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There is a large body of literature which addresses the quantitative and qualitative aspects of combat power. The purpose of this study, however, is to examine the nature of combat power and to develop a conceptual framework for gaining an understanding of what it is. The methodology consists of a review of the literature and an analysis of historical data. Concepts are grounded in empirical reality by briefly analyzing our more recent application of force on a large scale--Vietnam. A detailed analysis of the Battle of Kontum, Spring 1972, is provided to illustrate some of the key concepts. The author argues

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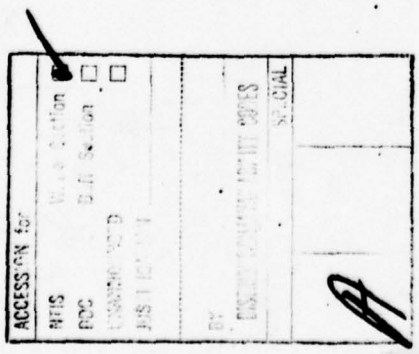
that the key element of combat power in the future will be relative mobility and that the increasing effectiveness of fire in the form of mines and PGMs has seriously eroded the relative mobility of armored vehicles. A major assertion of the study is that an attrition strategy can be avoided on the Central Front of Europe if NATO forces rely more heavily on helicopters to provide greater relative mobility.

COMBAT POWER: AN ONTOLOGICAL APPROACH

By

JOHN G. HESLIN
Major, USA
June 1978



EXECUTIVE SUMMARY

This study may be viewed as an exploratory effort designed to examine the military as an instrument of policy. The policymaker, if he is to be successful in establishing control, among other things, must have an intimate knowledge of the quantity, quality, and the nature of the means at his disposal. There is a large body of literature which addresses the quantitative and qualitative aspects of combat power. The purpose of this paper, however, is to examine the concept of combat power with an aim toward understanding it as an instrument of policy. The approach taken here is neither quantitative nor qualitative but, rather, ontological; that is, the locus of analysis is the nature of combat power.

What I hope to do, therefore, is to provide a conceptual framework for gaining an understanding of what combat power is and, later in the paper, to ground some of the concepts in empirical reality through the use of an historical example.

The methodology employed in this study consists of a review of the literature to develop the conceptual framework and an analysis of historical data.

We in the military have a responsibility to educate our civilian leaders on the capabilities, limitations, and the nature of the instrument of violence, which is military combat power. It is my assertion in this paper that the political instrument of force is in fact, combat power and that there are likely to be situations in the near future where it

will be necessary to use force in this form again.

We are living at a time when violence or threats of violence have permeated the very fabric of our lives. Never before have so many people lived in an environment so charged with the imminence of violence. As a nation or a community of nations we will always be faced with the possibility, if not the probability, of violence in some form--spontaneous or premeditated. We must be prepared to respond.

It is in the formation of military strategy that the interface between the military and civilian leaders takes place. "Politically, we must insure that our civilian leadership is fully informed of the capabilities and limitations of our military power. Part of the problem in the past was that our civilian leaders were misled by our failure to tell them the hard truths, the unpleasant realities, our shortcomings as well as our strengths."

If we accept the Clausewitzian view that war is a continuation of political intercourse and that battle is a means of continuing that intercourse, it should be recognized that success at the lower level may not always achieve the result desire on the higher level. Military objectives must support the political objectives for they are only the means to a political end, and the political leaders must understand the instrument they are using in order to be able to exploit the success which results from its use.

The military power of a nation is the combined <u>potential</u> of all the services to <u>actualize force</u> in the form of combat

power. Combat power, therefore, is the actual instrument which is used to gain control. However, not all the potential military power of a nation may be actualized at any given time.

The ultimate objective of combat power (if the intent is control) is the opponent's mind; more specifically, it is his perception of reality. If we can, we want to create a reality for the opponent that will allow us to control him. During non-violent periods political leaders attempt to create a reality that will convince a potential opponent not to resort to violence. The political approach usually assumes rationality--"To the rational actor, the availability and use of military force has utility only so long as expected gains exceed expected costs." The perception we hope to create, therefore, is that the potential opponent cannot win now - and, it must be remembered: "...the opponent's perception of one's commitment is decisive"--but, that he may win at some time in the future. "In terms of policy, one would combine a strong military posture (LOSE NOW) with Machiavellian manipulation of Nation Y's 'Value of Peace' (WIN LATER)." I wish to emphasize, of course, that this is a "created perception" and not the actual reality. "We would like the Soviets to perceive a WIN LATER outcome, although we naturally hope that reality is quite different from that perception." If the opponent perceives a no-win in the future, he may be willing to risk a possible loss now rather than a certain loss later. This created reality is the product of skillful political action which exploits our national

strengths and the opponent's weaknesses. Military power as a potential--that is, as potential combat power--is one of the tools the political leaders may use.

In a violent environment the objective is still the opponent's perception of reality and, therefore, his mind. As always the ultimate objective is control. Let us turn now to a descriptive model of the violent instrument of political control - combat power.

Combat Power - The Concept

The concept of combat power may be seen as an equation consisting of two elements; mass and fire. This conceptual bifurcation is an analytical technique which is much neater in the abstract than in the dynamics of actual combat operations. When addressing the concept of combat power we must not lose sight of the fact that it is made up of these two elements (mass and fire), and that they are variable relative to each other and relative to a specific opponent.

For the purposes of this paper, combat power may be defined as the actualization of force in armed combat. Force, in the broadest of terms may be viewed as the power to effect change. Combat power is restricted in that it exists in time as actualized force. Furthermore, it exists in time only at the point of contact which is a spatio-temporal concept. That is, it has a beginning and an end in time and specific geographical boundaries.

Mass

Mass consists of personnel, equipment, and material which is the physical, and usually psychological, center of balance. Mass survives by avoiding the effects of fire. Physically, it is made up of two variables; size and mobility. In determining the size of one's mass, it will be large or small relative to a specific opponent. Size of mass is relatively easy to quantify. It may include the entire population and the resources of the nation or be limited to the military services.

Mass, which exists in each medium, is usually based on some particular element around which all else develops. Current examples of this phenomenon would be the tank (land), the aircraft carrier (sea)--possibly being replaced by the submarine as the 'captital' ship, and the fighter aircraft (air). These 'platforms' emerged out of World War II as dominant in their respective mediums and, according to most, remain dominant today. There are indications that these base elements form not only the physical center of balance but also the psychological center of balance. The result of such psychological grounding is illustrated by the physical and psychological unbalancing experienced by the Israelis in the 1973 war.

These base elements are seen as dominant in the particular medium in which they exist and, therefore, become the bases for determining the relative size of mass. It is critical, therefore, that the base element selected is actually the

dominant element in that medium. Technology or tactics may change the base element, and the change may go unrecognized by one side or the other until hostilities begin.

The other physical variable of mass is mobility. Once again we must remember that mobility, like size, is relative to a specific opponent at the point of contact. Mobility provides for the concentration or dispersion of mass. In this age of nuclear fire the ability to disperse mass is more critical than ever before. Keeping in mind the relativity of movement, both sides could be in motion relative to a given medium, but in a steady state relative to each other. To have superior mobility one must have the ability to initiate a change from the steady state at will. When comparing the relative mobility of two masses, therefore, the one which can change the steady state at will is considered to have the greater mobility.

This concept is extremely important to an understanding of the relativity of combat power. More than ever, "the time factor is of crucial importance in relation to the ratio of force to space." Speed of movement permits rapid concentration and dispersion of mass. Technology has provided the means to accelerate greatly the 'tempo' of operation. Unless this tempo is understood by those involved in combat they are likely to be psychologically unbalanced and 'shocked' by the rapidity of change.

Specialized platforms have been developed which are designed to give high mobility to mass within a specific

medium. The platforms survive the opponent's fire by avoiding or by being impervious to it.

That part of a mass which is made up of personnel is subject to social-psychological phenomena. This is, in fact, the most crucial aspect of combat power for it is here that control resides, and the sense of balance is ultimately grounded.

Fire

Fire is measured in terms of its effect on an opponent's mass. It is usually the product of a munition, and it has both a manifest and latent function. Anything which will neutralize a mass--that is, render it incapable of effective action--or which can physically destroy a mass, would fall under the rubric of fire. Therefore, when considering the combat power equation one must address conventional, nuclear, chemical, bacteriological, or electromagnetic munitions as fire producers.

It is important to understand fire as having both a manifest and latent function. Its manifest function occurs when it is actualized. Its latent function occurs only in the perception of the individual. Thus, destruction is a result of the manifest function of fire. Fear of being destroyed is a result of the latent function.

Most munitions are projected through a medium by a weapon. Weapons, which must be seen as weapon systems--man and equipment--exist as part of mass and can be quantified.

Fire, however, is only potential until actualized in time and space against a mass. The effectiveness of fire is dependent on the vulnerability of the mass at which it is directed and the degree of concentration. Some have argued that there has been a 'revolution' in warfare with the introduction of large numbers of precision guided munitions (PGM) - "A guided munition whose probability of making a direct hit at full range on a tank, ship, radar, bridge, or airplane (according to its type) is greater than half." In terms of the combat power equation, the advent of PGMs coupled with the exponential increase in the explosive power of munitions has dramatically altered the relationship between mass and fire. As long as the value of fire was completely linked to the individual man, one could only increase the value of fire by increasing the number of men, thus increasing mass. The introduction of munitions and the weapons to project them fundamentally changed the linkage between man and the value attached to fire. Now a man or unit of mass can project a munition with a fire value many times greater than his own mass value. Carried to an extreme, a small mass could project fire of such a value that it would totally destroy all mass--the mythical doomsday weapon.

Through the act of formulating military strategy, the civilian leaders define the proper scope of action for the military by defining the combat power equation relative to a specific opponent. If the enemy mass is defined as military

personnel only, then the level of violence is, by definition, limited. If, on the other hand, the opponent's civilian population is included in the definition of mass, that is, as part of the combat power equation, then the level of violence may not be limited. Traditional American morality prefers 'military' targets only: however, the popular understanding of the 'lex talionis,' the Law of the Talon, can be seen operating in the rationalization of strategic bombing. In defining the combat power equation the civilian leaders also specify the type of fire that will be used. Thus, in some situations, the fire available to the military commander at the point of contact is of a lower intensity than what it could be. Many of the current 'scenarios' specify exactly what type of fire will be part of the combat power equation. It should be emphasized that defining the combat power equation is a continual process once hostilities begin. Not only can the definition of mass and fire change, but the point of contact can expand or contract, geographically.

If war is a state of sustained violence then combat power must also be sustained. Thus, logistical support is essential to maintain combat power during time of war. Logistical support is not only important to sustain combat power but also essential to project it to the point of contact. The validity of this concept is apparent when one recalls the plight of the Russians during the Cuban missile crisis or our own dilemma during the October War of 1972. "...if large (military) resources exist but cannot be moved

to the point because they are too far away or because there are geographical barriers, then the point is relatively invulnerable. If large military resources can be moved cheaply to a point, it is highly vulnerable." The reality of our large naval forces makes immense geographical areas 'highly vulnerable' to our military forces.

The importance of these concepts and a clearer understanding of the model presented here may be derived from the grounding of it in an empirical example. Our most recent application of forces on a large scale was in Vietnam. In light of that fact, using our experience and that of the French, I have briefly attempted to link some of the concepts with empirical reality. An examination of Chapters IV and V will provide illustrative material which tends to support my assertion that relative combat power is a function of mass and fire at the point of contact. Furthermore, there are indications that fire has reached a level of effectiveness which may render the mobility of mass extremely difficult.

The primary vehicle for maintaining mobility in land combat has been the tank. However, the use of relatively inexpensive munitions, such as mines and PGMs coupled with the high cost per armored vehicle may greatly curtail the use of these vehicles. Will we be forced to react in an historically predictive pattern of accepting exorbitant losses in a vain attempt to gain the initiative? Is our only response to extremely heavy armor losses more and more tanks?

I suggest we examine once again the essense of combat power and try to understand why the tank became the base element of land combat. The tank rendered fire ineffective by being invulnerable to it and by avoiding it. However, today the vulnerability of the tank is growing, and its ability to avoid fire is decreasing. There is, however, in my opinion, clear indication that mobility on the battlefield can and will be retained through the employment of another vehicle--the helicopter.

While it is true that the helicopter is vulnerable to a wide spectrum of fire, it is also true that it has a tremendous ability to avoid fire through speed and by using the protective cover and concealment of the ground. This last point is especially important. The helicopter must be viewed more as a surface vehicle than as a supra-surface vehicle in that it is terrain dependent for its survival in combat. Furthermore, its unique capability to land almost anywhere, create a mass anywhere on the surface, or extract a mass makes it, in essence, more of a land oriented platform than an airplane.

I believe a crucial issue which must be examined in greater detail is the relative strength in terms of helicopters at the point of contact. In rough terms, potentially the United States enjoys a 3 to 1 advantage over the Soviet Union in helicopter strength. However, when we look at our projected deployment for the year 1984, we find only about 15% of our total assets deployed in Central Europe. In relative

terms, therefore, the Soviets may enjoy parity at the point of contact.

If the tank is stopped on the battlefield, helicopters can be used to regain the initiative. Though we have a tendency to see enemy AA weapons as ubiquitous we can use helicopters to conduct high speed, small mass paralyzing attacks on enemy 'nerve' centers.

Conclusion

Combat power, as an instrument in the hands of our political leadership, can be an effective means for gaining our national objectives. However, it must be understood by those employing it. We live in a violent world which often requires a violent response. Combat power as actualized force is the violent response by which we may gain control. A point made here which must not be forgotten is that military power is merely potential until actualized as combat power against a specific opponent at a point of contact. Crucial to this point is that relative combat power is measured at the point of contact. Furthermore, since our perceptions are greatly affected by what we can actually see and measure, mass as an element of combat power plays a more important role in shaping perceptions than does the potential of fire. Therefore, if we intend to limit the escalation of violence at a point of contact, we must be capable of creating a mass of sufficient size to influence the perception of our opponent. On the other hand, it has become clear that the relationship

between mass and fire has been significantly altered by the technological advances made in recent years. The introduction of high value fire in the form of nuclear munitions has greatly increased the vulnerability of all mass to the effects of fire. Thus, large concentrations of mass in a nuclear environment may be an intolerable liability in future conflicts. In addition, the advent of large quantities of PGMs has greatly increased the vulnerability of high value mass. Overall, the increased effectiveness of fire greatly reduces the effect an imbalance of mass may have on relative combat power.

This, of course, is a gross oversimplification of a complex issue. However, I believe the assertions made here are important to our understanding of the true nature of combat power. We are caught in a dilemma. If we rely strictly on effective fire in order to strike a balance of combat power with an opponent, we may be able to significantly reduce the size of our mass. However, we are more likely to be required to actualize fire in order to gain control than if we had a large mass. On the other hand, if we rely on a large mass, we may suffer heavy losses to an opponent who relies on effective fire to strike a balance. There is a way, however, to increase the effectiveness of a relatively small mass, and that is by being more mobile than an opponent's mass. Thus, relative mobility may be <u>the</u> crucial issue in determining relative combat power. Mass which cannot be

brought to the point of contact may have little effect on the outcome of the combat.

In terms of combat power, I have attempted to demonstrate that we can have superior mobility in land combat. Our huge helicopter fleet can be the means of insuring superior mobility in central Europe if we have them, in sufficient quantity, when and where they are needed. In light of the difficulty we anticipate in introducing any additional mass at the point of contact once hostilities have begun, I argue here that a larger portion of our helicopter mass should be deployed to central Europe than is currently envisioned.

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CHAPTER I

INTRODUCTION

The policy maker, if he is to be successful in establishing control, among other things, must have an intimate knowledge of the quantity, quality and the nature of the means at his disposal. There is a large body of literature which addresses the quantitative[1] and qualitative[2] aspects of combat power. The purpose of this paper, however, is to examine the concept of combat power with an aim toward understanding it as an instrument of policy. The approach taken here is neither quantitative nor qualitative but, rather, ontological; that is, the locus of analysis is the nature of combat power. "Wars," said Hugo Grotius, "for the attainment of their objectives, it cannot be denied, must employ force and terror as their most proper agents."[3] This quote from the "Father of International Jurisprudence"[4] succinctly identifies the operative element of war -- combat power.

This study, therefore, may be viewed as an exploratory effort designed to examine the military as an instrument of policy. "Today voices are raised against the maintenance and use of military force. This view ignores the lessons of history, which contain ample proof that there are times when the use of force is not only suitable but essential

in the defense of a nation's interests."[5] As a result of our recent experiences, wherein civilian control of the instrument of violence was less than successful, some members of the military (and for that matter, some civilians) have become skeptical about the ability of civilian leadership to employ military force effectively. I believe the failures were primarily the result of a lack of understanding by the civilian leaders of the instrument of violence they were using. We in the military have a responsibility to educate our civilian leaders on the capabilities, limitations, and the nature of the instrument of violence, which is military combat power. "Statesmanship, in the H-bomb age, must control not only the aims but the operations. It should direct military defense planning, and the formulation of military doctrine. Hence statesmen and their diplomatic advisers must have a greater knowledge of military technique than they needed in the past."[6] It is my assertion in this paper that the political instrument of force is combat power and that there are likely to be situations where it will be necessary to use force in the form of combat power. Furthermore, the use of combat power is more likely to take place outside the traditional context of war than in the past.[7] This is not to say that war as sustained violence is unlikely; on the contrary, we must accept the assumption that "despite whatever effort there may be to prevent it, there may be war."[8]

The use of combat power can be likened to the medical instrument of the surgeon. Out of ignorance one may amputate when it is not necessary. By the same token, fear of the surgeon's knife may cost the life of the patient. "...a nation which habitually avoids violence and a society which considers all forms of war immoral may invite disaster by destroying its military credibility."[9] However, just as the surgeon's knife should be the last resort, the use of combat power should be carefully employed and then only in the amount or at the level necessary to accomplish the task.

If combat power is to be a legitimate means for achieving national objectives it must be understood by those employing it. "The policy-maker, among other things, must have an intimate knowledge of the quantity, quality, and nature of the means at his disposal."[10] More than ever our political leaders must thoroughly understand what combat power is, lest they refrain from using it out of fear or they use it inappropriately out of ignorance. "...statesmen must understand the language of war, so that they do not use it incorrectly."[11] In the limited use of combat power the political leaders must be prepared to exploit battlefield success. If violence is to be limited, then its greatest effect will be the political exploitation of it. "The power to hurt is bargaining power. To exploit it is diplomacy..."[12] If the political leaders are not prepared to exploit success in order to gain the desired objectives, then the military

leadership may attempt to achieve the objectives through an escalation of violence.

What I hope to do, therefore, in the pages that follow, is to provide a conceptual framework for gaining an understanding of what combat power is and, later in the paper, to ground some of the concepts in empirical reality through the use of an historical example.

The methodology employed in this study consists of a review of the literature to develop the conceptual framework and an analysis of historical data. Some of the historical data consist of extensive notes and taped interviews accumulated by the author as a participant in the Vietnam War. Chapter II is an attempt to develop a theoretical framework and place this work in perspective. Chapter III is a presentation of a model of combat power. The model is intended to be descriptive rather than prescriptive. Chapter IV, using Vietnam as an example, provides an historical perspective for some of the key concepts of the model. Chapter V is a rather detailed analysis of the Battle of Kontum which took place in the spring of 1972, in South Vietnam. The purposes of this chapter are first, to illustrate some of the concepts and therefore ground them in an historical event and secondly, to provide an accurate report for interested readers. Chapter VI is a brief examination of current land combat doctrine with an emphasis on helicopter operations in a NATO environment. Based on the results of my work,

tentative conclusions and recommendations are suggested in Chapter VI.

Professor Martin Blumenson, in a talk at the Naval War College in November 1971,[13] stressed that in doing research, especially historical research, we all have a tendency to simplify, to get at the essentials -- to get at the mearing of things so that we may understand. We tend, therefore, to distort the truth. In order to limit the scope of this study and remain within the parameters of my resources, I have been selective in the presentation of data. There is, therefore, distortion. My hope, however, is that I have remained faithful enough to my charge so that this work proves of some use. If it does nothing more than stimulate thought on the issues addressed then I will consider the effort worthwhile.

Aristotle once wrote, "Almost all things have been found out, but some have been forgotten."[14] I make no pretensions of originality in this work; if one wanted to invest the time and effort almost all the ideas presented can be traced to their antecedents. As Edward Atkeson has stated, "...few have contributed much that cannot be found in some form in the works of Sun, Clausewitz, and Jomini."[15] I have assiduously attempted to provide citations; however, I am sure there are errors of omission. The approach taken here is not intended to be new in the sense of new pieces to a puzzle but, rather, a slight rearranging of the old

pieces to reveal a little different picture. Throughout the preparation of this paper I have found Liddell Hart's aphorism to be accurate: "...cold print is a merciless exposer of mental fog."[16]

CHAPTER II

A THEORETICAL FRAMEWORK

> If the free nations want a certain kind of world, they will have to fight for it, with courage, money, diplomacy -- and legions.[1]
>
> . . . .
>
> A nation that does not prepare for all forms of war should then renounce the use of war in national policy. A people that does not prepare to fight should then be morally prepared to surrender.[2]

America is not accustomed to political exploitation of military success. We carry the burden of Napoleonic strategy firmly established since the Civil War.[3] The decision was to be made on the field of battle with the statesmen merely formalizing a "fait accompli." I realize this is an over-simplification, but it does serve to illustrate what I believe is a flaw in the American approach to world violence.

We are living at a time when violence or threats of violence have permeated the very fabric of our lives. Never before have so many people lived in an environment so charged with the imminence of violence. As a nation or a community of nations we will always be faced with the possibility, if not the probability, of violence in some form -- spontaneous or premeditated. We must be prepared to respond in order to limit the collateral effects of violence. Most of the people of the world live with the specter of a nuclear holocaust which threatens to engulf them and destroy their way of life.

Much has been written about the horrors of nuclear war, and the balance sheets of the statisticians tally cities by the tens and lives by the millions. More than ever, each of us, as an individual, is immediately concerned with conditions which might precipitate violence on this horrific scale. If there is one word or concept which captures the essence of our desires, it is the word control. "Control is what separates senseless violence from the purposeful use of force."[4] This, then, becomes the objective of our actions. We seekcontrol in all areas of social interaction in the belief that if we have control we can gain our objectives without undue risk. Control, as I am using the term here, does not necessarily mean dominance -- it simply means an ability to positively affect action. Thus, in terms of the violence extant throughout the world, we seek to control it in order to limit its collateral effects.

How, then, can we control violence? What are the means at our disposal, and who has the authority to legitimately employ these means? In terms of domestic violence we have a body of law which can sanction and an instrument of the state which can use violence to control violence. "While violence breeds violence it can also act as a vaccine."[5] Our state and municipal police forces are the legitimate means of force used to maintain domestic control. Recent experience in the form of "strikes" and sick-outs" have demonstrated, albeit painfully, the result of not having the means to control violence. In the international arena

where violence has been endemic we do not have an effective means of international control. "For where the power of law ceases, there war begins."[6] As a result, nations must depend on themselves or on powerful allies to insure their survival in the face of the aggressive forces of violence.

> Since the dawn of time, men have competed with each other -- with clubs, crossbows, or cannon, dollars, ballots, and trading stamps... Anyone who says there will be no competition in the future simply does not understand the nature of man.[7]

The fiercest kind of competition is that in which one's continued existence is at stake. Oftentimes intense competition has been manifested in overt confrontation and violence. These primal struggles have taken a myriad of forms; however most can be classified as armed conflict. Thus, war in all its various manifestations may be viewed as a violent struggle with each side attempting to control or annihilate the other. In the context of a struggle, the concept of balance is crucial to understanding the application of force in the form of combat power. "The same Clausewitz who argued that the psychological unbalancing of the enemy is the most important factor in victory totally ignores this factor when discussing the principle of mass. Tragically, it has been his fate to be primarily associated with cataclysmic war and senseless slaughter, rather than with skillful strategems aimed not at the physical but at the psychological defeat of the enemy."[8] Balance or "equilibrium,"[9]

as used here, is dynamic and must always be viewed in relative terms. Furthermore, it can be grounded in two areas--physical and psychological. Physical balance may be viewed as an objective reality; whereas, psychological balance is based on a perceived reality. For example, two boxers may be objectively measured by standards applied to their relative physical attributes; however, their psychological balance is difficult to measure. It may be understood as a created perception of reality which is accepted by the one holding it. The process by which the perception is created is essentially based on an interpretation of sense data, logical deduction, and, to some extent, intuition.[10] Thus, a sense of psychological balance is based on one's perception of reality which may or may not accurately reflect the objective reality. This is a crucial issue in that it is here that one's sense of balance may be manipulated and, in competitive situations, it often is.

In the "fog" of war a clear perception of the situation is often lacking, and the participants are vulnerable to being manipulated.[11] Violence in the form of combat is usually begun with both sides having some sense of balance and continues until one side or the other loses its balance--physical, psychological, or both; or, there is a mutual recognition that an imbalance cannot be achieved through the use of force. Usually during the latter stages of the conflict the protagonists enter into a dialogue, during which

they agree on a reality. Historically this has been the case; however, in recent times there has been a reticence on the part of protagonists to arrive at a consensus.

"War" and "military strategy" are concepts which have been defined and studied throughout recorded history.[12] For my purposes, however, I will use Grotius' definition of war "...war is the state of contending parties..." [13] and add that it is a violent state. "War is thus a type of violence."[14] "Strategy is the comprehensive direction of all the elements of power to control situations and areas in order to attain objectives."[15] Furthermore, "The understanding of power and force and their effective use is critical to the understanding of strategy."[16] The formulation of strategy is extremely important in that it specifies the opponent and provides a purpose for using violence. Strategy, therefore, provides the definition of victory[17]--national survival (a state of balance), or domination of the opponent (a state of imbalance). By the same token, it defines defeat. For example, the French grounded themselves in the Maginot line prior to World War II. "They had hoped to sit behind the Maginot Line and let the Germans batter themselves senseless...."[18] In a sense, in by-passing it the Germans created a defeat according to the <u>French</u> definition. Our public commitment to a forward defense in Central Europe may in fact, be defining victory and defeat for us. "On this calculation, the Warsaw Pact peacetime force is enough to make

a breakthrough likely if peacetime NATO forces are deployed forward, with only the two French divisions and the Canadian brigade as reserves."[19] "...NATO's forward forces should not be designed to resist Pact attacks without giving ground--this requirement can never be met against a force of comparable size designed for penetration of a narrow main attack sector."[20] (Emphasis added.)

It is in the formation of military strategy that the interface between the military and civilian leaders takes place. "Politically, we must insure that our civilian leadership is fully informed of the capabilities and limitations of our military power. Part of the problem in the past was that our civilian leaders were misled by our failure to tell them the hard truths, the unpleasant realities, our shortcomings as well as our strengths."[21] However, the primary responsibility for the formation of strategy in our democratic society rests squarely with civilian leadership. "In its fuller meaning, strategy is defined as the art of mobilizing and directing the resources of a nation or community of nations--including the armed forces--to safeguard and promote its interests against those of its enemies actual or potential."[22] (Emphasis added.)

Vietnam is a perfect example of the political leadership not understanding the instrument of violence and, therefore, using it inappropriately and not exploiting battlefield success. Battles were won, but the war was lost. As in all wars the defeat was ultimately moral rather than physical.

"...defeat results not from loss of life, save indirectly and partially, but from loss of morale."[23] Military objectives were achieved; however, they were not exploited by the American political leaders to attain more important political objectives. Indeed, some have argued that there were no clear political objectives. "While the 'objective' was repeatedly stated by the President and Secretary of State, it was never done so in terms that would produce conceptual unity in the conduct of operations."[24] If we accept the Clausewitzian view that war is a continuation of political intercourse[25] and that battle is a means of continuing that intercourse,[26] it should be recognized that success at the lower level may not always achieve the result desired on the higher level. Military objectives must support the political objectives "for they are only the means to a political end,"[27] and the political leaders must understand the instrument they are using in order to be able to exploit the success which results from its use. Furthermore, it must be understood that war, in essence, is "the state of contending parties"[28] in which the involved parties intend to use violence in order to establish control, for "the aim of war is some measure of control over the enemy."[29]

The military power of a nation is the combined potential of all the services to actualize force in the form of combat power. Combat power, therefore, is the actual instrument which is used to gain control. Not all the potential military power of a nation may be actualized at any given time.

For example, in Vietnam--"We were losing the political war and we did not have the power in usable form to invade North Vietnam."[30] The ultimate objective of combat power (if the intent is control) is the opponent's mind; more specifically, it is his perception of reality. "For the issue of any operation of war is decided not by what the situation actually is, but by what the rival commanders think it is."[31] If we can, we want to create a reality for the opponent that will allow us to control him. During non-violent periods political leaders attempt to create a reality that will convince a potential opponent not to resort to violence. The political approach usually assumes rationality--"To the rational actor, the availability and use of military force has utility only so long as expected gains exceed expected costs."[32] This rational "cost-benefit" approach is, of course, nothing new. Hugo Grotius, in 1634, wrote: "This is conformable to what was said by Augustus, that no war should be undertaken, but where the hopes of advantage could be (shewn) to overbalance the apprehensions of ruin."[33] The perception we hope to create, therefore, is that the potential opponent cannot win now-and, it must be remembered: "...the opponent's perception of one's commitment is decisive"[34]--but, that he may win at some time in the future. "In terms of policy, one would combine a strong military posture (LOSE NOW) with Machiavellian manipulation of Nation Y's 'Value of Peace' (WIN LATER)."[35] I wish to emphasize, of course, that this is a "created perception" and not the actual reality. "We

would like the Soviets to perceive a WIN LATER outcome, although we naturally hope that reality is quite different from that perception."[36] If the opponent perceives a no-win situation now and no-win in the future, he may be willing to risk a possible loss now rather than a certain loss later. This created reality is the product of skillful political action which exploits our national strengths and the opponent's weaknesses.[37] Military power as a potential--that is, as potential combat power--is one of the tools the political leaders may use.[38] Admiral Arleigh A. Burke clearly understood the Soviet use of this tool: "They have shown--and they now show--a rare skill in the psychological use of good military strength. They have often gained their ends without having to commit their forces, and that is important."[39] When violence is imminent or has occurred, then actualized force--combat power--is used to achieve the degree of control desired. "Power must be recognized by others if it is to function, whereas force functions by itself."[40] In a violent environment the objective is still the opponent's perception of reality and, therefore, his mind. As always, the ultimate objective is control.

Let us turn now to a descriptive model of the violent instrument of political control - combat power.

CHAPTER III

A MODEL OF COMBAT POWER

Combat Power - The Concept

The concept of combat power may be seen as an equation consisting of two elements; mass and fire. (I am making a different distinction then that of the traditional fire and maneuver.) This conceptual bifurcation is an analytical technique which is much neater in the abstract than in the dynamics of actual combat operations. However, in the interest of gaining understanding, I believe it is a useful tool. When addressing the concept of combat power we must not lose sight of the fact that it is made up of these two elements (mass and fire), and that they are variable relative to each other and relative to a specific opponent. Furthermore, any meaningful model using this concept must be applicable in any medium--land, sea or air (and for that matter, space).

For the purposes of this paper, combat power may be defined as the actualization of force in armed combat.[1] Force, in the broadest of terms may be viewed as the power to effect change. The purpose of combat power is to implement a strategy in support of national policy. Military power is the potential from which combat power is actualized.[2] Combat power is restricted in that it exists in time as actualized force. Furthermore, it exists only at the point of contact. "...military force levels scarcely exist in

abstracto and must of necessity be understood in the immediate context of their global, regional, or even local emplacement."[3] Let me emphasize: the point of contact is a spatio-temporal concept. That is, it has a beginning and an end in time and specific geographical boundaries.[4]

Mass

Mass consists of personnel, equipment, and material which is the physical, and usually psychological, center of balance. It exists in a medium and takes on one of three configurations or formations: line, square or column, or some derivation of these.[5] Mass survives by avoiding the effects of fire. Physically, it is made up of two variables; size and mobility. It must be emphasized that the relativity of these two variables is always in terms of a specific opponent and only at the point of contact. Thus, in determining the size of one's mass, it will be large or small relative to a specific opponent. Size of mass is relatively easy to quantify. It may include the entire population and the resources of the nation or be limited to the three military services: Army, Navy, and Air Force, which in turn provide a mass for each medium--land, sea, and air. There is, of course, some overlap, but each service is primarily oriented toward a specific medium. (Interservice disputes usually erupt as a result of these overlaps.)

Mass, which exists in each medium, is usually based on some particular element around which all else develops.

Current examples of this phenomenon would be the tank (land), the aircraft carrier (sea)--possibly being replaced by the submarine as the 'capital' ship, and the fighter aircraft (air). These 'platforms' emerged out of World War II as dominant in their respective mediums and, according to most, remain dominant today. "While an army is a complete organism, its core is the combined team built around the tank.... In Europe today the tank is supreme. If it can be stopped, the ability to project force and to occupy territory will no longer exist."[6] There are indications that these base elements form not only the physical center of balance but also the psychological center of balance. "The Soviet command places almost unbounded faith in the armored fighting vehicle, the tank."[7] The result of such psychological grounding is illustrated by the physical and psychological unbalancing experienced by the Israelis in the 1973 war. One might draw an analogy between the tank of today and the infantryman of World War I. The American Civil War demonstrated the vulnerability of the advancing infantry to the bullet, and the well-known response of leaders during World War I was "more troops." In terms of C. S. Forester's book The General this may be seen as the "Curzon" mentality.[8] In light of the growing proliferation and increased capabilities of precision guided munitions, there seems to be evidence that the "Curzon" mentality is still with us.

> In fiscal year 1975, following an interim assessment of tank combat attrition rates experienced in the 1973 Middle East war, the Army raised its inventory objective from 8,300 to 10,300 tanks (including about 325 tanks for its three new divisions). A year later, after a more formal assessment, the inventory objective was raised to 14,400 tanks--a 75% increase over the 1973 inventory objective.[9]

In Naval operations the supremacy of the aircraft carrier is, at the moment, contentious. However, it continues to be the prime determinant of the size of the fleet. "The most important factor is the number of aircraft carriers. The number of carriers determines the number of carrier escorts; together they have a major impact on the required number of fleet replenishment vessels, which in turn demand escorts of their own."[10] The physical and psychological balance was so firmly grounded in the aircraft carrier during World War II that its fate literally determined the fate of nations. The Battle of Midway:

> By destroying four of Japan's finest aircraft carriers together with many of her best pilots it deprived the Japanese Navy of a large and vital portion of her powerful carrier striking force; it must have had a sobering effect on the morale of those members of the Japanese fighting forces who witnessed the destruction of the four carriers; it stopped the Japanese expansion to the east; it put an end to Japanese offensive action which had been all conquering for the first six months of war; it restored the balance of naval power in the Pacific which thereafter steadily shifted to favor the American side; and it removed the threat to Hawaii and to the west coast of the United States.[11]

The dangers inherent in becoming too firmly grounded in a single element are illustrated in the following statement by Bernard Brodie: "The reason Admiral Halsey gave for rejecting the idea of staying off the San Bernardino Strait was a slogan in the fleet: 'The enemy's main forces are where his carriers are.' Now, I submit that that conception was true for the preceding two years of the war, but at the time of Leyte Gulf, it was no longer true."[12]

The Air Force has resisted attempts to specialize aircraft as close air support or air superiority. They have preferred a "Doctrine of Quality" which provided technically superior weapons capable of multiple combat roles--"air superiority, interdiction, and close air support."[13] Within the Air Force and, more specifically, within the Tactical Air Command (TAC), "...the mission of air superiority (and the fighter pilots who were good at it) tended to have more prestige than the close air support mission. Air superiority was closer to the 'essence' of the Air Force."[14] The historical example of the German Stuka in World War II is often used to point out the vulnerability of specialized close air support aircraft.[15] Specialization, however, is occurring with the introduction of the A-10 and F-15. The importance of the air superiority platform was firmly established in World War II and remains the base element of the Air Force today. "A major proportion of NATO aircraft would have to be assigned initially to air-to-air sorties

to prevent Pact air superiority over the battlefield and attacks on critical rear-area targets...."[16] There are those, however, who question the supremacy of the manned aircraft. "These new trends tend to discourage the use of manned attack aircraft in hostile environments. Advances in missile and gun fire from mobile systems on the ground can impose heavy casualties on manned aircraft at altitudes ranging from just above the surface up to 50,000 feet."[17]

These base elements are seen as dominant in the particular medium in which they exist and, therefore, become the bases for determining the relative size of mass. "Note that Soviet tanks exceed ours by more than four to one...."[18] It is critical, therefore, that the base element selected is actually the dominant element in that medium. Technology or tactics may change the base element, and the change may go unrecognized by one side or the other until hostilities begin. An historical example--and every war seems to provide some--was the French cavalry at Crecy in 1346.[19]

Mass because of its physical size must be treated as having weight, and this weight can be increased relative to an opponent through the action of momentum. Thus mass in motion may overcome another by displacing it from the space it occupied in a given medium. This displacement of an opponent's mass may affect the relative balance, physical as well as psychological, and expose the opponent's mass to fire. Fire is the only thing that can destroy mass. However,

since mass exists in a medium and occupies space within that medium, it is subject to being overwhelmed and displaced by another mass.[20] Fire can deny an opponent use of space in a medium, but mass must occupy space in order to use it.

The weight of an opponent mass, developed through the momentum of his motion, can be addressed by your mass in a number of ways: a) offer such resistance that his motion is stopped immediately upon coming into contact with your mass;[21] b) offer permeable resistance which allows the opponent mass to flow around and through your fractured mass--thus your mass continues as smaller units;[22] c) move away from the thrust of the opponent mass so as to diminish the effect of its momentum;[23] or d) move toward his mass at a higher velocity than he is moving, thus increasing your relative weight..." - thus 'multiplying force by velocity.'[24]

The displacement of an opponent's mass by your mass may be accomplished in one of two ways: a) by overwhelming his mass with the superior weight of your larger mass or through the action of your momentum;[25] b) by destroying the cohesion or will and thus resistance of the opponent mass.[26]

The other physical variable of mass is mobility.[27] Once again we must remember that mobility, like size, is relative to a specific opponent at the point of contact. Mobility provides for the concentration or dispersion of mass.[28] In this age of nuclear fire the ability to disperse mass is more critical than ever before. "It is when our

capabilities do not permit us to disperse as much as the enemy capabilities require of us that we are in trouble."[29] Furthermore, "There is a limit, determined by mobility, to what one may call the 'economic size' of any particular army. And the effective strength of an army may cease to increase when its numbers cause a decline in mobility...."[30] Keeping in mind the relativity of movement, both sides could be in motion relative to a given medium, but in a steady state relative to each other. To have superior mobility one must have the ability to initiate a change from the steady state at will. An illustration may clarify this point. If two opponents are foot-mobile and both can move at the same speed, then one can avoid the other indefinitely by simply moving away from the opponent at the same speed that the other is using to close. If other conditions are equal, this will result in the steady state. If, however, one side becomes horse-mobile, he can maintain the steady state or change it at will by moving toward the opponent faster than the opponent can move away. When comparing the relative mobility of two masses, therefore, the one which can change the steady state at will is considered to have the greater mobility.[31]

This concept is extremely important to an understanding of the relativity of combat power. More than ever, "the time factor is of crucial importance in relation to the ratio of force to space."[32] Speed of movement permits rapid

concentration and dispersion of mass.[33] Technology has provided the means to accelerate greatly the "tempo" of operations. "Speeds and volumes of calculations and transmissions are unprecedented. People and things as well as words and pictures can and do go almost anywhere in fractions of the time once required. Explosives can move from storage or factory directly to targets at almost any distance and from almost any launching medium, land, sea, or air in minutes and seconds rather than in the hours, days, weeks or longer as technologies of only two decades ago required."[34] Unless this tempo is understood by those involved in combat they are likely to be psychologically unbalanced and "shocked" by the rapidity of change. Liddell Hart refers to the "tank-time" of World War II.[35] In the future, we must anticipate an "air-time" which will be some order of magnitude greater than our previous experience. Action will be framed more in time than in space, and distances will be measured in time rather than kilometers. "The immense difference between the tactical (battlefield) ratio and the strategical (entire front) ratio shows that the crucial factor in the defense of any wide front is the time factor."[36]

Since mass exists within a medium, it follows that mobility occurs within a given medium. Two of the mediums are three-dimensional--sea and air--while land must be treated as two-dimensional. Specialized platforms have been developed which are designed to give high mobility to mass

within a specific medium.[37] The platforms survive the opponent's fire by avoiding it or by being impervious to it. Historically, invulnerability has been a result of at least one of these two variables, although usually it is a combination of the two. More often than not, one has to be sacrificed for the other, with the avoidance of the opponent's fire holding the greater chance for survival.

That part of a mass which is made up of personnel is subject to social-psychological phenomena. This is, in fact, the most crucial aspect of combat power for it is here that control resides, and the sense of balance is ultimately grounded.[38] Since most activity is within an organizational context the means of integrating and controlling the organization are vital. We commonly refer to these means as "command and control and communications (C^3)."[39] Furthermore, since perceptions become the basis of our actions we must have timely information with which to modify our perceptions so that they are in accord with objective reality.[40]

FIRE

Fire is measured in terms of its effect on an opponent's mass. It is usually the product of a munition, and it has both a manifest and latent function.[41] Anything which will neutralize a mass--that is, render it incapable of effective action--or which can physically destroy a mass, would fall under the rubric of fire. Therefore, when considering the combat power equation one must address conventional, nuclear

chemical, bacteriological, or electromagnetic munitions as fire producers. Any other distinction is artificial and must be seen as political in nature.[42] This is not to say such distinctions are not appropriate. The relationships which exist among these different forms of fire are more psychological than actual.[43]

It is important to understand fire as having both a manifest and latent function. Its manifest function occurs when it is actualized. Its latent function occurs only in the perception of the individual. Thus, destruction is a result of the manifest function of fire. Fear of being destroyed is a result of the latent function.[44] One can sometimes control an opponent with just the latent function; however, credibility and thus the effectiveness of the latent function usually requires the actualization of some fire. Fire can also produce an emotional-shock effect, usually transitory, as a result of its manifest function.[45] It is crucial to remember, however, that if we intend to control an opponent, firepower alone is usually not enough. We must have the ability to create a mass, for it is the presence of a mass which is decisive and not mere firepower unless, of course, our objective is the total destruction of the enemy mass.[46]

Most munitions are projected through a medium by a weapon. Weapons, which must be seen as weapon systems--man and equipment--exist as part of mass and can be quantified.[47]

Fire, however, is only potential until actualized in time and space against a mass. The effectiveness of fire is dependent on the vulnerability of the mass at which it is directed[48] and the degree of concentration.[49] The mass can render fire totally ineffective by achieving cover or by avoiding it. Fire should not be delivered against an invulnerable mass unless its purpose is something other than destruction--for example, immobilizing a mass. Thus, holding vulnerability constant, the other variable of fire is the degree of concentration. Furthermore, concentration is a factor of time and space. Given a fixed quantity of fire, it can be either dispersed in time and space or concentrated. The ideal actualization of fire is when it is concentrated against a vulnerable mass which is also concentrated. The ideal application of combat power achieves the above while, at the same time, insuring that the opponent is unable to apply effective fire to one's own mass. The best example of this is the ambush.

Some have argued that there has been a "revolution" in warfare with the introduction of large numbers of precision guided munitions (PGM). James P. Digby provides the following definition of a PGM - "A guided munition whose probability of making a direct hit at full range on a tank, ship, radar, bridge or airplane (according to its type) is greater than half."[50] In terms of the combat power equation, the advent of PGMs coupled with the exponential increase

in the explosive power of munitions has dramatically altered the relationship between mass and fire. "Until the invention of the improved machine gun late in the nineteenth century, the ratio between destructive capability of weapons and manpower was about one to one; that is one man with a sword was, as a matter of principle, capable of eliminating no more than one enemy at a time."[51] As long as the value of fire was completely linked to the individual man, one could only increase the value of fire by increasing the number of men, thus increasing mass.

The introduction of munitions and the weapons to project them fundamentally changed the linkage between man and the value attached to fire. "In short, the ratio between destructive capability of weapons and manpower continued to widen as the effectiveness of the lethal weapon continually improved...with nuclear weapons, the ratio jumped to almost astronomical figures. One bomb dropped from one airplane with a crew of only 12 men destroyed 4.7 square miles of the city of Hiroshima, and killed or incapacitated over 100,000 people."[52] Now a man or unit of mass can project a munition with a fire value many times greater than his own mass value. Carried to an extreme, a small mass could project fire of such a value that it would totally destroy all mass--the mythical doomsday weapons.

A point made earlier should be re-emphasized and elaborated on at this time. I stated that it was the application

of force which provides us with combat power. Combat power, therefore, must be viewed as actualized force rather than as potential force. Any world power may have potential force; but, until it is actualized as combat power, it is pure potential. Furthermore, it does not follow that all potential force will be actualized at any given moment as combat power. In fact, numerous external and internal factors may limit the amount of potential force which becomes actualized. Thus, when armed conflict occurs, one must address combat power, not potential force. It is relative combat power that will affect the balance. It appears that this distinction has not been clearly understood; and, therefore, misunderstanding has resulted when some have attempted to strike a balance based on military power as potential rather than actualized force.

Another area which must be stressed is strategy, which provides the purpose for actualizing force. The question to ask when one country applies combat power against another is whether the intent is balance (survival) or dominance. Survival, or status quo, is usually defined in terms of defense; whereas, dominance requires offensive action. A clear understanding here is essential to any definition of victory or defeat. As stated earlier, strategy must define victory. An imbalance implies dominance by one or the other. Traditionally, this has been viewed as victory or defeat depending on which side of the balance you are on. A balance implies survival of the two, which may also be viewed

as defeat for one and victory for the other. Herein lies the critical issue of how one defines victory, and it is inexorably linked with the purpose for which force was actualized.

Through the act of formulating military strategy, the civilian leaders define the proper scope of action for the military by defining the combat power equation relative to a specific opponent.[53] "...because the prime purpose of military force is to be able to oppose other military force, should the need arise, then any measurement of military force must be, of necessity, relative."[54] This is crucial when we consider who and what is defined as the enemy mass. If the enemy mass is defined as military personnel only, then the level of violence is, by definition, limited. If, on the other hand, the opponent's civilian population is included in the definition of mass, that is, as part of the combat power equation, then the level of violence may not be limited.[55] By defining the civilian population as part of mass they become proper targets for fire either directly or indirectly. Though most nations have refrained from explicitly defining the civilian populace as proper objective for fire, actions are usually more powerful than words. The heavy bombing of cities during World War II was essentially a "terror" tactic aimed directly at the civilian population. Another example of defining the enemy mass is provided in the instructions to American submarine

commanders after the Japanese attack on Pearl Harbor. "Six hours after the attack, Wither received a message from the Navy Department: EXECUTIVE UNRESTRICTED AIR AND SUBMARINE WARFARE AGAINST JAPAN."[56] The idea that the entire enemy population was in some way part of the enemy mass is captured in the following statement. "Every ship they had, combat or merchant, was engaged in the war effort one way or the other."[57] The order of the day was "shoot on sight."[58]

Traditional American morality prefers "military" targets only; however, the popular understanding of the lex talionis, the Law of the Talon, can be seen operating in the rationalization of strategic bombing. "There is a strong common intuitive inclination favorable to retribution.... Such reactions indicate that a desire for vengeance, or at least for measured retribution, is deeply embedded in our culture."[59]

> On August 24, 1940, however, several Luftwaffe planes happened to bomb London. Prime Minister Churchill seized the occasion to send ninety-five RAF Bomber Command aircraft against Berlin the next night--for precision bombing of industrial targets (though darkness made precision dubious), but also candidly as a retaliatory stroke. Hitler replied, 'If they attack our cities, we will rub out their cities from the map'....[60]

In defining the combat power equation the civilian leaders also specify the type of fire that will be used. Thus, in some situations, the fire available to the military commander at the point of contact is of a lower intensity than what it could be. "The major weapons limitation that has

been observed in local wars involves the qualitative distinction between atomic, biological, and chemical weapons on the one hand and conventional high explosives on the other."[61] Many of the current "scenarios" specify exactly what type of fire will be part of the combat power equation. It should be emphasized that defining the combat power equation is a continual process once hostilities begin. Not only can the definition of mass and fire change, but the point of contact can expand or contract, geographically.

Once the combat power equation has been defined and its purpose stated, the application of combat power should rest primarily with the military leaders. The military expertise is most appropriate in the art of tactics, which provides the techniques for applying combat power.[62] "When the application of the military instrument merges into actual fighting, the dispositions for control of such direct action are termed 'tactics.'"[63]

If war is a state of sustained violence then combat power must also be sustained. Thus, logistical support is essential to maintain combat power during time of war.[64] Logistical support is not only important to sustain combat power but also essential to project it to the point of contact. Furthermore, one must be aware of the cost in projecting combat power over large distances. "For each unit of distance, there will be a cost of transporting killing power. Let us assume for the present that there is a ratio

of resources used up each mile, or each kilometer, which is a homogeneous variable. That is, to transport a hundred riflemen a mile might cost about the same amount of resources as to equip one rifleman." Thus "...possible killing power has to be diverted from killing to moving killing power."[65] The interrelationship that exists between military potential, combat power and the point of contact should be fully understood by strategists when they consider "the military vulnerability of a point...."[66] The validity of this concept is apparent when one recalls the plight of the Russians during the Cuban missile crisis or our own dilemma during the October War of 1973.[67] "American nuclear power immobilized Russian nuclear power. And American local superiority in non-nuclear force together with a demonstrated willingness to use it discouraged further destabilizing moves."[68] As Stinchcombe points out "...if large (military) resources exist but cannot be moved to the point because they are too far away or because there are geographical barriers, then the point is relatively invulnerable. If large military resources can be moved cheaply to a point, it is highly vulnerable."[69] The reality of our large naval forces makes immense geographical areas 'highly vulnerable' to our military forces. There may be situations, however, when the need for combat power is of such short duration that logistics is relatively insignificant.

The importance of these concepts and a clearer understanding of the model presented here may be derived from the

grounding of it in an empirical example. Our most recent application of force on a large scale was in Vietnam. In light of that fact, using our experience and that of the French, I will briefly attempt to link some of the concepts with empirical reality. After presenting an overview of the Vietnam experience, I will present and analyze in some detail a specific battle, the Battle of Kontum.

CHAPTER IV

VIETNAM PERSPECTIVE

> It is better that they do a thing imperfectly than for you to do it perfectly: for it is their country, their war, and your time is limited.
>
> Lawrence of Arabia, 1919

In order to place this into a perspective, I believe it is essential to first examine the French experience.[1] If we had truly understood their situation we might have been more successful. It is important to understand that France as a world power, even in the post-WW II period, had a great potential for force in the form of military power. However, the actualization of that potential was quite limited. On the other hand, the Vietminh force potential had its basis not only in themselves but also in their allies, especially China. They elected to actualize as much force as they possibly could. Thus, they drew on their own potential for manpower and relied on China for most of their weapons. When evaluating relative combat power one must not confuse actualized force with potential.[2] There appears to have been a tendency on the part of many observers to measure the potential of France against the potential of the Vietminh. This often resulted in the erroneous perception that the balance was clearly in favor of the French. This misunderstanding worked for the Vietminh and against

the French. Vietminh losses were expected and, therefore, minimized; however, French losses were not expected, and an inordinate weight was attached to them. In addition, one must understand their purpose, the purpose or intent of the respective opponents. If we understand their purpose for actualizing force, then we can understand how they defined victory as well as defeat. It seems the French labored under a post-World War conventional definition of victory and therefore applied combat power to create an imbalance in which the Vietminh would admit defeat. The French definition of victory was predicated on an admission of defeat by their opponent. "If the objective is to defeat an enemy force rather than denying it victory, then the eventual cost depends as much on the enemy as on one's own plans."[3]

The Vietminh defined the situation very differently from the French. For them, victory was simply the ability to survive, to maintain a balance of combat power with the French. Their definition of victory was not dependent on any admission from the French. The situation was exacerbated for the French in that the rest of the world accepted the Vietminh definition.[4] They did not have to create an imbalance in order to defeat the French. They merely had to remain viable in the face of what was perceived by the world as superior French combat power. The longer they survived, the more recognized their victory became. Thus, with respect to combat power, the French were committed to

achieve an imbalance in their favor; whereas, the Vietminh were committed to survival and balance.

Let us examine the two opponents in terms of their relative combat power. The French potentially had more fire than did the Vietminh; however, they were inferior in mass. Their mobility was grounded in vehicles which severely limited them -- at great cost -- to a few serviceable roads. Although they had airborne forces, these did not appreciably alter the balance. Thus, the Vietminh, though foot mobile, had superior mobility and were able to concentrate at will. It must be remembered that mobility will provide for concentration or dispersion; but unless fire is applied,an opponent cannot be destroyed. The ideal application of combat power is to apply concentrated fire to a concentrated, vulnerable opponent and to destroy him without his being able to react. This is the ideal to be sought and may be viewed as the measure of our tactics. To dominate totally with impunity is the absolute function of combat power. The best example of this, as previously mentioned, is the ambush. We must, therefore, understand the dynamics of the ambush in the context of combat power and balance. In the ideal, one opponent is totally balanced; whereas, the other is totally unbalanced. Furthermore, the imbalance is both objective and subjective. The Vietminh became masters at applying their combat power in this fashion.[5] Since they had superior mobility they were able to select the place to concentrate fire. This

selection was made much easier by the road limitations of the French. The Vietminh retained the selection of space but gave the dimension of time to the French. That is, once the Vietminh had selected the place, they had to wait for the French to enter that space before they could apply their fire. They were able to balance effectively French combat power, and their successes were perceived as French defeats. The Vietminh were able to survive; and, thus, they saw victory. The French were not able to dominate; so, they saw defeat. The main problem for the French was that in order to dominate, they had to deliver effective fire. However, they could not get the enemy to concentrate his mass in neither time nor space,so that it could be addressed with fire. The French situation became desperate as time weighed against them. Lack of support at home and a growing, hostile world opinion served to erode the morale of the French troops and government officials. Every means was used by the Vietminh to manipulate the French perception of the situation so as to achieve a psychological imbalance. Eventually the French decided to become decisively engaged with the Vietminh combat forces. This engagement, by definition, would determine the balance. The French decided to entice the Vietminh to concentrate. In order to do that,they had to present what would appear to be a vulnerable mass. Furthermore, the Vietminh had to perceive the mass as vulnerable and advantageous to dominate or

destroy. Thus, the French projected their mass into an area normally dominated by the enemy. The place, selected by the French, was Dien Bien Phu. The time, selected by the Vietminh, was April, 1954. The French knew they were inferior in size and mobility; however, they believed they could dominate by having superior fire. Their tactic may have been correct; in fact, the events of 1972 lend credence to their approach. However, they grossly miscalculated the balance of fire. The kind of massive concentration of fire they needed could only be delivered by a large air mass or atomic fire -- neither of which was available to them.[6] Their fixed position soon became a concentration for Vietminh artillery pieces, while their own fire was delivered to a highly dispersed enemy mass which was frequently covered. The vital balance of combat power rested on fire which was not forthcoming.[7] Without the fire they were doomed. The enemy did in fact concentrate his mass in time and space and would have been exceedingly vulnerable to massive, concentrated fire.

The significance of these events and their relationship to the combat power equation become more meaningful when we briefly examine the American experience.

In 1965, the North Vietnamese Army (NVA) was applying combat power in South Vietnam against the South Vietnamese Army (ARVN). They hoped to create an imbalance, both physically and psychologically, which would allow them to dominate.

However, the introduction of American combat power immediately restored the physical balance while diplomatic efforts attempted to restore the psychological balance. The advantage of mobility once held by the NVA was negated by the large scale use of American helicopters. This fact was stunningly illustrated during the Pleiku Campaign of October and November, 1965.[8] Superior American fire was concentrated in time and space against a concentrated and vulnerable enemy mass. The enemy mass was intercepted while advancing; thus, it was exposed. Both the time and the place were selected by the Americans. The American mass could be rapidly concentrated so as to fix the NVA mass, and American fire could be concentrated on the exposed enemy mass. These were the key ingredients in the combat power equation which allowed the Americans to restore balance in the eleventh hour. "If certain victory was not yet guaranteed, certain defeat had obviously been averted."[9] Early success and traditional definitions soon worked against the Americans, much the same as they had with the French. The lack of a clear strategy seriously affected the definition of victory and the actualization of force as combat power.[10] In the absence of definitive guidance, victory was defined as dominating or destroying the enemy. "Search and destroy soon had as its goal defeat of the enemy in the South by United States forces."[11] Thus, an imbalance of combat power was essential, and implied was admission by the enemy that

an imbalance had been achieved.[12] Herein, the psychological balance favored the North in that American military combat power was committed to "win." The NVA quickly recognized that they could not dominate the Americans, but they could deny us our victory by surviving and remaining viable in the face of our power.[13] "It was not the aim of this strategy to defeat American forces in battle, that would have been beyond Hanoi's military capability." They could strike a physical balance and seek a psychological imbalance. "The war had to be made a test of will rather than a trial of strength."[14] Domination and destruction of the enemy mass became the primary objective of American combat power. There were striking similarities between the American situation and that of the French a decade earlier. American combat power grew rapidly but was closely matched by the rapid expansion of the NVA. "In other words, escalation had to be met by escalation."[15] The extensive use of helicopters put the Americans in a more favorable position than were the French; however, superior mobility was not achieved because large land areas used by the enemy mass were not accessible to the Americans. These politically imposed restrictions allowed the enemy mass to disperse -- reach a safe area -- almost at will. Furthermore, American efforts to close with and destroy the enemy often resulted in the enemey selecting the space if not the time. Often the enemy mass had carefully prepared the ground to receive concentrated

American fire. Their preparations provided cover and greatly reduced the effectiveness of American fire in these engagements. Clear evidence of American dominance was not forthcoming. The enemy would not admit to what appeared to the Americans as an objective reality. Furthermore, the enemy went to great lengths to deny the Americans any objective evidence, such as dead bodies or abandoned weapons. In the absence of such tangible evidence, and as a result of strong pressure to achieve an objective imbalance, statistical definitions of victory were used; e.g., the body count. Evidence that American combat power was superior had to be provided in order to justify its continued use in a political climate of growing doubt.[16]

The NVA continued to survive, and it successfully manipulated the American perception of reality. Many times, Americans compared the apparent tenacity and determination of the NVA with that of the ARVN. Always the comparison accentuated the seeming invincibility of the NVA and the ineptness of the ARVN. During a period when American successes seemed to support an objective reality of imbalance in favor of American power, the enemy staged a clear statement of their viability which did not substantively affect the physical balance but which greatly altered the psychological balance -- Tet, 1968.[17] Although the enemy mass suffered great losses, the balance was reestablished and continued until the American withdrawal. American combat

power was not able to dominate, and America declared itself a loser. The NVA survived.

One of the most controversial applications of American combat power was the bombing of the North.[18] This application of fire was a failure in that it was not concentrated against a vulnerable enemy mass.[19] Since the greater part of the enemy mass (by our definition - troops) was not in the North, fire applied to the North had little effect. Furthermore, there was no industrial base to speak of. The only available mass was the civilian population and foreign national ships which were carrying weapons and supplies.[20] In addition, the former must be eliminated because America did not see itself as being in a life-and-death struggle with North Vietnam; the civilians were not strategically defined as part of the enemy mass.[21] The foreign ships were not addressed because of the fear that including them as part of the enemy mass would initiate direct third party intervention. Thus, fire applied to the North cannot be assessed as effective. Its primary purpose was to achieve a psychological effect by intimidating the enemy. Its failure only served to strengthen the North's psychological position. They nurtured and cultivated the perception that they were David and America was Goliath.[22] This serves to illustrate that it does not necessarily follow that a large volume of fire will also be effective fire.

America withdrew its mass but continued to commit its fire. The combat power equation took on a unique balance.

The mass was provided by the ARVN, while the fire remained essentially American. In fact, tremendous quantities of fire could be concentrated at will. A subtle but extremely important shift in the balance took place with the withdrawal of the American mass. With American presence the NVA could define victory as balance. However, against the ARVN they were compelled to define it in terms of dominance. (The situation can be likened to our own civil war; to be victorious the South had only to survive.)[23] This represented a fundamental change which gave the ARVN a superiority in combat power. The enemy mass would have to concentrate against the ARVN mass, which would make them very vulnerable to American fire. The crucial issue here, as it was for the French at Dien Bien Phu, was the timely actualization of fire. Without it, survival of the ARVN mass was out of the question. "While on this subject, there is no doubt that American air power inflicted very heavy casualties on North Vietnamese troops investing Khe Sanh and made their positions untenable."[24] Events of 1972 indicate that a vulnerable enemy mass concentrated in time and space can be destroyed by concentrated fire.

I believe a detailed analysis of the Easter Offensive of 1972, specifically the Battle of Kontum, would serve to illustrate some of the key concepts of combat power. The intensity of combat coupled with the unique mix of an ARVN mass and U.S. firepower make the events of that period important to our understanding of the use of force,

especially in light of the recent decision to withdraw U.S. troops from South Korea. In addition, looking at the vital role played by helicopters during that period may provide insights into the roles they might play in a future conflict.

CHAPTER V

THE BATTLE OF KONTUM

On 30 March, 1972, the army of North Vietnam invaded South Vietnam. An article in the Pacific Stars and Stripes newspaper read:

> President Nixon was reported Saturday to be closely watching North Vietnam's long-awaited major offensive as a test of the success of his Vietnamization program to shift the burden of the war effort to South Vietnam.[1]

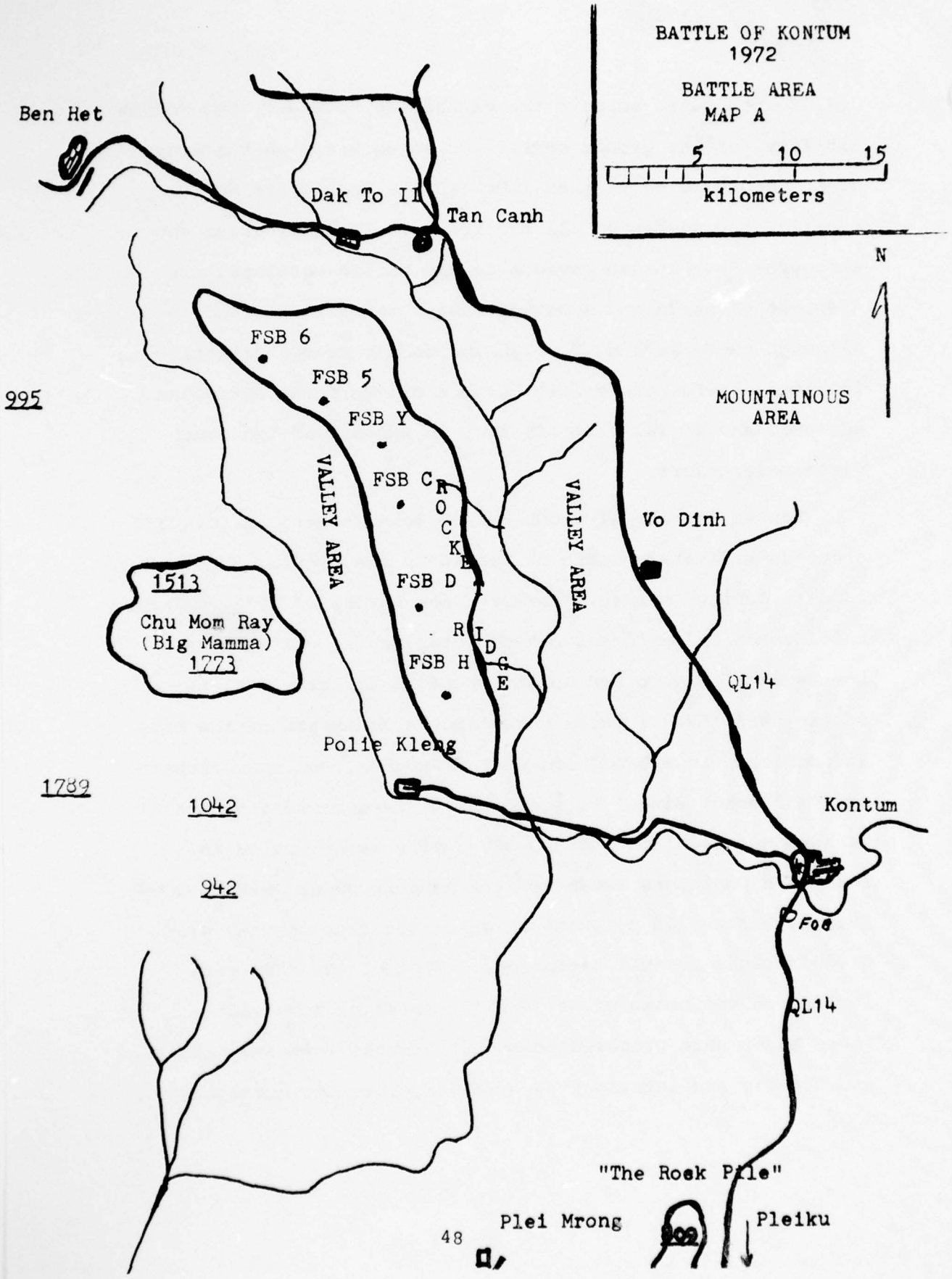
Other headlines indicated the magnitude of the invasion:

> South Vietnam's northern quarter erupted Saturday into the bloodiest battlefield since the 1968 Tet offensive, and the commander of government forces said more than 30,000 North Vietnamese troops had invaded Quang Tri Province.[2]

The battle that had been in the making for years had finally begun. The enemy opened three major fronts.[3] The first was in I Corps where he sent 30,000 troops streaming across the DMZ. The second was in III Corps where the enemy attacked out of his Cambodian sanctuaries and tried to capture the city of An Loc. The third was in II Corps where two NVA divisions tried to capture the provincial capital of Kontum. This paper deals only with the battle of Kontum.[4] For the first time in the Vietnam War, both U.S. and Vietnamese forces depended completely on the other for victory. Neither of the allies could win alone. The

U.S. forces could support the Vietnamese; however, the responsibility for the ground combat rested squarely on the Army of the Republic of Vietnam (ARVN). The Battle for Kontum typified the combat on all the fronts. The weaknesses and strengths that became obvious as the battle developed are a source of pride and sometimes shame for all involved. Although there were no U.S. ground combat troops directly involved, there were a large number of Americans acting as advisors and flying U.S. aircraft in support of the South Vietnamese effort.

Kontum, a city of about 30,000 inhabitants, is located about 30 kilometers north of Pleiku in the Central Highlands. During January, February, and March, of 1972, a large build up of enemy forces was detected in the valley area southwest of Dak To and northwest of Kontum city. Elements of the 22nd ARVN Division were located northwest of the city and deployed in a broad arc which extended from the southern end of "Rocket Ridge" to the district headquarters of Dak To (see Map A). Most of the ARVN units were located in fortified positions known as fire support bases (FSB). These FSBs were occupied by units which ranged from company size organizations to full battalions. Most of the FSBs were located on the peaks of large hill masses or mountains. These bases were prepared to accept attacks from any direction and usually had interlocking artillery fire for mutual support.


BATTLE OF KONTUM
1972
BATTLE AREA
MAP A
5
10
15
kilometers
N
MOUNTAINOUS AREA
Ben Het
Dak To II
Tan Canh
FSB 6
FSB 5
FSB Y
FSB C
ROCKPILE
FSB D
FSB H
VALLEY AREA
VALLEY AREA
Vo Dinh
995
1513
Chu Mom Ray
(Big Mamma)
1273
Polie Kleng
1789
1042
942
QL14
Kontum
FOB
QL14
"The Rock Pile"
Plei Mrong
Pleiku

In addition to the positions occupied by elements of the 22nd Division there were two Ranger camps located along the Laos and Cambodian borders (see Map A). These camps were manned by Ranger battalions from the Ranger Group and were placed under the operational control of the 22nd Division. The Division headquarters was located in Binh Dinh Province; however, a forward headquarters was established northwest of Kontum city near the village of Tan Canh.

For the purposes of this discussion, I have divided the Battle of Kontum into three distinct phases. Phase I was the battle for the fire support bases, Phase II was the battle for the border camps, and Phase III was the battle for the city of Kontum. Phase I lasted most of the month of April; Phase II the first two weeks of May, and Phase III from the middle of May until the first week in June.

As the threat mounted in Kontum Province, the 22nd Division was reinforced by elements of the strategic reserve, two brigades of an airborne division. Elements from the airborne division were located in FSBs on "Rocket Ridge," and the division headquarters was established near the village of Vo Dinh (see Map A).

ARVN units operating in Kontum Province were provided helicopter support by the 17th Combat Aviation Group operating out of Camp Holloway in Pleiku and Vietnamese helicopter squadrons operating out of Pleiku Airbase. The U.S.

aviation units primarily supporting the 22nd Division and airborne units were as follows:

TABLE I

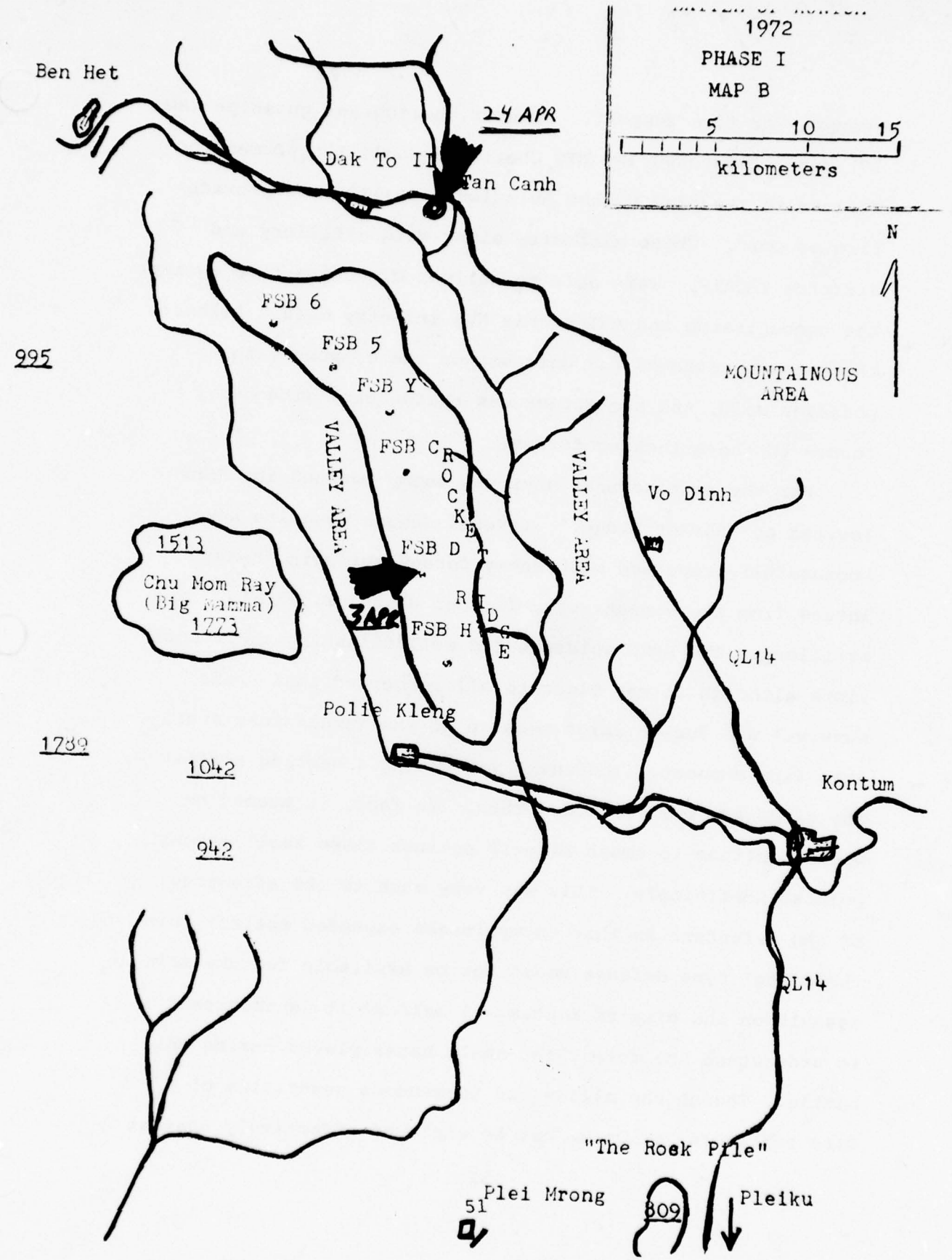
U.S. ARMY AVIATION UNITS

	TYPE AIRCRAFT*			
	AH-1G	UH-1	OH-6	CH-47
57th Assault Hel. Co.	8	20		
180th Assault Support				16
361st Aerial Weapons Co.	12			
B Troop 7/17th Air Cavalry Squadron (This unit was redesignated H Troop 7/17th in April 1972)	9	8	10	

* This was the approximate number of aircraft. The numbers varied dependent on combat losses and replacements.

Phase I - Battle for the Fire Support Bases

During the latter part of March the FSBs on "Rocket Ridge" had received probing attacks and attacks by fire (ABF) from a mixed caliber of weapons.[5] The intensity of the attacks increased until the first major assault took place on the 4th of April. This early morning attack against FSB D (see Map B) marked the beginning of Phase I, the battle for the fire support bases. The attacks were made by elements of the NVA 320th Infantry Division and consisted of heavy infantry assaults supported by direct and indirect artillery and rocket fire. Numerous antiaircraft weapons were positioned around the FSB inorder to prevent aerial


1972
PHASE I
MAP B
5 10 15
kilometers
N
Ben Het
24 APR
Dak To II
Tan Canh
FSB 6
FSB 5
FSB Y
FSB C
FSB D
FSB H
ROCKET
RIDGE
VALLEY AREA
VALLEY AREA
MOUNTAINOUS AREA
Vo Dinh
1513
Chu Mom Ray
(Big Mamma)
1273
3 APR
Polie Kleng
QL14
1789
1042
942
Kontum
QL14
"The Rock Pile"
Plei Mrong
Pleiku
51
509
995

resupply or fire support. However, helicopter gunships (AH-1G) were dispatched (by LTC Charles Bagnal, the Commanding Officer of the 52nd Combat Aviation Battalion) to provide fire support. These aircraft, along with artillery and airforce TACAIR, were able to deliver effective fire against the concentrated and vulnerable NVA infantry mass. Although the enemy penetrated the defenses of the compound, the position held, and the attack was beaten back with heavy losses to the attacking forces.

For the next several days the enemy pounded the FSBs located on "Rocket Ridge." Several ground assaults were successfully repulsed with enemy forces suffering heavy losses from the concentrated fire of gunships, TACAIR, and artillery. The ARVN soldiers did well defending their positions although it was clear to all concerned that their survival was due in large measure to the immediately available fire support. The enemy was taking a beating against the hardened, well-defended FSBs. In fact, it seemed he would continue to smash himself against these small strong points indefinitely. This was very much to the advantage of the defenders in that enemy losses expended against this "hedgehog" type defense would not be available for the main assault on the city of Kontum. I believe it is important to understand the role these small bases played during this battle. Though the allies had tremendous quantities of fire available, it could not be employed effectively against

the enemy mass because it was dispersed and well hidden. The problem, therefore, was how to get the enemy to concentrate his mass in such a way that it would be vulnerable to concentrated fire. By locating the FSBs on terrain which dominated the area, it became necessary for the enemy to eliminate them inorder to insure freedom of movement in the area. Thus, these small bases became the focal point of enemy activity because they occupied "key" terrain (i.e., terrain which gave the side occupying it an advantage). These small bases were relatively autonomous and were not dependent on overland lines of communication. Though they appeared isolated, they were not, because their lines of communications were through the air. The helicopters operating in and out of these small bases linked them both physically and psychologically with other units. Even though there were periods during which helicopters were very restricted because of enemy fire, there was a belief extant among the defenders that eventually the "choppers" would be back. They did not perceive their situation as hopeless.

A point which must be emphasized is that these FSBs were almost totally dependent on outside fire support if they were to survive a large scale attack. This created a difficult situation for the NVA in that their estimates of the strength within the base were accurate; however, they could not know for sure how much fire would be committed to support that particular base. Thus, in terms of combat

power, an accurate assessment of the ARVN mass could be made at the point of contact but the amount of fire that would be brought to bear was an unknown until it was actualized. It is my belief that the NVA consistently underestimated the amount of effective fire which could be actualized. (The Battle of Khe Sanh in 1968 is another example.)

Eventually, some of the FSBs were overrun.[6] It is interesting to note however, that even if one base were destroyed, the others continued to resist. There were numerous reports during this period that NVA armored vehicles were operating in the area. Helicopter crews reported sighting what appeared to be tank tracks in the valley on the west side of "Rocket Ridge;" however, the presence of tanks could not be confirmed.

The most glaring weakness in the overall defensive plan was the vulnerability of the 22nd Division command post located at Tan Canh. This relatively small compound was located on a small hill southwest of the town of Tan Canh. There were 155mm and 105mm howitzers located at the base as well as 4 M-41 tanks from the division's 14th Armored Cavalry Regiment. Located within the compound were a large number of support troops and approximately one battalion from the 42nd Regiment. The base lacked defense in depth and was located on relatively low ground. There were no significant forces to the north to counter a serious threat from that direction.

The division headquarters located at Tan Canh had received sporadic artillery fire throughout the month of April.[7] However, the intensity of the attacks increased until they reached more than 1,000 rounds per day. On the 23rd of April there were clear signs that an attack on the base was imminent. Surface to surface wire guided missiles were used by NVA forces to destroy the ARVN tanks located within the compound and the division command bunker. Several of the American advisors were injured during these attacks. Colonel Philip Kaplan, the senior advisor to the 22nd Division, recognized the seriousness of the situation and began making plans for the eventual evacuation of the American advisory team. In addition to the tanks being destroyed, one of the two 106mm recoilless rifles was also destroyed. By the evening of the 23rd, the situation at Tan Canh was grave. The only remaining antitank defense rested primarily on light antitank weapons (LAW) and air support. The division command post had been reestablished in the 42nd Regiment TOC, but the morale of the ARVN division commander, Colonel Duc Dat, and his staff, was very poor. It was believed that Colonel Dat was fatalistic about the outcome of the battle and was quite convinced that the NVA could not be resisted. This situation made it particularly difficult for Colonel Kaplan to get the division to adopt a more aggressive attitude.

Late in the evening of the 23rd there were reports that enemy armor was approaching the Tan Canh area from the

northwest. An Air Force C-130 Spectre gunship was called to the scene and with its onboard night vision equipment was able to detect a column of tanks on the road north of Tan Canh. The gunship engaged the tanks with a 105mm cannon and reported hitting three tanks. The column continued its advance toward Tan Canh. There were two bridges between the approaching tanks and the division headquarters; however, these bridges were being secured by Regional Force/Popular Force (RF/PF) troops who did not offer any significant resistance to the tanks nor did they destroy the bridges. When the tank column reached the town of Tan Canh some of them were engaged by tank hunter/killer teams from the 42nd Regiment. It was reported that two of the tanks had been destroyed by these teams using M-72 LAWs. However, the tanks continued their approach during the early morning hours of the 24th. Some of the tanks, about 10, split off from the main column and moved to positions north of the division compound in order to support the attack by fire. Large numbers of infantry were observed moving into positions around the compound. Some of these formations were taken under fire by the Air Force gunship and artillery. At about 0530 the tanks began their attack on the division headquarters. They approached in the early morning fog with their lights on and firing their machine guns at positions along the perimeter. The tanks which had taken up firing positions earlier supported the attack with direct fire

from their main guns. The tanks were Soviet T-54 and Chinese produced versions of this tank, the T-59. Large infantry formations assaulted the compound from the north. One of the American advisors, Captain Ken Yonan, directed fire from a water tower located in the compound. Unfortunately there was a large number of ARVN support troops (about 600) located within the compound. At the sight of the approaching tanks many of these troops panicked and ran away from the attacking forces. The exodus of these troops over the wire on the southern side of the camp spread a general sense of hopelessness among the remaining defenders. By 0600, the situation was critical. Fog and low clouds precluded the effective employment of air support. The Senior U.S. advisor, Colonel Kaplan, made the decision to evacuate the American advisory team once it became evident that the compound was about to be overrun. His decision was supported by the Senior U.S. Advisor for Military Region II, John Paul Vann. Mr. Vann, a civilian advisor who had over ten years of experience in Vietnam, was flying over the besieged compound and directing the air support which was finally able to work as the weather improved. Some of the enemy tanks were engaged by U.S. advisors as they fought their way out of the compound; however, the LAWs did not appear to be effective against the tanks at close range. The last time Colonel Dat and his staff were seen they were located in the men's room of the compound and had

resigned themselves to eventual death or capture. It was reported some weeks later that Colonel Dat had, in fact been captured and taken to North Vietnam. [8]

Once outside of the compound, the U.S. advisors were picked up in a daring rescue by Mr. Vann in his light OH-58 helicopter. [9] Mr. Vann and his pilot Captain John Todd made several trips in the rescue effort and ferried some of the advisors to the Dak To airstrip located about six kilometers to the west.[10] It was necessary to keep the distance short because some of the ARVN soldiers had grabbed the skids of the helicopter as it departed and were hanging beneath it. On one of the trips Mr. Vann's helicopter crashed while attempting to pick up the last of the advisors. Fortunately, he and the advisors were rescued by another helicopter. ARVN armored units which had been located west of Dak To II, at the Ben Het border camp, were ambushed by NVA infantry as they approached Dak To. All of the ARVN tanks in the relief column were destroyed by infantry weapons. Several ARVN tanks located at the Dak To airstrip were destroyed by NVA tanks which were themselves later destroyed by TAC air strikes. Several of the enemy tanks were engaged later in the morning by helicopter gunships; however, even though the tanks were hit by rockets, they were not destroyed.

The psychological shock created by the appearance of these enemy tanks from the 202nd NVA tank regiment was

greater than the physical damage they wrought. This appeared to be a perfect example of the "classic" shock effect of armor on infantry troops. Fortunately, the NVA were either unable or unwilling to exploit their initial success.

The destruction of the 22nd Division Headquarters on the 24th of April was a shock to the entire II Corps Headquarters. The Division ceased being an effective fighting unit, and the only things which stood between the NVA and Kontum city were a few airborne units located on the highway, QL 14. The attack on Tan Canh was made by elements of the 2nd NVA Division. Reports of two separate regiments operating in the area subordinate to the B-3 Front brought the size of the enemy effort against Kontum to about three divisions.[11]

General Ngo Dzu, the II Corps Commander, ordered the evacuation of the remaining FSBs on "Rocket Ridge." The troops walked out of these bases leaving their 105mm artillery pieces behind. Some of the units made heavy contact and took many casualties as the withdrawal turned into an exercise in escape and evasion. Some of the troops made it to the border camp at Ben Het and were extracted several days later by helicopter. Others were able to make their way to QL 14 and then, later, back to Kontum city. Many ARVN soldiers were lost, either captured or simply not able to make their way back to friendly locations.

The 22nd Division units operating in Kontum province were considered no longer combat effective and were withdrawn

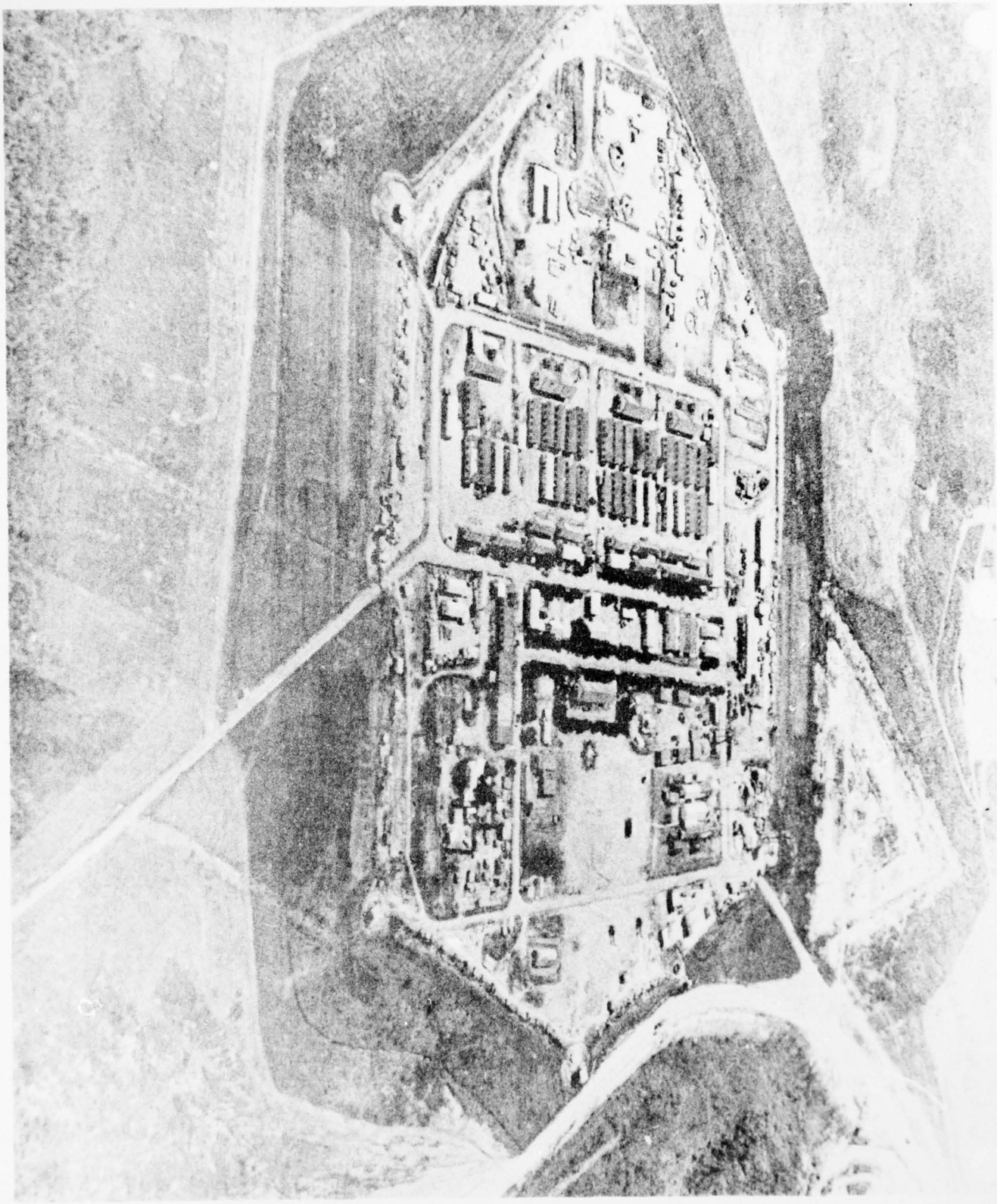
from the area to reorganize and refit at Camp Enari, Pleiku. Most of the airborne units were pulled back to the Saigon area to assist in the defense of An Loc. The 23rd ARVN Infantry Division from Ban Me Thout was assigned the mission of defending Kontum. A gloom and pessimism bordering on panic infected U.S. and Vietnamese alike. The fate of Kontum rested on the speed and determination of the 23rd Division and especially, of its commander, Colonel Ly Tong Ba.

On the 29th of April, Colonel John A. Todd, Deputy Commander of the 1st Aviation Brigade, arrived at Pleiku. His presence was requested by BGEN John G. Hill, Deputy Senior Advisor for II Corps. Colonel Todd was the third member of a planning and control group consisting of the Senior Advisor, Mr. Vann; his deputy, General Hill, and Colonel Todd. These men, along with the II Corps Commander, LTGEN Dzu, made the key decisions each day on the conduct of the defense.

Another very significant event took place on 29 April. At about 1600 hours two UH-IB helicopters, mounting the airborne TOW antitank missile system, arrived at Camp Holloway, Pleiku. These aircraft soon made army aviation history and proved a concept that had only been in the testing stage.[12]

The next week was devoted to preparing for the defense of Kontum city. Initially, there was confusion, and attempts

COLONEL DUC DAT, COMMANDER 22ND ARVN DIVISION



TAN CANH - TOP OF THE PICTURE IS WEST

LTGEN NGO DZU IN THE CENTER WITH JOHN PAUL VANN AT HIS LEFT

COLONEL JOHN A. TODD

FIRE SUPPORT BASE NO. 5

FIRE SUPPORT BASE NO. 6

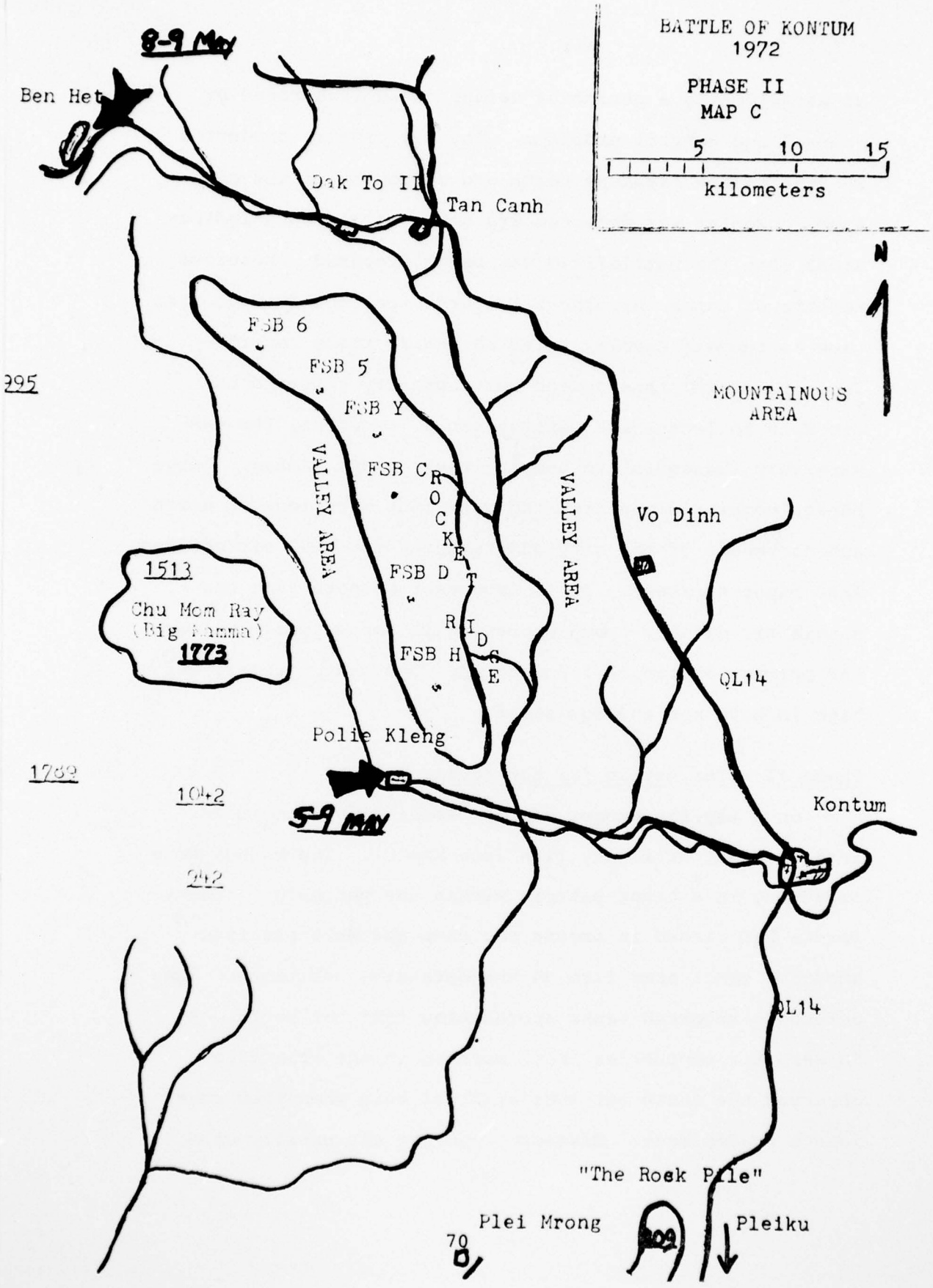
MAJOR GENERAL NGUYEN VAN TOAN

MGEN NGUYEN VAN TOAN INSPECTING TROOPS AT KONTUM

at establishing a perimeter defense were frustrated by command and control problems. The air cavalry conducted reconnaissance missions north and northwest of the city. Enemy movement was detected, and there were strong indications that the battlefield was being prepared. Numerous reports of tanks throughout the area resulted in much lost time as the air cavalry tried to verify these reports. In fact, during this period most activity centered on attempts to locate and destroy tanks. However, the NVA were very successful in keeping their tanks hidden. Large bunker complexes and fighting positions were located north and northeast of the city and targeted for B-52 air strikes (ARC light strikes). It is important to note that the single air cavalry troop operating in Kontum province was the primary source of information. The cost, however, was high in both men and equipment.

Phase II - The Battle for the Border Camps

On 5 May, the Ranger camp of Polei Kleng came under intense enemy artillery fire (see Map C). The rounds were impacting in a tight pattern within the perimeter. Enemy forces had closed in around the camp and were placing accurate small arms fire on the defensive positions. The defenders reported tanks approaching from the north. A forward air controller (FAC) working in the area also observed the tanks but lost sight of them when they moved into a wooded area. Elements from the air cavalry were


BATTLE OF KONTUM
1972
PHASE II
MAP C
5 10 15
kilometers
N
8-9 May
Ben Het
Dak To II
Tan Canh
FSB 6
FSB 5
FSB Y
FSB C
ROCKET RIDGE
FSB D
FSB H
VALLEY AREA
VALLEY AREA
MOUNTAINOUS AREA
Vo Dinh
1513
Chu Mom Ray
(Big Mamma)
1773
QL14
Polie Kleng
5-9 MAY
Kontum
QL14
"The Rock Pile"
Plei Mrong
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70
295
1782
1042
242

called in to relocate the tanks. In addition, the airborne TOW aircraft had been called in to engage the tanks. It should be noted that these aircraft were the only ones in existence; and, therefore, great caution was exercised in employing them. For example, only one TOW aircraft went out at a time; and, then, they were escorted by a team of AH-1G gunships plus a UH-1 (commonly called a "slick") to act as a command and control aircraft. The airborne TOW aircraft used the call sign "Hawk's Claw." Shortly after the helicopters arrived in the area, a steady stream of F-4 attack aircraft began arriving over the target area.

The gunner on the TOW aircraft spotted two of the tanks, which appeared to be painted black. He acquired one of the tanks in his sight but elected not to fire when a helicopter from the cavalry troop flew into his field of vision. Subsequently, the targets were spotted several times, but the gunner was unable to acquire the targets early enough in his approach to engage them because of the thick jungle canopy in the area. TACAIR, both U.S. and Vietnamese, dropped bombs on the suspected target locations in an attempt to blow away the jungle cover so that "Hawk's Claw" could get a clear shot. F-4's and VNAF A1-E's struck the area; however, the tanks were not visible. Several secondary explosions and what appeared to be oil base fires indicated that the airstrikes may have destroyed at least one of the tanks. As the aircraft orbited the camp they were sporadically engaged by a 23mm antiaircraft gun as well as

numerous 51 cal. machine guns and small arms fire. All aircraft were forced out of the area early in the evening due to weather. The ordeal by fire for the camp continued throughout the night. Intense artillery fire scored direct hits on the command bunker and other defensive positions in the compound. Many of these structures were damaged to the point that the defenders were forced to seek cover in individual foxholes. The enemy moved his assault troops to within 100 to 200 meters of the camp. Late in the afternoon of 6 May the decision was made by Mr. Vann and General Hill to pull out the two U.S. advisors.[13] This was a difficult decision in light of the fact that Polei Kleng was located on one of the main enemy avenues of approach into the city of Kontum. Many of the camp defenders had become casualties, and there was a shortage of supplies, especially water. It was decided to extract the two U.S. advisors in the evening when it was dark enough to afford some concealment for the light observation helicopter (LOH) from the cavalry troop that would make the extraction. Just at dusk the LOH flew into the camp through a hail of enemy fire and successfully extracted the U.S. advisors. It had been planned to replace the ARVN camp commander; however, the VNAF pilot of the UH-1 carrying the new commander refused to fly into the camp.

Another dramatic event took place on the 6th of May. A FAC, flying in support of the Polei Kleng operation received

a radio call from "Gladiator 715." This aircraft had been shot down on 24 April south of Dak To and it had been assumed that there were no survivors, as it was reported that the aircraft (UH-1H) had exploded on impact. The FAC established contact with a small group of survivors from the crash, and elements from the cavalry troop were dispatched to try and locate them. At first a trap was suspected because no one believed there could still be survivors from the crash. After locating the small party on the ground and insuring that they were in fact U.S. personnel, an LOH went in and picked up two survivors. They were accompanied by a group of ARVN soldiers and Montagnards who grabbed the aircraft when it landed and almost pulled it out of the air. Some of the aircraft in the area started receiving fire, so the U.S. personnel were the only ones recovered. These men told of three other badly wounded survivors located in the vicinity of the crash site. A "slick" (UH-1) from the cavalry landed in the reported location and recovered the three injured men. They reported that they had been helped by some ARVN troops who were in the area. It was also reported that a large number of these troops were wandering around in the hills south of Dak To, probably survivors from Tan Canh, Dak To, and the FSBs on Rocket Ridge.[14] A group of Montagnards had provided food and other assistance, to include an old PRC-25 radio. It was with this radio that Spec/4 Lea finally made contact with the FAC.

This was indeed a bright point in an otherwise dismal picture. Polei Kleng took several ground probes during the night. Enemy attacks by fire continued throughout the day on 7 May. Most of the camp was destroyed,and all the defenders were living underground.

It was reported that the camp commander and other key officers attempted to escape from the camp during the night by way of a tunnel; however, it had collapsed during the heavy shelling. The ARVN S-3 (operations officer) organized the defenders and generally took control of the situation. Mr. Vann spent a great deal of time flying over the besieged camp trying to offer assistance and encouragement to the defenders. On several occasions he attempted to have his counterpart, Gen Dzu,talk to the camp commander however, the camp commander was too shaken to talk to anyone.

Late in the afternoon of the 7th a very serious problem arose when one of the Montagnard battalions, the 71st, located at the Ben Het border camp, apparently mutinied. They shot one of their commanders and seized several Vietnamese officers as hostages. They threatened to shoot them all unless aircraft were made available the next day to transport them to Pleiku so that they could spend some time with their families. The dissident troops held a portion of the compound while the other battalion, still loyal, held the rest. Mr. Vann immediately flew out to the camp and worked out an agreement with the Montagnards and Vietnamese.

A plan was drawn up to airlift the mutinous battalion out of the camp the next day. This seemed to appease the mutinous troops; and, for the moment, the situation stabilized. During the night Ben Het came under intense attacks by fire, and large numbers of enemy troops were observed to the northwest of the camp.

On the 8th, the enemy continued to put heavy fire into both Ben Het and Polei Kleng. The situation at Polei Kleng improved somewhat when an ARVN captain, who spoke fairly good English, virtually assumed command of the situation. He was promoted to the rank of major by General Dzu and put in command. The most serious problem facing the defenders was their critical shortage of water. A plan was devised to air drop 3,000 pound loads of water into the camp before sunrise from CH-47 helicopters. Colonel John A. Todd organized and led the mission, however, it was aborted due to poor weather in the vicinity of the camp.

The Commander at Polei Kleng estimated that 1,000 rounds of 130mm artillery had hit the camp during the night and early morning of 9 May. Reports vary on the size of the attacking force; however, it is estimated that it was regimental size and supported by an unknown number of tanks. The defenders fired a 106mm recoilless rifle at the tanks, but missed. Allegedly, small arms fire became too intense to even use the M-72 LAW. Approximately 350 defenders (including some dependents) moved out of the camp to the

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south, leaving an unknown number of wounded behind. At 1700 hours there were reports of tanks leaving the area to the west and that 180 of the defenders were 6 km west of Kontum city. As of 1800 hours, 250 of the camp's defenders had joined with friendly units. In response to the loss of Polei Kleng the ARVN airlifted a battalion from the 45th Regiment (23rd Division) into a blocking position 12 km west of Kontum city. The enemy antiaircraft fire was quite heavy in the vicinity of Polei Kleng, and a VNAF A1-E was shot down 3 km northwest of the camp.

In response to the reported tank attack at Polei Kleng, the Hawk's Claw package which consisted of one UH-1H C&C (Command and Control), one UH-1B TOW equipped aircraft and two AH-1G gunships for fire support was launched at about 0645 from Camp Holloway. After arriving on station and not being able to locate suitable targets, the package was diverted to Ben Het.

At Ben Het, the revolt of the previous day subsided, and all personnel within the camp turned their attention to the defense of their position. One of the Vietnamese held captive by the mutinous unit was released so that he could coordinate the defense.

On the morning of 9 May, Ben Het came under an intense combined arms assault. Prior to the attack the NVA sent dogs through the wire from the north to detonate the mines; the infantry followed. The fighting continued at close quarters with the positions on the eastern perimeter trading

hands several times. Late in the afternoon a small enemy force still occupied several bunkers. The defenders stopped one tank at the main gate with an M-72 LAW. An estimated 100 enemy were killed in the immediate vicinity of the camp. Due to low clouds TACAIR was not able to work; however, our TOW ship was able to acquire and destroy the tanks easily.

During the early morning a decision was made to send in a slick from the 57th AHC to resupply the defenders with M-72 LAW's. The aircraft was escorted by two AH-1G's from the 361st AWC. All of the aircraft received hits. The drop was successful; however, while escorting the slick out of the camp, one of the gunships received multiple hits and crashed several hundred meters southeast of the camp. The aircraft exploded shortly after impact. The front seat pilot was observed climbing out of the aircraft and falling down nearby. The aircraft commander, Captain Reeder, was observed running to the southwest into a wooded area. After numerous airstrikes, an LOH from the cavalry was able to locate and pick up the front seat pilot; however, Captain Reeder was not seen again. (It was learned later that he was a POW.) The other AH-1G also received several hits and the pilot, WO Allen, was shot through the chest. After the copilot/gunner, Captain Gamber, landed the aircraft on QL 14, east of Dak To, WO Allen was administered life saving first aid by Captain Roy Sudec who was flying the C&C aircraft for Hawk's Claw. After administering first aid Captain Sudec evacuated the wounded pilot to Pleiku.

The attack on Ben Het was successfully beaten off, with the enemy taking very heavy losses. The situation was relatively stable on 10 May; and, by 0900 hours 11 May, the defenders had eliminated the enemy inside the camp and secured the entire perimeter. During the fighting four bunkers and some of the perimeter wire were destroyed.

It can be assumed that the enemy considered these border camps important enough to expend so much of his strength on them. Although Polei Kleng was lost, the cost to the enemy in his attempts to take Ben Het and the time he consumed must be considered a big plus for the allies. Preparations for the defense of Kontum were proceeding at a rapid pace, but time was the critical factor. The question was whether the defense would be well-enough organized and prepared to survive the attack everyone knew was soon to come.

The battle for the border camps was significant to the defense of Kontum for a number of reasons. First, it delayed the main attack on the city. Secondly, the resources expended on these well-fortified camps would not be available to the enemy in his main effort. Third, and probably most important, was the fact that the successful defense of Ben Het was the first really positive action since the disaster at Tan Canh. The fact had been established that the enemy could be stopped. On the 11th of May, the Vietnamese II Corps commander was replaced. LTGEN Ngo Dzu was replaced by MGEN Nguyen Van Toan.[15] General Dzu departed smiling

and apparently quite happy, remarking that he had been fired but at least he had not lost any province capitols. General Toan made a favorable impression. He was reputed to be both a fighter and a lover. Mr. Vann had remarked that if you didn't do one you wouldn't do the other, and he had hopes that things would improve. The staff had not changed and was still very weak. Mr. Vann recommended strongly that General Toan use his personal influence to get some top notch people from Saigon. A matter of serious concern was that the briefings and other information presented to the Corps Commander bore no discernible resemblance to the actual facts. The daily staff update for the CG was known as the "fairy tale hour." This lack of factual information created obvious problems in determining what should be done.

Kontum airfield continued to receive daily attacks by rocket and artillery fire. A special note of praise should go to the courageous tower and Ground Control Approach (GCA) operators who continued to man their positions even when hardened veterans were ducking for cover. Though the defensive preparations were proceeding at a feverish pitch, it was essential to have the airfield open and operating. Most of the supplies were being delivered by Air Force C-130 cargo aircraft.

The decision had been made to laager the cavalry troop and the Hawk's Claw package at Kontum airfield. This presented some problems in that the airfield received sporadic ABFs throughout the day. It was believed, however, that the

high degree of risk was warranted. A great deal of wasted blade time was saved by having the aircraft on standby at the airfield. Several aircraft were damaged; but, fortunately, no one was killed.

On 12 May while conducting a visual reconnaissance, one of the cavalry LOH's, piloted by Lieutenant Smith, located a T-54 tank. Unfortunately, the tank fired his main gun at the aircraft along with his machine gun. Although the LOH was not hit by the large caliber round, the aircraft was shot down by small arms fire. Both crew members were successfully extracted but the aircraft was destroyed.

In response to the tank sighting the TOW package was launched. The Hawk's Claw had considerable difficulty acquiring the target because of the jungle canopy and camouflage. Several observers from the cavalry substantiated the report that three T-54 tanks were in the area. After several unsuccessful passes by the TOW ship two missiles were fired into bamboo -camouflaged clumps in the area where the tanks were hidden, with unknown results. TACAIR strikes were used in an attempt to blow away the camouflage. The camouflage was blown away from one tank, and it received a direct hit by a TOW missile. The tank erupted into flames and was still burning as of 1900 hours. Numerous attempts were made to hit the other tanks with TOW missiles, but they could not be acquired by the gunner due to the dense jungle and camouflage employed. The area appeared to be a tank park

or assembly position and was nominated for an ARC light (B-52 strike) that night.

TACAIR was used against the enemy anywhere he was found. There were over 50 U.S. TACAIR sorties and 28 VNAF sorties in the Kontum area on the 12th of May. In addition there were 25 ARC light strikes. The approaches to Kontum city took on the appearance of the carpet bombing area for the breakout at St Lo. The resemblance stopped there, however, for the ARVN were not interested in breaking out, especially to the north.

The new Corps Commander, MGEN Toan spent the night of 11 May in Kontum city. He visited several positions and then met with the 23rd Division Commander and his staff. He told him there would be no retreat from Kontum city.[16] Early on the morning of the 12th, he conducted inspections of units and forward positions, and was highly critical of most prepared positions.

The 44th Regiment was scheduled to arrive in the city on the night of the 12th. The 44th was reported to be one of the best ARVN regiments in the 23rd Division, and everyone was anxious to get it into position before the main attack. Although most officials were publically voicing confidence that the city would be held, these were dark days; and most harbored grave doubts as to the ARVN's ability to hold the city. Most of the GVN officials had evacuated the city, and population control was becoming a serious problem.

Chinooks (CH-47s) from the 180th ASHC were doing a marvelous job of carrying in much needed supplies. Often the aircraft were forced to orbit until the shelling slowed enough for them to get into one of the landing zones. The chinooks were taking civilian refugees and wounded out of the city. The civilian population was in a state of near panic, and many of them would rush the aircraft in a desperate attempt to get out. Throughout the battle, the problem of refugee control was continual. Often it was necessary for armed police to fire their weapons into the air to control the mobs.

During this period the city of Kontum was beginning to fill up with several hundred ARVN deserters. These men were probably from units of the 22nd Division who had deserted in the confusion of battle. ARVN authorities were reluctant to round these men up and return them to their units. In order to force the ARVN authorities to take action, a false report was released that NVA soldiers were in the city masquerading as ARVN soldiers in uniform. This had the desired effect.

During the afternoon of the 13th, the great tank hunt continued. The LOH pilots of the cavalry troops continued their perilous work of hovering around suspected tank locations trying to get a visual fix on them. The significance of the role played by the air cavalry cannot be over-emphasized. They were the most important source of hard, timely intelligence, and the methods they used to gather it

were extremely hazardous to say the least. This fact is attested to by the heavy losses they suffered in men and material. (See Table II, helicopter vulnerability. Also see Map D for locations of aircraft shot down and destroyed.)

TABLE II[a]

HELICOPTER VULNERABILITY

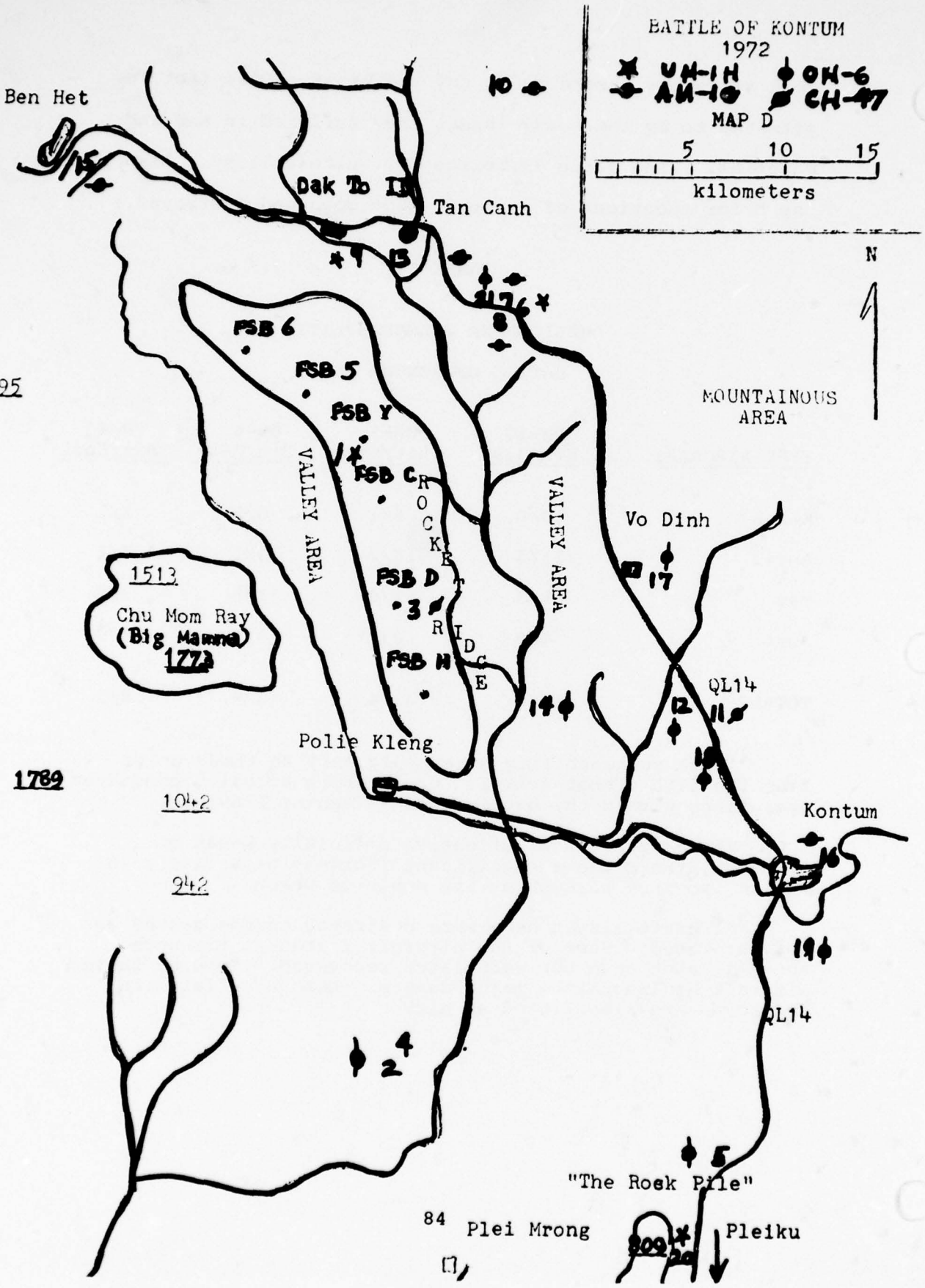
BATTLE OF KONTUM 1972

TYPE AIRCRAFT	AH-1G Hit/Dest	UH-1 Hit/Dest	OH-6 Hit/Dest	CH-47 Hit/Dest
March[b]	10/0	6/1	5/2	2/1
April	21/3	17/2	11/1	3/1
May	11/3	11/0	17/5	2/0
June	8/0	8/1	9/1	1/9
TOTALS[c]	50/6	42/4	42/9	8/2

[a]These vulnerability data apply only to those units from the 17th Combat Aviation Group which actually conducted operations within the battle area -- Kontum Province.

[b]Though the Easter Offensive officially began on 30 March, there was a significant increase of activity in Kontum Province throughout the month of March.

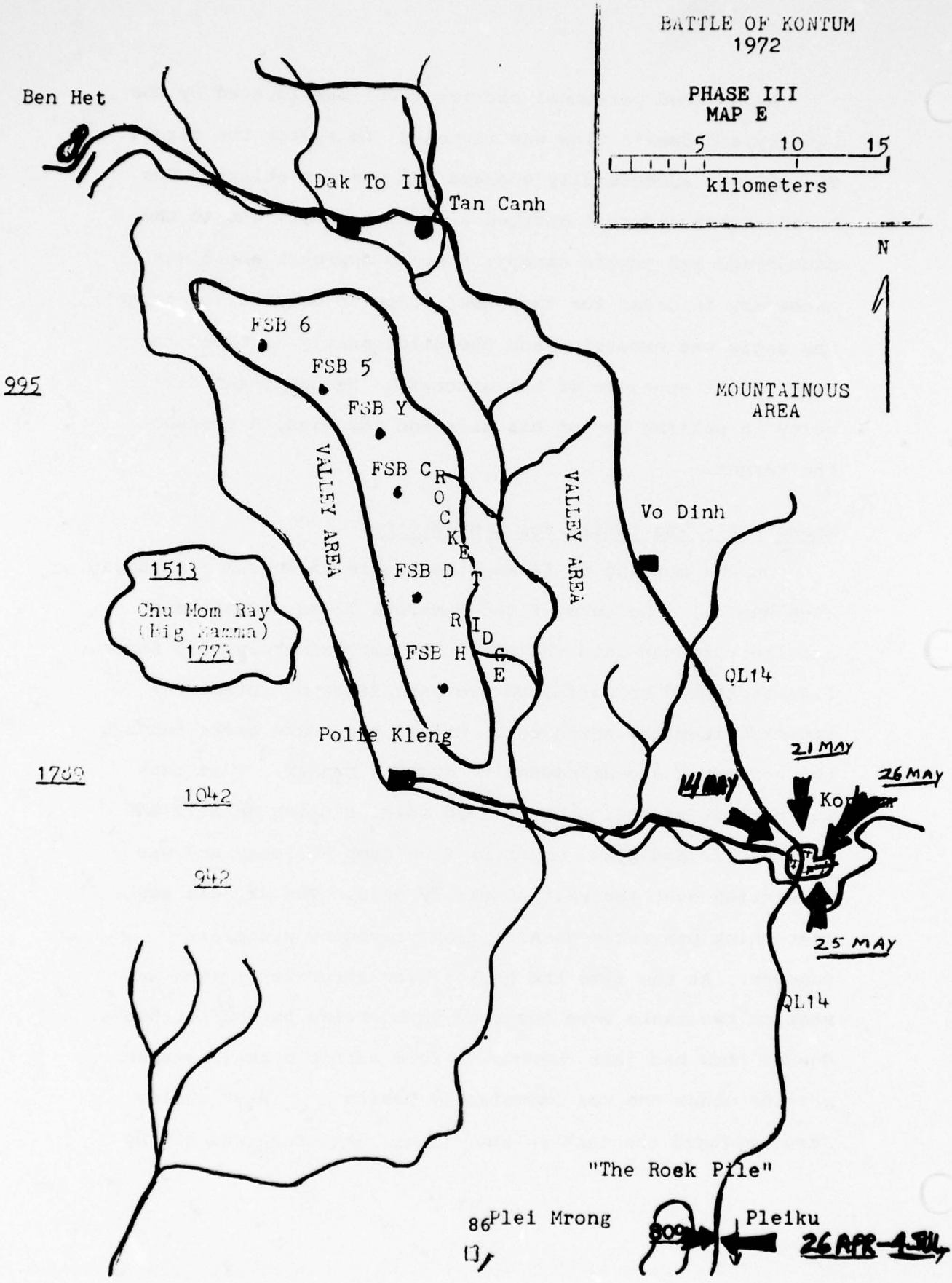
[c]Aircraft listed here were destroyed on the ground and not recovered. Some of the aircraft listed as hit were actually shot down but were later recovered. Some of these aircraft had sustained major damage. Aircraft listed as destroyed are also listed as hit.


BATTLE OF KONTUM
1972
UH-1H
OH-6
AH-1G
CH-47
MAP D
5 10 15
kilometers
N
Ben Het
Dak To II
Tan Canh
FSB 6
FSB 5
FSB Y
FSB C
FSB D
FSB H
ROCKET RIDGE
VALLEY AREA
VALLEY AREA
MOUNTAINOUS AREA
Vo Dinh
Chu Mom Ray
(Big Mama)
1771
1513
Polie Kleng
QL14
QL14
Kontum
"The Rock Pile"
84 Plei Mrong
Pleiku
995
1789
1042
242

An armored personnel carrier (APC) was located by the cavalry, and Hawk's Claw was launched to engage the target. The APC was successfully engaged and was set ablaze. One of the scout aircraft spotted a tank; however, due to the camouflage and jungle canopy, a steep approach angle was necessary in order for the Hawk's Claw to acquire the target. The angle was excessive, and the pilot nearly exceeded the safe flight envelope of the aircraft. He had great difficulty in pulling out of his dive, and the missile overshot the target.

Phase III - The Battle for Kontum City

On the morning of 14 May, the Battle of Kontum city began. (See Map E.) The enemy fired numerous 122mm rockets and artillery rounds into the city. At approximately 0530 hours, five tanks and an estimated two battalions of infantry attacked from the northwest. One of the tanks broke through the perimeter and attempted to crush a bunker. This tank was put out of action by an ARVN soldier using an M-72 LAW. Hawk's Claw had been launched from Camp Holloway and was on station over the battle area by 0650. The sky was overcast which prevented TACAIR from providing close air support. At the time the Hawk's Claw aircraft arrived on station two tanks were observed withdrawing to the northwest. One of them had just entered a ford across a small stream, and the other one was immediately behind it. Hawk's Claw first engaged the tank in the stream. This tank was hit by


BATTLE OF KONTUM
1972
PHASE III
MAP E
5 10 15
kilometers
N
Ben Het
Dak To II
Tan Canh
FSB 6
FSB 5
FSB Y
FSB C
ROCKET RIDGE
FSB D
FSB H
VALLEY AREA
VALLEY AREA
MOUNTAINOUS AREA
995
1513
Chu Mom Ray
(Big Mamma)
1273
1789
1042
942
Vo Dinh
QL14
Polie Kleng
21 MAY
26 MAY
25 MAY
QL14
"The Rock Pile"
Plei Mrong
Pleiku
26 APR - 4 MAY

the first missile, and the second tank was hit moments later by the second missile. Both tanks burst into flames and exploded. The entire engagement took about five minutes. A VNAF FAC directed accurate artillery fire on the attacking enemy troops, and they started to withdraw under this intense fire. The attack was over by 0900 hours. The burning tank hulks were a welcome sight for both the U.S. advisors and the ARVN troops.

The enemy continued his rocket artillery attack on Kontum city and the airfield throughout the day. One of the POL blivots containing JP-4 fuel at the airfield was set ablaze; however, it was extinguished before it completely destroyed the POL facility. The ground attack resumed at 1700 when friendly elements were reported in heavy contact on the northern perimeter. This attack was beaten off before nightfall. Thus ended the first day of attacks on the city itself. The defenses held and the outstanding performance of the Hawk's Claw had a very positive effect on everyone. Mr. Vann was over the battle area most of the day in his OH-58 helicopter directing the defensive effort. Due to the intensity and accuracy of enemy fire directed at the airfield, the decision was made to have the helicopter stand by at Camp Holloway instead of Kontum.

On the 15th there were numerous reports of contacts with enemy forces of unknown size north of the city, but no major attack developed. Kontum continued to receive enemy

rocket and artillery fire. The shelling was a daily occurrence and the people of Kontum learned to adjust to it.

Hawk's Claw was laagered at the Kontum airfield again on the 15th. They launched several times in response to reports from the air cavalry. One of the scouts reported sighting a tank; however, when the TOW aircraft got in the area, the only thing observed was a vehicle variously reported as an APC, half-track and 2 1/2 ton truck. At any rate, a missile was fired at it and scored a direct hit, totally destroying the vehicle.

At about 2000 hours six tanks were reported 2 km north of Kontum city. Hawk's Claw, which had returned to Holloway for the night, was scrambled to Kontum. The enemy tanks moved into firing positions just beyond the perimeter and began firing directly into friendly positions. An armed Air Force C-130 was on station and engaged the tanks with 40mm cannon fire without success. Flares were dropped to provide illumination for Hawk's Claw. Unfortunately, the gunner had difficulty acquiring any of the tanks in his sighting system. One missile was fired at a suspected tank location; however, there was no indication that the tank had been hit. After unsuccessfully attempting to acquire a target, the Hawk's Claw returned to Holloway. The Air Force gunship remained on station providing illumination and fire support for most of the night. Although the enemy tanks were firing on friendly positions, they never advanced any

closer; and, after several hours, they pulled back out of the area.

The Hawk's Claw destroyed numerous targets northwest of Kontum city on the 16th. Most of them were abandoned ARVN trucks and APC's. All of the items of equipment were considered usable. The targets were out of the range of friendly artillery and not considered suitable for TACAIR.

Kontum airfield received sporadic rocket and artillery fire on 17 May. One of the rockets impacted in close proximity to two Cobra gunships wounding one crew member and damaging both aircraft. Later in the day, an exploding rocket set off a stack of ammunition just as an Air Force C-130 was unloading another ammunition pallet nearby. The pilot of the C-130 immediately applied full power in an attempt to make a take-off. Unfortunately, the ramp was still down on the aircraft and when the pilot tried to rotate for take-off the ramp would drag on the runway, slowing down the aircraft. As the aircraft ran off the end of the runway, the right wing struck a brick building sheering the wing and rupturing the fuel tank. The fuel immediately ignited engulfing the aircraft in flames as it cartwheeled for several hundred yards. Only two survivors were pulled from the wreckage.

The ammunition continued to explode on the airfield for the rest of the day hurling 105 mm artillery rounds all over the area. Eventually the entire ammunition dump was destroyed. One of the shells landed near a POL blivet and set the JP-4

ablaze. The exploding ammunition dump eventually cost the allies over 3,000 105 mm artillery rounds, 25,000 gallons of POL, one C-130, and seven Air Force personnel who were the crew for the C-130.

For the next several days defensive preparations continued as the enemy continued firing artillery and rockets into the city. There were numerous reports of enemy contacts along the perimeter. At night the flashes from enemy machine guns and recoilless rifles could be observed in close proximity to the friendly positions. These enemy targets were engaged by TACAIR and gunships.

Efforts were made on the night of the 17th and early morning of the 18th to clean up the airfield. By 1030 hours the airfield was open to rotary wing aircraft but not ready for fixed wing traffic.

Hawk's Claw successfully engaged and destroyed a tank and 23 mm antiaircraft weapon northwest of the city on the afternoon of the 18th.

During the early morning of the 19th, the 44th Regiment came under ground attack along the northern perimeter. The attack, which was supported by 105/155 mm artillery fire lasted until about 0330 hours, when the enemy withdrew. Gunships from Camp Holloway and Air Force gunships provided fire support for the 23rd Division. Some of the enemy troops managed to infiltrate behind elements of the 44th Regiment; however, these pockets were eliminated by 0730 hours.

The 23rd Division launched a reconnaissance in force to the north of Kontum city on the morning of the 19th. At 1100 hours the 23rd Recon Company air-assaulted, using VNAF helicopters into a landing zone (LZ) 8 km north of the city in the vicinity of a suspected artillery position.

The assault went well and elements of 1/45th moved into blocking positions south of the LZ. The plan was to have the recon company move south from the LZ and catch any enemy troops between themselves and 1/45th. Enemy forces caught between the 23rd Recon Company and 1/45th, chose to attack 1/45th in their blocking position. The position held; however, reaction forces refused to conduct counter attacks.

There was a cautious note of optimism beginning to appear as it became evident that ARVN forces would stand and fight under sustained enemy pressure.

During the night of 19 May, enemy forces apparently tunneled up to the perimeter of the 53rd Regiment area on the northeast side of the city. The enemy drove elements of the 53rd out of their positions and occupied some of the friendly bunkers. The 53rd conducted counterattacks supported by TACAIR, gunships, artillery, and 9 ARVN M-41 tanks. A problem arose when the tank commanders refused to advance. General Toan and Colonel Ba rushed to the scene and, through various means, managed to convince the tank commanders that it would be best for them if they advanced. By later afternoon the positions were recaptured.

Kontum city and the airfield received the usual ABF's throughout the day. A VNAF C-123 was hit by an enemy rocket while it was parked on the ramp. The fuel cell was ignited, and the aircraft burned to the ground. The crew were able to get out of the aircraft without injury.

Reports from the air cavalry troop indicated the enemy was reinforcing his units by infiltrating troops into the area. The buildup was concentrated north and northeast of the city. B-52 ARC light strikes were scheduled into these areas on a daily basis. Bomb damage assessments (BDAs) conducted by air cavalry units indicated that the enemy bunkers and fighting positions were being destroyed. Although there were no clear indications that large numbers of enemy troops were being killed, it was believed the ARC light strikes were hurting the enemy. Later events proved this belief to be correct.

On 21 May the enemy launched a major attack against the northern perimeter. The friendly units were deployed generally in an arc to the north of the city running from west to east; they were: 3/44, 4/44, 4/45, and 2/53rd. The forward edge of the battle area (FEBA) generally followed the arc; however, along QL 14, the FEBA extended up the highway to the northwest to form a finger. At 0500 hours friendly units received a heavy ABF of mixed caliber rounds, followed by a two-pronged ground attack. The enemy was initially successful in cutting QL 14 at the base of the finger and in driving a wedge between 4/45th and 2/53rd.

Friendly elements conducted counterattacks throughout the day supported by artillery, TAC air, and tanks. 3/44th was successful in driving the enemy out and restoring the FEBA trace at the base of the finger. Two battalions attacked up QL 14 to the north, one on either side of the road, in order to reduce the penetration which had occurred between 4/45th and 2/53rd. The counterattack was supported by eight tanks. One tank was hit and sustained moderate damage. The counter-attack was successful in ejecting the enemy and restoring the FEBA. During the action Mr. Vann was overhead monitoring the situation. He appeared to be pleased with the outcome and stated that Colonel Ba's presence in the battle area had a very positive effect on the troops and was responsible for the successful outcome. It is believed that the enemy attacked with a regimental size force. The 406th sapper battalion was identified as the unit that cut QL 14.

There was evidence that the enemy was continuing his build upnorthwest of the city. It was the cavalry troop commander's evaluation that the main enemy attack would come from that area in the next few days. This proved to be a very accurate prediction.

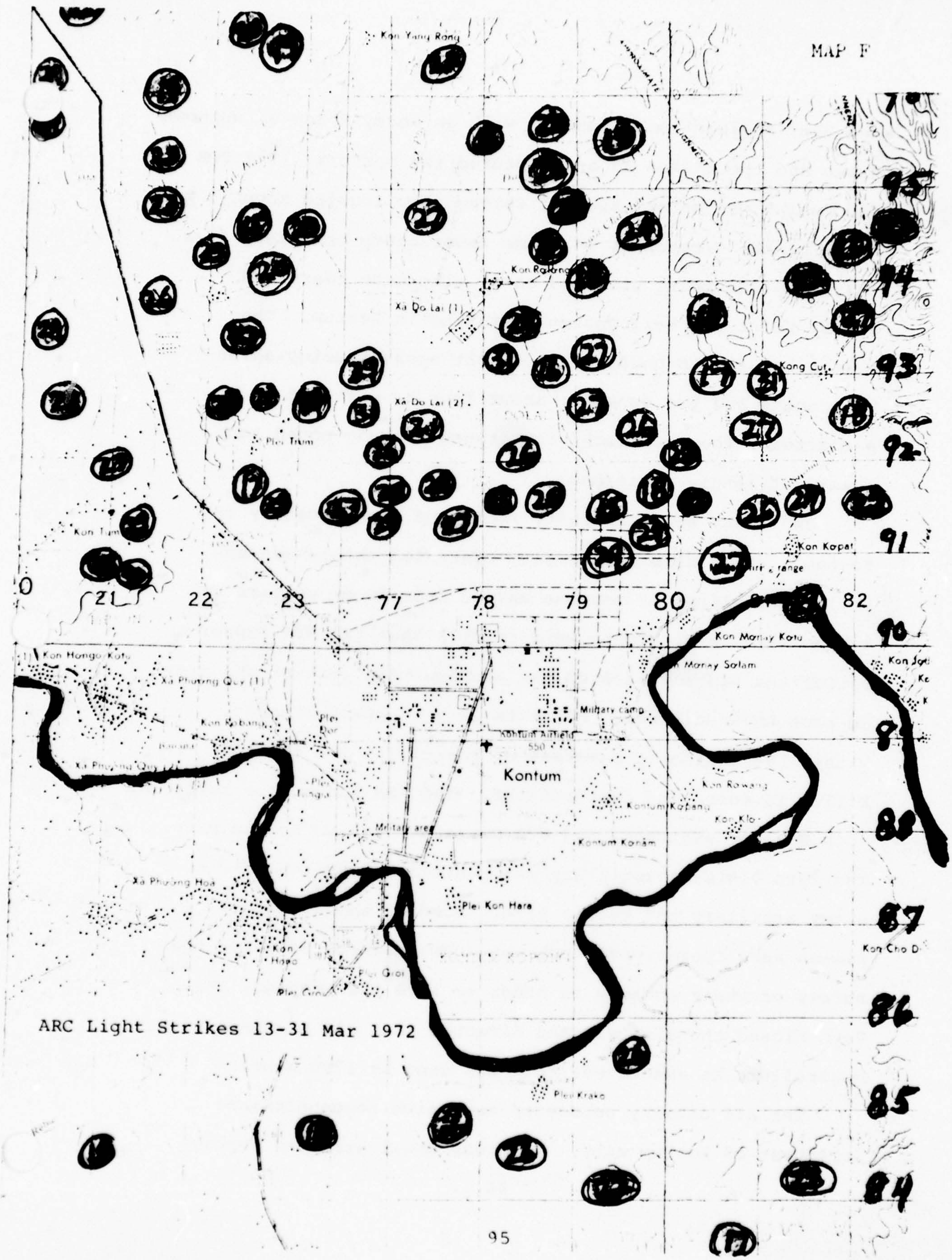
Due to the heavy ABFs on Kontum airfield during the day, Air Force C-130s were operating at night only. Early in the morning of 22 May the airfield received approximately five 122 mm rockets. A C-130 blew a tire while landing at about 0115 hours. This closed the field due to the fact

that the Air Force would not allow more than one aircraft on the field at a time. Throughout the early morning the airfield continued to take enemy rocket and artillery fire. The C-130 that had the blown tire was hit by a piece of shrapnel causing a fuel leak. The spilled fuel was ignited by another round. The fire burned for some time in close proximity to the aircraft; however, there were no attempts to put out the fire. After awhile, the flames spread under the wing and set it on fire. At about 1030 hours Colonel John A. Todd landed near the burning aircraft and he and his crew put the fire out with buckets of sand. Then the Air Force crew was extracted by Colonel Todd.

There were indications that the Arc light strikes had a significant impact on the combat effectiveness of the 320th NVA Division. The 4/53rd Infantry found 70 bodies just 2 km northwest of Kontum city. In addition, they recovered numerous small arms and crew served-weapons. Later in the morning the 2/53rd found 28 more bodies 1 1/2 km north of the city. Since 1 January, there had been 820 Arc light strikes in Kontum Province alone. In the previous week there had been 84 such strikes. It was becoming obvious that the heavy bombing was taking a toll on the enemy forces. (See Map F which shows the location of these strikes around the city during the period 15-31 May, 1972.)

The 23rd and 24th of May were relatively quiet. It appeared to be the "calm before the storm." There were the usual ABFs against the city and the airfield. Elements of

MAP F



ARC Light Strikes 13-31 Mar 1972

the 53rd Regiment made contact with an enemy force of unknown size, and the killed 25 and captured two mortars. The FOB pad, which was an old Special Forces camp located about 3 km south of the city on QL 14, came under enemy artillery fire. This camp was being utilized as an alternate rearm and refuel point for helicopters operating in Kontum. The 1/44th and 2/44th conducted a combat assault using seven VNAF units and two gunships about four km north of their perimeter. They met light resistance as they moved back towards friendly positions.

On 25 May enemy activity increased significantly in Kontum. Enemy ABFs on the city continued throughout the day. The caliber of weapons varied from 60 mm mortars to 155 mm artillery. There were reports that two NVA Sapper Battalions had infiltrated the southeastern part of the city wearing ARVN uniforms. RF units were in heavy contact within the southeast quadrant of the city. The 4/44th killed 16 enemy and captured one. The POW stated his battalion (6th Bn, 1st Regiment, 2nd NVA division) was in Kontum city. The 23rd Division artillery was neutralized by the intense enemy artillery and rocket fire. Most of the artillery pieces were operational, but the crews refused to leave the safety of their bunkers in order to fire the weapons. Mr. Vann closed the airfield and directed that all of the air controllers be evacuated; this was done by 1730 hours.

The air cavalry conducted extensive reconnaissance northwest of Kontum city. Numerous small arms and supply

caches were found in the vicinity of Rocket Ridge and the adjacent valley. It appeared that the area north of Polei Kleng was being used as a storage and staging area. There were numerous sightings of small groups of people throughout the area. The road that had stopped west of the ridge now extended over it to the east. There were indications of heavy usage by wheeled and tracked vehicles.

The long awaited main attack hit the northeast quadrant of the city early in the morning of 26 May. The enemy conducted an intense artillery preparation beginning at about 0230 hours and lasting until about 0430 hours. The preparation was followed by a massive combined arms attack spearheaded by 10-12 tanks. The enemy penetrated the perimeter and got in behind the 1/53rd and 3/53rd Infantry Battalions. The 44th Regiment was also heavily engaged. Enemy tanks and infantry penetrated to within several hundred meters of the runway at the airfield. In addition, enemy units that had occupied positions in the southeast part of the city had been reinforced during the night. Efforts to conduct a counterattack to eject the NVA were unsuccessful.

In response to the enemy attack, Hawk's Claw was launched from Camp Holloway at about 0615. The "turkey shoot" began at 0645 when the first tank of the day was destroyed by a TOW missile. This was the optimum situation for the airborne TOW. The weather was fairly good, and the tanks were exposed in the attack during daylight hours. Before the morning

was over, the Hawk's Claw aircraft had destroyed: nine tanks, two machine guns, one truck, and one bunker. This effectively stopped the momentum of the attack. During th remainder of the day the battle raged on with opposing forces locked in close combat within the city. By the end of the day the enemy controlled the eastern part of the city. TACAIR, artillery, and gunships supported the ARVN effort to stop the enemy.

The 27th was the second day of major enemy attacks on Kontum city. The enemy continued his attacks by fire and reinforced his forces within the city. Pressure was applied by enemy units to the northern portion of the perimeter. Enemy artillery fire was impacting with great accuracy in the vicinity of the 44th Regiment Command Post. Early in the morning of the 27th, the enemy made another major infantry attack from the northeast.

Once again, Hawk's Claw was scrambled from Camp Holloway to meet the threat. Two T-54 tanks were destroyed as soon as the Claw arrived in the area. However, dense smoke and dust clouds obscured the battle area, which prevented Hawk's Claw from acquiring any more targets.[17] The Senior Advisor for the 44th Regiment confirmed that two tanks were killed by the TOW missiles plus two T-54's were knocked out by M-72 LAW's 400 meters north of his command post.[18] The helicopter resupply effort continued throughout the battle. The main logistical burden during this period was carried by CH-47s belonging to the

180th Assault Support Helicopter Company (ASHC). Even though there were enemy snipers in close proximity to the Landing Zone and enemy artillery rounds impacting nearby, the Chinooks continued their essential work of hauling ammunition and food to Kontum. The only area that was secure enough to use was the soccer field located in the southwest part of the city. A serious problem that plagued the logistical effort throughout the battle was the lack of control of refugees in the LZ. The CH-47s were taking as many civilians out of the city as possible; however, often in their panic to escape, the refugees would mob the aircraft. On several occasions controllers were threatened by unruly mobs. This problem continued off and on throughout the period of intense enemy action but subsided as the situation stabilized.

Late in the afternoon of the 27th a VNAF A1-E was shot down 2 km southwest of the city. The pilot parachuted safely and was picked up by a helicopter operating in the area.

(Note: In late April the "Air Boss" concept was put into effect by BGEN Hill. The purpose of the "Air Boss" was to serve as an airborne C&C to control all aviation assets within the battle area. It was necessary to have this aircraft airborne most of the time, and it proved to be an effective technique for controlling the large number of aircraft operating in the area.)

During this intense period of combat there was considerable concern that ARVN units were not successfully launching

counterattacks. The biggest fear was that the longer the enemy stayed in the city, the more difficult it would be to dig them out.

An interesting event took place in the Kontum Pass where ARVN forces had been trying, without success, to open QL 14 between Kontum and Pleiku. Friendly units were bogged down by strong enemy forces occupying well-constructed bunkers and fighting positions. Colonel Tuong, II Corps Deputy for Operations, offered one third of his month's pay (he said about 10,000 piasters) to anyone in the unit he was with who would knock out a 51 cal. AA weapon that had been firing at aircraft that came into the area. His offer was accepted by one soldier who got into position, covered by his comrades, and threw a grenade into the cave from which the gun was firing. The soldier observed a 57mm recoilless rifle nearby and knocked this out with a grenade also. Both weapons were brought back to Colonel Tuong, but the gunner of the 51 cal. MG had to be cut loose from the weapon since he was chained to it. The enemy soldier was identified as being from the 40th Artillery Regiment, normally part of the 304th Division, but now apparently supporting the 95th B Regiment.

The operation to open QL 14 through the Kontum Pass dragged on for weeks. The enemy offered stiff resistance, and the ARVN forces were unable to dislodge them until the first week of July.

On the 28th of May the enemy continued the early morning attacks; however, they were not so strong as the previous

ones and were easily beaten off. Enemy ABFs continued throughout the day with the majority of the rounds landing in the vicinity of the 44th Regiment. The attacks were lighter than they had been for the previous three days. Although scattered contacts continued throughout the day, a major enemy assault never materialized. Hawk's Claw was launched at 0935 to engage an enemy 51 ca. machine gun position mounted on top of a water tower in the north central part of town. The position was attacked at 1010 hours. Five missiles were fired in an attempt to knock out the gun and destroy the water tower. The gun was destroyed, and the water tower was damaged to the point where it was leaning badly to one side. Another 51 cal. machine gun position located at the base of the tower was knocked out by 105 mm artillery fire.

The situation within Kontum city remained critical. The enemy still occupied the eastern half of the city plus some small penetrations in the northwest. During the night of 28 May friendly forces were pulled back closer to the center of the city so that ARC light strikes could be brought in closer.

The situation in Kontum remained about the same on 29 May. Enemy attacks by fire tapered off during the day. Although the ARVN were still not able to launch an effective counter-attack, there were indications that the enemy was no longer able to reinforce his elements. VNAF airstrikes in the south-east quadrant of the city appeared to have a good effect. The enemy had dug in and constructed fighting positions and

bunkers throughout the area which made movement and aircraft operations extremely hazardous. Two slicks received intensive small arms fire while attempting to land at the 23rd Division CP. During the afternoon reinforcements were sent to Kontum by CH-47. These troops, about 400 of them, were from the 47th Regiment.

Mr. Vann and General Toan were becoming more optimistic at this point. There were indications that the enemy had been badly hurt. POW's stated that enemy commanders at all levels had been directed to personally lead attacks to insure their success. Mr. Vann and General Toan directed that an all-out effort be made by psyops personnel to try to get enemy troops to surrender. These efforts, for the most part, were unsuccessful.[19]

The logistical problem was relieved somewhat as Air Force C-130's using radar vectors started dropping bundles of supplies by parachute. This proved very effective and continued throughout the remainder of the battle.

Early in the morning of 30 May the 44th Regiment CP and 23rd Division CP received an intense ABF; however, it was of short duration. Enemy elements within the city attacked units of the 44th Regiment. The enemy, however, was not able to make any significant gains. At about 0700 hours a large ammo dump located north of the airfield was set on fire and exploded. Two wounded NVA troops were captured early in the morning near the 44th Regiment CP. There was an attempt

to exploit these POW's for psyops purposes; however, the operation was not successful. Late in the day elements of the 44th Regiment made some progress in clearing the northeast section of the city.

The weather turned poor and started to adversely affect air operations. However, there was a note of optimism, and the entire picture was looking a little brighter.

In the afternoon at about 1330 hours, President Thieu visited the 23rd Division CP. He promoted Colonel Ba to the rank of BGEN.[20]

Some progress was made on the 31st of May when elements of the 44th Regiment and RF/PF units continued attacks against enemy-held positions within the city. The fighting in the northeast was difficult, and friendly forces suffered many casualties. The enemy, although not considered strong in numbers, occupied well-constructed bunkers. The difficult business of rooting them out fell on the ARVN infantry troops. The task was very costly, and it must be mentioned that the ARVN soldiers demonstrated a great deal of courage and persistence in this hazardous work.

The situation in Kontum continued to improve on 1 June. The enemy penetration in the southeast quadrant had virtually been eliminated, and there were indications that the enemy was withdrawing to the northeast. The 23rd Division reported that they had seized control of the airfield.

For the next several days the friendly forces conducted clearing operations within the city. The southeast quadrant

was cleared first; and, then, all forces were directed to sweep the northeast quadrant. Hard, bitter fighting ensued with heavy losses resulting for both sides. ARVN M-41 tanks often fired pointblank into buildings occupied by the enemy. Throughout the period the enemy conducted sporadic ABF's. Several minor attacks on the northern perimeter were easily repulsed. It was believed that these attacks were to support enemy units attempting to withdraw from the city.

On one occasion as the enemy was withdrawing from the city, he ran into one of his own units. A fire fight ensued and ARVN artillery supported both sides.

As ARVN units continued clearing operations, large numbers of enemy weapons were captured. Stiff resistance was encountered in the northeast quadrant, but it eventually was cleared out.

The business of cleaning up the battlefield was made more difficult by the fact that the enemy had booby trapped many of the dead ARVN soldiers. As time progressed this problem became more serious as the bodies rapidly decomposed in the hot sun.

By the 7th of June, it began to appear that another enemy attack on the city was unlikely, and optimism was felt by everyone. On the 8th of June, Air Force C-130s began landing again at the airfield during the night.

The 9th of June was a most significant day. On that day the 23rd Division Commander declared the city secured.

Another event took place on the 9th of June that was felt by everyone. That was the death of the II Corps Senior Advisor, Mr. John Paul Vann. After a farewell party held in honor of BGEN Hill, who was departing the next day, Mr. Vann got into his OH-58 helicopter along with his pilot, Lieutenant Doughtie, and a passenger, Captain Robertson. They took off from II Corps Headquarters at about 2100 hours. Mr. Vann had insisted on going to Kontum, because he wanted to spend the night with the 23rd Division. For the previous 30 days he had been up to Kontum at least once a day, and he didn't want to break his record. He took some fresh fruit and other treats that were left over from the farewell party. He had intended these for the men in Kontum so that they could share in the festivities that had taken place earlier.

Apparently Mr. Vann elected to low-level up QL 14 because the weather was poor. There were thunderstorms in the area and low scuddy clouds laying in and around the Kontum Pass. Mr. Vann called the 23rd Division CP shortly after take-off estimating 15 minutes from Kontum. That was the last anyone heard from him. An ARVN unit located in the Kontum Pass reported observing a helicopter crash. A search effort was launched as aircraft from 17th CAG scrambled from Camp Holloway, and an ARVN unit was dispatched to the suspected crash site. Within an hour the wreckage was located in some trees several hundred meters east of QL 14. The three bodies were found by ARVN soldiers, and Mr. Vann's body was carried

on LTC Jack Anderson's helicopter. The other bodies were recovered later.

For the purposes of this paper that concludes my discussion of the Battle of Kontum as an historical event. As stated earlier, it is my intention to use this battle to illustrate some of the concepts of combat power presented in the previous chapter. With that in mind I will briefly outline some of the key points.

RELATIVE COMBAT POWER

ALLIES	NORTH VIETNAMESE
FIRE	
B-52 strikes	Artillery
TAC air	Rockets
Artillery	PGMs - Sagger Missiles
PGMs - airborne TOW missiles, smart bombs	Small arms
Small arms	
MASS (As defined by opponent)	
ARVN soldiers and equipment	NVA soldiers and equipment
U.S. soldiers and equipment	
Vietnamese civilians	
MOBILITY	
Foot	Foot
Trucks and tanks	Trucks and tanks
Helicopters	
Airplanes	
SIZE	
2 Divisions plus	2 Divisions plus

BASE ELEMENT

Infantry soldiers in maneuver battalions	Infantry soldiers in maneuver battalions

WEIGHT

Static	Momentum of the attack

The point of contact was limited primarily to Kontum Province and was bounded in time between 31 March, 1972, and about the 9th of June, 1972. It is apparent from this brief discussion of the battle that the fire used against the NVA was not only immense in volume, but it was also very effective. Herein, in my opinion, is the key to the allies' success. During the many years of U.S. involvement in Vietnam, huge quantities of fire had been applied against an illusive and, oftentimes, well-protected enemy mass. In order for fire to be effective in its manifest form, it must be applied against a concentrated, vulnerable mass. To find and fix an opponent mass is not a guarantee that the mass will be vulnerable to fire. In fact, American "search and destroy" operations often located and fixed an enemy mass. However, the mass was usually well-protected by prepared positions dug deep into the ground. During the Battle of Kontum, the enemy mass was exposed and vulnerable once it moved from the cover of its staging areas. The targeting of this mass depended a great deal on the information provided by the air cavalry. This fact should not be forgotten.[21] Large areas could be observed in a short space of time using the helicopter. As

a result, targeting information was usually current enough to insure that the fire applied would indeed be effective fire. Another key point that must be made is the important role the ARVN mass played in fixing the NVA mass. If the ARVN positions had not held, then the NVA would not have been concentrated long enough for the fire to be effective. In this regard, it is crucial that we fully understand the vital role played by the small U.S. mass in the form of advisors and the total dependence of the ARVN mass on the actualization of effective fire. The U.S. advisors not only provided technical assistance, such as directing air strikes, but also provided the strong moral support of the U.S. commitment by their physical presence. The importance of the presence of even a small part of the U.S. mass should not be overlooked.

The introduction of PGMs to the battle greatly increased the effectiveness of fire for both the allies and the NVA. The NVA were able to effectively destroy point targets at Tan Canh using the Soviet wire guided Sagger missiles. Furthermore, the airborne TOW missile system demonstrated the vulnerability of an armor mass to PGMs.

The use of armor as part of both the NVA and ARVN masses bears special consideration in light of the dominant role it plays in the mass of modern mechanized armies. As stated earlier, the tank is the base element of most modern armies and certainly of the NATO and Warsaw Pact forces in Europe.

In Vietnam, however, although it initially threw the ARVN off balance, it was quickly relegated to a minor role. Heavy tank losses suffered by the NVA did not stop their infantry from continuing the attacks. Though tanks were used in rather large numbers by the NVA (and at great expense), their sense of balance, physical and psychological, was not grounded in them. When the ARVN infantry gained confidence in their ability to destroy the tanks, they ceased being a major threat.

The mobility provided through the use of the helicopter cannot be overemphasized. The surface isolation imposed by the NVA on the fire bases and the city of Kontum failed to have the desired effect, primarily because the air lines of communication remained open. Even though, by concentrating large numbers of antiaircraft weapons around the various bases, air traffic was interdicted for periods of time, the interdiction was usually temporary. The very fact of concentrating these weapons as part of their mass made them vulnerable to heavy fire in the form of B-52 strikes.

One may argue that the part played by tanks in this battle was relatively minor when compared to that of helicopters. Though this is admittedly a unique situation and is not necessarily transferable to other areas of conflict, the impact the helicopter has had on the relative mobility of mass is worth further examination and is the subject of the next chapter.

CHAPTER VI

RELATIVE MOBILITY

> The three most significant (and symptomatic) technologies have been tactical nuclear weapons, the helicopter and precision - guided munitions.[1]

There is a paradox emerging in our land combat doctrine. On the one hand, we say that "the tank, with its cross-country mobility, its protective armor, and its formidable firepower, had been and is likely to remain the single most important weapon for fighting the land battle."[2] On the other hand, we assert that the infantry with the proliferation of precision-guided munitions will be able to "...inflict heavy losses on armored forces at both long and short ranges."[3] (Furthermore, these PGMs may have a significant psychological effect which would increase the latent function of conventional fire--"what can be seen can be hit and what can be hit can be killed.") If in fact large numbers of highly reliable PGMs dominate the battlefield what will be the consequences? Critical to this paper is the assertion that mass as an element of combat power can be dominated by fire. If it is, all movement will be greatly restricted or cease altogether.[4]

Mass in the form of armored vehicles brought mobility back to the battlefield during World War I by rendering most fire ineffective. However, today we are faced with the real possibility, if not the probability, that mass in the form

of armored vehicles will be vulnerable to ever increasing quantities of effective fire.

> As an illustration, the present United States Army division has over a hundred forward observers, and artillery and mortar tubes capable of firing a guided ('smart') shell. Since an observer can guide in a shell every 15 seconds, division artillery could theoretically kill every armoured vehicle in a Soviet division in one minute. If individual targets are not visible but nonetheless grouped in a known location as in an assault, mortars with infrared seekers can have an even higher rate of kill. [5]

Armor protection is not keeping pace with out "...ability to penetrate armor...."[6] Though there is an ongoing rather heated debate on this issue one must at least address the problem and ask some crucial questions.[7] For example, does the defense now dominate the offense in land combat as a result of the new weapons technology? "On the ground and in the air...the advent of the missile suggests that the day of the main battle tank and warplane may be ending. The superiority of the offensive may be declining in favor of the defensive."[8]

As the vulnerability of armor increases one can envision a situation where tanks may be completely stopped. The use of relatively inexpensive munitions, such as mines and PGMs coupled with the high cost per armored vehicle may greatly curtail the use of these vehicles. Will we be forced to react in an historically predictive pattern of accepting exorbitant losses in a vain attempt to gain the initiative? When the infantryman was the base element of mass during World War I we learned how vulnerable he was to the effective

fire of machine guns and artillery. However, the reaction of those in command was an unimaginative policy of attrition which sent huge quantities of a vulnerable mass against extremely effective fire. Are we planning to do the same thing today with an extremely vulnerable armor mass? Is our only response to extremely heavy armor losses more and more tanks? I suggest we examine once again the essence of combat power and try to understand why the tank became the base element of land combat. The tank rendered fire ineffective by being invulnerable to it and by avoiding it. However, today the vulnerability of the tank is growing, and its ability to avoid fire is decreasing. Some have suggested that the only hope for the tank is to build it light enough to have the agility to avoid fire and thus, survive. There is, however, in my opinion, clear indication that mobility on the battlefield can and will be retained through the employment of another vehicle--the helicopter.

While it is true that the helicopter is vulnerable to a wide spectrum of fire, it is also true that it has a tremendous ability to avoid fire through speed and by using the protective cover and concealment of the ground.[9] This last point is especially important. The helicopter must be viewed more as a surface vehicle than as a supra-surface vehicle in that it is terrain dependent for its survival in combat. Furthermore, its unique capability to land almost anywhere, create a mass anywhere on the surface, or extract a

mass makes it, in essence, more of a land oriented platform than an airplane. (With the possible introduction of nuclear weapons on the battlefield, survival will be more and more a function of mobility.)

Let us assume for a moment that war takes places in central Europe and is limited to that geographical area. In terms of the concepts presented here the point of contact would be Central Europe, and NATO combat power would be relative to that of the Warsaw Pact. Let us also assume that, at least initially, fire remained conventional. Most of the literature examining this scenario addresses the relative strength primarily in terms of mass in the form of armored vehicles.[10] In these rough comparisons it is evident that the balance favors the Warsaw Pact nations. However, rarely do we find any significant weight being attached to the imbalance which exists in the number of helicopters available to the two sides.[11] In fact, there are many who discount the role helicopters are likely to play.

> Armoured (sic) formations of all arms supported by intense air-to-ground attack, will still, I believe, be the principal and most effective way of carrying out this latter task, rapidly followed up and accompanied by infantry on their feet, at night. I have little faith in air-mobile troops in such a situation..." (Emphasis added)[12]

Furthermore, when comparing the relative strength of armored units, most analysts are careful to specify that the comparison

is based on the vehicles likely to be present at the point of contact. In order to insure sufficient mass at the point of contact, there has been a determined effort to preposition large numbers of vehicles in the probable theater of employment - Central Europe. There is recognition by many of the decision makers that once the conflict begins relative combat power will depend mostly on what is on hand and not as much on what can be moved to the point of contact.[13] This is certainly a contentious issue; however, present national policy does provide for pre-positioning of large quantities of war material which would be available as mass if combat power were actualized.

I believe a crucial issue which must be examined in greater detail is the relative strength in terms of helicopters at the point of contact. In rough terms, potentially the United States enjoys a 3 to 1 advantage over the Soviet Union in helicopter strength.[14] (See Table III.) However, when we look at our projected deployment for the year 1984, we find only about 15% of our total assets deployed in Central Europe.[15] In relative terms, therefore, the Soviets may enjoy parity at the point of contact.

"With combat experience in Southeast Asia, the U.S. Army is the world's foremost exponent of air mobility."[16] (Emphasis added.) We learned, at great cost, the value of helicopters in Vietnam and the effect they can have on relative combat power. In the restricted terrain of Southeast Asia, it was the primary means of mobility in the battle

TABLE III

COMPARISON OF THE NUMBER OF U.S. AND SOVIET HELICOPTERS*

UNITED STATES		SOVIET UNION	
Army		Air Transport Force	
AH-1G/-S	1,000	Mi-1/2	800
UH-1/-19	4,000	Mi-4	410
OH-6/-58/-13	2,500	Mi-6	490
CH-47/-54	500	Mi-8	1,610
TOTAL	8,000	Mi-10	10
		Mi-24 (Hind)	310
Marine Corps		TOTAL	3,630
AH-1J	54		
UH-1E/-N	84		
CH-46F	162		
CH-53D	126		
TOTAL	426		

(Plus Navy, Air Force and Reserve Aircraft)

* Taken from The Military Balance 1977-1978, p. 4-6

area. We can book to the future in Central Europe[17] and see similar terrain restrictions; urban sprawl continues unabated and might significantly restrict surface movement.[18] In addition, the number of people operating privately owned motor vehicles has reached 20 million in the Federal Republic of Germany alone (FRG).[19] These trends clearly indicate the need for vehicles which can provide a high degree of mobility.

Possible roles of helicopters in the initial stages of conflict have been pointed out in an interesting study done by Brigadier General Robert Close, The Feasibility of a Surprise Attack Against Western Europe.[20] In the scenario

presented by General Close the Soviets use large numbers of helicopters to achieve surprise and effect deep penetrations of Western Europe before NATO forces can react.[21] By rapidly closing with NATO forces and by placing portions of their mass in the urban areas, high value fire in the form of nuclear weapons are eliminated as a possible reaction by NATO forces.[22] (This is assuming that these fires were to be directed only against the attacking military forces.)

The rapid movement afforded to the Soviets by the use of helicopters could only be effectively countered by equally mobile NATO forces. Here again, the number of helicopters on hand at the beginning of hostilities is critical. (For an example of current helicopter deployment in Central Europe, see Table IV; and, for an example of how it is envisoned in the FY 86-90's time frame, see Table V).

The real value of the helicopter, in my opinion, is as a vehicle to transport troops, equipment, and supplies, not as a weapons platform. "Movement must be recognized as an equal partner with fire-power..."[25] and "mobility of supply is no less important than mobility of troop movement."[26]

If the tank is stopped on the battlefield, helicopters can be used to regain the initiative. Though we have a tendency to see enemy AA weapons as ubiquitous we can use helicopters to conduct high speed, small mass paralyzing attacks on enemy "nerve" centers. "The Army is convinced that the rotary-wing aircraft can play a key offensive role by

TABLE IV

NUMBER AND TYPE OF HELICOPTERS PRESENTLY IN A EUROPEAN BASED U.S. CORPS (FY 76-85) [27]

U.S. - Less AVN Det/SEC (Corps)

ACR	AH	OH	UH
1-Atk Hel Trp	21	12	3
HQ Trp	--	8	14
TOTAL	21	20	17

DIV (CAB)	AH	OH	UH
HQ Co	--	--	--
Cbt Svc Co	--	25	16
2/Atk Co	42	24	6
Maint Co	--	--	1
TOTAL	42	49	23

CORPS	CH	AH	OH	UH
Corps Avn Bn	--	--	--	--
HHC Avn Bn	--	--	--	3
ASHC	16	--	--	1
Corps Avn Co	--	--	8	10
TOTAL	16	0	8	14

Corps Composite for 2 Div US Corps

US TOTAL			
CH	AH	OH	UH
16	105	126	54

OH/LOH - Observation Helicopter
AH - Attack/Antiarmor Helicopter
UH - Utility Helicopter
CH - Cargo/Medium Lift Helicopter

TABLE V

NUMBER OF HELICOPTERS ENVISIONED IN A TYPICAL US CORPS

(FY 86-90's)[28]

US - Less Avn Det/Sec (Corps)

ACR	AAH	ASH	LOH	UTTAS	UH
Atk Hel Trp	18	10	--	--	3
AC Trp	9	10	--	7	--
HQ Trp	--	--	6	--	13
TOTAL	27	20	6	7	16

DIV(CAB)	AAH	ASH	LOH	UTTAS	UH
HHC, CAB	--	--	--	--	--
Div Avn Col	--	10	22	--	14
Cbt Spt Avn Co	--	--	--	15	--
2 Atk Hel Co	36	20	--	--	6
Air Cav Trp	9	10	--	7	--
Maint Co	--	--	--	--	1
TOTAL	45	40	22	22	21

CORPS CBT AVN GP	CH	AAH	ASH	LOH	UTTAS	UH
HHC GS Avn Bn	--	--	--	--	--	--
Corps Avn Co	--	--	--	20	--	17
Cbt Spt Avn Co	--	--	--	--	15	--
2 Mdm Hel Co	48	--	--	--	--	2
TOTAL	48	0	0	20	15	19

AH Bn	AAH	ASH	LOH	UTTAS	UH
HHC	--	--	--	--	4
3/AHC	54	30	--	--	9
TOTAL	54	30	0	0	13

2 Div Corps	CH	AAH	ASH	LOH	UTTAS	UH
TOTAL	48	171	130	70	66	90

Note: U.S. aviation requirements are those recommended by the TRADOC ARCSA III Study Report dated 31 October 1976.

seeking out and destroying enemy armor and armored infantry units by massing helicopter firepower."[29] Our experience in Vietnam indicates that although high loss rates can be expected, with the use of proper training and recovery techniques these losses can be held to a minimum and crew survivability can be enhanced.

A crucial issue with regard to the effectiveness of helicopters in combat is the psychological preparation of the crew. Our current emphasis on the vulnerability of the helicopter may instill an overcautious attitude in our aviators. The situation may be likened to that of the submarine captains prior to World War II. These men were ingrained with the idea that technology had advanced to the point where their ability to survive once detected, was extremely limited. Thus, they practiced great caution in their pre-war training so as to avoid detection. It was soon learned however, that this overcaution was unfounded and it greatly reduced the effectiveness of the submarine.[30] "War experience teaches that no new weapon proves so deadly in practice as in theory...."[31]

A key element to the effectiveness of helicopters in the high threat environment of Vietnam during the Easter Offensive was the survivability of the crews. For an example see Table VI which shows the casualties sufferred by H Troop 7/17th air cav for the six month period 1 May - 31 October 1972.

Another essential role that helicopters can play on the battlefield of Central Europe is providing psychological

TABLE VI

OPERATIONAL SUMMARY*

H/7/17 CAV

	May	June	July	Aug	Sept	Oct	TOTAL
A/C hit	22	9	1	6	3	6	47
A/C shot down	4	1	0	0	3	0	8
WIA	7	4	0	0	4	2	17
MIA	2	0	0	0	0	0	2
KIA	0	2	0	0	0	1	3

* Data taken from Enclosure 1 of the Operational Report Lessons Learned, H Troop (air) 17th ACS 1 May 1972 - 31 October 1972.

integration for the many disparate units scattered throughout the battle area. Just as in Vietnam where the helicopter's air lines of communication prevented a sense of hopeless isolation from setting in, one can imagine small, highly dispersed units in Central Europe being integrated by means of the helicopter.

It is beyond the scope of this work to examine in detail the many roles helicopters could play in a European environment.[32] What is suggested by the model of combat power presented earlier and by our experience in Vietnam is that helicopters may play a significant if not a dominant role in future land combat. If this is accepted as a possibility one must ask what our present deployment policies are, and

question whether or not they are realistic. It is my assertion that the balance of combat power could favor the NATO forces if enough helicopters are available at the point of contact to provide greater relative mobility.

CHAPTER VII

CONCLUSION

The purpose of this paper was to examine the concept of combat power with an aim toward understanding it as an instrument of policy. Combat power, as an instrument in the hands of our political leadership, can be an effective means for gaining our national objectives. However, it must be understood by those employing it. We live in a violent world which often requires a violent response. Combat power as actualized force is the violent response by which we may gain control. A point made here which must not be forgotten is that military power is merely potential until actualized as combat power against a specific opponent at a point of contact. Crucial to this point is that relative combat power is measured at the point of contact. Furthermore, since our perceptions are greatly affected by what we can actually see and measure, mass as an element of combat power plays a more important role in shaping perceptions than does the potential of fire. Therefore, if we intend to limit the escalation of violence at a point of contact, we must be capable of creating a mass of sufficient size to influence the perception of our opponent. On the other hand, it has become clear that the relationship between mass and fire has been significantly altered by the technological advances made in recent years. The introduction of high value fire in the form of nuclear munitions has greatly increased the

vulnerability of all mass to the effects of fire. Thus, large concentrations of mass in a nuclear environment may be an intolerable liability in future conflicts. In addition, the advent of large quantities of PGM's has greatly increased the vulnerability of high value mass. Overall, the increased effectiveness of fire greatly reduces the effect an imbalance of mass may have on relative combat power. By way of analogy, just as the Colt 45. was considered the "great equalizer" of the Frontier West, so today effective fire (in the form of nuclear munitions and PGM's) may be seen as the great equalizer between opposing masses.

This, of course, is a gross oversimplification of a complex issue. However, I believe the assertions made here are important to our understanding of the true nature of combat power. We are caught in a dilemma. If we rely strictly on effective fire in order to strike a balance of combat power with an opponent, we may be able to significantly reduce the size of our mass. However, we are more likely to be required to actualize fire in order to gain control than if we had a large mass. On the other hand, if we rely on a large mass, we may suffer heavy losses to an opponent who relies on effective fire to strike a balance. There is a way, however, to increase the effectiveness of a relatively small mass, and that is by being more mobile than an opponent's mass. Thus, relative mobility may be <u>the</u> crucial issue in determining relative combat power. Mass which cannot be

brought to the point of contact may have little effect on the outcome of the combat. By way of analogy, it is similar to the liquidity problem faced by many of our financial institutions. One may have large financial reserves but may miss excellent opportunities simply because cash is not immediately available.

In terms of combat power, I have attempted to demonstrate that we can have superior mobility in land combat. Our huge helicopter fleet can be the means of insuring superior mobility in central Europe if we have them, in sufficient quantity, when and where they are needed. In light of the difficulty we anticipate in introducing any additional mass at the point of contact once hostilities have begun, I argue here that a larger portion of our helicopter mass should be deployed to central Europe than is currently envisioned. This does not mean that all of these aircraft remain operational or that they be necessarily located in the Federal Republic of Germany. Alternative staging areas, such as Great Britain, may serve satisfactorily, since helicopters could be easily and quickly flown from these locations to the central front. Furthermore, I believe, greater emphasis must be placed on utility helicopters than on attack aircraft, such as the Cobra. While I am not denying the importance of the helicopter aerial weapons platform, I am asserting that superior mobility of mass will be more dependent on utility aircraft than on weapons platforms.

NOTES

Chapter I

1. The current proliferation of quantitative models and the American penchant for them has, in my opinion, established a dangerous trend. The words of Andre Beaufre should be heard by more members of the American Defense community - "Now, the present dominant trend of American thinking puts the emphasis on material superiority, as did the French Army after 1918, forgetting that the measurable factors are only a part - and often a minimal part - of the overall problem. This leads to a strategy which tends to be more logistical than psychological or even operational, and which presupposes an overwhelming superiority." See Andre Beaufre, "The Disease of Victory," The Atlantic Monthly, June 1968, p. 93.

An overreliance on quantitative models, especially in force planning and policymaking may set us up for a "paper defeat" which could lead to a moral defeat. The determinism implicit in F. W. Lanchester's work remains with us today - "Also one must not overlook the demoralizing effect on the personnel of the fleet first to go into action, of the knowledge that they are hopelessly outnumbered and already beaten on paper - that they are, in fact, regarded by the King and country as 'canon fodder.'" See F.W. Lanchester, Aircraft in Warfare: The Dawn of the Fourth Arm, (London: Constable and Company Limited, 1916), p. 38.

2. For examples of various computer models see, Reiner K. Huber, Lynn F. Jones and Egil Reine ed. Military Strategy and Tactics: Computer Modeling of Land War Problems (New York: Plenum Press, 1974). For an excellent example of a quantitative model read, T. N. Dupuy, "Application of the Quantified Judgment Method of Analysis of Historical Combat to Current Force Assessments," in Military Strategy and Tactics, p. 133-151. A critical analysis of the current modeling techniques is provided by J. A. Stockfisch, Models, Data and War: A Critique of the Study of Conventional Forces, The Rand Corporation, Santa Monica, California, March 1975. "Indeed, on the subject of force structure, the new firepower indexes, and models that use them, should be silent because they have nothing to offer." p. 78.

3. Hugo Grotius, The Rights of War and Peace (Including the Law of Nature and of Nation) Translated from the original Latin of Grotius by A.C. Campbell, with an introduction by David J. Hill (Washington: M. Walter Dunne, Publisher, 1901), p. 249

4. Ibid., p. 11.

5. B. Mitchell Simpson III, ed., War, Strategy and Maritime Power (New Brunswick, New Jersey: Rutgers University Press, 1977), p. x.

6. B. H. Liddell Hart, Deterrent or Defence (New York: Frederick A. Praeger, 1960), p. 67.

7. For example, the raid on Entebbe, Mayaguez affair and the Korean tree cutting incident. See also, Barry M. Blechman and Stephen S. Kaplan, "Armed Forces as Political Instruments," Survival, July/August 1977, p. 169-173.

8. J. C. Wylie, Military Strategy: A General Theory of Power Control (New Brunswick, New Jersey: Rutgers University Press, 1967), p. 78.

9. Duncan L. Clarke, Strategy and Policy: Their Theoretical Relationship (Ann Arbor, Michigan: University Microfilms, Inc., 1971), p. 54. See footnote number 108.

10. Ibid., p. 35.

11. Carl von Clausewitz, On War, Michael Howard and Peter Paret, introductory translation with essays by Peter Paret, Michael Howard, and Bernard Brodie, and a commentary by Bernard Brodie (Princeton, New Jersey: Princeton University Press, 1976), p. 706.

12. Thomas C. Schelling, Arms and Influence (New Haven, Connecticut: Yale University Press, 1966), p. 16.

13. This was an informal lecture presented to the students at the Naval War College in November 1971. I have paraphrased Professor Blumenson's comments on the subjects.

14. T. R. Fehrenbach, This Kind of War: A Study in Unpreparedness, (New York: Pocket Books, Inc., 1964), p. 706.

15. Edward B. Atkenson, The Dimensions of Military Strategy, Strategic Studies Institute, U.S. Army War College, Carlisle Barracks, Pennsylvania, February 1977, p. 9.

16. B. H. Liddell Hart, Thoughts on War (London: Faber and Faber Ltd., 1944), p. 119.

Chapter II

1. Fehrenbach, This Kind of War, p. 705.

2. Ibid., p. 701

3. See Russell F. Weigley, The American Way of War: A History of United States Military Strategy, (New York: Macmillan Publishing Co., 1973). "Indian campaigns early encouraged the nation that the object of war is nothing less than the enemy's destruction as a military power. The Civil War tended to fix the American image of war from the 1860s into America's rise to world power at the turn of the century, and it also suggested that the complete overthrow of the enemy, the destruction of his military power, is the object of war." p. xiii.

4. Clarke, Strategy and Policy, p. 6.

5. B. H. Liddell Hart, The Revolution in Warfare, (London: Faber and Faber Ltd., 1946), p. 81.

6. Grotius, The Rights of War and Peace, p. 75.

7. Fehrenbach, This Kind of War, p. 704.

8. Clarke, Strategy and Policy, p. 59.

9. Wylie, Military Strategy, p. 88.

10. For a fuller discussion of how perceptions are formed, especially in international relations, see: Robert Jervis, "Hypotheses on Misperception," World Politics, No. 20, 3, 1968, p 454-479. This point--that it is "perceived" reality which forms the basis of our decisions and thus our actions--is made by Luttwak. See Edward N. Luttwak, The Political Uses of Sea Power, (Baltimore: The Johns Hopkins University Press, 1974), p. 39.

11. A classic example of this was provided during the Battle off Samar, October 1944--"...the overmatched Americans managed to put three of Kurita's cruisers into sinking condition and luckily kept him convinced that he was facing battleships and fleet carriers. At 9:11 A.M. he lost his nerve and turned back toward San Bernardino Strait." Russell Weigley, The American Way of War, p. 303-304. For a complete discussion of this action see Samuel Eliot Morison, History of United States Naval Operations in World War II: Leyte, June 1944-January 1945, (Boston: Little, Brown and company, 1958). "Thus, partly from what he knew, but still more from what he imagined, Kurita reached the conclusion that his prospects in Leyte Gulf were both thin and grim, and that he had better save the rest of his fleet, possibly to fight another day." p. 300.

12. Some have argued that it has not been studied enough: "The study of war as a branch of knowledge, requires the method of work that prevails in a University as well as the attitude of mind which is inculcated there. But it is not likely that these needs will be fulfilled until men of learning change their attitude of mind towards war, and learn to regard it as a branch of knowledge worthy of exploration," B. H. Liddell Hart, The Ghost of Napoleon, (London: Faber and Faber Limited, 1933), p. 146.

13. Grotius, The Rights of War and Peace, p. 18.

14. Quincy Wright, A Study of War, abridged by Louise Leonard, Wright, (Chicago: The University of Chicago Press, 1964), p. 18.

15. Henry E. Eccles, Military Concepts and Philosophy, (New Brunswick: Rutgers University Press, 1965), p. 257.

16. Henry E. Eccles, "The Basic Elements of Strategy," B. Mitchell Simpson III, ed., War, Strategy, and Maritime Power, p. 74.

17. For an interesting criticism of the American approach to victory see, Andre Beaufre, "The Disease of Victory." See also, B. H. Liddell Hart, Strategy, (New York: Frederick A. Praeger, Second Revised Edition, 1968). "Victory in the true sense implies that the state of peace, and of one's people, is better after the war than before." p. 370.

18. Martin Blumenson and James L. Stokesbury, Masters of the Art of Command, (Boston: Houghton Mifflin Company, 1975), p. 31.

19. Robert Lucas Fischer, Defending the Central Front: The Balance of Forces, (London: The International Institute for Strategic Studies, 1976), Adelphi Paper No. 127, p. 26.

20. Ibid., p. 37.

21. General Fred C. Weyand and Lieutenant Colonel Harry G. Summers, Jr., "Serving the People--The Need for Military Power," in U.S. Department of the Army, National Security, Military Power and the Role of Force in International Relations, (Washington: U.S. Govt. Print. Off., 1976), p. 169-170.

22. D. K. Palit, The Essentials of Military Knowledge, (Dehradun, India: E B D Publishing and Distributing Co., 1967), p. 87.

23. Hart, Thoughts on War, p. 48.

24. Henry E. Eccles, "The Vietnam Hurricane," Shipmate, July/August, 1973, p. 25.

25. Carl von Clausewitz, On War, edited with an introduction by Anatol Rapport (Baltimore, Maryland: Penguin Books Inc., 1968). "...War is nothing but a continuation of political intercourse, with a mixture of other means." p. 402. James E. King stresses the importance of the word 'with' as opposed to some earlier translations which used the word 'by'. "In English usage, the preposition 'by' permits, even suggests, replacement or substitution while the preposition 'with' (even when not qualified by 'the addition of') clearly connotes a supplementation, an additional component." See, James E. King, Clausewitz: Master Theorist of War," Naval War College Review, Fall 1977, p. 30.

26. Clausewitz, On War, ed. by Anatol Rapport, p. 241. "Strategy is the employment of the battle to gain the end of the War; it must therefore give an aim to the whole military action..."

27. B. H. Liddell Hart, "The Objective in War: National Objective and Military Aim," Naval War College Review, December 1952, p. 1.

28. Grotius, The Rights of War and Peace, p. 18.

29. Wylie, Military Strategy, p. 79.

30. Eccles, "The Vietnam Hurricane," p. 26.

31. Hart, Thoughts on War, p. 145.

32. Klaus Knorr, "On the International Uses of Military Force in the Contemporary World," Orbis, Spring 1977, p. 6.

33. Grotius, The Rights of War and Peace, p. 284.

34. Clarke, Strategy and Policy, p. 218.

35. Michael E. Brown, Deterrence Failures and Deterrence Strategies, The Rand Corporation, Santa Monica, California, 1977, p. 23.

36. Ibid., p. 22.

37. For an example of how the United States might do this see Edward Luttwak, "Perceptions of Military Force and U.S. Defense Policy," Survival, Jan/Feb 1977, p. 8. "The

idea would be to augment the political "output" of existing force structures and modes of deployment by enhancing the images of power they generate, and by overcoming their perceptually negative features. Elements of such a policy would range from, say, detailed and repeated explanations of the vast difference between Soviet and United States army divisions, to the systematic exposure of elite observers to suitable U.S. capabilities-in-action, and even the upward redesignation of combat formations." As Luttwak points out there are already indications of this taking place. For example, the "recent redesignation of U.S. Navy warships."

38. For an example of how the Soviet Union has manipulated our perceptions see Herbert Goldhamer, "The US-Soviet Strategic Balance as Seen from London and Paris," Survival, Sept/Oct 1977, p. 206. "In 1956 Marshal Zhukov told Hansen Baldwin of the New York Times that the United States overestimated Soviet strategic air strength. This statement, so out of character for a Soviet spokesman, coincided with the visit of General Twining, Chief of Staff of the Air Force, to Moscow, and it seems likely, given the unimpressive show that the Soviet Union put before Twining and his party, that their behaviour was intended to get the United States to lower her estimate of Soviet strategic air capabilities and thereby to decrease the production of the B-52 (recently augmented due to the threat of Soviet aviation growth). B-52 production was in fact cut back after the Zhukov statement and the Twining visit."

39. Arleigh A. Burke, "The U.S. Navy's Role in General War and Conflict Short of General War," Naval War College Review, April 1959, p. 4.

40. Luttwak, "Perceptions of Military Force and U.S. Defense Policy," p. 4.

Chapter III

1. The definition of combat power used here and the relationship of the variables which make up the concept is at variance with others which have been offered: "The total means of destruction and/or disruptive force which a military unit/formation can apply against the opponent at a given time." See Department of Defense Dictionary of Military and Associated Terms (JCS Pub. 1), (Washington: U.S. Govt. Print. Off., 1974), p. 72. "A combination of the tangible and intangible means available to a commander and the activities involved in the conduct of operations." See Tactical Operations Handbook (ST-153-FY74), Ft. Benning, Georgia, 1974, p. 224. A taxonomic approach has been taken by some: "Combat

power consists of many factors including; numbers, morale, esprit, leadership, weapons, discipline, tactical skill, fighting ability and resolution." Clifford F. Quilici, "Do the Principles of War Require Revision?" Unpublished thesis, Naval War College, Newport, R.I., March 1964, p. 48. The approach taken by Murry makes the basic distinction between mass and fire; "Combat power, however, is composed of manpower and firepower. An increase in the potency of the firepower element increases the vulnerability of manpower and decreases the need for manpower in establishing a given level of combat power." See William V. Murry, "Clausewitz and Limited Nuclear War," Military Review, April 1975, p. 21-22. Though this is certainly not a comprehensive presentation of the various definitions used for combat power, it is indicative of the inconsistencies commonly found in the literature.

2. Klaus Knorr, Military Power and Potential, (Lexington, Massachusetts: D.C. Heath and Company, 1970), p. 22.

3. John Erickson, Soviet-Warsaw Pact Force Levels, (Washington: U.S. Strategic Institute, 1976), p. 13.

4. Thomas Schelling provides an illustration of this phenomenon with regard to the Cuban missile crisis: "... the universal tendency--a psychological phenomenon, a tradition or convention shared by Russians and Americans--to 'define' the conflict in Carribbean terms....The countermeasures and counterpressures available to the Russians might have looked very different to the 'Russian' side if this had been a game on an abstract board rather than an event in historical time in a particular part of the real world." (Emphasis added.) Thomas C. Schelling, Arms and Influence, p. 87.

5. Palit, The Essentials of Military Knowledge, p. 38. See also Lynn Montross, War Through the Ages, (New York: Harper & Brothers Publishers, 3rd Edition, 1960), p.7.

6. Steven L. Canby, The Alliance and Europe: Part IV - Military Doctrine and Technology, (London: International Institute for Strategic Studies, 1975), Adelphi Papers No. 109, p. 15.

7. John Erickson, Soviet-Warsaw Pact Force Levels, (Washington: U.S. Strategic Institute, 1976), p. 32.

8. C. S. Forester, The General (Harmondsworth, Middlesex, England: Penguin Books Ltd., 1975). While this may be a gross oversimplification, it does highlight what I believe is a serious lack of imagination. If the PGM and mine are doing to tanks what the machine gun and barbed wire

did to the infantry, then maybe we ought to shift our emphasis if we are going to retain mobility on the battlefield.

9. U.S. Army Force Design: Alternatives for Fiscal Years 1977-1981 (Staff Working Paper) Congress of the United States, Congressional Budget Office, Washington, DC, March 1976, p. 15.

10. U.S. Naval Force Alternatives (Staff Working Paper) Congress of the United States, Congressional Budget Office, Washington, DC, March 1976, p. 15.

11. Thomas B. Buell, The Quiet Warrior: A Biography of Admiral Raymond A. Spruance (Boston: Little, Brown and Company, 1974), p. 150.

12. Bernard Brodie, The Worth of the Principles of War, The Rand Corporation, Santa Monica, California, May 1957, p. 18.

13. Richard G. Head, "Doctrinal Innovation and the A-7 Attack Aircraft Decision," in Richard G. Head and Ervin J. Rokke, eds., American Defense Policy (Baltimore, Maryland: The Johns Hopkins University Press, 1973), p. 434.

14. Ibid.

15. Ibid., p. 439.

16. Fischer, Defending the Central Front: The Balance of Forces, p. 34.

17. John H. Morse, "The Application of Advanced Technology in Modern War," Current News, Special Edition, January 1977, p. 6.

18. Donald G. Brennan, "The Soviet Military Build-up and Its Implications for the Negotiations on Strategic Arms Limitations," Orbis, Vol. 21, No. 1, Spring 1977, p. 113.

19. Donald Featherstone gives a vivid account of this battle with an emphasis on the calm, cool approach of the English bowmen. One can't help but wonder if we may once again see the emergence of the 'professional' infantryman dominating heavy armor. See Donald Featherstone, The Bowmen of England (New York: Clarkson N. Potter, Inc., 1967). It is interesting to note that the 'missile' fire of the English bowmen at Crecy ended the 1,000 year dominance of the horse cavalry. At the Battle of Adrianople, 378 A.D., the cavalryman became the base element for ground combat.

"It introduced a new cycle in the art of war. Hitherto infantry normally had been the decisive arm, and when they relied upon shock weapons, they had little to fear from cavalry as long as they maintained their order." See J.F.C. Fuller, A Military History of the Western World, Vol. I, (Minerva Press, 1967), p. 274. Recent events have led some to the conclusion that heavy armor no longer dominates the land battle--"On the ground and in the air, therefore, the advent of the missile suggests that the day of the main battle tank and warplane may be ending. The superiority of the offensive may be declining in favour of the defensive." See Elizabeth Monroe and A. H. Farrar-Hockley, The Arab-Israeli War, October 1973: Background and Events (London: International Institute for Strategic Studies, 1975), Adelphi Paper, No. 111, p. 34. "The late Egyptian Field Marshal, Ahmed Ismail, neatly summed it up when he told me that 'the tank and the aircraft have lost their dominance on the battlefield, but not their usefulness." See Charles Wakebridge, "A Tank Myth or a Missile Mirage?" Military Review, Vol. LVI, No. 8, August 1976, p. 11. Some have also concluded that the primary heavy armor tactic of the 'blitzkrieg' has been significantly altered with the advent of the anti-tank missile. "The most conspicuous casualty of the October War was the blitzkrieg. Indeed the single most important instruction of the war was the conclusive restoration of the superiority of tactical defense over tactical offense." See Jeffrey Record, "The October War: Burying the Blitzkrieg," Military Review, April 1976, p. 19.

20. One can't help but wonder if the growing Soviet naval mass may not some day 'bump' us out of the Mediterranean. For an interesting discussion of U.S. Fleet operations in the Mediterranean see Horacio Rivero, "Why a U.S. Fleet in the Mediterranean?" Proceedings, Vol. 103, No. 891, May 1977, p. 66.

21. The effectiveness of mass for denying an opponent the use of space without resorting to fire was clearly pointed out during the Cuban missile crisis. "The U.S. Navy placed itself physically between Cuba and Soviet ships bound for Cuban ports." See Arnold Horelick, "The Cuban Missile Crisis," World Politics, Vol. 16, 1964, p. 385. This is not to say that the potential of fire was not significant; it was. However, submarines also have the potential of fire and could have easily sunk any ship approaching Cuba. The submarines could not create a credible surface mass and, therefore, were ineffective in communicating intent and thereby influencing perceptions. This approach is most effective on land; marginally effective at sea, as long as one has a credible surface fleet, and not very effective in the air. An example of by-passing a surface mass was the Berlin Airlift of 1948-1949.

22. An example of this might be the 'hedgehog defense.' In World War II this technique was an improvisation to meet a need. "From the very first days of the campaign, the vastness of European Russia and the peculiarities of Russian warfare led to the repeated isolation of individual units and combat teams. All around defenses and security measures were the only possible remedy. Far from being stressed, these defense tactics were frequently not even mentioned in the field service regulations. The field forces improvised them and designated them very appropriately as 'hedgehog defenses'....Their use was not confined to defense. During offensive actions advance detachments had to build hedgehog defenses as protection against enemy surprise attacks by night." See U.S. Department of the Army, Historical Study: Military Improvisation During the Russian Campaign (Pamphlet No. 20-201), August 1951, p. 22. In another medium, the carrier task force might be an example of this phenomenon. During the Vietnam War, ground forces often relied on fire support bases to provide the same all-around security. With the introduction of highly lethal, precision guided munitions and the possibility of a nuclear exchange, some authors suggest an early adoption of this technique. For example, T. Finley Burke, The Implications of the PGM Era, The Rand Corporation, Santa Monica, California, March 1977. "It is shown there that a force fewer than one division, dispersed throughout West Germany, with modest terrain visibility, and calling on low kill probability fire, could nevertheless impose quite substantial and continuing attrition." p. 10. Steven Canby, Military Doctrine and Technology, especially "The chequerboard concept: defense by small strongpoints," p. 24. See also Robert Fischer, Defending the Central Front: The Balance of Forces," "...multiple and dispersed defensive positions..." p. 37. For a detailed explanation of PGMs see James Digby, Precision-Guided Weapons (London: The International Institute for Strategic Studies, 1975), Adelphi Paper No. 118; also James Digby, New Non-Nuclear Military Technology: Implications and Exploitable Opportunities, The Rand Corporation, Santa Monica, California, March 1977.

23. Such evasive techniques were employed during the last stage of World War I. "The forward positions were evacuated shortly before an imminent attack and the defending troops moved far enough to the rear into a new and even stronger line to force the enemy to regroup his forces, always a time-consuming maneuver." Also used by the Germans in World War II, "Like the fencer, the forces holding the threatened sector of the front executed a surprise withdrawal at the last moment." Military Improvisations During the Russian Campaign, p. 29.

24. Hart, Thoughts on War, p. 211. An example of this might be the Arab-Israeli, Six-Day War of 1967. The "extreme mobility" of the Israeli forces was a "decisive factor." For another example, see Historical Evaluation and Research Organization, A Survey of 'Quick Wins', a report prepared for Director, Net Assessment Office of the Secretary of Defense, October 1975.

25. An example of this might be Soviet military doctrine. "The Soviet doctrinal linchpin is the 'blitzkrieg,' the concept of overwhelming an opponent quickly through that attack." Canby, Military Doctrine and Technology, p. 10.

26. See for example these quotes from Liddell Hart, Thoughts on War, "To loosen his resistance and make him bolt there must be something from which to run--some tangible oncoming danger from which escape seems possible." p. 21. "The demoralization which begets a general conviction of inferiority comes from retreat and the break-up of organization." p. 20. "Paralysis, rather than destruction, is the true aim in war, and the far-reaching in its effects," p. 60.

27. As Sun Tzu says, we must be prepared to "come like the wind (and) go like the lightning." See Sun Tzu, The Art of War, translated by Samuel B. Griffith (New York: Oxford University Press, 1971), p. 97. Relative mobility has been identified as one of the key elements of success in a number of studies. See for example Measurement of Combat Effectiveness in Marine Corps Infantry Battalions: Executive Summary, Cybernetics Technology Office Defense Advanced Research Projects Agency, Policy Sciences Division, CACI, Inc., "The single most important function for unit success is maneuver during the action." p. 10.

28. A point often forgotten, until faced with the problem, is clearly emphasized in the following statement by Liddell Hart, "Mobility of supply is no less important than mobility of troop movement." Hart, The Revolution in Warfare, p. 89.

29. William G. Stewart, "Interaction of Firepower, Mobility, and Dispersion," Military Review, Vol. XXXIX, March 1960, p. 32.

30. Hart, Thoughts on War, p. 211. Hart's analysis of the data from World War II reveals some interesting insights. "It is evident that attacks were often checked by small detachments or remnants that were heavily outnumbered, whereas attacks succeeded in many cases where

the defenders were far more numerous relatively [sic] to the frontage. The contrast suggests that a buildup of the defense to the level suggested by custom and caution often aided the attacker by presenting him with a much increased target and one easier for him to destroy by concentrated fire." B. H. Liddell Hart, "The Ratio of Troops to Space, " Military Review, Vol. XL, April 1960, p. 11.

31. One could immobilize an opponent's mass by "fixing" it with fire or by "fixing" it with a portion of your own mass. Therefore, one may have the same means of mobility that an opponent has but because he has retained freedom of movement, he has greater mobility. Sun Tzu addresses this same issue: "The force which confronts the enemy is the normal; that which goes to his flanks the extraordinary." Also see footnote number one: "The normal (cheng) force fixes or distracts the enemy; the extraordinary (ch'i) forces act when and where their blows are not anticipated. Should the enemy perceive and respond to a ch'i manoeuvre in such a manner as to neutralize it, the manoeuvre would automatically become cheng." (Emphasis added.) Sun Tzu, The Art of War, p. 91. An illustration of this from the Vietnam War is provided by Zeb Bradford: "To a large degree, the role of the infantry became primarily to locate and pin down the enemy in order that the 'coup de grace' might be delivered by massive application of firepower from aircraft and artillery....The role of armor as a mobile striking force was also altered in battles such as this one. Here, the armor was used as a holding force, while the more mobile infantry moved to out-flank the enemy. This is a marked change from traditional employment." (Emphasis added.) Zeb B. Bradford, Jr., "U.S. Tactics in Vietnam," Military Review, Vol. LII, No. 2, Fenruary 1972. p. 72.

32. Hart, "The Ratio of Troops to Space," p. 10.

33. For an interesting approach to the relationship which exists between the mobility of mass and firepower, see Stewart, "Interaction of Firepower, Mobility, and Dispersion," p. 26-33.

34. Morse, "The Application of Advanced Technology in Modern War," p. 3.

35. Hart, Deterrent or Defense, p. 193.

36. Hart, "The Ratio of Troops to Space," p. 13. "Mentally, the British and French generals still moved the way their men did, at a foot-soldier's pace; they never caught up." Blumenson and Stokesbury, Masters of the Art of Command, p. 31.

37. The helicopter is a unique aerial platform in that it is capable of creating a mass anywhere on the surface. In an operational sense, it is terrain-dependent for survival in a high threat combat environment. (See FM 90-1 Employment of Army Aviation Units in a High Threat Environment.) Conceptually, it may be more appropriate to view the helicopter as a surface platform rather than as a supra-surface platform, such as an airplane.

38. "The real target in war is the mind of the enemy command, not the bodies of his troops. If we operate against his troops it is fundamentally for the effect that action will produce on the mind and will of the commander; indeed, the trend of warfare and the development of new weapons--aircraft and tanks--promise to give us increased and more direct opportunities of striking at his psychological target." Hart, Thoughts on War, p. 48.

39. The importance of communications has been greatly emphasized in recent times. "Communications are the second most important specific function that an infantry battalion must perform well to operate effectively in combat. Units that communicate well also have a good record in use of supporting fires, although specific linkages to external units or commands do not show up as critical in themselves." Measurement of Combat Effectiveness in Marine Corps Infantry Battalions, p. 6-21. With ubiquitous mechanization in all mediums of combat there is an increased dependency on electronic means of communications. The ability to control a mass in combat is almost completely reliant on radio communications. This has created new vulnerabilities which can be exploited by fire. "The commander must view the electromagnetic environment as a battlefield extension where a different type of combat takes place. This invisible but very real struggle is electronic warfare (EW)." FM 100-5 Operations, Headquarters, Department of the Army, Washington, DC, July 1976, p. 9-1.

40. The need for deception has long been recognized by those who have studied war. Likewise, the power of information has been demonstrated throughout history. Sun Tzu provides a concise statement on the need for both: "If I am able to determine the enemy's dispositions while at the same time I conceal my own then I can concentrate and he must divide." Sun Tzu, The Art of War, P. 98.

41. This distinction between manifest and latent function is implicit in the following statement by Schelling: "It is latent violence that can influence someone's choice--violence that can still be withheld or inflicted, or that a

victim believes can be withheld or inflicted." (Emphasis added.) See Thomas C. Schelling, Arms and Influence, p. 3.

42. "And why is a kiloton nuclear bomb so different from an equivalent weight of high explosives dropped in a single attack? ...it is by convention--by an understanding, a tradition, a consensus, a shared willingness to see them as different--that they are different." Schelling, Arms and Influence, p. 133-134.

43. One sometimes has to question the 'humanitarian' distinctions we make btween the various forms of fire. The use of gas has been outlawed; however, there are those--even the victims of gas--who argue that it is not as inhumane as other forms of fire. "Logically, it is difficult to object to the use of gas while accepting high explosives, especially as the percentage of victims who died or were permanently disabled was much smaller." Hart, The Revolution in Warfare, p. 62.

44. An excellent discussion of the psychological effects of fire is provided by Irving L. Janis, Air War and Emotional Stress (New York: McGraw-Hill Book Company, Inc., 1951).

45. "Emotional-shock reactions, ranging from a dazed stupor to jumpiness and preoccupation with the horrors of the air raid, occur primarily among the 'near-misses'--people who undergo direct exposure to actual danger. This may involve a narrow escape from death, being wounded, witnessing the destruction of persons close by, or suffering the loss of a loved one.

In contrast to the powerful reinforcement of fear among the near-misses, there is likely to be a reduction of fear among those who do not directly experience the destructive impact of the air attack." The indiscriminate use of fire may be counter productive if it does not create a near-miss situation. See Janis, Air War and Emotional Stress, p. 103-104.

46. "...the ultimate determinant in war is the man on the scene with a gun. This man is the final power in war. He is control. ...if the strategist is forced to strive for final and ultimate control, he must establish, or must present as an inevitable prospect, a man on the scene with a gun. This is the soldier." (Emphasis added.) Wylie, Military Strategy: A General Theory of Power Control, p. 85.

47. As previously mentioned, we Americans have a penchant for quantifying the instruments of war. We accept the "rational" approach to deterrence in that a relative materiel

equilibrium will assure non-aggression by potential opponents. There are indications however, that a materiel balance is not, in and of itself, sufficient to deter a determined aggressor. For an interesting discussion of this issue and some historical illustrations see Michael E. Brown, Deterrence Failures and Deterrence Strategies.

48. "This factor of 'vulnerability' has yet to be adequately appreciated, although it has grown immensely in importance under modern conditions, especially under pressure of air-power. It affects all calculations of war, from the highest scale, of the comparative defence [sic] situations of countries, down to the effect with which particular weapons can be credited.

The vulnerability of the target counts for at least as much as the power of the weapon--and possibly counts for more." Hart, Thoughts on War, p. 155. The growing vulnerability of mass has been stressed in field manuals and slogans such as "If you can be seen you can be hit. If you can be hit you can be killed." The increased "lethality" of new weapons has brought about a new awareness of vulnerability. It is interesting to note the paradox of our planning wherein we stress the vulnerability of mass at the tactical level but do practically nothing to protect our mass at the national level. See Janis, Air War and Emotional Stress, especially Part III "Psychological Aspects of Civil Defense," p. 181-257.

49. "It is fire-power, and fire-power that arrives at the right time and place, that counts in modern war--not man-power." Hart, Thoughts on War, p. 67.

50. James F. Digby, Precision-Guided Weapons: New Chances to Deal with Old Dangers, p. 3.

51. United States Continental Army Command Pamphlet No. 145-2, U.S. Defense Establishment, dated 29 September 1967, p. 20.

52. Ibid.

53. When there are multiple opponents and limited resources it becomes necessary to prioritize so that sufficient combat power can be applied to the most dangerous opponent first. A clear example of this situation, and the difficulties involved with multiple opponents, is provided by Forrest C. Pogue in George C. Marshall: Ordeal and Hope 1939-1942 (New York: The Viking Press, 1966). See especially Chapter VI "If War Came," p. 120-138.

54. Erickson, Soviet-Warsaw Pact Forces Levels, p. 7.

55. There have been occasions when the "man with the gun" has applied his own definition of what and who constitutes the enemy mass. A tragic example of this was the actions of Lt. William L. Calley, Jr. in 1968, at My Lai, South Vietnam. There have also been occasions when the deliberate destruction of large numbers of the enemy civilian population has been carried out as a matter of policy. For example, "In the Crimean War of 1854-5, the Royal Navy repeatedly bombarded the Russian coast towns on the Baltic, the Black Sea, and the Sea of Azov, in order, as the First Lord of the Admiralty said, to 'teach them that a war with England is not to be engaged in with impunity.'" See Hart, The Revolution in Warfare, p. 59. For some interesting insights of the decision to employ the atomic bomb see Gordon Thomas and Max Morgan Witts, Enola Gay (New York: Stein and Day, Publishers, 1977). "The historic fact remains, and it must be judged in the after time, that the decision whether or not to use the atomic bomb to compel the surrender of Japan was never an issue. There was unanimous, automatic, unquestioned agreement around the table." p. 192. As Thomas Schelling points out, "...in the Second World War noncombatants were deliberately chosen as targets by both Axis and Allied forces, not decisively but nevertheless deliberately." Schelling, Arms and Influence, p. 26.

56. Clay Blair, Jr., Silent Victory: The U.S. Submarine War Against Japan (New York: Bantam Books, 1976), p. 106.

57. Ibid.

58. Ibid., p. 131.

59. Harold L. DeWolf, Crime and Justice in America: A Paradox of Conscience (New York: Harper & Row, Publishers, 1975), p. 54.

60. Weigley, The American Way of War, p. 354.

61. Morton H. Halperin, Limited War in the Nuclear Age (New York: John Wiley & Sons, Inc., 1963), p. 35.

62. The broad guidelines for actually employing combat power may be likened to the general rules that an artist follows. Commonly, with regard to warfare, we refer to these general rules as the 'principles of war.' There are some who question the value of these principles. "In Clausewitz, one finds innumerable wise and valid thoughts, but no single rule, except perhaps the recurrent insistence that the pursuit of war ought to be politically purposeful--that the political objective should guide the military conduct of war." Brodie, The Worth of Principles of War. For an excellent discussion of the origins of the principles of war see John T. Alger, "The Origins and Adaptations of the

Principles of War," unpublished thesis, U.S. Naval War College, Newport, Rhode Island, 1964; Clifford F. Quilici, "Do the Principles of War Require Revision?" Whether or not tactics is an art or a science has been debated by many. I agree with Major Doughty, "...the successful orchestration of forces on the modern battlefield remains an art, served by many sciences." See Robert A. Doughty, "The Art and Science of Tactics," Parameters, Vol. VII, No. 3, 1977, p. 45.

63. Hart, Strategy, p. 335.

64. An excellent discussion of the importance of logistics is provided by Henry Eccles, Military Concepts and Philosophy; see especially Chapters VI and VII. For an analysis of the logistics effort in Vietnam and its impact on combat operations see Harold D. Gallagher, "The Eye of the Needle: Combat Support in Wars of National Liberation," unpublished thesis, Naval War College, Newport, Rhode Island, June 1972. "An analysis of the effects of the overindulgent combat support practiced in Vietnam (1965-1970) upon in-country U.S. Military operations, U.S. strategic flexibility, politics of South Vietnam." p. ii.

65. Arthur L. Stinchcombe, Constructing Social Theories (New York: Harcourt, Brace & World, Inc., 1968), p. 219.

66. Ibid., p. 218. In the case of the Soviet Union; "If power is to be measured in terms of a country's ability to ferry material support great distances to friends fighting in settings like Angola in 1975, the Soviet Union is immeasurably stronger than it was 15 years earlier when Patrice Lumumba needed help." Robert Legvold, "The Nature of Power," Foreign Affairs, October 1977, p.

67. We experienced considerable difficulty in resupplying Israel during the 1973 War.

68. Albert and Roberta Wohlstetter, Controlling the Risks in Cuba (London, England: The Institute for Strategic Studies, April 1965), Adelphi Paper 17, p. 22.

69. Stinchcombe, Constructing Social Theories, p. 217.

Chapter IV

1. For an excellent discussion of the French experience see W. Scott Thompson, "Lessons from the French in Vietnam," Naval War College Review, March-April 1975, pp. 43-52.

2. "It has to be recognized that, when a great power steps down from the top league into a minor league, it has to conform with the rules applicable at that lower level. This is a grave disadvantage because whereas the minor power, in this case North Vietnam, can in its terms fight a total unlimited war, for which it is conditioned and trained, the United States in its terms must fight a limited war, for which it is not entirely conditioned nor suitably trained." Robert Thompson, No Exit from Vietnam, (New York: David McKay Company, Inc., Updated edition 1970), p. 109.

3. Douglas Kinnard, The War Managers (Hanover, New Hampshire: University Press of New England, 1977), p. 40.

4. "The Vietminh were, therefore, prepared to settle for what they had already gained on the battlefield, thereby obtaining international recognition of their victory." Thompson, No Exit from Vietnam, p. 77.

5. For an excellent description of Vietminh ambush tactics see Bernard B. Fall, Street Without Joy (New York: Schocken Books, 1972), especially pp. 185-250.

6. "In order to support the French the question of direct American intervention, at least with air power, was considered during the battle of Dien Bien Phu but, partly owing to the opposition of Sir Winston Churchill and Mr. Anthony Eden, who foresaw that such intervention might not be effective, no direct action was taken." Thompson, No Exit from Vietnam, p. 105.

7. "Air power on a more massive scale than was then available could not have changed the outcome of the Indo-china War, but it would have saved Dien Bien Phu." (Emphasis added.) Bernard B. Fall, Hell in a Very Small Place (New York: Vintage Books, 1967), p. 455.

8. For a short presentation of the events of that period see Report on the War in Vietnam (Washington: U.S. Govt. Print. Off., 1968), pp. 107-111.

9. Thompson, No Exit from Vietnam, p. 98.

10. "To secure its aims by a military victory, the United States was committed, without any limitation, to a progressive increase in costs and to a steadily mounting escalation. In retrospect the whole process, step by step as it occurred, appears to have been inevitable, which raises two questions: how could an apparently inevitable process have been avoided and how could the instrument of American intervention in Vietnam have been used to achieve their aims? (Emphasis added.) Thompson, No Exit from Vietnam, p. 108.

11. Kinnard, The War Managers, p. 39. "The first operational term was 'search and destroy.' Operations of this type were designed to find, fix in place, fight, and destroy (or neutralize) enemy forces and their base areas and supply caches. This was essentially the traditional attack mission of the infantry." Report on the War in Vietnam, p. 91.

12. "The basic question...is in essence: Could the Americans win a victory in accordance with their concept of the war unless at the same time they inflicted a defeat on the enemy in accordance with his concept of the war?" Thompson, No Exit from Vietnam, p. 17.

13. Ibid., p. 62.

14. Ibid., p. 64.

15. Ibid., p. 56.

16. "Battle followed battle and casualty figures proclaimed the victories, but the North Vietnamese also claimed victories because they understood the overall long term effect of the battles -- that they were keeping American costs high and preventing American forces from achieving any productive or permanent results." Ibid., p. 139.

17. Ibid., p. 103.

18. The decision to bomb the North had many consequences, not the least of which included expanding the point of contact and broadening the definition of mass. "...it spread the war into North Vietnam and brought into play all the population of the North instead of only those being infiltrated into the South. All could now make a direct contribution to the war." Ibid., p. 50.

19. For a detailed discussion of operation "Rolling Thunder," see Report on the War in Vietnam, pp. 16-54.

20. "Almost the only targets that remained off limits were the harbour of Haiphong (for fear of hitting a Russian ship), the population itself and the Red River dykes. As the bombing campaign escalated, so, of course, did the reasons for it." Thompson, No Exit from Vietnam, p. 94.

21. "Hanoi knew quite well that there was only one asset in the North which was vital to the war and that was the human material, i.e., the manpower. It was the only target which the Americans could not attack either directly by bombing the centres [sic] of population or indirectly by bombing the Red River dykes which, if destroyed at a certain time of the year, would have caused enormous flood damage and destroyed much of the rice crop." Ibid., p. 59.

22. "...the bombing put Hanoi in what might be termed the underdog position and, therefore, attracted to her great international sympathy and support, in addition to awakening the conscience of the United States itself." Ibid., p. 140.

23. "If, as I have argued, the war was basically an internal insurgency within South Vietnam boosted by infiltration, raids and an element of invasion from North Vietnam, then, because the war was defensive in character, it would have been sufficient merely to thwart the enemy's purpose without necessarily achieving a military victory. This concept of victory was better understood in ancient times and was well expressed by Belisarius, one of the great generals (if not the greatest) of all time:

'The most complete and happy victory is this: to compel one's enemy to give up his purpose, while suffering no harm oneself.' Ibid., p. 116.

24. Ibid., p. 69. See also Report on the War in Vietnam, p. 171. "The key to our success at Khe Sanh was firepower, principally aerial firepower."

Chapter V

1. "Battles Seen as Big Test," Pacific Stars and Stripes, 3 April, 1972, p. 1:1.

2. "30,000 'Invaders' Hurl Back S. Viets," Pacific Stars and Stripes, 3 April,1972, p. 1:4.

3. For an excellent overview of the Easter Offensive, see A.P. Serong, "The 1972 Easter Offensive," Southeast Asia Perspectives, Vol. 10, Summer 1974. See also Kinnard, The War Managers.

4. Most of the data used in this account of the battle were acquired by the author while serving as an army aviator

stationed at Camp Holloway, Pleiku, South Vietnam. As a participant observer many insights were gained which, admittedly, have colored my perceptions of the events. Though much of the detail has been eliminated, I believe this account of the Battle of Kontum will serve as a useful illustration of combat power as actualized force. In addition to my own notes of the period, numerous articles published in the Pacific Stars and Stripes newspaper have been cited. These articles provide background information and may prove useful to an interested reader.

5. "ARVN Kills 87 After Red Attack," Pacific Stars and Stripes, 3 April, 1972, p. 6:3.

6. See Matt Franjola, "Reds Paid High Price for Bases, Advisor Says," Pacific Stars and Stripes, 17 April, 1972, p. 7:3. Also "North Viets Overrun Base, Cut Highways in Highlands," Pacific Stars and Stripes, 24 April, 1972, p. 1:1.

7. For a newspaper account of this period see Peter Arnett, "Highlands Staggering Under NVA Assault," Pacific Stars and Stripes, 26 April, 1972, p. 6:1. Also "More Bases Fall - Viets Pull Back Under Red Push," Pacific Stars and Stripes, 26 April, 1972, p. 1:4.

8. "A likable, intelligent officer, Colonel Dat nonetheless had the fatal, once common conviction, already so sharply disproved by the fighting elsewhere, that North Vietnamese would always beat South Vietnamese." Joseph Alsop, "Dangerous Defeat in Central Highlands, " Pacific Stars and Stripes, 6 May, 1972, p. 10:1.

9. For a vivid account of this rescue see "Helo's Angels Save 9 Advisors," Pacific Stars and Stripes, 26 April, 1972, p. 1:1.

10. Some of the advisors were picked up later by a UH-1 from the 57th AHC. This aircraft was shot down and it was believed all aboard were killed. See "Shot Down in Highlands - 10 Yanks Reported Killed in Helo," Pacific Stars and Stripes, 27 April, 1972, p. 6:1. In fact, most survived the crash and were rescued some 13 days later. The advisors included: Major Julius Warmoth, Captain Kellar, 1st Lieutenant Jones, Sergeant Ward, and Spec. Zollen-Kopher.

11. Some have asserted that only two divisions were involved in the attack. See Serong, "The 1972 Easter Offensive," p. 31.

12. See S.L. Christine, "1st Combat Aerial TOW Team: Helicopter vs. Armor," United States Army Aviation Digest, Vol. 20, No. 2, February 1974, p. 2-4.

13. Some of the U.S. advisors did not want to leave their units. These men played a vital role by calling in

airstrikes and demonstrating American resolve by their presence. See "Advisors Protest Orders to Quiet Menaced Bases," Pacific Stars and Stripes, 28 April, 1972, p. 6:1.

14. Some of these troops were put to work by the NVA. For example see Jacques Leslie, "Viet Sgt. Escapes from Red After Two Weeks of Driving Bus," Pacific Stars and Stripes, 27 May, 1972, p. 7:1.

15. See "Another Top General Fired by Thieu," Pacific Stars and Stripes, 12 May, 1972, p. 1:1.

16. "President Nguyen Van Thieu, in a memorable address, named certain towns - Quang Tri and An Loc - to be held at all costs. Later phases of the operation, called that order into question, in that it restricted the flexibility of the field commanders. But it now appears that Thieu knew his commanders better than did the critics, and that he was prepared to accept limitations on flexibility for the sake of an absolute statement of aims that permitted no temporizing." (Emphasis added.) Serong, "The 1972 Easter Offensive," p. 28.

17. It is important to mention that all of the TOW missile attacks were made from a relatively high altitude. The average altitude for the aircraft was about 2200 feet above ground level. Even with this excellent position for observing ground targets, smoke and dust from artillery fire tended to obscure the targets making it difficult to engage them.

18. A crucial point to be aware of is the confidence gained by the ARVN infantry in their antitank role. For example see "Stopping 'em in their Tracks - S. Viets Learn to Kill Tanks," Pacific Stars and Stripes, 1 June, 1972, p. 7:3. Ken Schultz, "With Electronic Missile - Teacher Shows How - Blasts Red Tank," Pacific Stars and Stripes, 2 June, 1972, p. 6:2.

19. For example see "100 Reds Offer to Surrender," Pacific Stars and Stripes, 2 June, 1972, p. 6:4.

20. For a brief account of this event, see "Thieu Looks on as Viet Tanks Tackle Reds Inside Kontum," Pacific Stars and Stripes, 1 June, 1972, p. 1:2.

21. For a discussion of cavalry operations during the battle see John MGEN G. Hill, Jr., "Colonel Patterson's Letter," United States Army Aviation Digest, Vol. 22, No. 3, March 1976, p. 3.

Chapter VI

1. Steven L. Canby, The Alliance and Europe: Part IV - Military Doctrine and Technology, p. 12.

2. U.S. Army, Operations, FM 100-5, p. 2-6.

3. Ibid., p. 2-7.

4. An excellent discussion of the relationship between mobility and firepower is provided by William G. Stewart, "Interaction of Firepower, Mobility, and Dispersion."

5. Canby, The Alliance and Europe, p. 4.

6. FM 100-5, p. 2-8.

7. For examples of the different view points see Finley T. Burke, The Implications of the PGM Era; Richard Burt, "New Weapons Technologies and European Security," Orbis, Summer 1975, p. 514-532; Philip A. Karber, "The Soviet Anti-tank Debate," Survival, May/June 1976, p. 105-111; Jeffrey Record, "The October War: Burying the Blitzkrieg."

8. Elizabeth Monroe and A.H. Farrar-Hockley, The Arab-Israel War, October 1973: Background and Events, p. 34.

9. For a discussion of specific techniques see Charles A. Block, "Helicopter Tactics in a Non-Permissive Air Defense Environment," Unpublished thesis, Naval War College, Newport, Rhode Island: 1976; George N. Ivey, "Helicopter Survivability on Mid-Intensity Battlefield," Unpublished thesis, Naval War College, Newport, Rhode Island, 1976; Robert R. Lund, "Can Helicopters Survive Today's Antiair Threat to Support Amphibious Operations?" Unpublished thesis, Naval War College, Newport, Rhode Island, 1976; U.S. Army, Employment of Army Aviation Units in a High Threat Environment, FM 90-1 (Washington: 30 September 1976).

10. For example see The Military Balance 1977-1978 (London: The International Institute for Strategic Studies); Steven Canby, The Alliance and Europe; John Erickson, Soviet-Warsaw Pact Force Levels; Robert Lucas Fisher, Defending the Central Front: The Balance of Forces; William Schneider, Jr., "Soviet General-Purpose Forces," Orbis, Vol. 21, No. 1, Spring 1977, p. 95-106; "NATO and the New Soviet Threat," Congress Record, 25 January 1977, p. S1411-S1417.

11. When one compares the total NATO assets versus Warsaw Pact the imbalance is more obvious. See The Military Balance. There are indications however, that the Soviets are making great efforts to catch up. See Alexander Malzeyev, "Mil Mi-24--The First Soviet Combat Helicopter," Interavia, January 1976, p. 44-45; "Mil Mi-24 Hind A Assault Helicopter," Aviation Week & Space Technology, 1 March 1976, p. 16-17, Major Peter J. Blake, "Soviet Airmobile Tactics," United States Army Aviation Digest, April 1977, p. 1-3; and LTC Walter Urbach, Jr., "Behind the Hind," Ibid., p. 4-5; David A. Bramlett, "Soviet Air Mobility: An Overview," Military Review, January 1977, p. 14-25.

12. Michael Carver, "Documentation: NATO Strategy," Survival, Jan/Feb 1977, p. 36.

13. "Decreased warning time severely limits the reinforcements that could be moved from North America and the United Kingdom to NATO Center. This greatly magnifies the importance of forces already in place on the continent, the bulk of which are and of necessity must be European." "NATO and the New Soviet Threat," Congressional Record, 25 January 1977, p. S1414. For a detailed discussion of moving helicopter units to Europe see LTC John A. G. Klose, "Get Ready - Get Set - Go!!" U.S. Army Aviation Digest, December 1976, p. 6. Also see other articles dealing with "Reforger 76" in that issue of Aviation Digest.

14. This is based on figures provided in The Military Balance 1977-1978. For example see Table III. It is interesting to go back for the past ten years of The Military Balance and note that comparison tables of helicopter strength are not provided.

15. "Establishment of the Cobra force and reorganization of the air units that operate Cobras to enhance the anti-armor capability is only a portion of the major increase in air power the Army plans to put into Europe by the end of 1984.

By that time, the Army plans to have 1,566 aircraft in Europe, including 360 anti-armor missile-equipped helicopters." David A. Brown, "Cobra Bolsters U.S. Stance in Europe," Aviation Week & Space Technology, November 14, 1977, p. 41.

16. FM 100-5, p. 2-30.

17. "Defined as the territory of the Federal Republic of Germany south of the Elbe and the Benelux countries." "NATO and the New Soviet Threat," p. S1413.

18. "Present doctrines for mobile ground operations and material employment are based on open spaces that are shrinking rapidly, engulfed by development." See Paul J. Braken, "Models of West European Urban Sprawl as an Active Defence Variable," in Reiner K. Huber, Lynn F. Jones and Egil Reine, ed., Military Strategy and Tactics Computer Modeling of Land War Problems, p. 219.

19. "Motor vehicles licensed in the Federal Republic of 1 July 1974 numbered 20,424,226 (including 230,364 motor cycles, 17,341,265 passenger cars, 1,135,784 trucks, 57,808 buses and 1,543,000 tractors)." John Paxton, ed., The States man's Year Book (New York: St. Martin's Press, 1976), p. 969.

20. General Robert Close, The Feasibility of a Surprise Attack Against Western Europe, NATO Defense College, 24 February 1975.

21. "Soviet doctrine emphasizes offensive operations based on seizing the initiative and exploiting the surprise factor, for both nuclear and conventional operations....This advance would be assisted by the extensive use of helicopter-borne assaults to seize objectives designed to facilitate the Soviet advance and also airborne operations, used in similar fashion to exploit the initial nuclear blow." John Erickson, Soviet-Warsaw Pact Force Levels, p. 32.

22. For a discussion of "urban hugging tactics" see Paul Braken, "Urban Sprawl and NATO Defense," Military Review, October 1977, p. 32-39. This same tactic was used extensively by the NVA to avoid the American fire.

23. Army Concept Paper on Airmobile Operations, August 1977, p. B-10. SECRET

24. Ibid., p. B-12.

25. D.K. Palit, The Essentials of Military Knowledge, p. 38.

26. B. H. Liddell Hart, The Revolution in Warfare, P. 89.

27. Army Concept Paper on Airmobile Operations, August 1977, p. . SECRET

28. Ibid., p.

29. "New Helicopter Combat Roles Planned," Aviation Week & Space Technology, 29 September 1975, p. 53.

30. See Clay Blair Jr., Silent Victory: The U.S. Submarine War Against Japan.

31. Hart, The Revolution in Warfare, p. 32.

32. See for example David A. Brown, "Helicopter Play New Role in Europe," Aviation Week & Space Technology, 28 November 1977, p. 62.

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