: "You know, I am sure that not numbers or strength bring victory in war; but whichever army goes into battle stronger in soul, their enemies generally cannot withstand them." [12]

What is morale that makes it such an important factor in the outcomes of battles? Gal describes morale by saying that,

For some it is the state of mind of the individual--his dedication, eagerness and willingness to sacrifice. For others it is a social phenomenon--the group's collective enthusiasm,...or its persistence in pursuing common goals under adverse conditions. [13]

Gal differentiates between morale and motivation by explaining that morale is more oriented toward a group or unit, while motivation is more toward the individual. He concludes, however, that the two merge together in reality. [14]

This concept of morale is fundamental to this study on battlefield stress, for it is morale that helps a unit to overcome the adversities of combat. A good example of this is the defense of Calais by the British 30th Brigade against the German 10th Panzer Division in May 1940. The brigade had moved on short notice, left most of its equipment and ammunition in England, and had a poorly planned and executed movement. Once in combat, they faced continuing adversities such as the unexpected, the unknown, fear, exhaustion, and the normal noise and unpleasant sights of

battle. Yet, the 30th Brigade fought well and held for four days against a determined enemy and overwhelming hardships. It was the unit's collective morale that allowed this feat--morale that was fostered over time by most men having served together for many years, by excessive pride in the Regiment, and by exceptional leadership.[15]

The ability of morale to help overcome the hardships of combat--including battlefield stress--is reinforced by an extensive study by Noy. He conducted a detailed literature review oriented on finding the primary factors responsible for exits of the soldier from battle. He concluded that soft casualties (non-physical casualties) were a function of whether the war was being won, morale, cohesion and leadership, as well as some of the physical characteristics of combat which will be addressed in a later section. The results were clear: those units with good morale, cohesion and leadership had a lower rate of soft casualties.[16]

A more detailed listing of the factors composing a soldier's morale is provided by Gal. Using 1981 data from the Combat Readiness Morale Questionnaire given to 1200 Israeli soldiers prior to entering Lebanon, the following are identified as determining a level of morale: "1. confidence in commanders, 2. unit cohesiveness and morale, 3. confidence in weapons and in oneself as a soldier, and 4. perceived legitimacy of war (or military operation)."[17]

Gal points out that a strength in one of these areas may compensate for an apparent weakness in another.

Unit Cohesion

By far, the single most important element affecting battlefield stress is unit cohesion. "There is little question that the number of psychiatric battle casualties is related more to group characteristics than to individual personality traits." [18] Group characteristics, in this context, easily translate to cohesion. Keeping the focus of this paper in mind, it is not the intent of this section to specify in detail how to obtain unit cohesion. That is a subject for another study. What is appropriate, is to provide an explanation of the effects of a highly cohesive unit in combat versus a non-cohesive unit. The purpose of this examination is to better understand the critical importance of cohesion on combat stress and stress casualties.

Steiner and Neuman provide very convincing scientific support to the proclamation that cohesion is a paramount factor in the prevention of battle stress casualties. Using returnees from the 1973 Yom-Kippur War, they conducted a detailed study on the effects of social support in the unit on combat performance. The study group consisted of veterans diagnosed as having suffered traumatic neurosis of

war based on the normal combat stress symptoms. The soldiers in the control group were selected from an elite reserve airborne unit and did not show evidence of war neurosis.

The soldiers in the control group went through many more hardships than did the soldiers who suffered from combat reactions, such as: being across enemy lines, temporarily cut off, under heavy barrage, short in equipment, with heavy losses and half the soldiers experiencing exhaustion, all of which did not apparently contribute to severe psychic reactions.

The psychosocial factors seem to play a much more important role: soldiers with traumatic reactions (study group) experienced more loneliness, felt less trust toward their immediate command, had a low esteem regarding their military performance, and usually experienced their unit's morale as very low. Many of them did not serve with their original units and some of them changed teams repeatedly. At times these soldiers were sent to the battlefield in a tank with a crew of four men who were total strangers to each other.[19]

In comparison, 95 percent of the control group trusted their commander; 97 percent were self-confident as to their military performance; and all felt unit morale was high. Additionally, 88 percent fought with their original unit; 86 percent with the same people with whom they had fought the previous war. Only 15 percent of the control group changed teams during the conduct of the war, and this was normally within their original unit.

Steiner and Neuman conclude that,

The present study demonstrates clearly that lack of social support, little or no identification with a unit or team, no trust in leadership, displacement, rotation and replacement all have a marked contributory effect on the development of combat reactions. In contrast, positive social support may help in preventing traumatic neurosis of war, even under the most severe stress situations.[20]

History is replete with other examples of the effects of non-cohesiveness and disunity in battle. Even in 210 B.C., Petronious Arbiter recognized the effects of breaking up well-trained integrated units, when he wrote:

We trained hard, but it seemed that every time we were beginning to form up into teams we would be reorganized... And wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency, and demoralization.[21]

Turning to the present century, Moran gives a World War I example of the effects of unit cohesiveness when he describes two British units who were side by side under the same battle conditions when they were attacked with gas. In one battalion, 150 men drifted away during the attack, in the other, Fusiliers, only 10 left the line. The difference is attributed to the difference in unit cohesion.[22]

In the first sixty days following the D-Day Invasion of World War II, there were 13,000 American neuropsychiatric hospital admissions--a rate of one combat fatigue per five wounded. Of interest to the topic of cohesion is that "many cases appeared among men sent in to replace battle casualties, for these soldiers lacked support of the group

feeling which comes with unit training and preparation for combat." [23]

Marshall, had many comments about the poor integration of U.S. replacements into their units in World War II. He describes a typical example and the resulting consequences in the following excerpt:

It has happened too frequently in our Army that a line company was careless about the manner in which it received a new replacement. The stranger was not introduced to his superiors nor was there time for him to feel the friendly interest of his immediate associates before he was ordered forward with the attack. The result was the man's total failure in battle and his return to the rear as a mental case. [24]

A final statement of the adverse affects of unit cohesion in combat is provided by Gal's analysis of the events of the 1973 Yom-Kippur War. In this war, when Israel was totally surprised, many reserve armor units were sent forward before forming into their normal combat teams. In this piecemeal deployment, many tank crews went into battle without knowing each other's names. When the psychiatric casualties from the war were analyzed, they were much higher in those makeshift crews than in the normal organic crews fighting under identical circumstances. [25]

The value of having strong unit cohesion present in combat is priceless. This value was confirmed in many of the examples of poor cohesion referenced above. Additionally,

in World War II, the cohesion in volunteer units such as the airborne infantry resulted in significantly lower battle fatigue rates compared to non-volunteer units. This held true even when the overall casualty rates were higher in the volunteer units.[26]

It is difficult to understand the basis of the strength found in cohesive units. It appears to be primarily oriented on each individual's dedication and devotion to the other individuals and the unit as a whole. In a survey of the veterans of the Lincoln Brigade who volunteered to fight in the Spanish Civil War, Dollard learned that 98 percent of those surveyed felt they were better soldiers because they were afraid that if they were weak it would endanger their friends. "Here shame at endangering friends is pitted against fear of the dangers in battle." Dollard also notes that pride in the unit along with loyalty to friends is key in fighting fear which is a major contributor to combat stress.[27]

The importance of the other men in the unit is eloquently explained by Marshall in the following passage:

I hold it to be one of the simplest truths of war that the thing which enables an infantry soldier to keep going with his weapons is the near presence or the presumed presence of a comrade. The warmth which derives from human companionship is as essential to his employment of the arms with which he fights as is the finger with which he pulls a trigger...The other man may be almost

beyond hailing or seeing distance, but he must be there somewhere within a man's consciousness or the onset of demoralization is almost immediate and very quickly the mind begins to despair or turns to thoughts of escape.[28]

Note that Marshall specifies that it is the presence of a comrade that is the key to this phenomenon. It must be a friend who is known and trusted. He cites an example of the effects of putting strangers together in the Ardennes: "Individual stragglers had almost no combat value when inducted into a strange organization. The majority of them were unwilling to join any such solid unit which was still facing the enemy." [29] Marshall notes that when this was done, these soldiers left their posts as soon as they experienced any enemy pressure.

There was a difference, however, when members of the same gun crew, squad or platoon were placed together to fight with a strange company. Marshall comments, "they tended to fight as vigorously as any element in the command which they had newly joined, and would frequently set an example of initiative and courageous action beyond what had been asked of them." [30] Clearly, the difference lies in the effects of cohesion.

The positive effects of unit cohesion are experienced even beyond that point on the battlefield where combat is ongoing. It carries over to assist in the prompt recovery and return of battle stress casualties and other wounded

soldiers. In commenting on the procedures for treating stress casualties, Glass explains that "brief treatment in the combat zone succeeds because time and distance have not yet dimmed the powerful devotion to the group, whereas evacuation to a safe and comfortable rear hospital reinforces the demands of self-preservation." [31] This has the effect of weakening or breaking the bond between the individual and the group.

Parrish further explains the strength of the bonds in cohesive units and the effects of withdrawing a soldier from the immediate area. He says a soldier "fights for his unit, for this hour, this place and these men...To extract a man from the unit which gives him his living self, is to kill part of him. Evacuated, he must make strong excuses why he left those comrades." [32]

A summary of this section on unit cohesion must reemphasize the overwhelming role it has in the area of battlefield stress. The relationship between cohesion and stress is succinctly presented by Noy in the following comment:

Cohesion is the only meaningful force that can effectively prevent combat psychiatric casualties. Cohesion is created by the stress of combat and serves as a remedy against it. In the absence of stress the need for group cohesion is not distinctly felt. It is felt in time of danger. Cohesion may be viewed as a group defense mechanism. [33]

Level of Training Proficiency

Although not as pervasive as cohesion, training proficiency is a factor which also contributes to the overall level of morale in a unit. The level of morale, in turn, affects the individual's ability to counter the stresses of combat. In evaluating the problems of fighting the Japanese in Burma during World War II, Slim recounts that a chief contributor to the combat failures and low morale of the British and Indians was the inadequate training they had received for fighting in the jungle environment.

Slim explains, "to our men, ...the jungle was a strange and fearsome place; moving and fighting in it were a nightmare...To the Japanese, it was a welcome means of concealed manoeuvre and surprise." [34] The difference in outlook of the opposing forces was in training. The Japanese had developed formations and equipment for fighting in jungles and negotiating rivers. The British, at this time were trained and equipped for combat on the open desert. The impact of this deficiency was devastating to the morale of Slim's forces.

Training for a specific combat situation and environment was also noted as a deficiency in a survey conducted during the Korean War. Many of the U.S. soldiers interviewed expressed that they had not been adequately trained for the type of

combat they were experiencing in Korea. Specifically, they were not trained in those skills essential to night fighting--walking quietly, familiarization to night noises and operations, and night firing of weapons. Again, the effects were demoralizing.[35]

Reference the problem of battlefield stress casualties among soldiers in combat for the first time, Marshall philosophizes "some who might have been saved, had great wisdom been given those who were responsible for their training, will go to this scrap heap." [36] Clearly, training proficiency is a factor that must be addressed in controlling the problem of combat stress casualties.

Leadership

Morale in a unit is also heavily influenced by leadership. Its affects on morale can be generally discussed in terms of the absence or presence of leaders, and in terms of good or poor leadership in a unit.

Although not easily quantified, Chermol was able to conclude from a study on battle fatigue casualty rates in World War II that leadership has a definite impact on the rate of stress casualties in a unit. He states that the cause of different battle fatigue rates in similar units in the same organization was attributable to differences in leadership.

Chermol reaches this conclusion by his observations that the units with the high rates either had poor leaders or their leaders had become casualties.[37]

The importance of the personal factor in the commander's relation to his men in time of war was explained as follows by Eisenhower:

I found that it did a great deal of good to get down to the troops in the combat area. My presence relaxed them and made them feel more comfortable about the situation...They were saying to themselves, "there must be less danger than we thought or the old man wouldn't be here." [38]

Surely, actions such as this from such a high level of command must have a significant affect on the morale of units in combat.

At a lower level of organization, the Israeli Defense Force recognizes the tremendous impact of officers on the unit's morale. Consequently, Israel has taken some significant measures to ensure that only the best soldiers are selected to be officers, and that their methods of leadership continue to foster the necessary level of morale in time of war.

This goal is primarily achieved in two ways. First, all the officers in the Israeli Defense Force are selected from the ranks of the soldiers based on demonstrated excellence in leadership; and second, their methods are founded in leading

by personal example (from the front) in peace and war. The result is an overwhelming trust and confidence in the leaders and commanders in Israel. There is also a cost to this philosophy--in the Yom-Kippur War and in Lebanon, officers were three times more likely to be killed than were their soldiers.[39]

The consequences of either not having or not knowing a leader, or in the soldiers not having trust and confidence in the leader, can be severe. Ardant du Picq writes of the feeling among each member of a well trained unit that when, "brought together under unknown leaders, he feels the lack of a union, and asks himself if he can count on them. A thought of mistrust leads to hesitation. A moment of it will kill the offensive spirit." [40]

A specific example of this problem occurred in the Korean War where a company was under a heavy attack. One platoon was within 50 to 75 yards from the enemy and could see the company command post being overrun. In spite of the severity of the situation and the ultimate danger to themselves, that platoon did not engage the enemy with fire. The explanation of this unusual behavior was that the platoon did not want to give away its position. The significance of this example is that the ranking person present was a private first class.

Thus, it can be seen that the success or failure of a small unit in combat depends a lot on the leader of that unit, his presence and his actions. Egbert notes that "in successful units, the frequency of personal contact between leader and subordinates, primarily from company level down, seemed to be in direct proportion to the current severity of stress." [41] In quiet time, the leader's presence is not required as often. However, under periods of extreme hardship such as intense shelling or heavy attack, the soldiers need to see their leaders more frequently.

The need for the presence of a leader at critical times is supported by Dollard's study with the veterans of the Lincoln Brigade after the Spanish Civil War. The importance of getting frequent instructions and information from a leader during a difficult situation was recognized by 89 percent of those surveyed. They elaborated that an experienced leader elicits the confidence of the soldiers because they feel he can accomplish the mission with the minimum necessary risk. The net effect of good leadership in battle is that it "builds up a force which helps resist fear." [42] This result is critical, as fear is a primary contributor to battlefield stress casualties.

Two appropriate quotations serve to summarize the contribution of leadership to the overall topic of morale. The first, by Marshall, places emphasis on the timing of the

commanders presence: "The values which derive from inspection and personal reconnaissance are in direct ratio to the difficulties of the situation." [43] The benefits of the commander's personal presence are greatly increased in the heat of battle as compared to a quiet time in a reserve position.

The second, by Slim, addresses a different aspect of the necessity for having confidence in leaders: "Success is, of course, the easy foundation on which to build and maintain morale--if you have it. Even without success, confidence in their leaders will give soldiers morale." [44]

Confidence in Ability to Win

Regardless of the level of organization, a unit's confidence in its ability to successfully combat the enemy is a main element in its morale. In recalling the problems he faced in the Burma Theater in World War II, Slim recognized morale as touching on every aspect of his army's efficiency and health. He states, "there was no doubt that the disasters in Arakan, following an unbroken record of defeat, had brought morale in large sections of the army to a dangerously low ebb." [45]

The repeated defeats suffered at the hands of the Japanese were devastating, not only to the front line units, but equally to the supporting units:

It was in the rear areas, on the lines of communication, in the reinforcement camps, amid the conglomeration of administrative units that covered the vast area behind the front that morale was really low. Through this filter all units, drafts, and individuals for the forward formations had to percolate, and many became contaminated with the virus of despondency.[46]

In such a defeatist environment, it was easy for rumors to grow and spread concerning the invincibility of the Japanese. All talk of the Japanese savagery, equipment superiority, and training were grossly exaggerated. Equally enlarged were the hardships, suffering, and problems of the British and Indians. In sum, the attitude in Burma at this time was one of hopelessness toward being able to defeat the Japanese.[47]

It is ironic to note that even in times of victory, it is possible to acquire a sense of failure. Marshall elaborates,

It happens that a company or battalion may win a victory under circumstances which make it appear almost as a defeat on the local ground either because it is over-conscious of its own hard losses or because the over-all tactical effect could be seen only at the higher headquarters. This impression of failure will continue so long as no one concerns himself with setting the facts aright.[48]

Marshall continues to explain that few things are as important as victory to the morale of a unit. "The knowledge of victory is the beginning of a perception of superiority." [49] The benefits of one small victory may be able to erase the adverse effects of many sequential defeats.

At a much higher level, a significant reduction in the neuropsychiatric casualty rates was detected in the European Theater from the end of 1944 throughout 1945. This decrease in stress casualties was in spite of a high level of other casualty rates in the first four months of 1944. Similar results were seen in the Mediterranean Theater at approximately the same time even though battle casualty rates remained high. Finally, a downward trend in combat stress rates also occurred in the Western Pacific Theater about the time of VE day. The explanation for these trends is simple--it was evident to the fighting soldiers that major advances were being made toward ending the war. [44] Perhaps for the first time, they could see a hope of relief from combat other than death, wounds or break down.

It is important to iterate that none of these individual morale factors can be considered in isolation from the others. They all work together and have a combined effect on battlefield stress.

In summary, the soldier's morale, as comprised by its components, is the secret weapon by which even intolerable demands--morally debatable or physically hazardous--will be ultimately carried out.[51]

The strength of morale in preventing the effects of combat stress should not be underestimated.

Physical Aspects of Combat

The physical aspects of combat orient away from the humanistic factors, and toward the more measurable characteristics of battlefield stress. "Battle stress is primarily a threat of annihilation. This is a subjective stress which however has a lot to do with the reality of the war." [52] It is this reality of war that is the subject of this section. Included are the sub-topics of intensity and violence, duration, fatigue, type action, and isolation.

Intensity and Violence

It is now accepted that the actual stresses of combat are primarily responsible for combat stress casualties, and not the type unit to which a soldier is assigned. In World War II, the U.S. units most vulnerable to combat stress were the infantry--they did most of the fighting. More recently in the Israeli Defense Force, it has been the armor units suffering most of the battle stress reactions. The reason

again, is because the Israeli armor units are the main fighting force and sustain a majority of the casualties.[53]

Moran describes the impact of the physical characteristics of combat as being caused by commotional shock and not only emotional shock. The man that cracks from being subjected to the intense blasts of an artillery barrage has suffered an injury just as the other wounded have. "Such a man had not been defeated by his thoughts; he was hurt as men with broken limbs are hurt, though there was not a scratch on him." [54]

In making this connection between the physical elements of battle and the psychological frailty of the human mind, it is possible to predict trends in stress reaction. Correlation studies show that the number of stress casualties varies as a function of the intensity of the combat, as measured in terms of wounded and killed in action. Therefore, more intense combat results in higher wounded and killed as well as higher psychiatric casualties. The number of stress casualties also varies with the length of continuous combat exposure. This will be addressed in more detail later in this section.[55]

More complete studies conducted on data from the 1973 Yom Kippur War confirm the positive correlation between wounded and killed, and the battle stress reaction casualties. They

showed that the frequency distribution of the percentages of combat stress casualties is very similar to that of the physical casualties except for a short time lag of the psychiatric behind the physical. "In other words, the more intense the fire the higher the number of psychiatric casualties." [56]

A final confirmation of the effects of intensity of battle on stress casualties is obtained by comparing the length of time required to suffer comparable rates of stress casualties under varied intensities of combat. The intense combat of the Normandy Invasion produced significant psychiatric casualties in 15-20 days of battle. The less intense combat in Italy did not produce comparable stress casualties until after 90 days of combat. [57] Thus, intensity of combat appears to be a major factor affecting the levels of combat stress reactions.

BF [Battle Fatigue] covaries with battle casualties or battle intensity; the greater the intensity of battle--that is the number of WIAs and KIAs--the greater the number of BF casualties and the more rapid the onset of BF. This probably occurs because high-intensity combat produces more fear, more "near-miss" situations, and greater loss of friends and unit leaders while preventing adequate rest. [58]

Duration

The rate of stress casualties is also a function of the length of time in combat. "By day or by night, in the

trenches or in billets, whatever the odds, still there was no such thing as one moment's complete security." [59] That comment was made about the conditions in World War I, but is still appropriate for combat today. It serves to highlight the cumulative nature of stress over time in combat.

Chapter II explained that there are two times that soldiers have increased susceptibility to becoming stress casualties. The first is during their initial combat experience. The second has been dubbed Old Sergeants' Syndrome because it does not occur until after extended periods in continuous combat. The primary cause of this second category of casualties is the duration of their combat experience. The U.S. experience in North Africa during World War II showed that combat exhaustion "is the inevitable result of continual combat. It will overcome any soldier when his individual limit of endurance is temporarily exceeded." [60]

An excellent descriptive analogy concerning the processes ongoing when a soldier is subjected to continuous combat is provided by Moran from his World War I personal experiences:

In the trenches a man's will power was his capital and he was always spending, so that wise and thrifty company officers watched the expenditure of every penny lest their men went bankrupt. When their capital was done, they were finished. [61]

The impact on the man subjected to the conditions of combat for extended times is graphically expressed when Moran

describes a British battalion removed from the front after the Somme:

All around me are the faces of men who do not seem to have slept for a week. Some who were tired before look ill; the very gait of the men has lost its spring. The sap has gone out of them. They are dried up...Men wear out in war like clothes.[62]

Analysis of extensive data on casualties from World War II allows us to translate Moran's observations into the actual impact that length of time in combat has on the psychiatric casualty rate. As was noted in the previous section, battle stress casualty rates are positively correlated to the intensity of combat as measured by wounded and killed in action. However, this correlation does not hold true indefinitely--there are limits.

In the Italian Campaign this correlation ceased to hold true beyond 200 days in continuous combat. At that time, while battle casualties were decreasing, nonbattle casualties (including battle stress casualties) were increasing. This phenomenon continued beyond the 200 day mark, out to 300 days, with the negative correlation between battle and nonbattle casualties becoming increasingly greater. Because disease rate (another component of nonbattle casualty data) remained constant in relation to the battle casualty rates, other factors were at work in causing the shift. Those

factors appear to be that the rate of combat stress casualties increases with duration of combat exposure.[63]

A statement in a report by the Surgeon General on the Italian Campaign summarizes the conclusions reached at the end of the war:

It was shown conclusively for the first time in the United States Army experience that neuropsychiatric symptoms were chiefly pressure symptoms induced primarily by the emotional stress of combat, and that the question of predicting neuropsychiatric breakdown resolved itself into one of determining when a man would break rather than who would break under the stress.[64]

Fatigue

It is very difficult to isolate the affects of a single variable among many when examining an issue as complex as battlefield stress. This is particularly true with determining the specific contribution of fatigue and sleep deprivation on stress casualty rates. In general terms, however, it is understood that combat failures (including combat stress) increase with excessive fatigue, lack of food, and lack of sleep and rest.[65]

Although sleep deprivation appears to be a physiological affair, the critical problems resulting from it are more psychological than physiological. "In a sentence, it is not a question of muscle, but of judgment and will." [66] The effects on judgment are primarily experienced in the

leadership and decision makers, while the effects on will are felt more in the lower ranking soldiers.

Sleep loss effects are significant because of their degradation to cognitive skills. For example, the impact on activities such as map reading, encoding/decoding, reasoning and short term memory occurs much quicker and more severely than on physical tasks such as marching, shooting and moving ammunition. With decision makers, it is not only an impact in quantity of work produced, but also in quality. With leaders and planners, this reduction of quality is dangerous during time of war.

Ironically, this degradation of performance is usually unrecognized and unacknowledged by those affected. Typical, is this observation of a continuous operations scenario during a three week training exercise: "We were immediately struck by the reluctance (nay refusal) of the officers and senior NCO's to get any sleep." [67] It appears to be a point of pride to stay awake. Obtaining necessary sleep and rest is considered a sign of weakness among those who probably need it most. The danger in this phenomenon is that poor quality decisions are made under these circumstances--decisions which affect morale and ultimately the combat stress level of all concerned.

Another interesting aspect of sleep loss and fatigue is noted in the symptoms of soldiers experiencing it:

Vacant stare, pale skin, postural instability, slowness of response, lapses in attention, inability to grasp directions, difficulties with numbers, difficulties with expression, unclear speech, decision problems and message garbling.[68]

Slower reaction time; increased time to perform a known task; short-term memory decrement; impairment in learning speed, reasoning, and complex decision chain; errors of omission; lapses of attention; irritability; depression; and erratic performance.[69]

Of particular interest here, is the tremendous similarity between the symptoms of sleep deprivation and those of combat stress casualties--especially the symptoms of Old Sergeants' Syndrome.

Another characteristic of sleep loss that has a direct bearing on the subject of battlefield stress is the cumulative nature of sleep loss. Losing a few hours sleep each night repeatedly will eventually catch up to an individual. His performance will be degraded as he becomes more and more fatigued. The only solution is to pay back this sleep deficit. This pay back is not necessarily something that can be accomplished with one good night of sleep, although any amount of rest and sleep contributes toward recovery. For example, full recovery time for 48 hours of continuous operations is approximately 12 hours; 72 hours without sleep requires 24 hours; and 96 hours without

sleep will result in a need for 120 hours on a "normal sleep cycle." [70] This data, which is independent from the subject of combat stress, nonetheless corresponds well with treatment of stress casualties. These casualties can usually be successfully treated in three or four days with the primary emphasis of the treatment being rest, food and sleep.

The importance of fatigue to the problem of battlefield stress is irrefutable:

Weakness in the somatic sphere automatically diminishes ability to perform the activity required for aggressive action. An individual with lessened physical powers is temporarily like the severely passive soldier who can only absorb fear. [71]

The soldier who is fatigued to the point that he is passively absorbing fear and the other stresses of combat is soon to become a battle stress casualty, if he is not already one.

Type of Action

The type of military action a unit experiences has a direct bearing on the combat stress casualty rate of that unit. Noy has combined the results of the extensive studies researched by Stouffer (1949) and Glass (1973) and summarized the effects that different types of battles have on non-combat casualties.

In an assault on a fortified position, heavy resistance is anticipated. Both combat and non-combat casualties are expected to be high. Likewise, heavy losses are predicted in an assault of a defended beach such as Omaha beach during the Normandy Invasion. This is because of the high physical losses, uncoordinated actions, and lack of heavy weapons and equipment, which all tend to increase the psychiatric casualty rate. Defense against a heavy attack, such as Anzio, is a third form of battle. Here, the constant enemy pressure without foreseeable letup also produces high physical and stress casualties. It is only in these first three forms of intensive combat where high combat stress casualties are produced.[72]

The last four types of combat result in relatively low rates of battle stress reaction and other casualties. Included are the categories: advancing with an organized front, infiltration warfare without a fixed front, retreat after a breakthrough, and a holding action with little combat. In all of these four cases, the intensity of the combat is much lower, the amount of contact is reduced, and the use of heavy artillery is minimized. The end result is lower levels of all types of casualties.[73]

A very key causal factor in these different rates of stress casualties from the different types of combat is in the level of activity of the soldiers. Moran explains:

In the presence of danger man often finds salvation in action. To dull emotion he must do something; to remain immobile, to stagnate in mind or body, is to surrender without terms. Whereas movement, work of any kind, helps to deliver him from those feelings which are traitors to his better nature.[74]

Isolation

Isolation is the last of the physical aspects of combat to be discussed. It will be considered in three ways: isolation from the enemy, isolation from support, and isolation from individuals. A key point to isolation is that it may be real or perceived. Perception, however, is interpreted as reality by the mind.

In the training that prepares soldiers for combat, there are always masses of people and equipment around. The individual soldiers are always exposed to movement, noise and lots of other people. Even in field training exercises, the closest approximation to combat, there is never a feeling of loneliness or isolation. "He thinks of battle as the shock impact of large and seeable forces, a kind of head-on collision between visible lines of men and machines extending as far as the eye can see." [75]

Because of these training experiences, it is somewhat of a shock when he enters combat and comes under fire the first time. His perceptions of the battlefield are shattered. "He had expected to see action. He sees nothing. There is

nothing to be seen. The fire comes out of nowhere...Where are the targets? How does one engage an enemy who does not seem to be present?"[76] This isolation from the enemy while still subjected to the effects of his weapons is traumatic, and certainly is a major stress on the battlefield.

Not only does the soldier feel isolated from access to the enemy, but he may also feel isolated from his support. A common sensing is that "we were fighting phantoms...We had to do it all alone. We got no support on either flank."[77] The reasons for these feelings of isolation from other units and supporting arms are many.

The nature of the terrain over which maneuver forces proceed toward engagement, the nature of protection, and the physical reaction to hostile fire all determine that forces which are endeavoring to remain invisible to the enemy must remain largely invisible to their own components.[78]

Even though these sensations of isolation from support are false, they are very real to the soldier feeling them in contact with the enemy.

Just as real is the feeling of isolation from the other members of the unit which is experienced by the soldier under fire from the enemy. The immediate reaction to contact is for everyone to go to ground. When this occurs, "under circumstances where they cannot see one another, the

moral disintegration of that line is for the moment complete...What has been a force becomes a scattering of individuals." [79]

The effects of this triple isolation on the battlefield may significantly contribute to the overall stress level a soldier experiences in combat. His perception of isolation from seeing the enemy, from his own support, and from his buddies can be devastating when added to all the other stressors in combat.

Fear

The numerous studies conducted from World War II data are consistent in the finding that fear is the critical ingredient in combat failure. "The key to an understanding of the psychiatric problem is the simple fact that the danger of being killed or maimed imposes a strain so great that it causes men to break down." [80] In its simplest form, therefore, fear is a response to danger. It appears that fear is the true cause of battlefield stress casualties, while the other factors discussed previously are basically accomplices which contribute to the degree that fear affects each individual.

General

In combat, there is a constant interaction between the physical and the mental. "Physical fatigue, hunger, disease, thirst, and above all, the stress of adverse climatic conditions, can reduce the physical state of the soldier to such an extent that his will to fight is broken." [81] When he loses his will, he can no longer control his fear and must react in some way. Responses to fear are discussed later in this section.

Man is unique among animals in his response to fear. "All animals have life-preservation reactions; but probably it is only man, that fears death, for it is only man that knows--or thinks he knows--enough about death to feel in it the terror of the unfathomed and unknown." [82] This is an important point as it explains the strong impact of fear on soldiers in combat. Fear is an internal struggle that, like the enemy, must be overcome in battle. It is, by definition, "a natural, emotional reaction to what appears to be a radically unfit or unfriendly condition or environment." [93] What environment better fits this description than the battlefield?

Moran is succinct in his explanation of fear when he writes, "fear is the response of the instinct of self-preservation to danger." [84] The idea of fear being an instinct is

supported in part by Dollard's analysis which states that fear is a normal response to danger which "begins with strong bodily responses and is then registered in the mind." [85] The inference here is that all men in combat experience fear physically, but whether they break from it is determined psychologically.

Perhaps the most harmful characteristic of fear is that it is highly contagious. It is like an infectious agent that spreads quickly and finds other victims. In large doses, any person can be overwhelmed and become ineffective. Even in small doses over time, its effects are cumulative unless periodic relief is obtained. Eventually, even the strongest succumb to its pressure and become stress casualties. [86]

Causes of Fear

Basically, fear is a response to danger. The danger can be present and immediate, or it can be imagined or potential. Regardless, of whether real or imagined, the "primary stress of the battlefield is the fear of disfigurement, mutilation, intense pain, death," etcetera. [87]

The effects of immediate danger are compounded by the element of surprise on the battlefield. The occurrence of the unexpected can result in the routing and panic of entire units. Investigations into seven cases of panic in World

War II by Marshall revealed that they all started with some small event.

The trouble began because somebody was thoughtless, somebody failed to tell other men what he was doing...Nothing is more likely to collapse a line of infantry in combat than the sight of a few of its numbers in full and unexplained flight to the rear.[88]

Another graphic example of the terror and destruction that can result from the unexpected is provided by Ardant Du Picq's description of the ancient battle of Cannae. In this battle, Hannibal's 36,000 soldiers were able to destroy a superior force of 70,000 Romans. Just when the Romans had penetrated and thought they were victorious,

suddenly the wings were attacked by the African battalions; the Gauls, the Iberians, who had been in retreat, returned to the fight. The horsemen of Hasdrubal, in the rear, attacked the reserves. Everywhere there was combat, unexpected, unforeseen. At the moment when they believed themselves conquerors, everywhere, in front, to the right, to the left, in the rear, the Roman soldiers heard the furious clamour of combat.[89]

Ardant du Picq's study of ancient battle disclosed repeatedly that it was the surprise effects of an attack from a flank or the rear that was chiefly responsible for winning battles. He quotes Xenophon as saying, "be it agreeable or terrible, the less anything is foreseen, the more does it cause pleasure or dismay. This is nowhere better illustrated than in war where every surprise strikes terror even to those who are much stronger."[90]

It has been said that, "most battle fear is anticipatory, the product of impending evil".[91] However, the fears caused by the anticipation of danger are every bit as detrimental as those which are experienced by an actual danger. In considering upcoming operations, there is a tendency to dwell on the worst possible outcome. This apprehension about the uncertainty of the future is subject to gross exaggeration which can result in high levels of fear.

Another type of fear which is closely related to anticipatory fear is one that occurs in retrospect. This may take place after the danger has passed from a perilous, life-threatening situation. One such example is described by Moran about a soldier who escapes a close call from artillery fire:

You say "What luck, but can it last?" A dozen times you have escaped the improbably [improbable] until you are forced at last to realize the odds. The mind is full of what may come because it is full of what has gone. All danger is long past, but this does not mean that the imagination is out of hand, only that reason jogged by memory is presenting her bill.[92]

Moran describes this apprehension as being "fear in its infancy. There is no danger, so it has been labelled imaginative fear, but it has its roots in reason, it feeds on the memory of things." The danger here, is that "more life may trickle out of men through thought than through a

gaping wound."[93] In time, the end result from such processes is a battle stress casualty.

Responses to Fear

"Of all the emotions, fear is the most compelling and gives us the strongest urge to action whose aim is to remove the cause of the threat of injury or suffering either by fighting or by running away."[94] This instinctive urge to action is prodded forward by fear clearing the mind of irrelevant matter and increasing the flow of adrenalin in the body. These actions improve the body's preparedness for either fight or flight. However, this benefit of fear has a limit, beyond which action is hindered by man freezing--incapable of action.

The physiological responses to fear are significant. The body reacts with digestion and assimilation slowing; adrenalin flowing readily; respiration and circulation rate increasing; the heart pounding with a rapid pulse rate; tenseness of muscles; and sweating. Uncontrolled reaction to fear (flight) can result in either concealment or escape to get away from the cause of the fear. Concealment may take the form of physical concealment, or hiding in a lie. Escape too may be physical, or may take other forms such as drugs, alcohol, suicide or simply shutting one's eyes.[95]

A specific reaction of a man who is unable to cope with extreme fear may take the form of a soldier who fails to fire his weapon in response to contact with the enemy:

The failure of the average soldier to fire is not in the main due to conscious recognition of the fact that the act of firing may entail increased exposure. It is a result of a paralysis which comes of varying fears. The man afraid wants to do nothing; indeed, he does not care even to think of taking action.[96]

A dangerous situation in combat which causes fear also creates an internal conflict in the individual soldier. The fear of injury or death is pushing him to flight, while the fear of losing face with his friends if he runs is pushing him to remain in place and fight.[97] This internal dilemma further enhances the level of stress he is undergoing in combat.

Defenses Against Fear

Once the soldier gains control and chooses to fight rather than attempt to escape, the fear lessens. As the action progresses, fear begins to disperse, and an internal calm prevails compared to the pre-attack anticipation. It seems that once in the midst of conflict, there is a sense of having some control of the outcome, no matter how bleak the situation.[98]

The question then becomes, what allows man to make the decision to fight rather than escape? The answer rests with the concept of courage. "Courage may be defined as the mental determination to persist in spite of being afraid." [99] Like any good thing, courage is available in limited quantities. Eventually it is used up. A soldier can resist prolonged and repeated exposure of fear in combat as long as his supply of courage lasts. Then, he either refuses to continue or becomes a psychiatric casualty.

Moran provides an excellent discussion on courage when he explains:

Courage is a moral quality; it is not a chance gift of nature like an aptitude for games. It is a cold choice between two alternatives, the fixed resolve not to quit; an act of renunciation which must be made not once but many times by the power of the will. Courage is will power. [100]

Courage is will-power, where if no man has an unlimited stock, and when in war it is used up, he is finished. A man's courage is his capital and he is always spending. The call on the bank may be only the daily drain of the front line or it may be a sudden draft which threatens to close the account. [101]

There are many variables affecting the balance in Moran's bank account of courage. First, fear is primarily responsible for using courage. Similarly, the occurrence of unexpected events tend to drain the account. Third, apprehension about the unknown is detrimental. Whatever a soldier has never seen before is usually expected to be

worse than it really is. Also using up precious amounts of courage is the fear of failure--of letting down his friends. Fifth, the noise and sight of battle tend to unnerve and destroy will. This is particularly true of intense artillery barrages. Sixth, the fear of killing creates a mental conflict which further drains the account of courage. Finally, exhaustion, both mental and physical, detract from a man's courage. Soldiers must have a break to build the account back up.[102]

A recap of this section must repeat that fear is caused by either real or imagined dangers on the battlefield. "From a quantitative standpoint it can be measured by the intensity of enemy fire power particularly when the effect of that fire power is confirmed by the grim evidence of nearby casualties." [103] Although fear may be controlled by courage, it can result eventually in combat stress casualties which are "the most direct manifestation of combat fear." [104]

Summary

Chapter III has highlighted those factors affecting the levels of combat stress experienced by soldiers in time of war. It can be concluded from the previous discussion that fear is the chief cause of battlefield stress, while the

individual factors, morale factors, and physical aspects of combat all combine to determine the extent that the stresses of combat will affect the individual soldier. The contribution of one element cannot be separated from the others. They are all intertwined to the point that:

individual adaptation to the stress in the combat zone is determined by the outcome of a struggle in which the sustaining properties of personality, physiological status, training, group unity and leadership are opposed to the crippling effect of battle fear.[105]

CHAPTER III

ENDNOTES

1. Shabtai Noy, "Combat Psychiatry: The Israeli Experience" (paper presented at the AMEDD Division and Combat Psychiatry Short Course, Monterey, California, April-May, 1980), pp. 1-3.
2. Brian H. Chermol, "The Quiet Enemy: Combat Stress," Army, 33 (September, 1983), p. 20.
3. Noy, "Combat Psychiatry," p. 4.
4. Zahava Solomon and Shabtai Noy, "Who Is At High Risk for Combat-Reaction?" (paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983), pp. 2-4.
5. Reuven Gal, "Unit Morale: Some Observations on Its Israeli Version" (unpublished paper, Walter Reed Army Institute of Research, February, 1984. Previous edition of this paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983.) p. 9.
6. Albert J. Glass, "The Problem of Stress in the Combat Zone," Symposium on Stress (16-18 March 1953) (Washington, D.C.: U.S. Army Medical Service Graduate School, Walter Reed Army Medical Center, 1953), p. 101.
7. Samuel L. A. Marshall, Men Against Fire (Gloucester, Mass.: Peter Smith, 1947), p. 49.
8. Carl von Clausewitz, On War, translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), pp. 113-114.
9. Charles McMoran Wilson Moran, The Anatomy of Courage, (Boston: Houghton Mifflin, 1967), p. 149.
10. Shabtai Noy, "Division-Based Psychiatry in Intensive War Situations," Journal of the Royal Army Medical Corps, 128 (1982), p. 111.
11. U. P. Williams, "They May Not Die - But They Wither Fast," Military Review, XXX (July, 1950), p. 21.

12. Gal, "Unit Morale," p. 2.
13. Ibid., p. 1.
14. Ibid.
15. T.S. Hart, "Determination In Battle," Armor, .XXXIX (May-June, 1980), pp. 33-34.
16. Shabtai Noy, "Battle Intensity and Length of Stay in the Battle Field as Determinants of the Type of Evacuation," (paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983), p. 4.
17. Gal, "Unit Morale," pp. 6-7.
18. Larry H. Ingraham and Frederick J. Manning, "Psychiatric Battle Casualties: The Missing Column in a War Without Replacements," Military Review, LX (August, 1980), p. 27.
19. Meir Steiner and Micha Neumann, "Traumatic Neurosis and Social Support in the Yom Kippur War Returnees," Military Medicine, (December, 1978), pp. 866-868.
20. Ibid.
21. Hart, "Determination in Battle," p. 34.
22. Moran, The Anatomy of Courage, pp. 175-176.
23. Williams, "They May Not Die," p. 20.
24. Marshall, Men Against Fire, p. 42.
25. Gal, "Unit Morale," p. 8.
26. Brian H. Chermol, "Psychiatric Casualties in Combat," Military Review, LXII (July, 1983), p. 28.
27. John Dollard, Fear in Battle (Westport, Conn.: Greenwood Press, inc., 1977). (Reprint of original published in 1944 by The Infantry Journal, Washington, D.C.), p. 46.
28. Marshall, Men Against Fire, p. 42.
29. Ibid., p. 151.

30. Ibid.
31. Albert J. Glass, "Psychotherapy in the Combat Zone," Symposium on Stress (16-18 March 1953), (Washington, D.C.: U.S. Army Medical Service Graduate School, Walter Reed Army Medical Center, 1953), p. 290.
32. Matthew D. Parrish, "Combat Psychiatry in Varied Settings," Collected Papers, 1970-1980, M.D. Parrish, M.D. (Washington, D.C.: U.S. Department of the Army, Office of the Surgeon General, 1981), p. 4.
33. Noy, "Combat Psychiatry," p. 13.
34. William J. Slim, Defeat Into Victory (New York: David McKay, 1961), p. 95.
35. Robert L. Egbert, Robert V. Katter, and George D. Greer, Jr., Incidental Observations Gathered During Research in Combat Units, (Fort Ord, CA.: U.S. Army Field Forces, Human Research Unit No. 2, 1953), p. 10.
36. Marshall, Men Against Fire, p. 49.
37. Brian H. Chermol, "Battle Fatigue," Infantry, 74 (January-February, 1984), pp. 13-14.
38. Marshall, Men Against Fire, p. 103.
39. Gal, "Unit Morale," pp. 7-8.
40. Charles J. J. Ardant du Picq, Battle Studies, translated from 8th edition by John N. Greely and Robert C. Cotton (Harrisburg, Penn.: Military Service Publishing, 1946), p. 97.
41. Egbert, Katter, and Greer, Incidental Observations, pp. 6-8.
42. Dollard, Fear in Battle, p. 44.
43. Marshall, Men Against Fire, p. 105.
44. Slim, Defeat Into Victory, p. 25.
45. Ibid., p. 154.
46. Ibid.
47. Ibid.

48. Marshall, Men Against Fire, pp. 120-122.
49. Ibid.
50. Williams, "They May Not Die," p. 22.
51. Gal, "Unit Morale," p. 10.
52. Noy, "Combat Psychiatry," p. 4.
53. Ibid., p. 6.
54. Moran, The Anatomy of Courage, pp. 18-20.
55. Chermol, "Battle Fatigue," p. 13.
56. Itzhak Levav, Haim Greenfeld, and Eli Baruch, "Psychiatric Combat Reactions During the Yom Kippur War," American Journal of Psychiatry, 136:5 (May, 1979), p. 638.
57. David H. Marlow and Larry H. Ingraham, "Emphasizing Cohesion, Morale Can Help Prevent Battle Stress," Army, 33 (July, 1983), p. 16.
58. Chermol, "Psychiatric Casualties in Combat," pp. 28-29.
59. Moran, The Anatomy of Courage, p. 70.
60. Chermol, "Psychiatric Casualties in Combat," p. 28.
61. Moran, The Anatomy of Courage, pp. 63-64.
62. Ibid.
63. Williams, "They May Not Die," pp. 20-21.
64. Ibid.
65. Glass, "Problem of Stress in Combat Zone," p. 95.
66. Frederick J. Manning and Larry H. Ingraham, "Continuous Operations: Who Melts, When, and Why?" Field Artillery Journal, 49 (May-June, 1981), p. 15.
67. Ibid.
68. Henry L. Thompson, "Sleep Loss and Its Effect in Combat," Military Review, LXII (September, 1983), p. 20.

69. George R. Frank, "Continuous Operations," Armor, XCI (January-February, 1982), p. 20.
70. Thompson, "Sleep Loss and Its Effect in Combat," p. 19.
71. Glass, "Problem of Stress in Combat Zone," p. 95.
72. Noy, "Division-Based Psychiatry," pp. 109-110.
73. Ibid.
74. Moran, The Anatomy of Courage, p. 38.
75. Marshall, Men Against Fire, pp. 45-46.
76. Ibid., p. 47.
77. Ibid., p. 45.
78. Ibid., p. 89.
79. Ibid., pp. 129-130.
80. Ingraham and Manning, "Psychiatric Battle Casualties," p. 23.
81. Hart, "Determination in Battle," p. 32.
82. Michael F. Belcher, "Fear in Combat," Marine Corps Gazette, 64 (September, 1980), pp. 49-50.
83. Ibid.
84. Moran, The Anatomy of Courage, p. 16.
85. Dollard, Fear in Battle, pp. 4-10.
86. Glass, "Problem of Stress in Combat Zone," p. 92.
87. Frank, "Continuous Operations," p. 22.
88. Marshall, Men Against Fire, p. 145.
89. Ardant du Picq, Battle Studies, p. 66.
90. Ibid., pp. 81-82.
91. Belcher, "Fear in Combat," p. 51.
92. Moran, The Anatomy of Courage, pp. 112-113.

93. Ibid.
94. "Fear and Pain," (Seminar Report, M.N. Naylor, chairman) Journal of the Royal United Services Institute for Defence Studies, 25 (September, 1980), p. 69.
95. Belcher, "Fear in Combat," p. 50.
96. Marshall, Men Against Fire, p. 71.
97. Ingraham and Manning, "Psychiatric Battle Casualties," p. 23.
98. Belcher, "Fear in Combat," p. 51.
99. Journal of the Royal United Services Institute for Defence Studies, p.70.
100. Moran, The Anatomy of Courage, p. 61.
101. Ibid., p. xii.
102. Hart, "Determination in Battle," p. 31.
103. Glass, "Problem of Stress in Combat Zone," p. 92.
104. Ibid.
105. Ibid., p. 99.

CHAPTER IV

STRESS ON THE FUTURE BATTLEFIELD

Chapter IV serves to explain how the factors contributing to combat stress may apply to future combat. The information in Chapter III was based on data collected and analyzed from past major war experiences. In many cases, the conclusions reached in Chapter III apply without clarification to future war. In other cases, circumstances in the future may be different, so as to require a modification or elaboration of the previously discussed factors affecting combat stress. Chapter IV provides this bridge from the past to the future by first giving a general description of what modern combat might be like, followed by brief sections on: the effects of continuous operations; chemicals on the battlefield; impact on treatment procedures; and a discussion of future battlefield stress casualty rates.

The Modern Battlefield

A transition from the past to the present is appropriately introduced by Moran's comments on the difference between war

of the 20th century and previous wars. His point is as applicable today as it was for World War I.

The real difference between the war of 1914 and the wars of history lay in the absence of a close period, when men safe for the moment could rest and build up a reserve. It ended inevitably in the breaking of men who would have passed the test of any single day's fighting with credit...There was no rest, no moment's peace.[1]

Moran's reference still applies to the problems that may be experienced in future war as a result of continuous operations and the lack of a safe haven where a soldier can build up his bank account of courage.

A second idea that serves to bridge the ancient to the modern is extracted from a quote from Ardant du Picq: "Man always has had the greatest fear of being trampled by horses. That fear has certainly routed a hundred thousand times more men than the real encounter." [2] What was true about horses in ancient combat must be even more applicable today with the terror caused by massed armor and mechanized vehicles in the attack.

Thus, there are those elements in past warfare which are equally or even more relevant to modern combat. Following is a concise statement of those and other characteristics of modern combat which will impact on the levels of battlefield stress experienced by soldiers in the future:

The nature of modern weapons systems have altered the nature of combat leadership, even battle itself, by their increased range and lethality. The frontage of the battlefield has been extended such that friend and foe alike are farther apart, more unseen. The intensity of battle is expected to be more fierce than ever experienced; the range and lethality of future weapons, the casualties they are expected to produce, and the attendant battlefield isolation, will inherently increase the temptation to hide and shirk battle, and are also expected to increase battle stress casualties.[3]

The potential of these new and improved weapons for producing fear and terror in soldiers is unprecedented. Future combat "can be expected to include chemical and biological weapons that can incapacitate or kill quickly; tactical nuclear munitions that can destroy, burn, or irradiate; and laser beams that blind or stun." [4] The additional burdens of wearing chemical and biological protective clothing for extended periods of time; enemy air defense systems robbing the U.S. forces of their usual air superiority; continuous combat operations over extended periods of time; and a relative inability to communicate electronically will further contribute to combat stress casualties above and beyond previous levels.

Another significant difference between past and present wars is the increased vulnerability of the rear areas to enemy attack. There will be even fewer safe areas, as in the past, where the regions behind the forward edge of the

battle area were considered relatively secure. The further back from the front, the safer it became.

Soviet tactics now identify support functions in rear areas as being key targets for indirect conventional fires and for nuclear and chemical weapons. Those support units in the rear areas are particularly vulnerable to such attack, as they are generally large, concentrated and less mobile than combat units. Also, they are probably less well-trained in those combat skills which aid in countering the effects of combat stress resulting from such attacks.

This threat to the rear combined with questionable control of the air make medical evacuation of casualties by helicopter forward of brigade clearing stations unlikely. The result could be a front line evacuation that is far less responsive and slower than planned for by present medical evacuation procedures.[5] Add the probability against wheeled ambulances surviving the intensity of modern combat, and the result is a soldier who now must face some fear of dying from wounds because of a lack of prompt evacuation in addition to the fears of death and mutilation.

Even the normal combat fears could be different in the future.

While the thought of disfigurement or dismemberment has been horrifying to soldiers in past wars, the thought of permanent laser

blindness or slow death by radiation or its aftereffects will be additional concerns not experienced by earlier generations.[6]

Continuous Operations

The conduct of continuous combat operations will be a contributor to increased battle stress casualties in future war. A belief that the next major war will include continuous land combat is more than mere presumption if one accepts the assumption that such a war will include forces of the Warsaw Pact. Marshal Siderenko of the Soviet Union is quoted as saying: "The offensive will be conducted day and night without let up until the enemy is defeated." [7]

This philosophy is incorporated in Soviet military doctrine, more than in U.S. doctrine. Its more descriptive title is Continuous Land Combat which may be defined as,

the capability of a maximally engaged force to effectively operate in all weather and warfare conditions, conducting the central battle and concurrently generating the force required to fight the succeeding central battles without pause.[8]

The ability of the Soviet Union to execute such a doctrine appears more feasible now than ever before. It is made so by their extensive mechanized forces; all weather, day and night capable, sealed environment vehicles; and the seven day self support concept of Soviet divisions. Adding credibility for the conduct of such continuous operations is

the Soviet knowledge that if they can defeat existing NATO forces using continuous action before the arrival of follow-on forces three or more weeks after initiation of hostilities, they have a chance at a quick victory. "Despite the many arguments or rationalizations against such a capability it is obvious that they plan, train, organize, develop and equip their forces to conduct a continuous day, night, all weather, unrelenting offensive action." [9]

Although the United States is aware of the Soviet intent toward continuous land operations, there has been little done in the study and testing of the overall effects of such operations and the associated stress on the commanders, decision makers, staffs and soldiers. Most training exercises are simply not long enough to be able to measure the cumulative effects of continuous operations on battlefield stress factors. Yet, it seems obvious that the "lack of sleep, physical and mental fatigue, and emotional stresses related to fear, anxiety, uncertainty and physical danger" during the execution of continuous combat operations must weigh heavily on the ability and efficiency of commanders, staffs and soldiers to both fight the battle and to resist becoming a stress casualty. [10]

A major problem with the relative inability of the United States Army to execute continuous combat is that the Tables of Organization and Equipment do not authorize sufficient

personnel. Existing authorization documents do not allow sufficient personnel to sustain a unit fighting a medium to high intensity conflict day and night over extended periods of time. The problem is further compounded at the lower unit level where, the closer the staff is to the front, fewer personnel are available to perform the needed staff functions.[11]

At present, the U.S. staffing of cognitive/decision making personnel in the Army is oriented toward 14 to 16 hour days. It is not possible for these key leaders and staff personnel to perform 24 hours a day for prolonged periods of combat. A similar problem exists with low-density specialists such as computer operators, image interpreters, linguists, medical personnel, specialized equipment repairmen and operators, and key staff officers. The end result of such shortcomings will be measured in casualties. "There will be an unprecedented number of casualties from fatigue and stress alone. There will also be many injured or wounded indirectly resulting from those same factors." [12]

In addition to Soviet doctrine, modern technology pushes combat more toward the night. The picture of warfare "is likely to change dramatically as a result of the development of precision-guided weapons, remotely controlled unmanned aircraft, high-energy laser beams, and other advanced technology weaponry." [13] The characteristics of these

systems will tend to restrict the normal freedom of movement of the combat arms in the daylight. Units will be forced to conduct more night operations to reduce the effectiveness of this new technology.

Being forced to operate at night brings new problems to the soldier. He must "be able to find his way and maintain a direction of movement, be able to detect, locate, and identify targets from sensory information, and be able to maintain efficiency under stress and during extended operations," at night.[14] These are requirements that are not always done well under daylight training conditions. Abilities to accomplish them at night vary widely between soldiers. Each of these functions takes on new dimensions and characteristics during darkness and under stress. Even vision through sophisticated night observation devices loses contrast and clarity normal to daylight vision. The end result of this relatively foreign experience is to increase the levels of combat stress because of restricted vision, isolation feelings, and more frequent misorientations.[15]

An even bigger problem with continuous land combat is the fatigue and sleep deprivation which inevitably occurs. The human body operates on a 24 hour cycle--a diurnal cycle--which regulates the normal physiological functions of the body. Included are: temperature, salivation, lacrimal secretions, gastric and biliary secretions, heart rate, blood

pressure, pupil restriction and overall metabolic rate. An important characteristic of the diurnal cycle is that the normal night effects occur whether the individual is asleep or awake.[16] Therefore, a person who is required to operate by staying awake in opposition to his cycle, cannot operate at the same level of proficiency. He is operating at something less than peak efficiency.

As continuous operations progress over time, sleep deprivation increases. The adverse effects of extended sleep deprivation in combat can be significant to the point where units become combat ineffective. A test of the effects of sleep loss was conducted using three infantry platoons over a period of nine days. One platoon received three hours sleep per night; one received one and one-half hours sleep per night; and the third received no sleep. Over the period of the test, the platoons were given normal military tasks to complete. These included development and improvement of battle positions, ambush and reconnaissance patrols, and defense of a battle position.[17]

The results of the experiment serve as a warning to the potential adverse effects of continuous operations on performance capability of units. The platoon with three hours sleep per night remained effective for the entire nine day period. The platoon receiving one and one-half hours sleep per night could only rally to immediate challenges

after four days, and on the fifth day, 50% of the platoon was lost to extreme fatigue and exposure. In the platoon without sleep, nobody completed the test. After three days, most had ceased to be effective, and from the fourth to fifth day, the entire platoon was withdrawn due to fatigue and inability to stay awake.[18]

In a less stringently controlled military environment, Manning and Ingraham observed a U.S. artillery battalion in a three week exercise in Germany. The exercise included a 36 hour phase of continuous operations. They noted that most of the troops managed to get short periods of sleep even with the high level of activity and noise in the area. Although there were no incoming artillery rounds, they

think it safe to assume that most of the junior enlisted ranks will snatch the three hours of sleep necessary to support the largely physical and forced-paced work demanded of them. The 'will and drive to continue,' however, may be worth some consideration.[19]

Although able to perform the necessary physical tasks, the consideration needed is in their increased vulnerability to becoming a combat stress casualty as a consequence of the fatigue induced by continuous operations.

The more dangerous effects of sleep deprivation are seen in the performance of decision makers--commanders, executive officers, fire direction center personnel, and other key staff personnel. Although forced-paced activities such as

responses to requests for fire, were acted on in a timely fashion, there was a tremendous degradation in self-paced activities such as meteorological corrections to firing data, fire planning, attention to camouflage, and improvement of positions. This is of major concern, because good planning should be a self-paced activity (proactive) rather than forced-paced (reactive) in response to enemy actions. Additionally, these key decision makers "will very likely be more susceptible to the stress of continuous high intensity combat than those with more labor-intensive jobs." [20]

Stress on the Chemical Battlefield

The mere fact that the Soviets reference a conventional variant of war as apart from their expected conduct of war, implies that they intend to use chemical weapons routinely. [21]

The chemical battlefield will present a special challenge. The environment, protective clothing, contamination and mass casualty situations will act synergistically slowing down straining and choking the combat medical support system. [22]

The introduction of chemical weapons will probably result in psychiatric casualties increasing markedly. A sampling of how devastating the chemical battlefield could become is seen in the spontaneous results of field training exercise

wherein medics were training in managing mock chemical casualties.[23]

Tasks required of the exercise included routine military duties such as camouflaging a vehicle in full chemical protective clothing --Mission Oriented Protective Posture IV (MOPP IV)--over a one hour period of time. The unexpected results of this training period were that psychiatric symptoms were observed immediately after the start of the exercise and throughout the remainder of the hour. In all, fourteen of the seventy participants were affected in some way by wearing the protective clothing.[24]

Three of the participants "experienced sufficiently debilitating symptoms to require termination of their continuation in the exercise." [25] After donning their masks and clothing, they were overcome by panic, shaking or hyperventilation. All three of these soldiers had previously received intensive training with chemical protective gear and the gas chamber. They did not, however, conduct chemical training with simultaneous execution of other soldier skills.

Eleven other participants also suffered psychological reaction during the training. Eight of the eleven showed "blatant poor judgment in problem solving and frequently complained of dyspnea, visual blurring, confusion, and

fear."[26] Overall, of the sixty combat arms and ten medical soldiers, at least twenty percent had negative psychiatric reactions. This number would have been even higher had the exercise continued beyond one hour or had personnel been available for closer observation.

The chief cause of such a high stress reaction in this training appears to have been the chemical protective gear itself. The overcoat, boot covers, trousers, and gloves obscure the process of identification and recognition of friends and leaders. This has the effect of hindering communication by stifling talk and interpersonal interaction, which further impacts adversely on unit cohesion.

The cocoon-like effects of the chemical protective clothing is similar to sensory deprivation with all of its associated psychiatric reactions--"apprehension, paranoia, disorientation, loss of time sense, depersonalization, dissociation, distorted bodily sensations, hallucination, confusion, and panic."[27]

The potential for severe combat stress reaction from assuming a high level of Mission Oriented Protective Posture is even greater than that implied from the training exercise discussed above. In addition to the direct psychological response by the soldier, there are physiological

considerations which must be considered in chemical combat environments. It is possible that heat will be an even bigger problem on the chemical battlefield. In full chemical gear, infantry can only operate about twenty minutes in temperatures ranging from 75 to 90 degrees Fahrenheit where high exertion is needed. Even tank crews "buttoned up" inside their tanks show the effects of heat stress in less than one hour at 100 degrees.[28] This secondary effect of the chemical battlefield will further weaken and fatigue the soldiers in combat, making them even more susceptible to becoming a stress casualty. If there is good news in the above information, it is that the affects of a chemical battlefield impact on both sides equally adversely.

Treatment of Stress Casualties

The complex issue of treating combat stress casualties in modern war has been best addressed by the Israelis. As a result of the unexpectedly high rate of battle stress casualties in the October 1973 War, the Israelis developed a systematic doctrine and an organizational structure within its combat units to resolve their shortcomings. The key ingredient in this new structure and doctrine is a field psychologist who "may well be the IDF's [Israeli Defense

Force] secret weapon in extracting maximum combat power from its limited manpower pool." [29]

Israel's basic fighting unit is the brigade. Each brigade now has two staff psychologists assigned who are responsible to the commander for prevention and treatment of battle stress casualties. Using the revised procedures and organization in Lebanon in 1982 resulted in stress casualty rates only slightly lower than in 1973, but with "the new system of identification, prevention and treatment, over 80 percent of the battle-shock casualties in Lebanon were treated at the front and returned to their units where they became effective soldiers again." [30] It appears that the success of the Israeli system lies in establishing the necessary structure within which the long established treatment procedures can be accomplished.

Even with a good understanding of the treatment procedures required for combat stress casualties, it may still be a problem on the modern battlefield. In the highly mobile warfare expected in future combat, returning casualties of all types to their original units after treatment could be difficult in light of transportation assets being at a premium. Not being able to return soldiers to their units would run counter to the maintenance of strong cohesion and unit identity. Even the seemingly simple task of sorting out the stress casualties from the physical casualties in a

high intensity conflict such as that envisioned in AirLand Battle could be a major effort which is subject to error.[31]

The chaos that could be common on the future battlefield would dictate that the corpsmen and other medical personnel be thoroughly educated by the psychiatric personnel in identifying the stress casualties so they are not evacuated with the physical casualties. An erroneous evacuation of stress casualties which lands them in an evacuation hospital among a myriad of surgical casualties would only serve to worsen the condition of the stress casualty.[32] This has been proven time and time again from World War I through Israel's experience in Lebanon in 1982.

A final problem with the treatment of combat stress casualties in modern warfare is the potential for the United States division based psychiatry system to become overwhelmed by casualties and thus ineffective in treating them. The existing system is effective in low to middle intensity situations, but unable to cope with the volume of casualties that will result from high intensity engagements of the future. The entire medical system at all levels will be stretched to the limits of its capability. The emphasis will be on the application of life saving measures, especially at lower levels such as battalion. There will be no time for the treatment of the stress casualties at the

level where they may have the best chance of full recovery, were they to receive proper treatment.[33] Ironically, those casualties who could be most easily and most quickly treated and returned to combat as replacements may end up becoming permanent casualties in future war because of improper evacuation and treatment.

Future Stress Casualty Rates

The Israeli Defense Force is recognized as being a highly motivated, well-trained and cohesive military force. In spite of these accolades and their proven ability to win in combat against overwhelming odds, they still suffered significant numbers of battlefield stress casualties in 1973 and 1982.[34] It is easy to infer from the Israeli experiences that the United States Army is not immune from stress casualties, and is subject to experience them in high numbers in future war.

The 1973 Yom Kippur War is perhaps the best approximation of what future war will be like as far as its impact on combat stress casualties. In it,

The power of the high-intensity battlefield to break men was starkly demonstrated. The 1973 war saw under three weeks of heavy fighting, but the combat was among the most intense of this century.

Levels of combat-stress casualties that would have taken months to generate in World War II were

reached in days in the face of contemporary weaponry.[35]

The intensity and continuous operations of the 1973 war are unprecedented in the combat experience of the United States. The United States could enter the next major war with no units having any significant combat experience; without crystallized unit cohesion hardened by battle experience; having to wait a long delay for fresh replacements; and with the original units in place being required to hold against the initial attack until reinforced weeks later. This combination of circumstances matched with the potential intensity of future war may result in the United States experiencing very high psychiatric casualty rates.[36]

Accurate predictions on the extent of the stress casualty problem in modern war are not possible. However,

based on U.S. Army experience in previous conflicts and Israeli Defense Force experiences in more recent combat operations, it can be predicted that, in high-intensity conventional warfare, at least one psychiatric casualty will occur for every four battle casualties during the initial 30-day period.[37]

If consideration is given to the probability of the next major war being one characterized by continuous operations and nuclear, chemical and biological threats, the prediction for battlefield stress casualties increases to a ratio ranging from 1:3 to 1:2 stress to battle casualties in a 30-day period. It is estimated that beyond 30 days, stress

casualties will exceed battle casualties, and "most unit personnel may be psychologically ineffective after 60 days of continued, high-intensity combat." [38]

All things considered--the lethality of modern weapons, the effects of technological improvements in weapons systems, the conduct of continuous operations, the chemical battlefield, and the intensity of modern combat--warfare in the future may produce stress casualties at a rate far greater than ever experienced before. This prediction makes an understanding of the causes, cures and countermeasures of stress casualties even more important than in previous conflicts.

CHAPTER IV

ENDNOTES

1. Charles McMoran Wilson Moran, The Anatomy of Courage, (Boston: Houghton Mifflin, 1967), p. 69.
2. Charles J. J. Ardant du Picq, Battle Studies, translated from 8th edition by John N. Greely and Robert C. Cotton (Harrisburg, Penn.: Military Service Publishing, 1946), p. 92.
3. Jesse H. Denton, Fighting Power and the Maintenance of Combat Strength: The Imperative Allies of Technology, Study Project. (Carlisle Barracks, PA.: U.S. Army War College, 1983), pp. 5-6.
4. Brian H. Chermol, "Battle Fatigue," Infantry, 74 (January-February, 1984), p. 14.
5. Ibid., p. 19.
6. Ibid., p. 20.
7. John G. Pierce, Paul Bankit, and James R. Cook, The Impact of Continuous Land Combat on Cognitive Personnel - Implications for Army Medical Research and Development, Report KFR 267-80 (Fort Detrick, Frederick, MD.: U.S. Army Medical Research and Development Command, 1980), p. 1.
8. Ibid., p. 2.
9. Ibid., pp. 3-5.
10. Ibid., pp. 16-18.
11. Ibid., pp. 19-20.
12. Ibid., pp. 162-163.
13. Donald O. Weitzman, A Survey of Some Human Factor Problems in Night Operations, Research Memorandum 77-4 (Alexandria, VA.: U.S. Army Research Institute for the Behavioral and Social Sciences, 1977), pp. 1-2.
14. Ibid.
15. Ibid., p. 22.

16. Henry L. Thompson, "Sleep Loss and Its Effect in Combat," Military Review, LXII (September, 1983), p. 16.
17. George R. Frank, "Continuous Operations," Armor, XCI (January-February, 1982), p. 19.
18. Ibid.
19. Frederick J. Manning and Larry H. Ingraham, "Continuous Operations: Who Melts, When, and Why?" Field Artillery Journal, 49 (May-June, 1981), pp. 15-16.
20. Ibid.
21. Pierce, Bankit, and Cook, The Impact of Continuous Land Combat on Cognitive Personnel, p. 4.
22. Stanley J. Sarnoff et al., Final Report of the Ad Hoc Subgroup on Combat Medical Support, (Washington, D.C.: Army Science Board, Assistant Secretary of the Army for Research, Development, and Acquisition, 1984), p. 1.
23. Franklin R. Brooks et al., "Psychological Reactions During Chemical Warfare Training," Military Medicine, 148 (March, 1983), p. 232.
24. Ibid., p. 233.
25. Ibid.
26. Ibid., p. 234.
27. Ibid., p. 232.
28. Frank, "Continuous Operations," p. 21.
29. Richard A. Gabriel, "Stress in Battle: Coping on the Spot." Army, 32 (December 1982), pp. 37-39.
30. Ibid., pp. 38-39.
31. David H. Marlow and Larry H. Ingraham, "Emphasizing Cohesion, Morale Can Help Prevent Battle Stress," Army, 33 (July, 1983), p. 17.
32. Matthew D. Parrish, "Combat Psychiatry in Varied Settings," Collected Papers, 1970-1980, M.D. Parrish, M.D. (Washington, D.C.: U.S. Department of the Army, Office of the Surgeon General, 1981), p. 6.

33. Shabtai Noy, "Division-Based Psychiatry in Intensive War Situations," Journal of the Royal Army Medical Corps, 128 (1982), pp. 107-108.
34. Samuel K. Rock and Robert J. Schneider, "Battle Stress Reactions and the Israeli Experience in Lebanon: A Brief Summary," Medical Bulletin of the US Army, Europe, 41:1 (January, 1984), p. 11.
35. Marlow and Ingraham, "Emphasizing Cohesion," p. 16.
36. Noy, "Division-Based Psychiatry," pp. 112-113.
37. Chermol, "Psychiatric Casualties in Combat," p. 28.
38. Ibid.

CHAPTER V

MINIMIZING THE OCCURRENCE AND IMPACT OF BATTLEFIELD STRESS

The purpose of Chapter V is twofold. First, it provides a summary of the most important factors which combine to determine the levels of stress experienced by soldiers in combat. This is accomplished in the section entitled "Conclusions." Second, Chapter V offers countermeasures to the phenomenon of combat stress. These suggested actions are certainly not all-inclusive, however, they are generally within the ability of commanders of division level and lower to implement. The potential remedies to battlefield stress are presented in two groups--those that apply before entering combat and those relevant to active battle situations. Both are discussed in the section, "Solutions." A brief summary of the entire paper serves to conclude the thesis.

Conclusions

An efficient and succinct means of presenting the key points established in previous chapters is in a simple listing.

With no attempt to place in order of importance, the more significant characteristics of combat stress include:

Individual Factors

--Stress casualties are more likely in new combatants than those who have combat experience.

--Some factors external to the unit and the combat situation impact on stress levels: lower age, higher education, higher military motivation, and higher aptitude all contribute to lower vulnerability to combat stress.

Morale Factors

--Psychiatric casualties are most likely to occur in units with low cohesion which are in a high threat situation.

--Factors contributing to high unit morale also lower individual vulnerability to battlefield stress: high unit cohesion, confidence in leadership, high level of training proficiency, confidence in ability to win.

--Unit cohesion is the single most important element in reducing the effects of battlefield stress.

Physical Aspects of Combat

--Stress casualties increase with intensity, lethality and duration of combat.

--Vulnerability to stress increases with fatigue, sleep loss, food and water deprivation, and climatic hardships.

--Stress casualties are generally lower in operations involving movement or maneuver.

--The battlefield produces feelings of isolation which contribute to increased vulnerability to stress.

--Wearing chemical and biological protective gear causes increased levels of stress.

Fear

- Fear is the primary cause of combat stress.
- Surprise and uncertainty compound the adverse effects of fear.
- Inactivity increases levels of anticipatory fear.

General

--All soldiers are subject to becoming combat stress casualties.

--The future battlefield may be characterized by increased weapons lethality and range, new technology in weapons, an increased sense of isolation, and continuous operations, all of which might increase levels of combat stress and the occurrence of stress casualties.

--Proper treatment of stress casualties generally results in their prompt return to their unit, while improper evacuation or treatment may result in their becoming a permanent casualty.

In general terms, combat stress is a function of the level of fear and danger that an individual soldier experiences, tempered by his ability to resist that fear. His ability to resist is further a function of those other factors affecting the level of combat stress--individual factors, morale factors, and the physical aspects of combat. When the individual's ability to resist is less than the level of stress he is experiencing, he becomes a combat stress casualty. Although, it may not be possible to eliminate stress casualties in modern war, it is possible to minimize them. Some actions which may be taken to minimize the effects of battlefield stress are presented in the following section.

Solutions

Before Combat

A critical point in countering the effects of stress on the battlefield is that most countermeasures must be undertaken before entering combat.

Most of the preventive measures do not occur in combat but in the weeks and months that precede entry into battle. Stress inoculation training in combat units is nothing more than training under the same conditions in which you expect to fight.[1]

Before any conscious effort can be taken to prepare soldiers for the stresses of combat, an education on the subject must first be provided. The need for this is painfully obvious. Research conducted to determine the general level of knowledge that soldiers have about combat stress revealed that in a random sample of 261 U.S. soldiers, only 15% had ever had a class on battle stress reaction (7% in the last two years); only 20% had ever seen a stress casualty simulation (12% in the last two years); and a full 26% would not trust a stress casualty back in the unit (an additional 26% would have doubts about him).[2]

Of those who had seen a stress reaction simulation, the experience is of questionable value. For example, as recently as the 1983 REFORGER, a simulation had three soldiers being evacuated for stress disorder. "The

casualties attacked the medics, tied them up, ran screaming from the ambulance, and disappeared into the woods." [3] This type of erroneous portrayal of combat stress casualties does little to teach soldiers and medics about stress or to build trust and confidence in a casualty returned to duty in the unit.

In future war, there will be no time to receive on the job training in recognition and treatment of stress casualties. Prior to combat, soldiers must already know the normal responses to stress on the battlefield and be able to detect a buddy on the verge of becoming a stress casualty. Being armed with this knowledge before deploying to a war zone will prevent individuals from over-reacting to their own normal bodily responses to combat. Early recognition of stress and fear enhances control rather than succumbing to the pressure. Control in the early stages prevents the extreme responses such as panic or breakdown.

Realistic simulations of combat stress reaction must be incorporated in all field training exercises. Staffs must be forced to consider the effects of these casualties on mission accomplishment during command post exercises. Individual soldiers must be educated to the fact that in combat they may have to give their buddy special considerations at times--extra rest, food, and an understanding ear. [4]

A thorough integration of combat stress in training will prevent soldiers from being surprised with their own normal reaction to combat. This will lower their vulnerability to becoming a stress casualty. It will also make them more tolerant of other soldiers who return to the unit after treatment for combat stress. They will understand that these men are competent, combat-experienced soldiers who are fully capable of performing their combat mission.

In addition to integrating combat stress and stress casualties into training, it is imperative that training exercises be as realistic as possible in replicating combat conditions. On this topic, Clausewitz comments:

Peacetime maneuvers are a feeble substitute for the real thing; but even they can give an army an advantage over others whose training is confined to routine, mechanical drill...It is immensely important that no soldier, whatever his rank, should wait for war to expose him to those aspects of active service that amaze and confuse him when he first comes across them. If he has met them even once before, they will begin to be familiar to him.[5]

The true value of realism in training is that soldiers can avoid the anxiety of stressful situations in combat if they have a learned response that they can execute to pull them through the crisis. If no such immediate response exists or if they find themselves unable to execute it, they experience the anxiety of the situation.[6] Thus, if combat training exercises are sufficiently realistic, then soldiers

will acquire a repertoire of combat skills to pull them through the most demanding of the stresses of combat.

Marshall is also a strong believer in the value of training to reduce the effects of fear in combat:

It is possible that the infantry soldier can be trained to anticipate fully the true conditions of the battlefield; it is possible that units can be schooled to take full and prompt action against the disunifying effect of these conditions. Fear is ever present, but it is uncontrolled fear that is the enemy of successful operations, and the control of fear depends upon the extent to which all dangers and distractions may be correctly anticipated and therefore understood.[7]

Although not easily attained, the goal of all training should be to duplicate the conditions under which you expect to fight. In preparation for modern combat, training should require soldiers to

wear MOPP 4 [Mission Oriented Protective Posture] gear, communicate without reliance on radios, let subordinates assume leadership positions for brief periods, engage in single operations that extend for days and cover many kilometers, practice combat skills at night and in inclement weather, make both battle and psychiatric casualties a part of training scenarios, and train under live-fire conditions.[8]

Perhaps we can adapt some training principles from the Soviet Army. "Psychological toughening involves above all the development of emotional stability, and a steadfast will on the part of the trainee, i.e., the ability to withstand danger and negative effects upon one's psychological

well-being." [9] The Soviets work toward this goal with training realism which includes the use of high explosives to simulate the shaking of the ground in combat and to add a level of emotional tension to training. The training course continues by having the trainees pass through terrain shrouded in fog and a fire zone representing contamination, devastation and fires from combat. The importance of this psychological training of soldiers is so they can "withstand the severe strains of war and all moral and physical challenges coming their way." [10] Obviously, these same goals are sought by the U.S. Army.

A third major category of stress countermeasures which must be initiated prior to entering combat is the building of unit cohesion. Recall that high unit cohesion is the single most effective protective measure against combat stress.

With the improvement in weapons, the power of destruction increases, the moral effect of such weapons increases, and courage to face them becomes rarer. Man does not, cannot change. What should increase with the power of material is the strength of organization, the unity of the fighting machine. Yet these are most neglected. [11]

These sage words written by Ardant du Picq are still applicable today. Knowing the critical importance of unit cohesion and esprit-de-corps in the prevention and treatment of battlefield stress casualties, observers of a major training exercise in Germany were dismayed at the ease with

which strangers to the unit were able "to elicit disparaging remarks about the unit and its members." [12] The reasons for this unexpected event were the routine turnover of one third of the unit personnel in the previous six months and a general division between the junior enlisted soldiers, the non-commissioned officers and the officers. This situation runs in direct opposition to the following guidance from Ardant du Picq:

A wise organization insures that the personnel of combat groups changes as little as possible, so that comrades in peace time maneuvers shall be comrades in war. From living together, and obeying the same chiefs, from commanding the same men, from sharing fatigue and rest, from cooperation among men who quickly understand each other in the execution of warlike movements, may be bred brotherhood, professional knowledge, sentiment, above all unity. [13]

Perhaps General Wickam, the Army Chief of Staff, was reflecting on the advice of Ardant du Picq when he wrote:

The Cohesion Operational Readiness and Training system or COHORT, which stabilizes soldiers and leaders in companies and battalions, will allow horizontal and vertical bonding from initial entry training through deployment to combat. Within this more stable unit environment, cohesion, the powerful, intangible combat multiplier, will help produce tightknit, self-confident, competent units capable of withstanding the most demanding stresses of war. [14]

In addition to the policy guidance of the Army Chief of Staff, there is much that can be done at Division level and below to reduce turmoil and increase stability of personnel.

Only with an integrated effort throughout the Army can unit cohesion be maximized.

During Combat

Confidence is the first point of discussion in the countermeasures against battlefield stress during actual combat. Admittedly, confidence is a characteristic that is usually established before entering hostilities. It is primarily based on how well soldiers feel their unit is able to carry out combat missions. This feeling is initially a function of the intensity and realism of the training received prior to deployment. Difficult and demanding training results in units entering combat with a high level of confidence.

This confidence, however, can be quickly shattered by the reality of war. This turnabout may occur in cases where units either enter a sector where the enemy has been previously successful, or when they suffer defeat after engaging in combat. The results are the same in either event--a loss in confidence to win in combat. Such a lack of confidence can be devastating and impact heavily on the susceptibility of the unit to the pressures of combat stress.

Such was the situation facing Slim in the Burma Theater in World War II after his army had met with defeat after defeat against the Japanese. It was obvious that the confidence of his forces in their ability to stand up to the Japanese must be restored. "But all this could not be convincingly put over by talking and education alone. It had to be demonstrated practically." [15] In light of his army's level of training and confidence, a large-scale victory was simply not possible at that time. Slim's answer in this situation was to take aggressive action against the enemy through patrolling. "These patrols came back to their regiments with stories of success, of how the Japanese had walked into their ambushes, how they had watched the enemy...and then pounced on them." [16]

After developing the confidence of the soldier, the next step Slim took was to expand this confidence.

Having developed the confidence of the individual man in his superiority over the enemy, we had now to extend that to the corporate confidence of units and formations in themselves. This was done in a series of carefully planned minor offensive operations...These were carefully staged, ably led, and, as I was always careful to ensure, in greatly preponderating strength...We had laid the first of our intellectual foundations of morale; everyone knew we could defeat the Japanese, our object was attainable. [17]

Just as Slim had to turn around the failing confidence level of his army in Burma, tactical and operational commanders in future war may be required to do the same. This building of

confidence can be accomplished by a combination of additional training and the pursuit of minor victories, as was aptly demonstrated by Slim's actions in World War II. Failure to take such actions will only result in additional defeats and increased rates of combat stress casualties.

Closely tied to the building of confidence in soldiers and units is the need for information while in combat. Marshall notes that the effective combat strength of a unit does not rest only with the quantity of men and weapons present, but with knowledge of the mutual support and combined strength of that unit, adjacent units and supporting organizations.

All tactical support must be known and be felt to be of true moral help in a time of crisis. That part of it which lies beyond the knowledge of the ranks of a company--the supporting artillery fire which it cannot see or the strong point lying just around the bend in the river--may be greatly sustaining to the company's efforts in terms of protection to front and flanks or actual hurt to the body of the enemy, but so long as it remains unknown, it will not keep the company from breaking when the pressure appears to become uncontainable.[18]

Specific knowledge of what is around and contributing to a unit's combat strength is essential to counter the natural feeling of isolation in combat.

Detailed knowledge of what is about to occur is also important in psychologically preparing soldiers for combat. Ironically, Ardant du Picq's analysis of the ancient battle

of Cannae is an excellent example with direct application to the U.S. Army AirLand Battle doctrine:

Hannibal, in order to inspire his people with such confidence, had to explain to them before the combat his plan of action...He must have warned his troops that the center would be pierced, but that he was not worried, about it, because it was a foreseen and prepared affair. His troops, indeed did not seem to be worried about it.[19]

Had Hannibal not explained the planned penetration of his lines beforehand, his soldiers would surely have run in defeat when it occurred.

In general, it can be summarized that,

Accurate and timely information from a trusted source can reduce battle stress. If unit members believe that the chain of command has consistently provided honest and complete information in the past, fewer inaccurate, demoralizing rumors will be circulated, and reassurances or positive news will be more readily accepted.[20]

The touchstone in successful maintenance of confidence in a unit and in the passing of necessary information is the leader. There is no dispute of the critical function of the leader in reducing the effects of stress in combat. He is the one responsible for assessing the need for, and the implementation and execution of all the countermeasures to stress--both before and during combat. Particularly in battle, "the physical presence and outward poise of an officer is critical to sustain most of the soldiers through the strain of fear. Men lean on their leaders for moral

support...Just as fear is infectious, so too is courage." [21] Competent and sincere leadership must be developed throughout the chain of command. Although beyond the scope of this study, it is worth noting that the creation of a forward psychology support system, similar to the one in the Israeli Army, would be invaluable in aiding the commander in monitoring the psychological status of the members of his command.

An important task for leaders in combat is in the prevention of anticipatory fear by redirecting the attention of soldiers to other things. In the difficult time before an attack, the minds of the troops must be reoriented away from the hazards of the immediate future into other, more productive areas. This can be effectively accomplished by the performance of light duties which are meaningful and non-tiring. These duties can easily be solidified in unit standing operating procedures for pre-attack preparations which might include such simple tasks as weapons sighting, weapons cleaning, camouflage replacement, and equipment checks. [22] The key is to have action of some type to take the attention away from the anticipation of the dangers to come. The personal involvement of leaders is the essential in this area of minimizing stress.

Another means of reducing the effects of stress in combat is through the reduction of fatigue and its effects. "To

minimize fatigue effects, the individual soldier should be well-trained and experienced in the tasks he will be expected to perform." [23] Once in combat, leaders must understand the limits to man's ability to conduct continuous operations over extended periods of time. The overall efficiency of a soldier in prolonged operations depends on his ability to counter and recover from the effects of fatigue caused by exertion and lack of sleep. Man can be viewed as "a system having a limited capacity for continuous operation and some reserve that can be used to deal with temporary additional requirements. Rest allows the reserve to be re-established." [24]

There must be conscious decisions made and positive actions taken to re-establish this reserve, or to keep it from being used except in case of extreme emergency. As discussed in a previous chapter, the effects of sleep loss are cumulative. The impact on performance and recovery time required become worse over time--not better.

A partial solution to the problem is for units to have a strictly enforced sleep plan, especially when occupying assembly areas, battle positions or strong points. Most individuals can perform satisfactorily over extended periods of time with as little as four hours sleep and four hours rest per twenty-four hour period. For periods up to a week, soldiers can perform satisfactorily with as little as three

hours sleep per day. It is important to recall that those individuals whose jobs require vigilance, monitoring or complex decision making require even more sleep. Included in the category of requiring more sleep are commanders and key staff personnel.

In situations where units are engaged in active battle for extended times, it may be possible for higher level commanders to rotate units out of contact for a temporary break from the action. Rest for personnel is every bit as important as maintenance and resupply under such conditions. Rotation of company sized units for brief rest periods may be more feasible under the new U.S. Army organization of four companies per battalion than under the previous organization.[25]

Rotation of units out of immediate combat serves a purpose beyond simply allowing rest and recuperation from physical fatigue. It also allows some respite from the other stresses of combat and the immediate danger of battle. Breaks from the intensity and lethality of direct contact with the enemy will aid in reducing psychiatric casualty rates, in addition to allowing time to recover from the effects of fatigue and sleep deprivation. Actions such as this would allow some deposits to be made to Moran's bank account of courage.

The next step which would aid in reducing the effects of fatigue on the units in combat would require an organizational change in the structure of units below division level. As noted in a previous chapter, most U.S. units below division level are staffed only with cognitive decision making personnel to operate for 14 to 16 hours per day. This makes extended continuous operations impossible without suffering significant risk in unit efficiency. The simple solution to this problem is to augment the present organizational structure of these units with the required personnel to conduct continuous operations. Judging from the overwhelming work load of key personnel even in peacetime, such a change is warranted and justified. An adjunct to this solution is the total acceptance of the executive officer at all levels below division as being a second in command.

The last area to be addressed deals with minimizing the effects of battlefield stress while in combat. If a thorough education on stress has been provided and realistic stress casualty simulations have been integrated into the pre-combat training program, then battlefield stress will be viewed by all as it should be--as an event that is likely to occur. Further, all personnel will be responsive to the symptoms of stress as they begin to be displayed by those

affected. This early recognition of the signs of stress in a soldier will expedite prompt and appropriate treatment.

By soldiers being alert to the symptoms of combat stress, it is probable that many stress casualties can be avoided without requiring evacuation into medical channels. This can be achieved by such simple actions as sending the individual back to work in the unit's supply trains. There, he is out of direct contact with the enemy and yet, he is not letting his buddies down because he is still providing a useful service. With a brief stint of light duties, some food, and additional rest and sleep, the near-casualty should be ready to return to full combat duty in a day.

Summary

Battlefield stress is an unavoidable consequence of man being exposed to the hostile environment of combat. It is specifically caused by man's fear of the dangers of combat, and is fueled and tempered by other variables such as morale, cohesion, fatigue, confidence, training and intensity of the combat. Positive actions can be taken to reduce the occurrence of stress casualties and minimize the effects of combat stress on the unit mission. These steps include education, training and building unit cohesion before entering combat; and active measures to ensure

information is passed, confidence is built and maintained, and brief respite is obtained from the rigors of battle when actually in combat.

Psychiatric casualties represent recoverable manpower on the battlefield. Whether they will be counted as assets or written off as permanent losses depends upon preparations (or lack thereof) made now, for there will be little time to improvise once the battle begins.[26]

CHAPTER V

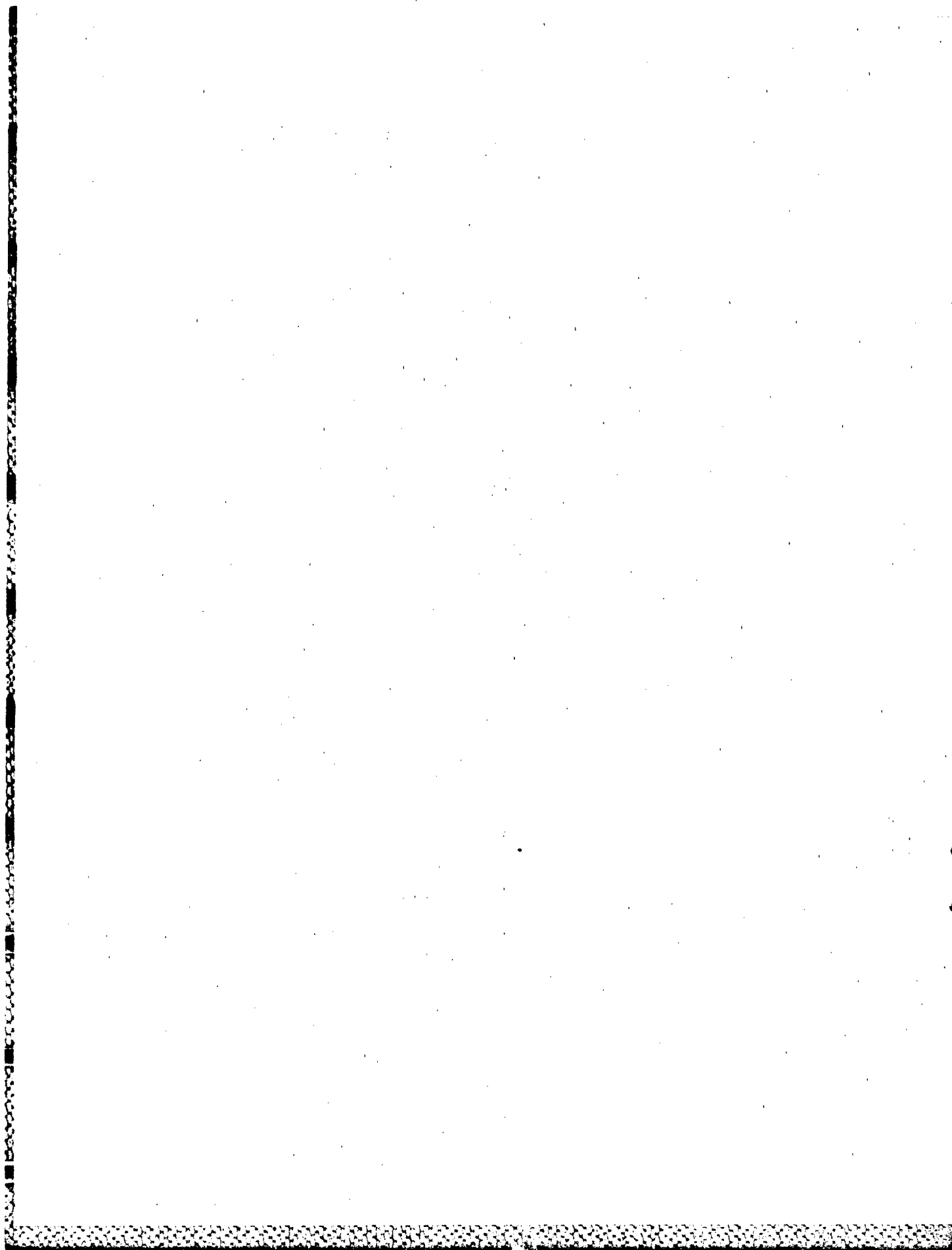
ENDNOTES

1. Brian H. Chermol, "Psychiatric Casualties in Combat," Military Review, LXII (July, 1983), pp. 32-33.
2. Robert J. Schneider and Richard L. Luscomb, "Battle Stress Reaction and the United States Army," Military Medicine, 149 (February, 1984), pp. 66-67.
3. Ibid., p. 68.
4. Ibid.
5. Carl von Clausewitz, On War translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), p. 122.
6. Frank L. Goldstein, "Stress Management in Israeli Defense Forces: Implications for U.S. Military Human Service Professionals," Proceedings, Psychology in the Department of Defense, Ninth Annual Symposium, 18-20 April 1984, (Colorado Springs, CO.: U.S. Air Force Academy, Department of Behavioral Sciences and Leadership, 1984), p. 331.
7. Samuel L. A. Marshall, Men Against Fire, (Gloucester, Mass.: Peter Smith, 1947), p. 37.
8. Chermol, "Psychiatric Casualties in Combat," pp. 32-33.
9. V. Tsetsevatou, "The Psychological Training and Toughening of Soldiers in the Red Army" translated by Terry M. Hill (Charlottesville, VA.: U.S. Army Foreign Science and Technology Center, 1983), p. 2.
10. Ibid., p. 1.
11. Charles J. J. Ardant du Picq, Battle Studies translated from 8th edition by John N. Greely and Robert C. Cotton (Harrisburg, Penn.: Military Service Publishing, 1946), pp. 109-110.
12. Frederick J. Manning and Larry H. Ingraham, "Continuous Operations: Who Melts, When, and Why?" Field Artillery Journal, 49 (May-June, 1981), p. 16.
13. Ardant du Picq, Battle Studies, p. 96.

14. John A. Wickham, Jr., White Paper 1984 Light Infantry Divisions, (Washington, D.C.: Department of the Army, Office of the Chief of Staff, 1984), p. 3.
15. William J. Slim, Defeat Into Victory, (New York: David McKay, 1961), pp. 161-163.
16. Ibid., pp. 161-162.
17. Ibid., p. 162.
18. Marshall, Men Against Fire, p. 87.
19. Ardant du Picq, Battle Studies, p. 68.
20. Chermol, "Psychiatric Casualties in Combat," p. 30.
21. Michael F. Belcher, "Fear in Combat," Marine Corps Gazette, 64 (September, 1980), p. 53.
22. Ibid., p. 52.
23. Donald O. Weitzman, A Survey of Some Human Factor Problems in Night Operations, Research Memorandum 77-4. (Alexandria, VA.: U.S. Army Research Institute for the Behavioral and Social Sciences, 1977), p. 18.
24. Ibid., p. 17.
25. George R. Frank, "Continuous Operations," Armor, XCI (January-February, 1982), p. 20.
26. Larry H. Ingraham and Frederick J. Manning, "Psychiatric Battle Casualties: The Missing Column in a War Without Replacements," Military Review, LX (August, 1980), p. 28.

SELECTED BIBLIOGRAPHY

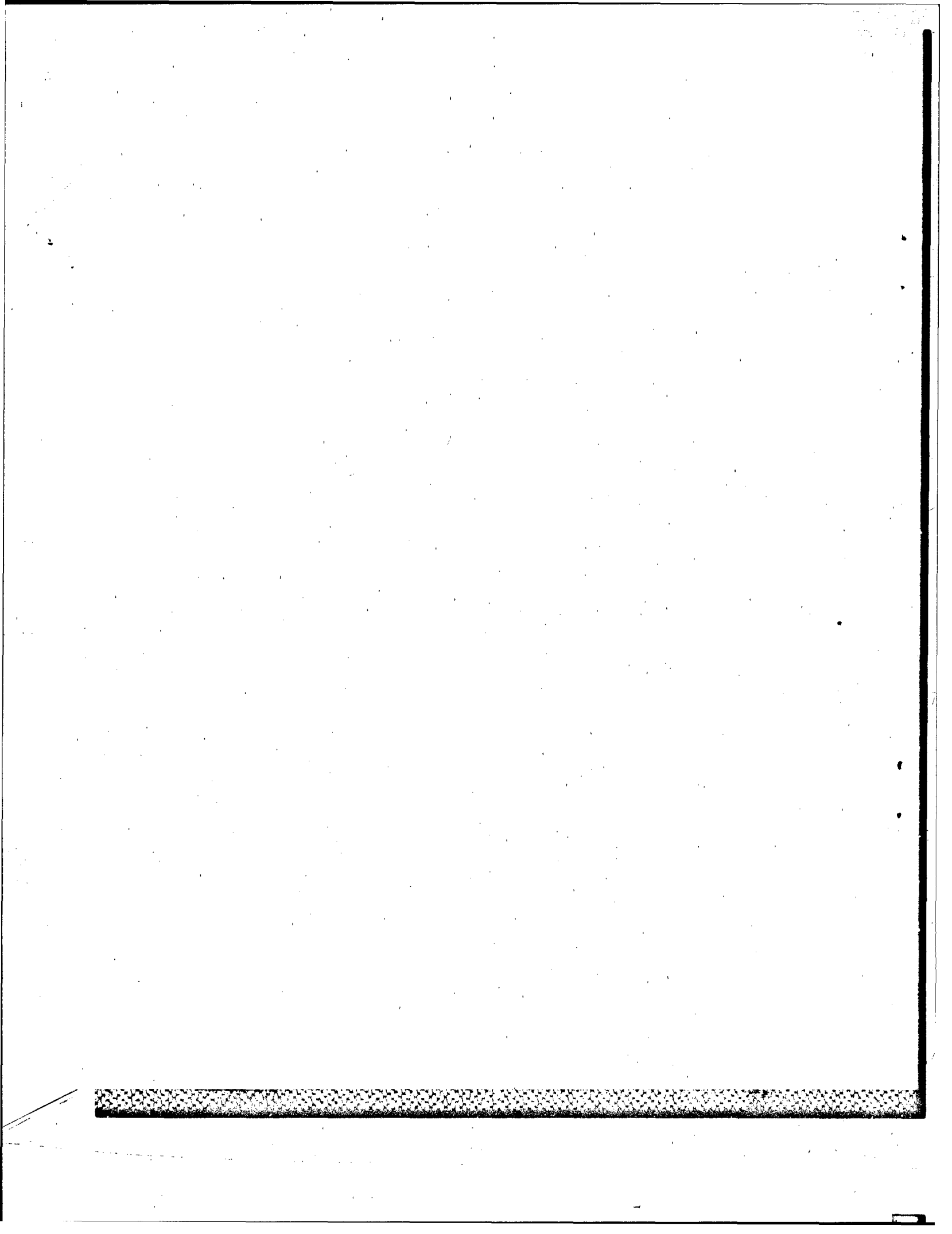




SELECTED BIBLIOGRAPHY

BOOKS

- Ahrenfeldt, Robert H. Psychiatry in the British Army: In the Second World War. New York: Columbia University Press, 1958.
- Ardant du Picq, Charles J. J. Battle Studies. Translated from 8th edition by John N. Greely and Robert C. Cotton. Harrisburg, Penn.: The Military Service Publishing Company, 1946.
- Boring, Edwin G., ed. Psychology for the Armed Services. Washington, D.C.: Infantry Journal Press, 1945.
- Clausewitz, Carl von. On War. Translated by Michael Howard and Peter Paret. Princeton, New Jersey: Princeton University Press, 1976.
- Copeland, Norman. Psychology and the Soldier. Harrisburg, Penn.: The Military Service Publishing Company, 1942.
- Crane, Stephen. The Red Badge of Courage. Logan, Iowa: Perfection Form Company, 1973.
- de Saxe, Maurice, Marshal. Reveries on the Art of War. Harrisburg, Penn.: The Military Service Publishing Company, 1944.
- Dollard, John. Fear in Battle. Westport, Conn.: Greenwood Press, Inc., 1977. (Reprint of original published in 1944 by The Infantry Journal, Washington, D.C.).
- Figley, Charles R., ed. Stress Disorders Among Vietnam Veterans: Theory, Research and Treatment. New York: Brunner/Mazel, Publishers, 1978.
- Goldberger, Leo and Shlomo Breznitz, eds. Handbook of Stress: Theoretical and Clinical Aspects. New York: Macmillan Publishing Company, Inc., 1982.
- Keegan, John. The Face of Battle. New York: Penguin Books, 1976.



- Kellett, Anthony. Combat Motivation: The Behavior of Soldiers in Battle. Boston: Kluwer-Nijhoff Publishing, 1982.
- Lewis, Nolan D. C., and Bernice Engle, eds. Wartime Psychiatry: A Compendium of the International Literature. New York: Oxford University Press, 1954.
- Little, Roger W. "Buddy Relations and Combat Performance." The New Military: Changing Patterns of Organization. Edited by Morris Janowitz. New York: Russell Sage Foundation, 1964.
- Marshall, Samuel L. A. Men Against Fire. Gloucester, Mass.: Peter Smith, 1947.
- , Night Drop. Boston: Little, Brown and Company, 1962.
- Moran, Charles McMoran Wilson, Lord. The Anatomy of Courage. Boston: Houghton Mifflin Company, 1967.
- Sarkesian, Sam C., ed. Combat Effectiveness: Cohesion, Stress, and the Volunteer Military. Beverly Hills: SAGE Publications, Inc., 1980.
- Slim, William J., Viscount. Defeat Into Victory. New York: David McKay Company, Inc., 1961.
- Solomon, Harry C. and Paul I. Yakovlev, eds. Manual of Military Neuropsychiatry. Philadelphia: W. B. Saunders Company, 1944.
- Stouffer, Samuel A., and others. Studies in Social Psychology in World War II, Vol. 2: The American Soldier: Combat and its Aftermath. Princeton, New Jersey: Princeton University Press, 1949.
- Truscott, Jr., L. K. Command Missions. New York: E. P. Dutton and Company, Inc., 1954.
- van Creveld, Martin. Fighting Power: German and U.S. Army Performance, 1939-1945. Westport, Conn.: Greenwood Press, 1982.
- von Greyerz, Walo, Psychology of Survival: Human Reaction to the Catastrophes of War. Translated by Claude Stephenson. New York: Elsevier Publishing Company, 1962.

Watkins, John G. Hypnotherapy of War Neuroses. A Clinical Psychologist's Casebook. New York: The Ronald Press Company, 1949.

Zais, Mitchell M., and William J. Taylor, Jr. "Stress and the Military." Life Stress. Vol. III of A Companion to the Life Sciences. Edited by Stacey B Day. New York: Van Nostrand Reinhold Company, 1982.

GOVERNMENT DOCUMENTS

Belenky, Gregory L., C. Frederick Tyner, and Frank J. Sodetz. Israeli Battle Shock Casualties: 1973 and 1982. Report WRAIR-NP-83-4. Washington D.C.: Walter Reed Army Institute of Research, 1983.

Bond, Douglas D. "The Common Psychological Defense to Stressful Situations and the Patterns of Breakdown When They Fail." Symposium on Stress (16-18 March 1953). Washington, D.C.: U.S. Army Medical Service Graduate School, Walter Reed Army Medical Center, 1953.

Cowings, J.S. "Reaction of Combat Service Support Troops Under Stress: The Small Maintenance Support Unit in a Combat Environment," unpublished MMAS thesis. Fort Leavenworth, Kansas: Command and General Staff College, 1975.

Denton, Jesse H. Fighting Power and the Maintenance of Combat Strength: The Imperative Allies of Technology. Study Project. Carlisle Barracks, PA.: U.S. Army War College, 1983.

Egbert, Robert L., Robert V. Katter, and George D. Greer, Jr. Incidental Observations Gathered During Research in Combat Units. Fort Ord, CA.: U.S. Army Field Forces, Human Research Unit No. 2, 1953.

Glass, Albert J., "The Problem of Stress in the Combat Zone." Symposium on Stress (16-18 March 1953). Washington, D.C.: U.S. Army Medical Service Graduate School, Walter Reed Army Medical Center, 1953.

-----, "Psychotherapy in the Combat Zone." Symposium on Stress (16-18 March 1953). Washington, D.C.: U.S. Army Medical Service Graduate School, Walter Reed Army Medical Center, 1953.

- Goldstein, Frank L. "Stress Management in Israeli Defense Force: Implications for U.S. Military Human Service Professionals." Proceedings, Psychology in the Department of Defense, Ninth Annual Symposium, 18-20 April 1984. Colorado Springs, CO.: U.S. Air Force Academy, Department of Behavioral Sciences and Leadership, 1984.
- Hegge, Frederick W. The Future Battlefield: Human Dimensions and Implications for Doctrine and Research. Report WRAIR-NP-82-1. Washington, D.C.: Walter Reed Army Institute of Research, 1982.
- Historical Evaluation and Research Organization. The Effects of Combat Losses and Fatigue on Combat Performance. Ft. Monroe, VA.: U.S. Army Training and Doctrine Command, 1979.
- Hodge, David C., ed. Military Requirements for Research on Continuous Operations. Technical Memorandum 12-72. Aberdeen Proving Ground, Maryland: U.S. Army Aberdeen Research and Development Center, 1972.
- Holsenbeck, Linton S. "Combat Psychiatry: A Primary Prevention Program in the 4th Infantry Division (Mechanized)." Proceedings, Psychology in the Department of Defense, Ninth Annual Symposium, 18-20 April 1984. Colorado Springs, CO.: U.S. Air Force Academy, Department of Behavioral Sciences and Leadership, 1984.
- Kendrick, Richard P., and Anne Shuman. Casualty Estimation Study, Part I (CES I). Study Report CAA-SR-81-21. Bethesda, Maryland: U.S. Army Concepts Analysis Agency, 1981.
- Kish, Francis B. "Cohesion: The Vital Ingredient for Successful Army Units," Student Essay. Carlisle Barracks, PA.: U.S. Army War College, 1982.
- Mangelsdorff, A. David, James M. King, and Donald E. O'Brien. "Workshops for Management of Combat Stress." Proceedings, Psychology in the Department of Defense, Ninth Annual Symposium, 18-20 April 1984. Colorado Springs, CO.: U.S. Air Force Academy, Department of Behavioral Sciences and Leadership, 1984.
- Parrish, Matthew D. "Combat Psychiatry in Varied Settings." Collected Papers, 1970-1980. M.D. Parrish, M.D. Washington, D.C.: U.S. Department of the Army, Office of the Surgeon General, 1981.

Phipps, Jeremy J. J. Unit Cohesion: A Prerequisite for Combat Effectiveness. National Security Affairs Issue Paper Series 82-3. Washington, D. C.: National Defense University Research Directorate, 1982.

Pierce, John G., Paul Bankit, and James R. Cook. The Impact of Continuous Land Combat on Cognitive Personnel - Implications for Army Medical Research and Development. Report KFR 267-80. Fort Detrick, Frederick, MD.: U.S. Army Medical Research and Development Command, 1980.

Reister, Frank A. Battle Casualties and Medical Statistics: U.S. Army Experience in the Korean War. Washington, D.C.: Government Printing Office, 1973.

Sarnoff, Stanley J., George S. Blanchard, Theodore Cooper, and Chris J.D. Zarafonitis. Final Report of the Ad Hoc Subgroup on Combat Medical Support. Washington, D.C.: Army Science Board, Assistant Secretary of the Army for Research, Development, and Acquisition, 1984.

Tsetsevatov, U. (Major General in the Soviet Army). Translated by Terry M. Hill. "The Psychological Training and Toughening of Soldiers in the Red Army." Charlottesville, VA.: U.S. Army Foreign Science and Technology Center, 1983.

U.S. Department of the Army. Management of Stress in Army Operations. Field Manual 26-2. Washington, D.C.: U.S. Government Printing Office, 1983.

U.S. Department of the Army. Soldier Performance in Continuous Operations. Field Manual 22-9. Washington, D.C.: U.S. Government Printing Office, 1983.

Walter Reed Army Institute of Research. Symposium on Medical Aspects of Stress in the Military Climate, 22-24 April 1964. Washington, D.C.: U.S. Government Printing Office, 1965.

Weitzman, Donald O. A Survey of Some Human Factor Problems in Night Operations. Research Memorandum 77-4. Alexandria, VA.: U.S. Army Research Institute for the Behavioral and Social Sciences, 1977.

West, Vita, and James F. Parker, Jr. A Review of Recent Literature: Measurement and Prediction of Operational Fatigue. Arlington, VA.: U.S. Department of the Navy, Office of Naval Research, 1975.

Wickham, John A., Jr. White Paper 1984 Light Infantry Divisions, Washington, D.C.: Department of the Army, Office of the Chief of Staff, 1984.

PERIODICALS AND ARTICLES

Artiss, Kenneth L. "Human Behavior Under Stress - From Combat to Social Psychiatry." Military Medicine, 128 (October, 1963), 1011-1015.

Belcher, Michael F. "Fear in Combat." Marine Corps Gazette, 64 (September, 1980), 49-53.

Branley, Bill. "Mind Over Battle." Soldiers, 36 (September, 1981), 22-24.

Brooks, Franklin R., and others. "Psychological Reactions During Chemical Warfare Training." Military Medicine, 148 (March, 1983), 232-235.

Chermol, Brian H. "Battle Fatigue." Infantry, 74 (January-February, 1984), 13-15.

----- "Psychiatric Casualties in Combat." Military Review, LXII (July, 1983), 26-32.

----- "The Quiet Enemy: Combat Stress." Army, 33 (September, 1983), 18-21.

El Rayes, El Sudany. "Traumatic War Neurosis, Egyptian Experience." Journal of the Royal Army Medical Corps, 128 (1982), 67-71.

Ewell, Julian J. "High Morale in Combat." Military Review, LXII (June 1982), 19-33.

"Fear and Pain." (Seminar Report, M.N. Naylor, chairman.) Journal of the Royal United Services Institute for Defence Studies, 25 (September, 1980), 69-74.

Frank, George R. "Continuous Operations." Armor, XCI (January-February, 1982), 19-23.

Gabriel, Richard A. "Stress in Battle: Coping on the Spot." Army, 32 (December 1982), 36-42.

- , "Professionalism Versus Managerialism in Vietnam." Air University Review, XXXII (January-February, 1981), 77-85.
- Gabriel, Richard A., and Reuvan Gal. "The IDF Officer: Linchpin in Unit Cohesion." Army, 34 (January, 1984), 42-49.
- Geier, Richard P. "Sleep Loss: A Debt That Must Be Paid." Armor, LXXXVIII (January-February, 1979), 37-38.
- Griffin, Darrell R., George Everly, and Calvin Fuhrmann. "Designing an Effective Stress-Management Training Program." OE Communique, 6 (4-1982), 35-39.
- Hales, Robert E., and Franklin D. Jones. "Teaching the Principles of Combat Psychiatry to Army Psychiatry Residents." Military Medicine, 148 (January, 1983), 24-27.
- Hanson, Frederick R., ed. "Combat Psychiatry: Experiences in the North African and Mediterranean Theaters of Operation, American Ground Forces, World War II." The Bulletin of the U.S. Army Medical Department, IX Supplemental Number (November, 1949), 1-216.
- Hart, T.S. "Determination In Battle." Armor, .XXXIX (May-June, 1980), 30-37.
- Hollis, William S. "Esprit de Corps and Morale - The Four Facets of the Soldier." OE Communique, 7 (1-1983), 14-17.
- Ingraham, Larry H., and Frederick J. Manning. "Psychiatric Battle Casualties: The Missing Column in a War Without Replacements." Military Review, LX (August, 1980), 18-29.
- Jones, W.K. "Leadership Stress." Marine Corps Gazette, 67 (November, 1983), 46-48.
- L'Etang, Hugh. "Factors of Morale - Fatigue, Stress, Fear." NATO's Fifteen Nations, 25 (December, 1980/January, 1981), 49-54.
- Levav, Itzhak, Haim Greenfeld, and Eli Baruch. "Psychiatric Combat Reactions During the Yom Kippur War." American Journal of Psychiatry, 136:5 (May, 1979), 637-641.

- Ludwig, Alfred O., and Stephen W. Ranson. "A Statistical Followup of Effectiveness of Treatment of Combat-Induced Psychiatric Casualties: I. Returns to Full Combat Duty," and "II. Evacuations to the Base." The Military Surgeon, 100 (January-February, 1947), 51-62 and 169-175.
- Manning, Frederick J., and Larry H. Ingraham. "Continuous Operations: Who Melts, When, and Why?" Field Artillery Journal, 49 (May-June, 1981), 13-16.
- Marlow, David H., and Larry H. Ingraham. "Emphasizing Cohesion, Morale Can Help Prevent Battle Stress." Army, 33 (July, 1983), 16-17.
- Noy, Shabtai. "Division-Based Psychiatry in Intensive War Situations." Journal of the Royal Army Medical Corps, 128 (1982), 105-116.
- Rock, Samuel K., and Robert J. Schneider. "Battle Stress Reactions and the Israeli Experience in Lebanon: A Brief Summary." Medical Bulletin of the US Army, Europe, 41:1 (January, 1984), 9-11.
- Schneider, Robert J., and Richard L. Luscomb. "Battle Stress Reaction and the United States Army." Military Medicine, 149 (February, 1984), 66-69.
- Standish, Anthony. "Crisis in Courage." Combat Forces Journal, 2 (April, 1952), 13-24.
- Steiner, Meir, and Micha Neumann. "Traumatic Neurosis and Social Support in the Yom Kippur War Returnees." Military Medicine, (December, 1978), 866-868.
- Stock, Walter D. "Leading to Confidence." Infantry, 68 (May-June 1978), 20-26.
- Thompson, Henry L. "Sleep Loss and Its Effect in Combat." Military Review, LXII (September, 1983), 14-23.
- Troxler, Raymond G., and Harry P. Wetzler. "Executive Stress: The Symptoms, the Cause, and the Cure." Air University Review, XXXII (March-April, 1981), 43-52.
- Williams, U. P. "They May Not Die - But They Wither Fast." Military Review, XXX (July, 1950) 16-23.

OTHER SOURCES

- Bar-On, Reuven, Zahava Solomon, and Shabtai Noy. "War Related Stress: An Overview of the Clinical Picture in the 1982 Conflict in Lebanon." Paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983.
- Gal, Reuven. "Unit Morale: Some Observations on Its Israeli Version." Unpublished Paper, Walter Reed Army Institute of Research, February, 1984. (Previous edition of this paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983.)
- Noy, Shabtai. "Battle Intensity and Length of Stay in the Battle Field as Determinants of the Type of Evacuation." Paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983.
- . "Combat Psychiatry: The Israeli Experience." Paper presented at the AMEDD Division and Combat Psychiatry Short Course, Monterey, California, April-May, 1980.
- Noy, Shabtai, Chen Nardi, and Zahava Solomon. "Battle Characteristics and the Prevalence of Combat Psychiatric Casualties." Paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983.
- Noy, Shabtai, and Zahava Solomon. "The forward Treatment of Combat Reactions: A Testcase in the 1982 Conflict in Lebanon." Paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983.
- Pierce, Edward V. "Battle Stress." Unpublished paper, Division Psychiatrist, 9th Infantry Division, Fort Lewis, Washington, 1983.
- Solomon, Zahava, and Shabtai Noy. "Who Is At High Risk for Combat-Reaction?" Paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983.

Solomon, Zahava, and Bruce Oppenheimer. "Subsequent Military Adjustment of Soldiers Who Suffered from Combat-Reaction in the Yom-Kippur War." Paper presented at the Third International Conference on Psychological Stress and Adjustment in Time of War and Peace, Tel Aviv, Israel, January, 1983.

INITIAL DISTRIBUTION LIST

INITIAL DISTRIBUTION LIST

Assistant Chief of Staff, G3
1st Armored Division
APO NY 09326

Assistant Chief of Staff, G3
1st Cavalry Division
Fort Hood, TX 76554-5200

Assistant Chief of Staff, G3
1st Infantry Division (Mech)
Fort Riley, KS 66442

Assistant Chief of Staff, G3
2d Armored Division
Fort Hood, TX 76544-5200

Assistant Chief of Staff, G3
2d Infantry Division
APO SF 96224-0289

Assistant Chief of Staff, G3
3d Armored Division
APO NY 09039

Assistant Chief of Staff, G3
3d Infantry Division (Mech)
APO NY 09036

Assistant Chief of Staff, G3
4th Infantry Division (Mech)
Fort Carson, CO 80913

Assistant Chief of Staff, G3
5th Infantry Division (Mech)
Fort Polk, LA 71459

Assistant Chief of Staff, G3
7th Infantry Division
Fort Ord, CA 93941

Assistant Chief of Staff, G3
8th Infantry Division (Mech)
APO NY 09111

Assistant Chief of Staff, G3
9th Infantry Division
Fort Lewis, WA 98433-6000

Assistant Chief of Staff, G3
10th Mountain Division (Light Infantry)
Fort Drum, NY 13602-5000

Assistant Chief of Staff, G3
24th Infantry Division (Mech)
Fort Stewart, GA 31314

Assistant Chief of Staff, G3
25th Infantry Division
Schofield Barracks, HI 96857

Assistant Chief of Staff, G3
82d Airborne Division
Fort Bragg, NC 28307

Assistant Chief of Staff, G3
101st Abn Division (AASLT)
Fort Campbell, KY 42223-5000

Combined Arms Research Library
U.S. Army Command and General Staff College
Fort Leavenworth, KS 66027

Commandant
Academy of Health Sciences
Fort Sam Houston, TX 78234

Defense Technical Information Center
Cameron Station
Alexandria, VA 22314

Deputy Chief of Staff, Training
U.S. Army Training and Doctrine Command
Fort Monroe, VA 23651-5000

Lieutenant Colonel Marvin W. Flora (ret)
2021 SW 36th Terrace
Fort Lauderdale, FL 33312

Lieutenant Colonel William L. Speer
Department of Combat Support
U.S. Army Command and General Staff College
Fort Leavenworth, KS 66027

Lieutenant Colonel Henry L. Thompson, III
School for Professional Development
U.S. Army Command and General Staff College
Fort Leavenworth, KS 66027

Lieutenant Colonel (P) Frederick W. Timmerman, Jr.
Military Review
U.S. Army Command and General Staff College
Fort Leavenworth, KS 66027

Lieutenant General Carl E. Vuono
Deputy Chief of Staff for Operations
HQ, Department of the Army
Washington D.C. 20310-0400