

The Continuing Utility of Phasing Constructs in Operational Planning

A Monograph

by

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ABSTRACT

The Continuing Utility of Phasing Constructs in Operational Planning, by Major Scott L. Taylor, US Army, 60 pages.

Recent assertions have been made that the nature of warfare in our current operating environment has changed in such a way that phasing in military operations has outlasted its utility and become problematic, requiring it to be eliminated or replaced in military planning. The problem this monograph attempts to evaluate and solve is whether or not phasing in U.S. Military doctrine and operational design still has utility in planning military operations, or if it should be eliminated or replaced by some other means of visualizing plans and arranging forces for military operations.

Phasing has been utilized to assist U.S. Military commanders and planners to visualize plans and how forces should be arranged to conduct military operations and campaigns since the creation of operational design in the 1920's. Phasing has been applied in planning conventional as well as non-conventional military operations. Recent criticisms of phasing have surfaced in the aftermath of Operation Iraqi Freedom's failure to rapidly stabilize Iraq in Phase IV of the operation.

This paper analyzes phasing through theoretical and historical influences to trace how it has become a part of operational design and planning. Phasing is described and defined in U.S. Military doctrine from its first appearance as a method to assist in planning in the 1920's to the present and historical examples are provided as examples of its use. Mao Tse Tung's use of phasing to visualize the strategy for conducting his Protracted War against Japan is analyzed to determine what influence it may have had on U.S. Military doctrine.

Criticism of phasing and proposed alternatives are presented and scrutinized through Systems Theory, Complexity Theory, logic, and doctrine to evaluate the rationality for criticism and applicability of alternative methods for visualizing plans and arranging forces. Recent changes and modifications to phasing in U.S. Military doctrine are analyzed to understand the logic behind the changes.

Emerging concepts such as Operational Net Assessment, Effects Based Operations, and Net-Centric Warfare are described and analyzed through a "system of systems" approach to understand both the positive and negative influences they are having on U.S. Military doctrine and phasing. A concept for "red teaming" is proposed as a method for establishing a foundation for understanding strategic and operational problems, synchronizing efforts, and coordinating between the U.S. Military, other government agencies, and non-government agencies to improve problem solving capabilities and integration of elements of national power.

The influence emerging concepts are having on doctrine and their military applications are analyzed to determine how they can be used to improve the efficiency and effectiveness of arranging forces through phasing in operational design.

The principle findings and conclusions are that warfare in our current operating environment has not changed in such a way that has made it necessary to eliminate or replace phasing in military planning. Phasing is not a method for solving problems. Military operations or campaigns to solve problems should be visualized from start to finish in order create an understanding of what must be accomplished to achieve the desired end-state. Phasing should be utilized within the visualization of the plan to arrange forces in terms of resources, time, space and purpose to accomplish objectives that cannot be accomplished concurrently or require transition of efforts or forces within the plan. The phases of a plan should be analyzed holistically in order to understand the relationships between the phases and how actions in each phase will effect the others. Misuse, misunderstanding, and misapplication of phasing in military planning can lead to plans that fail to achieve strategic and operational end-states. Emerging

concepts and problem solving methods cannot replace phasing because their purpose is to solve problems, not arrange forces within plans to solve problems. Emerging concepts can improve planning by increasing the clarity of visualizing plans and result in increased efficiency of phasing and arranging forces in terms of resources, time, space, and purpose.

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INTRODUCTION

Lessons learned from Operation Enduring Freedom and Operation Iraqi Freedom have called into question whether or not our current phasing constructs for planning military campaigns and operations are still relevant. Phasing has been a tenet of U.S military operational campaign design that can be traced back at least to 1925, and phasing has been a foundation of U.S. military campaign planning since World War II. Phasing has been a method by which staffs and commanders can visualize an entire campaign in terms of time, space, forces, resources and purpose to achieve the campaign's end-state.

Previous Joint Doctrine described four distinct phases of military operations, recognizing that they could be conducted concurrently and often overlap. In November 2004 the Secretary of Defense gave guidance that war plans should have a "phase zero" in order to shape the environment not just on the battlefield but in order to gain national and international support. In June 2005 the Joint Operational War Plans Division provided an information brief on an updated six phase campaign construct, and if approved the construct will be published in revised Joint Doctrine.

Opponents to phasing argue that our current operational environment makes phasing obsolete. They say that the nature of the enemy, technology, and the concepts of Operational Net Assessment, Effects Based Operations, Net-Centric Warfare, and proposals such as Complexity Theory and Systems Theory make phasing an outdated practice in campaign and operational planning.

The significance of adjusting and improving current phasing constructs at the Joint level is quite clear. It will adjust military doctrine from the top that will trickle down to the squad level. Adjusting and improving doctrine based on combat lessons learned is not only common but essential. The significance of removing phasing altogether from military doctrine in favor of a new method for planning campaigns is quite unclear, and could have a drastic effect on the military planning and execution system.

This monograph will attempt to answer several questions in regard to phasing. The primary research question is do current U.S. military phasing constructs still have utility in planning military campaigns and operations? The secondary research question is has the nature of modern warfare changed so drastically that it requires a fundamental change in how we plan military operations? Subsequent

questions include: Will proposed alternatives be capable of replacing phasing as a way of arranging forces in terms of resources, time, space, and purpose? How can new technologies, concepts, and problem solving theories be utilized to increase the effectiveness of phasing within current planning and phasing constructs?

The thesis for this monograph is that planning by phases has not lost its utility because of our current contemporary operating environment (COE), new technologies, concepts, and problem solving theories, but phasing can be modified and improved by them. New technologies, concepts, problem solving theories, and combat lessons learned all have an effect on how military campaigns and operations are planned and executed, but they do not change the fact that planners and commanders must be able to visualize, describe, direct, and resource forces over time and space to achieve military end-states within a complex environment. This monograph will offer historical examples of phasing in military campaigns will show that phasing is a proven and logical method that allows planners and commanders to visualize a campaign from start to finish.

Phasing originated in U.S. Military doctrine in the 1920's when the operational level of war was first developed. The operational level of war was developed to bridge the gap between strategic and tactical levels of war, and phasing was designed as a method for arranging forces in terms of time, space, resources, and purpose. Phasing can be conducted at the strategic, operational, and tactical level of war, but this monograph will focus primarily on phasing at the operational level in accordance with operational design, as it also serves to bridge the gap between the strategic and tactical levels of war in regard to arranging forces, and the operational level is where phasing is used most prominently. Phasing will be considered by how it can be applied to any type of warfare or operation. This monograph will be structured in four chapters to address the utility of phasing, analysis of proposed alternatives to phasing, and the application of new concepts designed to increase successful planning and execution of operations. Conclusions will be presented at the end of each chapter.

The purpose of chapter 1 is to trace the roots of phasing in operational design, how it is described in our military doctrine, and how it has been applied in recent conflicts in order to identify what in our

current situation has influenced a request for change in phasing constructs. Chapter 2 will discuss issues that military commanders and staff officers have identified as shortfalls in our current phasing constructs, and identify proposed alternative methods for visualizing a campaign or operation. The alternatives will be evaluated to determine their utility. Lastly, this chapter will introduce how emerging concepts and theories are having an effect on operational design. Chapter 3 will define the concepts of Net-Centric Warfare, Operational Net Assessment, and Effects Based Operations to determine what influence they can or will have on phasing military campaign plans and operations. The end of the chapter will introduce a proposal for modifying the emerging military concept of “red teaming” that could serve to assist in the creation of a common Operational Net Assessment and integration and synchronization of all elements of national power. Chapter 4 will synthesize chapter 3’s emerging concepts into the six phase planning model outlined in the revised and soon to be published edition of Joint Publication 5-0 in order to identify how phasing can be enhanced and improved by them.

THE HISTORY OF PHASING

Phasing is neither a principle of war nor a tenet of operations that builds on the principles of war. Nonetheless, phasing has been woven into the fabric of U.S. Military Operational Design as a key aspect of arranging operations. The purpose of this chapter is to trace the roots of phasing and its link to operational design in U.S. Military doctrine, identify historical examples of phasing in military campaigns, define key terms, identify how phasing is represented in current U.S. Military doctrine, and to identify what has changed in our current operating environment that has caused some commanders and planners to question the utility of phasing operations. U.S. Military doctrine is the common language that allows military planners and commanders to visualize, describe, and direct forces in military operations. Operational design is defined as “The key considerations used as a framework in the course of planning

for a campaign or major operation.”¹ It is the process of developing the intellectual framework that will underpin an operation and its subsequent execution, and it is primarily an intellectual exercise based on the experience and judgment of commanders and planners. The result of the process should be a framework that provides a conceptual linkage between ends, ways, and means.² Arranging operations is one of the fifteen elements of operational design, and according to Joint Publication (JP) 5-00.1 how operations are arranged will often be a combination of simultaneous and sequential operations to dominate and achieve the desired end state conditions, quickly, with the least cost in personnel and other resources.³ Phasing in U.S. Military doctrine is currently described in JP 5-00.1 as:

Phasing. Phasing is a basic tenant of campaign plan design. Phasing assists commanders and staffs to visualize and think through the entire operation or campaign and to define requirements in terms of **forces, resources, time, space, and purpose**. Since a campaign is required whenever pursuit of a strategic objective is not attainable through a single major operation, **the theater operational design includes provision for related phases that may or may not be executed and can, in some cases, overlap with activities occurring either simultaneously or in sequence. Phases are a logical way of chronologically organizing the diverse, extended, and dispersed activities involved in the campaign.** Also, a campaign plan design may also have several aspects, each to be executed by different forces or different kinds of forces. The campaign planner’s task is to devise a combination of actions over time that most effectively and quickly achieve the strategic objective. While each phase may be distinguishable from the others as an identifiable episode, each is necessarily linked to the others and gains significance only in the larger context of the campaign. The manner of distinction may be separation in time, space, or a difference in aim or of forces assigned. **Each phase should represent a natural subdivision of the campaign’s objectives**, e.g., “establish dimensional superiority.” As such, it is imperative that the campaign not be broken down into numerous arbitrary chunks that may inhibit tempo and lead to a plodding, incremental approach.⁴

Vision and visualization are not adequately defined in U.S. Military doctrine. Since “vision” and “visualization” are key terms used in the description of phasing, it is necessary to describe how they will be used in this monograph. A “vision” is a description of how U.S. Military senior leaders believe

¹ Joint Publication 5-00.1 *Joint Doctrine for Campaign Planning*. (Washington DC: Department of Defense, 2002). GL-9.

² Joint Publication 5-0 *Joint Doctrine for Campaign Planning, Revision Third Draft (3)*. (Washington DC: Department of Defense, 2005), IV-1

³ JP 5-00.1, III-17.

⁴ JP 5-00.1, II-16-17.

military operations will be conducted. “Visualization” provides a comprehensive view of U.S. Military capabilities leading toward a desired end state, and phasing has been a method by which staffs and commanders can visualize an entire campaign in terms of time, space, forces, resources, and purpose to achieve the campaign’s end-state.⁵

A “phase” is a key term described as “a definitive stage of an operation or campaign during which a large portion of the forces and capabilities are involved in similar or mutually supporting activities for a common purpose.”⁶ A campaign is a series of related military operations aimed at accomplishing a strategic or operational objective within a given time and space.⁷ Military plans are developed to solve problems that require action in order to achieve resolution. Phasing is used as a framework to organize forces, activities, and efforts within a plan to solve problems. Phasing allows commanders and planners to further visualize and analyze requirements for arranging forces within the plan. The framework is used to organize thoughts and answer questions on how forces should be arranged in terms of resources, time, space, and purpose. Analysis of this aspect of phasing leads to an understanding that phasing can assist commanders and planners to answer questions. These questions are not additional research questions for this monograph, but an example of questions commanders and planners typically need to answer in planning a campaign or operation: What forces will be required to solve the problem in terms of type, size, and capabilities? What resources will be required to deploy them and sustain them? What resources are available? When do the forces need to be employed to begin solving the problem? How long will it take to deploy them from current locations? Can we anticipate how long the operation will last? If not do we need a rotation plan to replace units? How should individual unit purposes be synchronized over time and space to set the conditions to achieve the overall purpose of the operation? Can the conditions be set concurrently, or will objectives and operations within

⁵ LTG John M. Curran, USA, Memorandum for distribution to CDR’s, U.S. Military Education Centers, Subject: Effects Based Concepts and Doctrine in Army Education, Enclosure 1: Vision, Concept, and Doctrine Terms (Department of the Army US Training and Doctrine Command Futures Center, Fort Monroe VA, 22 Dec 2005).

⁶ JP 5-0 (Draft 3), IV 30.

⁷ Ibid, IV 1.

the plan need to be sequenced? Will forces need to transition between objectives? Will the purposes of the synchronized forces be able to achieve the desired end-state? Within the analysis of these questions more questions may arise and need to be addressed, but the overall analysis of the component requirements establishes the foundations of the plan within the framework to determine the feasibility of the plan and allow further refinement of the plan. To understand the context of phasing in current U.S. military doctrine, it is necessary to trace its roots and project it through history to the present.

Much of U.S. warfare doctrine is founded on the works of the two most prominent theoreticians of the 19th Century, Antoine Henri Jomini and Carl Von Clausewitz, who only recognized the strategic and tactical levels of war. The operational level of war had not been envisioned during their time. Jomini and Clausewitz lived in a pivotal time after the creation of Napoleonic *levee en masse* but prior to the full emergence of the industrial revolution. The *levee en masse* (conscription) allowed the rapid fielding of large armies that resulted in wars that were “total” involving the entire population and resources of the state.⁸ Of the two theorists only Clausewitz refers to “phases” in his monumental work *On War*, but it gives little credence to any hypothesis that he could have been the inspiration for the concept of phasing. One mention that Clausewitz gives to phasing appears in Book Six, Chapter Eight where he distinguishes between a defensive phase to ward off the enemy, which then expands into another phase of strategic offense, but he deems this concept unacceptable and insists that the idea of retaliation, meaning counterattack, is fundamental to all defense and that there should be a dynamic relationship between attack and defense.⁹ His analysis is focused only on the concept of phasing between attack and defense in order to achieve strategic objectives. The vital difference between strategy and tactics that Clausewitz points out is that at the tactical level it may be feasible for the successive employment of force, and that tactical successes usually occur in engagements during the phase of disarray and weakness, but strategic

⁸ F. M. Anderson, ed., *The Constitutions and Other Select Documents Illustrative of the History of France, 1789-1907*, 2d Ed. (Minneapolis: H. W. Wilson Co., 1908), 184-185. Available at <http://www.fordham.edu/halsall/mod/1793levee.html>. Last accessed on 25 Oct 2005.

⁹ Carl Von Clausewitz, *On War*, trans. and ed. M ichael Howard and Peter Paret (New Jersey: Princeton University Press, 1976), 380.

victory already lies beyond that phase when the fragmented results have combined into a single, independent whole: “The consequences of this difference is that in the tactical realm forces can be used successively, while strategy knows only the simultaneous use of force.”¹⁰ The difference between Clausewitz’s time and our contemporary operating environment is that now “force”, which can include all elements of national power, can be applied simultaneously as described in phasing, but they cannot always be given equal effort. Clausewitz’s argument therefore does not contradict the current use of phasing at the operational level when sequential combat and non-combat activities are required to achieve strategic objectives. In Clausewitz’s time the simultaneous use of force was logical when conducting warfare in an era when wars were fought on distant battlefields away from populated areas, and strategic victory required only defeating an opponent’s army through a single decisive battle, then suing for peace. Clausewitz meant using all forces available simultaneously against the enemy’s main combat forces or center of gravity (source of all power), which can be complicated, but not complex if the enemy offers to give battle. The difference between a complicated system versus a complex system is described by Robert Axelrod and Michael D. Cohen in their work *Harnessing Complexity; Organizational Implications of a Scientific Frontier*. According to Axelrod and Cohen, a system is complex when it has strong interactions among its elements, so that current events heavily influence the probabilities of later events.¹¹ A complicated system may have many moving parts, but if they do not heavily influence each other they are not deemed complex.¹² Warfare became much more complex when it was possible for a state to produce multiple conscripted armies supplied rapidly with weapons manufactured by an industrialized civilian work force, creating strong interactions between the workers, the industry, the military, and the government. The population became an integral part of the state’s military capability.

¹⁰ Ibid., 206

¹¹ Robert Axelrod and Michael D. Cohen, *Harnessing Complexity; Organizational Implications of a Scientific Frontier* (New York, NY: The Free Press, a division of Simon and Schuster, 2000), 7.

¹² Ibid, 15.

The consequence of this evolution of warfare required something between the strategic and tactical levels of war, giving rise to “operational art”.¹³

Dr. James J. Schneider, a professor of theory at the School of Advanced Military Studies at Fort Leavenworth, K.S., credits General Ulysses Grant for the birth of operational art by citing a letter that Grant wrote on April 4th, 1864 in which he described how he would unite all military activities east of the Mississippi in an integrated chain of distributed operations designed to work towards a common center.¹⁴ Grant’s Grand Design plan was to be applied in two stages, West and East, to separately but simultaneously converge his armies upon the respective goals of Atlanta and Richmond. The first army to be successful in accomplishing their objective would turn and move to join the other.¹⁵ In examining the American Civil War, arguably the birthplace what would become operational art, it is important to note that the strategy taken on at the beginning of the war was not the strategy that the Union would evolve to in order to win the war. At the onset of the war it was not politically acceptable to embark on a campaign that involved the destruction of Confederate infrastructure, but indeed it evolved to that out of necessity to win the war, as it could not be won in a single decisive battle. A parallel can be drawn between the Civil War and the initial strategy for Operation Iraqi Freedom, which envisioned a swift collapse of Saddam’s Iraqi regime and liberation of Iraq, not occupation so long after the decisive combat operations were concluded.¹⁶ A strategy of occupation would have encountered considerable resistance both nationally and inter-nationally, yet out of necessity to achieve the desired end-state the strategy evolved into occupation to stabilize Iraq in the aftermath of successful combat operations. The combat operations alone were not decisive in achieving the end-state.

¹³ James J. Schneider, *The Theory of Operational Art*, Theoretical Paper #3 (Ft. Leavenworth, K.S. : School of Advanced Military Studies, 1988), 8.

¹⁴ James J. Schneider, “Vulcans Anvil, Theoretical Paper #4” (Ft. Leavenworth, K.S. : School of Advanced Military Studies, 1992), 37.

¹⁵ Shelby Foote, *The Civil War, A Narrative, Red River to Appomattox* (New York, NY: Vintage Books, a division of Random House, 1986), 15.

¹⁶ Williamson Murray and Robert H. Scales, Jr., *The Iraq War* (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 2003), 43.

Dr Schneider identifies three reasons for the decline of a single decisive battle that could achieve a strategic victory: Demographic—dramatic rise in populations allowing multiple armies that could conduct more than one campaign at a time; geopolitical—creation of multinational alliances; and technological—increased lethality of weapon systems.¹⁷ Due to the dramatic rise in populations, geopolitical multinational alliances, and increased lethality of weapons systems, warfare in the Twentieth Century became much more complex. Increased complexity created an environment within which a single decisive battle was much less likely of achieving strategic victory. This environment required a level of warfare between the tactical and strategic, giving rise to operational art. Failure to recognize the consequences of this evolution in warfare led to strategic stalemate and attrition warfare in World War I.

The operational art that was developed in U.S. Military doctrine after World War I required a new framework and increased sophistication to become useful.¹⁸ Although Jomini and Clausewitz only recognized the strategic and tactical levels of war, most of the key concepts for operational art were developed by them.¹⁹ COL William K. Naylor, the director of the General Staff School at Ft. Leavenworth in the 1920's, is credited with producing most of the doctrinal thought related to operational art. Influenced by the works of Jomini, Clausewitz, and Baron Von der Goltz, Naylor wrote *The Principles of Strategy* to replace Von der Goltz's *The Conduct of War* that was in use at the school at that time, and he insisted on linking political aims with campaign plans that suggested successive operations.²⁰ In 1922 the General Staff School produced the *Tactical and Strategical Studies, Corps and Army*. The fifth edition published in 1925 introduced the first concept of phasing as well as branches and sequels to campaign planning. The campaign plan:

¹⁷ Schneider, Theoretical Paper #3, 9.

¹⁸ COL Michael R. Matheny. "The Roots of Modern American Operational Art." Available online at http://www.au.af.mil/au/awc/awcgate/army-usawc/modern_operations.pdf. Last accessed on 25 Oct 2005. 6.

¹⁹ Ibid., 3.

²⁰ Ibid., 7.

“... may also contemplate probable successive operation phases to continue the success of the primary operations, and consider steps to be taken contingent upon results being different from those expected.”²¹

Further development of the phasing concept continued at the General Staff School to include joint planning. COL C.M. Bundel, director of the War Plans Division in 1925 advised students that ...”the war effort is not a rigid, individual affair...it is divided into several distinct steps or phases which while inherently distinct, nevertheless are interdependent and sometimes overlapping.”²² By 1936 concepts such as commanders being able to visualize beyond the battle, succession of operations or phases to achieve final victory, and culmination point were articulated in the Staff School’s *Principles of Strategy for an Independent Corps or Army in a Theater of Operations*.²³ It appears that by 1936 the General Staff School had developed most of the elements of the concept of phasing in operational art that appear in current U.S. military doctrine. Students of the school took that knowledge to successfully defeat Germany and Japan in World War II, as exemplified by OPERATION OVERLORD, a phased coalition plan to secure a lodgment in Europe from which Allied forces could attack into Germany.²⁴ Since its inception into operational art in the 1920’s phasing was utilized to assist in planning the conduct of conventional wars. But one of the first applications of phasing was conducted in an unconventional war.

Mao Tse-Tung’s Chinese Communist Revolution had its start in 1922, but by 1938 the war shifted to fighting against the Japanese occupation of China. Mao did not believe in a theory of “quick victory”.²⁵ It is unclear if Mao was familiar with the U.S. Military’s development of operational art and phasing, but in May 1938 he visualized and predicted defeating the Japanese occupation through a “protracted war” that would be conducted through three “stages”: First, the strategic defense,

²¹ Ibid., 9.

²² Ibid., 11.

²³ Ibid., 13-14.

²⁴ Outline of Operation Overlord, prepared by the Historical Section of the G-4 of the Communications Zone, European Theater of Operations (COMZ, ETOUSA, Feb 2002), 1-2. Available at <http://www.army.mil/cmhp/documents/WWII/g4-OL/g4-ol.htm>

²⁵ Combat Studies Institute, *The Selected Writings of Mao-Tse-Tung*. (Ft. Leavenworth: U.S. Army Command and General Staff College, 1990), 206.

characterized by mobile warfare supplemented by guerilla and positional warfare; second, the strategic stalemate characterized by consolidation of the enemy, guerilla warfare, and Chinese preparation for counter-offensive; and third, the counter-offensive to achieve decisive victory.²⁶ The critical difference between Mao's "stages" and the phasing concept developed in US operational art is that Mao stressed transition between stages dependent on setting the conditions to enter into the next stage, recognizing that transition may take a long time to develop.

The lessons of Mao's protracted war were overshadowed by World War II. By the 1950's, the atomic bomb caused operational art to fade based on the belief that large unit operations were no longer possible in the face of nuclear deterrence and destruction. In correlation with the decline of operational art, U.S. Doctrine related to phasing began to make subtle adjustments that would dilute its original intent (see Appendix 2 for more details). The concept of phasing is addressed in the 1950 publication of FM 100-15, but phasing is not defined.²⁷ The 1957 version of JCS Publication 1 addresses phasing as a "step" in the operation, a reorganization or transition to another action, and acknowledges that phases may overlap, but the publication only defines phasing in terms of amphibious operations.²⁸ Phases of accomplishment are identified in the 1960 publication of FM 101-5, and although "steps" in the operation, reorganization, and transition to another action are elements articulated; visualization of a plan for successive operations is not.²⁹ FM 100-15 first defined phasing in 1963, and although the definition is broad, it does identify phasing to plan and control an operation.³⁰ In 1964 JCS Publication 1 eliminated the term phasing from its definitions in relation to any type of planning, including amphibious

²⁶ Ibid., 210-217.

²⁷ FM 100-15 *Field Service Regulations-Larger Units* (Washington D.C.: Department of Defense, 1950), 19.

²⁸ Joint Chiefs of Staff Publication 1, *Dictionary of U.S. Military Terms for Joint Usage*. (Washington DC: Department of Defense, 1957), 80.

²⁹ FM 101-5, *Staff Officers Field Manual Staff Organization and Procedure* (Washington DC: Department of Defense, 1960), 310.

³⁰ FM 100-15 *Field Service Regulations-Larger Units* (Washington D.C.: Department of Defense, 1963), 24.

operations.³¹ The revision of FM 100-5 in 1968 provides a definition of phasing that was the closest to that of the current JP 5-00.1, reflecting progress back towards revitalizing operational art. Unfortunately it wasn't revised until the very end of major U.S. combat operations in Vietnam, and reflects a critical flaw that may have been characteristic of the Vietnam War's failure to link tactics and operations to a strategic end-state when it says: "Phasing is normally necessary when a commander is unable to visualize the operation through its completion or contemplates a major organizational change".³² This advocates substituting phasing for visualization, as opposed to visualizing the plan for an operation through to the end-state, then framing the succession of conditions that must be set within logical phases that may require a transition or organizational change, which is articulated in recent changes to JP 5-0 where transition is described.³³ The 1968 version of FM 100-5 is a contradiction to visualizing beyond the battle the succession of operations and phases required to achieve final victory that was articulated in the 1936 General Staff School publication, *Principles of Strategy for an Independent Corps or Army in a Theater of Operations*.

Lack of nested operational design concepts in U.S. doctrine indicates why operations in Vietnam did not display any clear link between tactics and strategy. Gen William Westmorland over relied on technologically advanced weapons and an attrition strategy that lacked visualization for a succession of tactical objectives that would lead to strategic victory, and he failed to recognize that the U.S. strategic center of gravity was the will of the American people.³⁴ But lessons learned from Vietnam would change all that, leading to a revival of operational art through the creation of Air Land Battle doctrine at Fort Leavenworth in 1982, and FM 100-5 Operations became the guide for Air Land Battle.³⁵

In *The Iraq War*, Williamson Murray and Robert H. Scales, Jr. claim that the 1991 Gulf War represented the first time in forty years that the U.S. military had conducted a successful campaign at the

³¹ Joint Chiefs of Staff Publication 1, *Dictionary of U.S. Military Terms for Joint Usage*. (Washington DC: Department of Defense, 1964)

³² FM 100-5 *Operations* (Washington D.C.: Department of Defense, 1968), 6.

³³ JP 5-0, IV 32.

³⁴ Max Boot, *The Savage Wars of Peace, Small Wars and the Rise of American Power*. (New York, NY: Basic Books, a member of the Perseus Books Group, 2003), 316.

³⁵ Matheny, 19.

operational level.³⁶ Operation Desert Storm is a prime example of the operational art that had been resurrected at Ft. Leavenworth in the 1980's. The campaign was planned to destroy Republican Guard Forces in zone, and it was visualized through three air campaign phases and six ground campaign phases.³⁷ To illustrate how phasing was used in planning for Desert Storm this monograph will show just the details of the relationship between how the air phases set the conditions for the ground phases. The planning assessment was that a frontal assault into heavily defended Iraqi Republican Guard Forces (RGFC) would result in unacceptable Coalition Force losses. In order to allow Coalition Forces to conduct a broad flanking maneuver several conditions needed to be set before the ground campaign could begin. Each of the air phases was planned to destroy a succession of tactical and operational objectives in order to set specific pre-conditions for the ground assault. Phase I focused on destruction of Iraqi Command and Control (C2) facilities, key industrial centers, and key rail lines and bridges to limit their mobility and prevent Iraqi senior leadership from being able to give orders to adjust their defenses. Targets from Phase I continued to be attacked in Phase II, but the priority was shifted to Iraqi air defense artillery, the Iraqi Air Force, and bombing of the RGFC in order to gain air superiority and reduce the RGFC to 50% strength prior to the initiation of the ground operation. Phase III focused primarily on bombing the Iraqi ground forces to support follow on Coalition ground operations. The six phases of the ground assault visualized the conduct of movement from the ports in Phase I through the final destruction of the Republican Guard Forces and defense of Kuwait in Phase VI. Each phase transitioned to the next dependent on pre-conditions set by both the ground forces and air forces, with some phases overlapping.³⁸ Phasing assisted commanders and staffs in visualizing the sequence of actions required to achieve victory, and the result was one of the most astonishing military victories in modern history.

In the twelve years after Desert Storm leading up to Operation Iraqi Freedom (OIF), the U.S. Army and other services attempted to adapt to the post Cold War era, incorporating lessons learned from

³⁶ Murray & Scales, 12.

³⁷ VII (U.S.) Corps Operations Order 1990-2 (Ft. Leavenworth, Kansas: CALL Gulf War Collection, 13 January 1991), 5-9.

³⁸ Ibid., 6-9.

operations such as combat in Desert Storm as well as peacekeeping in Haiti, Bosnia, and Kosovo in order to anticipate changes or trends in the operational environment, and to take advantage of technologies to improve combat capability.³⁹ These aspects, as well as an identified need for increased joint capability and improved joint doctrine were at the forefront of the U.S. military evolution between 1991 and 2003. In comparison to Desert Storm, which had a limited strategic objective, OIF was a much more complex campaign, requiring not just the destruction of Iraqi combat forces but a broader campaign strategy to remove of Saddam Hussein's Ba'athists Party from power.

Joint Publication 3-0 published in September 2001 represented a four phase model consisting of "Deter/Engage", "Seize the Initiative", "Decisive Operations", and "Transition". These four phases were designed to be a flexible example model for arraying the full spectrum of combat and non-combat activities, allowing commanders to decide whether or not to use them, what phases to use, and even what to call them if they did decide to use them in planning.⁴⁰ CENTCOM's military campaign plan to liberate Iraq was a four phase operation in support of the strategic goals of removing Saddam Hussein and the Ba'athists from power, and establishing a stable, secure, prosperous, peaceful, and democratic Iraq that is a fully functioning member of the community of nations.⁴¹ Phase I, Preparation, was conducted to set the conditions to neutralize Iraqi forces. Phase II, Shaping the Battlespace, was conducted to posture forces and set the conditions for conducting sustained combat operations. Phase III, Decisive Offensive Operations, was conducted to defeat Iraqi forces, seize Baghdad, and remove Saddam Hussein and the Ba'athist party from power, setting the conditions for transition to Phase IV, Post Hostilities, to conduct stability and support operations, as well as humanitarian assistance. Bob Woodward, a renowned author of political nonfiction, points out that although General Franks argued that the decisive combat operations would go very fast and that they needed to focus on the aftermath, Secretary Rumsfeld, General Myers,

³⁹ Gregory Fontenot, E.J.Degen, David Tohn. *On Point, The United States Army in Operation Iraqi Freedom* (Washington, DC: Office of the Chief of Staff U.S. Army, 2004), xxiii.

⁴⁰ Joint Publication 3-0 *Joint Doctrine for Campaign Planning*. (Washington DC: Department of Defense, 2001), III-18.

⁴¹ *Ibid.*, xxii-xxiii.

and others in the Bush Administration were too focused on the combat operations of the war.⁴² Swift collapse of the Iraqi regime was accomplished, but failure to pay attention to Phase IV resulted in an unexpected requirement to occupy Iraq with military forces.

It was recognized by planners that transition to Phase IV would occur in some areas while Phase III combat operations continued in others, recognized as one of the defining characteristics of the campaign and a hallmark of full-spectrum operations, meaning conducting both combat and non-combat operations.⁴³ A major flaw in the plan was that Phase IV was not fully developed by planners before combat activity commenced. Failure to analyze the complexity of what would have to be done in Phase IV led senior leaders to assume that the Iraqi's would welcome Coalition Forces with open arms. When this did not happen, the transition to Phase IV was slow because forces were not adequately arranged and resourced in terms of time, space, and purpose to adequately succeed in the aftermath of major combat operations. Since March of 2003 Operation Iraqi Freedom has been struggling through Phase IV, Post Hostilities, which has evolved to include a counter-insurgency campaign in Iraq. The complexity of conducting operations in the current Iraq environment that includes much more than just conducting combat operations has prompted many military leaders to question the utility of phasing operations.

Conclusions

Phasing was introduced into U.S. doctrine as a framework for commanders and planners to visualize the succession of distinct interrelated operations, sometimes overlapping, within a campaign that are required to achieve the strategic end-state. Phasing is not a substitute for the lack of visualization of what must be accomplished to achieve the end-state, rather it is a logical framework used to visualize actions in an operation or campaign through to final victory. Phasing becomes extremely useful when operations require reorganization or a transition of forces to another action. Phases are designed to set the

⁴² Bob Woodward, *Plan of Attack*. (New York, NY: Simon and Schuster, 2004), 413.

⁴³ *Ibid.*, xxiii.

conditions for the successful transition to, and execution of follow on operations or phases along the continuum of successive operations planned to achieve the strategic end-state.

Phasing has proven its value in planning through successful operational campaigns conducted in complex environments that include US conventional wars and Mao's unconventional war. Wars in the 20th Century included conventional wars, revolutions, insurgencies, and even involved the use of weapons of mass destruction. Warfare continues to require action to be taken in order to achieve victory. Taking action requires the arrangement of operations and forces in terms of resources, time, space, and purpose. In that respect, warfare in our contemporary operating environment has not fundamentally changed since the 20th Century. The requirement to take action and arrange operations and forces will not change. Tactics and weapons may change, but warfare will continue to be a complex undertaking without easy solutions.

Doctrinal definitions and descriptions of phasing have gone through many changes since it was first introduced in the 1920's, but the decline of operational art after the advent of nuclear weapons caused U.S. doctrine related to phasing to become warped and misinterpreted from its original definition and intention. This has caused confusion for commanders and planners who tried to utilize phasing as a substitute for visualization when lacking a clear understanding of the successive objectives or conditions that must be set to achieve the end-state, as was seen in action during Vietnam and reflected in the 1968 publication of FM 100-5 that advocates phasing when a commander is unable to visualize the operation through its completion.

Phasing is designed to be used as a framework for military planners and commanders to visualize the plan for an operation from start to finish. Each phase is planned to achieve objectives within it in order to set the conditions for transition to subsequent phases, all leading to the achievement of the desired end-state. Phases are interdependent variables that must all be considered in the sum of the entire plan. It is necessary to understand how the phases relate to each other, and how actions taken in one phase will effect the others. Failure to develop a phase within a plan, such as was done with Phase IV of OIF, can result in unexpected consequences that are not properly anticipated and planned for. Phasing

assists in framing a commander's intent and assigning tasks to subordinate unit commanders. Describing a phase allows a commander to provide mutual understanding of what the priority of military efforts is during each phase of a campaign, and coordinate efforts to achieve success. Subordinate military unit commanders and planners can create their own "sub phases" within the context of the overall plan if it helps them to arrange or transition their own forces to focus on the priority of their own effort for their particular mission, but they must be mutually supportive of the higher level plan.

Military operations are planned to solve problems. Although both phasing and operational design are considered frameworks in US doctrine, their relationship must be understood. Operational design is a framework for visualizing U.S. Military capabilities leading toward a desired end-state. Operational design visualizes the ends, ways, and means. Phasing is a framework within "arranging operations", which is one of the elements of operational design. Phasing is therefore a sub-framework within the larger framework of operational design. Phasing is used for visualizing a plan to implement the ways and means to achieve the end in terms of forces, resources, time, space, and purpose. In other words, operational design is used to visualize the "what"; what must be done, what methods to use, and what is available to use. Phasing visualizes the plan, or "how" forces and efforts will be arranged. Efforts must be "nested" from the lowest level to the highest level of command, meaning efforts at the lowest level are planned to be mutually supporting in the achievement of operational objectives.

ARGUMENTS AGAINST PHASING

"The student who cannot discover this harmony in actions that lead up to a final success may be tempted to look for genius in places where it does not and cannot exist."

- Carl Von Clausewitz

The purpose of this chapter is to discuss issues that military commanders and staff officers have identified as shortfalls in our current phasing constructs and compare perceived shortfalls against changes that are being made to the soon to be published revision to *Joint Publication 5-0, Joint Operations Planning*, to see if the changes address the problems. Alternatives to phasing will also be presented to

identify if they can be valid replacements that would allow the elimination of phasing as a component of arranging operations in operational design.

Criticisms of phasing are recent, indicating that they have surfaced during current operating environments in OEF and OIF where commander's and staff's struggle to plan operations that will achieve strategic end-states in complex environments. The level of complexity can create prolonged campaigns when the end-state is not clearly articulated or the achievement of the end-state requires integration of other government agencies to solve problems that the military element of national power cannot solve by itself. One example is MG Peter W. Chiarelli's experience in Iraq as the commander of 39,000 soldier strong Multi-National Division-Baghdad (MND-B) from April 2004 to January 2005. MG Peter W. Chiarelli, Commander of the 1st Cavalry Division, took charge of Task Force Baghdad on 15 April 2004. Tasked with executing multiple operational themes in a campaign plan that would require combat as well as stability and support operations, MG Chiarelli's task force concluded through mission analysis that:

"...the traditional phased approach, grounded in U.S. doctrine, might not be the answer; rather, an event-driven "transitional" approach might be more appropriate based on a robust set of metrics and analysis."⁴⁴

Recognizing that MG Chiarelli's Division deployed to Baghdad during an evolved Phase IV of OIF, and redeployed in January 2005 shortly after successfully supporting the Iraqi elections (still Phase IV of the campaign plan), he identifies a critical flaw in U.S. doctrine's definition of phasing. Recognizing that phasing emphasized "transition" in the previously stated publications such as FM 100-15 in 1950 and FM 101-5 in 1960, and recognizing that transition was critical to Mao's strategy, transition between phases was not emphasized in previous versions of Joint Publications.

His assessment of the situation in Iraq going into planning for the mission was that previous phased approaches had "boxed our potential" and allowed insurgent leaders to take advantage by

⁴⁴ MG Peter W. Chiarelli & MAJ Patrick R. Michaelis. Winning the Peace, The requirement for Full-Spectrum Operations (Military Review, July-August 2005), 7.

solidifying the structural and psychological support of the Iraqi populace.⁴⁵ It is not clear which previous phased approaches MG Chiarelli is referring to, but it was understood that failure to rapidly stabilize Iraq after major combat operations had allowed an insurgency to develop. MND-B's plan was to conduct full spectrum operations along five simultaneous interconnected and equally balanced logical lines of operation, described as an event driven "transitional" approach.⁴⁶ The five lines of operation were combat operations, train and employ security forces, essential services, promote governance, and economic pluralism, all designed to increase Coalition Forces legitimacy, which he saw as necessary in order to achieve the objective of defeating the insurgency and setting the conditions to achieve the strategic end-state:

"A secure and stable environment for Iraqis, maintained by indigenous police and security forces under the direction of a legitimate national government that is freely elected and accepts economic pluralism."⁴⁷

MG Chiarelli's plan contained elements of operational design such as lines of operations, decisive points, forces and functions, arranging operations, and leverage, to name just a few. The event driven transitional approach required setting conditions of security and stability necessary to execute key events critical to the success of MND-B's operation, such as the successful execution of the December 15 2004 Iraqi National Elections. By doctrine a key event that allows a commander to gain a marked advantage over an adversary or contribute materially to achieving a desired effect is a decisive point.⁴⁸ Forces had to be arranged along each line of operation and steps had to be taken to sequentially set conditions for success in terms of forces, resources, time, space, and purpose. One example along one of MG Chiarelli's lines of operations is that steps were required to recruit, train, equip, assess, and then transition the employment of Iraqi security forces.⁴⁹ Each "step" had to be visualized and planned through the entire

⁴⁵ Chiarelli, 4.

⁴⁶ Ibid, 7.

⁴⁷ Ibid, 7.

⁴⁸ JP 5-0, GL 10.

⁴⁹ Ibid, 7.

campaign to define requirements in terms of forces, resources, time, space, and purpose, which by doctrine phasing assists commanders and planners to do. If all five lines of operation were conducted concurrently with no shift in priority of effort or transition of forces planned between lines of operation, phasing may not have been needed to assist in visualizing the plan. MG Chiarelli's plan visualized achieving objectives by arranging operations along five mutually supporting lines conducted concurrently, where as phasing operations assists commanders in achieving objectives that cannot be achieved concurrently. MG Chiarelli did not need to utilize the concept of phasing as a framework to plan operations within an already established CENTCOM phase of stability and reconstruction because he and his planners were able to visualize conducting all five lines of his operation concurrently. In MG Chiarelli's specific operational circumstances phasing was not required, but that does not discount the utility of phasing in operational planning. Commanders that are properly resourced with the required manpower and capabilities to accomplish their missions without having to phase operations over time and space should not, but that will not always be a luxury.

One of the most recent criticisms of phasing was presented by MAJ Mark Hovatter (USA) in his School of Advanced Military Studies (SAMS) AY 04-05 monograph titled "*Discarding The Saber: An Assessment of the Utility of the Phasing Construct in Operational Design.*" MAJ Hovatter's general thesis is that phasing in operational design is a "linear and reductive thought process" that was well suited to the industrial age of warfare but has outlived its usefulness in the contemporary and future operational environment characteristics of the information age.⁵⁰ MAJ Hovatter argues that when phases overlap is where the value of phases to aid understanding in execution is suspect.⁵¹ It is necessary to point out that this indicates a flaw in his logic. There is a difference between planning and execution. Phasing assists commanders and staffs to visualize and think through the plan. Commanders do not execute phases; they execute missions to achieve objectives while maintaining situational awareness of what other command

⁵⁰ MAJ Mark Hovatter, "*Discarding The Saber: An Assessment of the Utility of the Phasing Construct in Operational Design.*" School of Advanced Military Studies, United States Command and General Staff College, Fort Leavenworth Kansas, 2005, iii.

⁵¹ Ibid, 2.

elements and units are doing in the operation where efforts are synchronized through time and space, and directed towards a common end-state.

Focusing his evaluation of phasing against contemporary theories such as systems theory, Toffler's Third Wave, and complexity theory, MAJ Hovatter derives four conclusions he believes support his argument that phasing is no longer relevant in campaign planning. The first is that the concept of Operational Net Assessment (ONA) must be further developed to provide a better understanding of friendly and enemy systems, requiring an appreciation for feedback and interaction, which MAJ Hovatter believes is not done very well by phasing. The second is that the complex environment of contemporary warfare requires a more adaptive method of campaign design that includes interagency cooperation, which he ties to his third conclusion; that the hierarchical structure of combatant commands allows the enemy to exploit seams between areas of responsibility, between which commanders must coordinate their activities while only being able to influence part of the problem within their area of responsibility (AOR). MAJ Hovatter's final conclusion is that the new perception of the battlefield that systems theory and complexity theory provide is causing classic operational art to lose its relevance, and the "linear construct of phasing" is a part of the problem. His final recommendation is for the Joint Forces Command to commission a study to fully develop alternatives to phasing for campaign design.⁵² MAJ Hovatter does recommend some alternatives to phasing, which will be addressed, but first it is necessary to identify the merits and faults of his arguments against phasing.

The significant problem with MAJ Hovatter's first conclusion is that ONA is to be used to gain a better understanding of friendly and enemy systems in order to understand the problem and what can be done to solve it. Phasing is a framework for visualizing the plan to solve it. They are not the same. ONA helps visualize the "what". Phasing helps visualize the "how". However, there is merit in MAJ Hovatter's argument for further development of ONA in accordance with systems theory and visualizing friendly and adversary elements as complex adaptive systems. ONA is still being developed for use in the

⁵² Ibid, 40-41.

U.S. Military, and there can be no doubt that gaining a better understanding of the enemy and friendly elements as “systems” can provide marked advantage in warfare. Improving the ability to understand the “what” improves the ability to organize and arrange forces to conduct the “how”. This is not a new idea, and harkens back to the famous quote by Sun Tzu: “Know your enemy and know yourself and you can fight a hundred battles without disaster.”⁵³ By applying the elements of systems theory and complexity theory it is possible to gain insight into how friendly and adversary systems interact, if for the practitioner of warfare it were not already quite clear: actions have consequences and attempting to visualize and predict what those consequences might be on friendly and enemy “systems” can assist in avoiding possible disaster through unintended catastrophic consequences of actions. Through this thought process military planners assess risks and can therefore implement measures to mitigate them. This is called Risk Management in US doctrine.⁵⁴ If we agree with MAJ Hovatter’s assertion that we are in “Toffler’s Third Wave”, an information age, and that the enemy is a complex adaptive system, how is planning warfare now any different than it was in the time of Sun Tzu?

“Sun Tzu recognized the inherent difficulties, both intellectual and physical, and repeatedly emphasized that the nature of war is ceaseless change. For this reason operations require continuous review and readjustment.”⁵⁵

Sun Tzu reminds us that planning is continuous because war is ceaseless change. Change in the situation during war requires adaptation, usually resulting in a transition of efforts from one thing to another. ONA can provide a better understanding of systems to more accurately predict how they will interact and adapt, but it is a dangerous notion to think that better understanding of a system will allow complete predictive accuracy. Social systems do not react mechanistically; according to Robert Axelrod & Michael D. Cohen, they react through interaction with other internal and external systems that

⁵³ Samuel B. Griffith, *Sun Tzu; The Art of War*, (New York, NY. The Oxford University Press. 1971), 50.

⁵⁴ JP 3-0, GL 28.

⁵⁵ Sun Tzu, 52.

influence them.⁵⁶ Furthermore, when experts are asked to forecast the future and its requirements in complex settings they acknowledge the difficulty of prediction and then do the best they can with their particular expertise.⁵⁷ Therefore, like planning, ONA must be continuous to adapt to changes in the environment and changes by the adversary. Information superiority is required for ONA to be accurate and must include intelligence gathering, which was woefully inadequate in regard to the WMD assessments leading up to OIF. Even with increased ONA capability, warfare will require adaptation and transition of efforts such as from combat operations to stability and support operations that can best be visualized in planning by phasing operations.

In his second conclusion MAJ Hovatter stresses the continued importance of interagency cooperation, meaning two or more agencies, in an environment of complex and dynamic enemy systems. The value of this argument is readily apparent if it is understood that more than just the military elements of national power must be brought to bear to achieve strategic end states in complex environments. Compared to the Napoleonic era when defeating an adversary's army directly resulted in their surrender and conflict resolution, defeating the Iraqi military in OIF was not decisive in achieving our overall end-state of establishing a stable, secure, prosperous, peaceful, and democratic Iraq. But to conclude that phasing is at fault for this is misguided. He does not identify any link between lack of interagency coordination and phasing. Using systems theory it can be seen that major combat operations against Iraq were undertaken because the other elements of national power were unable to influence the Iraqi system through diplomacy or sanctions effectively enough to resolve the conflict by themselves. Military action was taken to set the conditions that would enable other elements of national power to enter the Iraqi system and create regime change. Providing guidance and synchronizing all elements of national power is done at the Presidential level and is critical to solving complex problems, but it requires a mutual understanding of capabilities between them. The military is responsible for designing and planning operations and campaigns. There will be situations in which it is more logical for the military to be

⁵⁶ Axelrod & Cohen, 62.

⁵⁷ Ibid, 12.

supported by other government agencies, and others where the military is the supporting element.

Coordination between the military and government agencies that represent the other elements of national power is crucial in order to create mutual understanding of what military and government agency assets can be applied, where and when, and what conditions must be set in order for them to be applied properly in solving the problem. Other agencies have to understand enough about the plan to know when and where their particular assets for solving the problem can be applied within the overall military campaign plan. Their assets will also have to be arranged in terms of forces, resources, time, space, and purpose within the plan.

MAJ Hovatter's third conclusion is not linked to phasing at all. If the hierarchical structure of combatant commands allows an adversary to exploit seams between combatant commands it is a geographical problem if it is a physical seam, and a situational awareness problem if it is a conceptual seam. Where seams exist they must be overcome by overall theater command and control and cross talk between combatant commanders. This requires continuous evaluation and planning to adapt to the changing enemy system, not discarding phasing as a framework for visualizing a plan to begin with.

In his fourth and final conclusion MAJ Hovatter argues that operational art may be losing its relevance in the contemporary operational environment, and the elimination of phasing is the first step towards recognizing the problem.⁵⁸ He sees phasing as a linear and reductive method for breaking up a plan into manageable chunks that are analyzed separately, not as a whole. This is indeed a problem if a plan is not visualized thoroughly from beginning to end before it is implemented. If it is visualized that combat operations are required but it will be necessary to transition to stability and reconstruction operations to ultimately set the conditions for achieving the end-state, it is a grave mistake to focus all planning efforts on the combat phase and worrying about the details of the subsequent phases later. That would be linear thought and a failure to analyze the whole system, but phasing operations only forces linear thought if phases are analyzed separately without taking into account how actions in one phase will

⁵⁸ Hovatter, 41.

effect another through both inductive and deductive reasoning, meaning conducting both forward and backward planning. MAJ Hovatter's assertion that phasing is linear and reductive is not doctrinally correct, indicating that he does not understand phasing. If the uses of phasing are not clearly understood, phasing could be misused. According to JP 3-0 phasing is designed to assist commanders and planners to think through the entire operation holistically, from end-to-end.⁵⁹ A plan is first analyzed from start to finish. The results of the analysis may lead commanders and planners to identify phasing as a useful structure to plan in greater detail the succession of objectives that must be accomplished to achieve the desired end-state, and when objectives cannot be achieved concurrently, how forces and efforts will transition efforts between them. This must be done holistically to understand the relationship between the phases, and how efforts in one phase will effect the others.

MAJ Hovatter also links the relevance of operational design to the relevance of the center of gravity concept (COG). He argues that COG is a critical foundation of the linear based operational framework, and that complex dynamic systems like Al-Qaeda make conventional center of gravity analysis invalid.⁶⁰ These arguments have no merit. There is not a "linear based operational framework" in U.S. Military doctrine, nor is there a "conventional center of gravity analysis." Planners are not required to plan linearly because they can plan forward and backward simultaneously, and they are not limited in their methods for analyzing and enemy center of gravity. Debate rages continuously on the topic of "center of gravity" throughout the military community, and although center of gravity is an element of operational design, it is not an aspect of arranging operations or phasing, and therefore is outside the scope of this monograph.

MAJ Hovatter does not address the relevance of operational design against a future peer competitor such as China, or any country that has a conventional military. His arguments are directed towards the fight we are in, not the fights we may face in the future. Phasing has been used in conventional wars like WWII, Desert Storm, and OIF. It has been used in unconventional wars such as

⁵⁹ JP 3-0, III-18 &19.

⁶⁰ Hovatter, 19.

Mao's Protracted War and OEF. Since the U.S. Military is designed to project forces through deployment to the theater in which they will need to operate, arranging forces will continue to be necessary for the U.S. Military in the foreseeable future. Scientifically founded theories such as systems theory, complexity theory, and Toffler's "Third Wave" can be applied to enhance MAJ Hovatter's argument for further development of ONA and interagency coordination to be able to understand and influence systems. ONA depends on contributions from government and non-government agencies in order to provide greater understanding of problems. Coordination between the agencies is a prerequisite for influencing systems to a desired end-state. At issue is that MAJ Hovatter does not provide a framework for how these capabilities can be applied to solve complex problems. Theories do not solve problems. Even visualizing a plan to solve a problem does not automatically solve the problem. Action must be taken and forces arranged in terms of time, space, resources, and purpose to solve problems based on the plan.

MAJ Hovatter did recommend three alternatives to phasing which will only briefly be addressed here, as they are not actually alternatives to phasing. The first two are Senge's *Causal Loops*, and COL Robert Shaw's Theory of Spheres. Both are promising concepts to help understand complex systems, but neither can be operationalized militarily by arranging operations in terms of forces, resources, time, space, and purpose. In other words, they can help visualize the "what", but not the "how"; although it should be noted that COL Shaw's concept has a geographical component so it can also visualize "from where" for targeting purposes. The third alternative is electrical circuit theory, which essentially is a force ratio calculation framework, but can only help visualize "with what".⁶¹ In closing it must be pointed out that although his alternatives are all rooted in scientific methods, they are trying to deal with enemy and friendly systems that are governed by choice, not law. There are laws associated with arranging forces that can be measured in terms of the weight and volume of forces deploying to a theater and their means available to deploy them, as well as logistical requirements to sustain them with items such as fuel, food,

⁶¹ Hovatter, 42-46.

water, ammunition, and repair parts. These aspects of arranging forces are also planned through phasing to sequence forces based on the combatant commander's need for the deploying force capability.⁶²

MAJ Hovatter contends that phasing should be discarded in favor of contemporary theories he believes will be more useful to planners. Systems theory and complexity theory applied in the information era may provide a better analysis of what actions should be taken and how they will effect systems, but MAJ Hovatter's arguments fail to address how they will assist military forces to be directed through time and space, and with available resources to achieve objectives that cannot be achieved concurrently. He does not address the principle of economy of force as it applies to time, space, resources, and purpose.⁶³ Phasing or sequencing of actions will continue to be an important facet of operational design because even if you understand all things that must be done within a system, it will not always be logical or possible to do them all at the same time, or with equal priority of effort. In full spectrum operations you cannot reconstruct a bridge while simultaneously destroying it. You cannot replace a regime without first defeating the elements that protect the regime. The U.S. Military does not have unlimited manpower, resources, or operational reach that would be required to do all that is envisioned must be done in the plan simultaneously. Most operations therefore must be sequenced based on priority of actions required and planned based on visualization of what conditions must be set in order to ensure an element or unit can transition to the next action, which will often require reallocation of forces and equipment to succeed.

Phasing in operational design has gone through many changes since its development in U.S. Military doctrine. The most recent change will be presented in the soon to be published Joint Publication 5-0. Lessons learned in recent combat operations, emerging concepts such as Operational Net-Assessment, Effects Based Operations, Net-Centric Warfare, and guidance from the President of the

⁶² Joint Publication 3-35 *Joint Deployment and Redeployment Operations*. (Washington DC: Department of Defense, 1999), III-3

⁶³ Joint Publication 1, *Joint Warfare for the Armed Forces of the United States*. (Washington DC: Department of Defense, 2000). Appendix B-1. Economy of Force defined as "To allocate minimum essential combat power to secondary efforts. Economy of force is the judicious employment and distribution of forces. It is the measured allocation of available combat power to such tasks as limited attacks, defense, delays, deception, or even retrograde operations in order to achieve mass elsewhere at the decisive point and time."

United States and the Secretary of Defense will all have an influence on the changes. In November 2004 US Secretary of Defense sent a memo to the Chairman of the Joint Chief of Staff to articulate that he saw a need for a “phase 0” in campaign planning to shape the environment for post combat operations, resulting in the development of a revised “6 Phase Planning Construct” first briefed to the Joint Chiefs of Staff in July 2005. The changes are not meant to constrain commander’s initiative, but to provide greater standardization among operational plans (OPLANs) and more consistent products for senior Department of Defense leadership.⁶⁴ The revised JP 5-0 describes phasing:

“Arranging operations is an element of operational design, and **phasing** is a key aspect of this element. A campaign is normally divided into phases to logically organize a campaign’s diverse, extended, and dispersed activities. Phasing assists JFCs and staffs to visualize and think through the entire operation or campaign and to define requirements in terms of forces, resources, time, space, and purpose. The primary benefit of phasing is that it assists commanders in systematically achieving objectives that cannot be achieved concurrently by planning manageable supporting operations. Phasing can be used to gain progressive advantages and assist in achieving objectives as quickly and effectively as possible. Phasing also provides a framework for assessing risk to portions of an operation or campaign, by which plans to mitigate this risk may be developed.”⁶⁵

The 2005 JP 5-0 ver. 3 (Draft), eliminates the old Phase IV (Transition) and emphasizes the importance of transition between phases to prevent culmination and maintain operational momentum. MAJ Hovatter’s assertion that phasing is “linear and reductive” is again refuted by our doctrine. According to JP 5-0:

“Phasing is accomplished using forward and backward planning methods, simultaneously.

Backward planning develops phases from the desired end state to the present; it provides better long-term focus. **Forward planning** develops phases from the present to the desired end state, focusing on

⁶⁴ Commander Bill Parker, *Standardizing Campaign Phases and Terminology*. (This briefing was presented to the Joint Operational War Plans Division, June 2005, and was the first time the 6 Phase Construct is described).

⁶⁵ JP 5-0, IV-30.

near term objectives; it gives planners a better idea of near term feasibility. A successful plan will mesh backward and forward planned phases.”⁶⁶

The value of conducting forward and backward planning is that it allows planners to see the interaction of phases, or how actions in one phase will effect the others. This is the heart of the problem when we recognize that the stability and reconstruction phase of OIF was not planned thoroughly before combat operations commenced. There was a disconnection between the strategic and operational understanding of the problem. In retrospect, failure to develop the plan for the stability and reconstruction phase that would be required in the aftermath of decisive combat operations in OIF could be considered a catalyst for the debate on the utility of phasing in operational design.

The phases in the revised JP 5-0 are identified as “0- Shaping”, “1- Deter”, “2- Seize the Initiative”, “3- Dominate”, “4- Stabilize”, and “5- Enable Civic Authority”, cycling back to “Shaping”. Like the four phase model the phases are not prescriptive and their use and naming are still left to the discretion of the commander. The changes are designed to visualize more involvement of elements of national power other than just the military in order to solve complex problems. The changes recognize that a campaign is required to accomplish strategic objectives when they cannot be accomplished by a single operation. The cyclic nature is meant to break the linear and sequential forward planning interpretation of phasing that the four phase model may have inspired in commanders and planners, emphasizing that planning should be done in reverse as well as forward. Reverse planning assists in visualizing what conditions must be set at the end of the campaign to achieve a strategic end-state, while forward planning assists in visualizing the sequences of action that are required to set the conditions. This new phasing construct describes that actions from each phase can be carried out throughout the campaign, but what distinguishes a phase is the level of priority and effort it receives, allowing commanders to arrange forces and activities to be mutually supporting in achieving objectives. Another significant change is that in the four phase model it was articulated that phases may overlap in some cases, were as

⁶⁶ JP 5-0, IV 32.

the new model states that phases do not overlap, meaning they have a distinct start and end, but that activities from one phase may be carried out in other phases.⁶⁷ The effort to revise phasing in doctrine is intended to provide greater clarity of understanding from the lowest levels of command all the way up through senior commanders in DoD to the Secretary of Defense and the Commander in Chief, reinforce the value of phasing, and emphasize the need for more involvement of other elements of national power when planning a campaign.

Conclusions

In planning a military operation it is necessary to first visualize what must be done from beginning to end. Only once you see the whole of what must be done, or the link between objectives and the end-state, should a plan be broken down into phases, and only then if it is logical and necessary to help visualize transition points within a plan where objectives cannot all be accomplished concurrently. Failure to develop and visualize all phases of OIF as they related to each other caused unforeseen problems in the aftermath of combat operations, prompting commanders and planners to question the utility of phasing constructs in operational design.

Even a flawlessly planned and executed military operation becomes ineffective if not directed at clearly understood objectives designed to achieve the strategic end-state. The problem does not reside between the tactical and operational levels of war, which is where the concept of phasing is applied in operational design. It resides between the operational and strategic understanding of the problem. General Frank's assessment that Phase III of OIF would be completed very rapidly turned out to be correct. Because Phase IV was not fully developed before combat operations commenced, Coalition Forces were not prepared to transition into Phase IV. There was not enough time between Phase III and Phase IV for planners to complete the development of Phase IV, leaving Coalition Forces unprepared to arrange their forces in terms of time, space, resources, and purpose to rapidly transition into Phase IV.

⁶⁷ JP 5-0, IV 30-IV 31.

Initiative was lost, allowing resistance to become organized and gain support for what developed into an insurgency in Iraq.

JP 5-0's change from the four phase model to the six phase model is more similar to Mao's description of phasing. The four phase model included a transition phase; transitioning control to a follow on force or a host nation. The six phase model stresses transition between phases such as how Mao described, and moving from one phase to another is based on the assessment that a set of objectives have been accomplished or changes made by the enemy require a shift of focus for the forces conducting the operation.⁶⁸

Overlapping phases can indirectly create confusion in the chain of command of a military operation, as well as in senior Department of Defense leadership. The recent change proposed by JP 5-0 emphasizes that phases do not overlap, they are sequential; however, activities within a phase may overlap with other phases.⁶⁹ This change was made to prevent commanders from being confused as to which phase they are in, but they must still understand how their activities are nested to support the objectives of the overall campaign. JP 5-0 eliminated the overlapping of phases so that senior as well as lower level leadership can clearly understand what phase they are in and what the overall priority of effort is. Despite overlapping phases, OIF exemplified how operational art was once again utilized to bridge the gap between tactics and strategy, and phasing was an integrated part of the plan to help staff officers and commanders visualize the sequence of objectives required to be accomplished in order to set the conditions for transition of forces and efforts that would ultimately achieve the strategic objectives during the major combat operations, or through Phase III. The lack of planning for Phase IV and the subsequent rise of an insurgency emphasizes the requirement to visualize the whole operation from start to finish, not just by sequential phases.

Proposed alternatives to phasing, theories, and emerging concepts are not capable of replacing phasing as a way of arranging operations and forces in terms of resources, time, space, and purpose. They

⁶⁸ JP 5-0, IV 32.

⁶⁹ JP 3-0, IV 25.

are not designed to do so. Theories do not solve problems by themselves. Action is required to solve problems, and that action requires operations and forces to be arranged in a logical sequence. MAJ Hovatter's proposals of *Senge's Causal Loops*, COL Robert Shaw's *Theory of Spheres*, and electrical circuit theory are incapable of eliminating or replacing phasing because they are designed to increase understanding of systems and how systems are related through interaction, not arrange operations and forces in order to influence systems.

Eliminating phasing based on perceptions of the current war may result in myopically focusing on OIF and OEF rather than potential future wars. U.S. Military doctrine is continuously adapting in an effort to improve. Doctrine is influenced by such things as lessons learned in combat, new concepts, and adjusting to guidance from senior leaders. Guidance from the Secretary of Defense and lessons learned from OEF and OIF have influenced the change from the 4 Phase Construct in JP 5-00.1 to the 6 Phase Construct in JP 5-0. Emerging concepts such as Effects Based Operations, Operational Net Assessment, and Net-Centric Warfare are also having an effect on doctrine, and will continue to do so in the future. Emerging concepts may have the potential to improve how forces are arranged through phasing, but eliminating phasing without a proper and tested replacement for it is reductive thought and illogical. Eliminating phasing reduces the available options commanders and planners have available to them to visualize plans. Until a better replacement for phasing can be introduced and tested, phasing will be an important element of arranging forces in operational design in the future. The next chapter will explore how emerging concepts can influence and improve phasing in operational planning.

EMERGING CONCEPTS EFFECTING PHASING

Military tactical and operational successes in combat on the battlefield will not always resolve conflicts unless there is a clear and accurate understanding of the problem, as exemplified by US actions in Vietnam. Military and informational superiority provide a marked advantage in warfare but they are not decisive in achieving victory in war unless they are properly applied through actions. Phasing is not an assessment. Phasing is the result of assessing that achievement of certain objectives will be able to set

the conditions necessary to transition efforts to achieve subsequent objectives that could not have been achieved concurrently at the start of the campaign. Better situational understanding increases the likelihood that assessments will be accurate. Increased understanding of systems involved in the conflict will allow plans to be more accurately analyzed, resulting in more detailed and accurate actions required to be taken during the phases of the operation. Commanders and planners will have a better understanding of what must be done and how, allowing them to plan how forces will be arranged in terms of time, space, resources, and purpose more effectively. Emerging concepts are entering into the realm of operational design in efforts to improve understanding of complex problems and bridge the gap between what must be done and how it should be done. They are having a profound effect on how problems are thought about in order to resolve conflicts that require military intervention. The military must be analyzed as a system to understand what effect these emerging concepts are going to have on it. Only after fully understanding their potential effects can a plan be devised to incorporate these concepts into the system and allow it to adapt to more efficiently and effectively analyze and solve complex problems.

The purpose of this chapter is to explore the emerging concepts of Net-Centric Warfare, Operational Net Assessment, and Effects Based Operations through a system of systems approach in order to analyze their potential for success or failure in operational level planning. A new concept will be introduced at the end of this chapter as a recommended method for bridging the gap between the elements of national power that are required to be applied in order to solve complex problems. These emerging concepts have the potential to increase the effectiveness of phasing operations, which will be explored in the next chapter.

Robert Axelrod and Michael Cohen describe Complex Adaptive Systems:

“In Complex Adaptive Systems there are often many participants, perhaps even many kinds of participants. They interact in intricate ways that continually reshape their collective future. New ways of

doing things—even new kinds of participants—may arise, and old ways—or old participants—may vanish. Such systems challenge understanding as well as prediction.”⁷⁰

The U.S. Military clearly qualifies as a complex adaptive system by this standard. The U.S. Military does not at this time have a peer competitor at the operational level of war, but that alone does not guarantee strategic success.⁷¹ It must be prepared to fight not only the wars of OIF and OEF, but full spectrum operations against a future peer competitor. Adopting the concepts of Net-Centric Warfare, Operational Net Assessment, and Effects Based Operations can be applied at the operational level of warfare to assist in bridging the gap between operational and strategic success, but they must be analyzed and tested before they are implemented in order to avoid catastrophic failure. Since these emerging concepts have not all been thoroughly analyzed and tested, it is not understood what effect they will have on U.S. Military Operational Design. These concepts must be synchronized to work together in solving complex problems, but since they are not completely understood they cannot be incorporated into operational design and military doctrine concurrently. They should therefore be implemented sequentially after being thoroughly analyzed and tested, allowing compatible systems to be phased into operational design without unbalancing the military system and causing it to fail.

Dietrich Dorner, a Professor of Psychology at the University of Bamberg and winner of the Leibniz Prize, Germany’s highest science award, conducted numerous computer simulated problem solving experiments which he describes in his book *The Logic of Failure; Recognizing and Avoiding Error in Complex Situations*. He identifies that in order to deal with a complex problem rationally we must define our goals clearly, construct a model of the specific reality or modify an existing model, then gather information and observe the system to understand the connections between variables to determine

⁷⁰ Robert Axelrod and Michael D. Cohen, *Harnessing Complexity; Organizational Implications of a Scientific Frontier* (New York, NY: The Free Press, a division of Simon and Schuster, 2000), xi.

⁷¹ JP 5-0 defines the operational level of war: “The level of war at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or other operational areas. Activities at this level link tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events. These activities imply a broader dimension of time or space than do tactics; they ensure the logistic and administrative support of tactical forces, and provide the means by which tactical successes are exploited to achieve strategic objectives.” GL-18.

how it is behaving and how it is likely to behave in the future. Once that is done we can move on to planning.⁷² He describes planning:

“Planning consists of examining the consequences of individual actions, then stringing individual actions together into sequences and examining the consequences of these sequences of action.”⁷³

Participant #13 in one of Dorner’s experiments was one of the most successful in analyzing and solving a particular problem. When faced with a complex problem in which the system was not completely understood, #13 found that small adjustments and analysis focusing on understanding developments were successful in assessing changes in the system.⁷⁴ The ability to assess in these situations was critical to solving the problem. This is a similar situation that US doctrine is facing. US doctrine is a system and it is not yet understood what effect emerging concepts will have on it. Small adjustments and analysis through evaluation in training before they are applied in combat is a logical method for improving doctrine.

Strategic, operational, and tactical problems are related and may have similarities but all problems will have differences. If the goal is to bridge the gap between tactical, operational, and strategic success and no two problems will be the same, then the U.S. Military must enable itself with the capability to solve any problem that it may face. It’s not about devising a system that can solve a particular problem; it is about devising a system capable of solving any problem. Enabling a system to solve any problem requires the ability for it to assess problems and simultaneously know what means are available to solve them. Giving commanders and planners more options to solve complex problems allows them to approach solving problems in different ways depending on the nature of the problem. Eliminating frameworks like phasing would be counterproductive by reducing the options available to commanders and planners to visualize plans to solve problems. Understanding the problem is the first critical step that must be taken in order to solve it. Operational Net Assessment is a way to do so. The

⁷² Dietrich Dorner, *The Logic of Failure; Recognizing and Avoiding Error in Complex Situations*, (New York, NY. Metropolitan Books, 1996), 153.

⁷³ Ibid, 154.

⁷⁴ Ibid, 146.

holistic understanding that ONA can provide enables the ability to influence or change the system through Effects Based Operations. Both ONA and EBO are developmental concepts within the concept of Rapid Decisive Operations.

Rapid Decisive Operations (RDO) was first developed in the aftermath of 9/11 when strategic guidance outlined the requirement to be able to rapidly transition from a relatively peaceful environment to intense combat operations in order to decisively achieve strategic objectives.⁷⁵ RDO recognizes that our current operational environment requires the ability to rapidly deploy forces and that there is an expectation both nationally and internationally that results can be achieved rapidly and at minimal cost.⁷⁶ The RDO concept incorporates ONA and EBO to enhance the ability of US Forces to achieve rapid success at minimal cost. A critical aspect of RDO is the ability to understand the nature of the problem before forces are deployed and throughout the operation. ONA is the method through which this understanding is attained.

ONA is not new, but further development and incorporation into operational design has great potential for enabling commanders and planners to better visualize and understand systems as they relate to problems. The Joint Warfighting Center Joint Doctrine Series Pamphlet 4 *Doctrinal Implications of Operational Net Assessment (ONA)* describes ONA as “the integration of people, processes, and tools that use multiple information sources and collaborative analysis to build shared knowledge of the adversary, the environment, and ourselves.”⁷⁷ ONA utilizes a “system-of-systems” approach to allow commanders and planners to analyze a potential adversary’s Political, Military, Economic, Social, Infrastructure, and

⁷⁵ US Joint Forces Command, *A Concept for Rapid Decisive Operations, Final Draft* (J9 Joint Futures Lab, Suffolk, VA: 2001), IV. Available at: https://www.daml.org/2002/01/experiment/RDO_White_Paper.pdf. Last accessed on 19 March 2006. RDO defined: “Rapid Decisive Operations is a concept for future joint operations. A rapid decisive operation will integrate knowledge, command and control, and operations to achieve the desired political/military effect. In preparing for and conducting a rapid decisive operation, the military acts in concert with and leverages the other instruments of national power to understand and reduce the adversary’s critical capabilities and coherence. The United States and its allies asymmetrically assault the adversary from directions and in dimensions against which he has no counter, dictating the terms and tempo of the operation. The adversary, suffering from the loss of coherence and unable to achieve his objectives, chooses to cease actions that are against US interests or has his capabilities defeated.”

⁷⁶ Ibid, 6.

⁷⁷ Joint Warfare Center Joint Doctrine Series Pamphlet 4 *Doctrinal Implications of Operational Net Assessment (ONA)*, (Suffolk, VA: 2004), 8.

Information (PMESII) war making capabilities in order to enable consideration the full range of Diplomatic, Informational, Military, and Economic (DIME) actions that can be taken against it in support of national objectives. ONA's purpose is to identify key links and nodes within the adversary's systems and to propose methods that will influence, neutralize or destroy them and achieve a desired effect or outcome.⁷⁸ ONA must be continuous in order to remain relevant in understanding changes in adversarial complex adaptive systems, as an adversary will attempt to adapt in unpredictable ways when actions are taken against it. Because an enemy can adapt in unpredictable ways ONA will never have complete predictive assurance, but it can greatly increase the chances that actions will create the effects desired on the system. To be most effective ONA must provide an accurate assessment, common understanding, and share knowledge between all elements of the DIME. Data must be collected and organized into information. The information must be provided to the elements of the DIME that require it. The information becomes a base of knowledge that through shared analysis becomes shared understanding. One of the current shortfalls of ONA was identified by Air Force COL Donna Lucchese during Millennium Challenge in 2002, and it has yet to be remedied. COL Lucchese said "though some of those things (analyzing an adversary's PMESII) are done separately now, there isn't a single multi-agency effort to share and blend information, leading to vital information slipping through the cracks."⁷⁹ The extent of this problem can go far beyond just losing some information about a system. If no single multi-agency effort is conducting ONA, multiple organizations that may not have the expertise to analyze or have access to accurate information may attempt to do their own ONA's of a particular system, resulting in multiple ONA's that may be erroneous or conflicting. This will never create an accurate and common understanding of a system throughout the entire DIME. The U.S. Military currently has a method for analyzing an adversary's combat forces, called Joint Intelligence Preparation of the Battlefield (JIPB), but focusing solely on combat forces does not provide an understanding of all an adversary's elements of

⁷⁸ United States Joint Forces Command, *Joint Forces Command Glossary*, Available at <http://www.jfcom.mil/about/experiments/mc02/ona.htm>. Last accessed on 7 February 2006.

⁷⁹ COL Donna Lucchese, quoted by JO2 Michael Wimbish, USJFCOM Public Affairs, during Millennium Challenge 2002. Available at <http://www.jfcom.mil/about/experiments/mc02/ona.htm>. Last accessed on 4 Jan 2006.

power. ONA can provide that understanding. The concept of ONA has entered into U.S. Military through sources such as Pamphlet 4 and ONA is being attempted at unit levels as low as Army Divisions by planners that do not have the expertise or access to all the information necessary to conduct an accurate ONA, or the capability to analyze and understand changes in the system when actions are taken. The results could potentially be catastrophic if actions taken result in the opposite of the desired effects.

ONA is linked very closely to the concept of Effects Based Operations (EBO). ONA assists in understanding the “what”, as in what can be done to change a system from an undesirable state to a desirable state. EBO addresses the “how”, as in actions that can be taken to influence specific parts of the system. Joint Forces Command defines EBO as:

“Operations that are planned, executed, assessed, and adapted based on a holistic understanding of the operational environment in order to influence or change system behavior or capabilities using the integrated application of selected instruments of power to achieve directed policy aims.”⁸⁰

The intent of EBO is to assist commanders and planners to visualize problem solving methods that use more than just military means to influence a system, resulting in combined and cooperative application of all elements of national power. EBO must be linked to the systems understanding that ONA provides to be most effective. Attempting to influence a system without a thorough analysis of the potential effects that can be created could be extremely dangerous if the effects result in the system reacting in ways that become counterproductive to solving the problem. EBO without thorough systems analysis could be used as a means to probe the system to see how it will react, but not without incurring significant risk. “Reconnaissance by fire” is an appropriate analogy of EBO without ONA, meaning firing a weapon into the woods to flush out an enemy whose position is uncertain. It could be effective, but the risk of killing an innocent villager and inspiring the village to riot could produce a catastrophic failure.

⁸⁰ Joint Forces Command Joint Experimentation Directorate EBO Prototyping Team, *The Effects Based Operations Process (Draft)*, (Suffolk, VA. 2004), 95.

Since the intent of EBO is to apply selected instruments of national power in addition to or in lieu of traditional military kinetic means, there must be a common understanding of the problem as well as an understanding of what government agency resources are available to assist in solving the problem. In October 2001 General Tommy Franks (USA) recognized that combating terrorism required capabilities beyond those of any single agency, but in order to enable coordination between agency assets he had to gain permission from Secretary of Defense Donald Rumsfeld to create an “interagency coordination cell” that allowed him to coordinate directly with necessary agencies.⁸¹ Coordination between the military and other government agency resources continues to be a problem without a formal solution, resulting in informal “cells” such as Joint Inter-agency Coordination Cells (JIACC) being created to solve specific problems, which take time to organize before solutions can be applied to the problem. The loss of time becomes time gained by an adversary. Interagencies, meaning elements of two or more agencies in coordination with each other, do not have planning staffs that allow them to analyze a problem, and each agency does not currently have a common source from which to gain understanding of a problem. In order for interagencies to work with the military in applying assets to influence the problem they must have a common visualization of the problem and understand the systems involved. A common ONA between all national elements of power will assist them in applying and synchronizing efforts through EBO. There must be a communication link between the U.S. Military and other government agency organizations.

In order to function and adapt in desired ways the U.S. Military requires methods through which it can communicate and provide direction to its forces. It must also be able to see and understand its relationship with other systems in order to coordinate with them and achieve unity of effort towards achieving the goal or objective. The concept behind Net-Centric Warfare (NCW) is to take advantage of existing and emerging technology to increase combat power through the effective linking or networking

⁸¹ Colonel Mathew F. Bogdanos, USMC, *Joint Interagency Cooperation: The First Step*, (Joint Forces Quarterly, issue thirty seven, 2005), 11.

of knowledgeable entities that are geographically or hierarchically dispersed.⁸² The goal is to “develop the kind of actionable knowledge that helps decision makers focus capabilities when, where, and how needed to achieve desired outcomes.”⁸³ NCW is what links concepts such as ONA and EBO together. ONA allows commanders to visualize what must be done, and NCW allows them to describe and direct forces to create the effects desired. NCW takes advantage of computer and networked communications technology to provide a shared awareness of the battle-space for US Forces, which proponents say increases synergy for command and control, resulting in superior decision-making, and the ability to coordinate complex military operations over long distances for an overwhelming war-fighting advantage.⁸⁴ It is designed to increase the ability of the U.S. Military forces to see themselves and see the enemy while enabling commanders to be able to react and adapt to changes in the situation or changes made by the enemy faster than the enemy can. NCW requires computer networked communications, satellite imagery, and satellite communications that all require large amounts of bandwidth to broadcast the information, which is one of the major shortfalls for NCW. Operations in Iraq during OIF included the use of NCW technology, which proponents say proved NCW’s worth, while others say its success may be misleading when faced by an incompetent enemy such as the Iraqi forces.⁸⁵ The depth of NCW’s components and the issues that surround the concept cannot fully be explored in this monograph, but it is important to point out a few of the difficulties that must be overcome, therefore requiring analysis and sequential methodology in order to phase NCW capabilities into U.S. Military forces.

The first issue is that not all US forces have been fielded with NCW technology, creating a compatibility problem between forces that must communicate with each other in order to nest their actions to achieve a common end-state. This is even further complicated when including coalition forces

⁸² David S. Alberts, John J. Gartska, and Fredrick P. Stein, *Network Centric Warfare: Developing and Leveraging Information Superiority* (second Edition) (Washington DC, DoD C4ISR Cooperative Research Program, 2000), 6.

⁸³ Ibid, preface.

⁸⁴ CRS Report for Congress, *Net Centric Warfare: Background and Oversight Issues for Congress*, (Library of Congress, D.C, 2004), 2. Available at <http://www.fas.org/man/crs/RL32411.pdf>. Last accessed on 14 Dec 2005.

⁸⁵ Ibid, CRS 21.

in a campaign or operation. In OIF coalition partners were often treated as separate entities who were locked out of planning and execution because they did not have access to systems that only the US forces were using.⁸⁶ Increased reliance on technology threatens to further the technology gap between US and coalition forces, further alienating coalition partners in future campaigns unless systems are integrated to be compatible with US coalition partners.

The second issue is the threat of becoming over-reliant on technology that requires dominance of air and space in order to be applied. NCW has an advantage over adversaries that do not possess technology similar to that of US forces, but against a technologically peer or superior force this advantage is nullified or even reversed. For example, the Blue Force Tracker system that allows US forces to identify where their units and even individual soldiers are could be “hacked” into by a technological competitor in order to reveal the location of US forces, thus giving the adversary a significant advantage and placing US soldiers at extreme risk. NCW technology is also susceptible to electromagnetic interruption or destruction that can happen passively from things such as solar flares, or actively by an adversary’s use of an electromagnetic-pulse weapon system such as the one US forces used to disrupt power grids in Baghdad prior to US ground operations. Computer based systems are also vulnerable to cyber attack, as networks can be accessed by hackers with the proper training and skills.

Neither of these issues is an argument for not taking advantage of technology to execute operations or campaigns, but a caution that over reliance on technology without a redundant system that allows US forces to operate without NCW technology could create catastrophic failure. NCW therefore requires thorough analysis and testing against potential adversary capabilities before its benefits can be fielded incrementally to US and coalition partners. Technological advantages are not more important than being able to synchronize efforts through planning and execution.

The concepts of Net-Centric Warfare, Operational Net Assessment, and Effects Based Operations all show promise when combined and applied to campaign planning and operational design. All need to

⁸⁶ Ibid, CRS 24.

be further analyzed and tested before they can be implemented incrementally applied to U.S. Military doctrine and planning. Lieutenant General John M. Curran, Director of the US Army Futures Center, expressed the danger of applying effects based concepts before they are validated or vetted in a memorandum for Commanders of U.S. Military education centers in Dec 2005.⁸⁷ His warning articulates that there is an inherent danger to applying emerging concepts before they are fully developed and captured in doctrine. Doctrine must be a clear and concise language that all U.S. Military organizations have a common understanding of. As the concepts of ONA, EBO, and NCW are tested and validated they can be phased into doctrine and planning to increase the potential for designing plans for campaigns and operations that will succeed, but they must be phased in incrementally as compatible and synchronized systems that are properly grounded in doctrine. After testing and validation a plan can be developed to incorporate them into military training and doctrine just as operational design arranges forces; in terms of forces, resources, time, space, and purpose, in order to increase commanders and planner's abilities to visualize, describe, and direct forces during campaigns and operations.

The visualization challenge that COL Lucchese identified in Millennium Challenge 2002 still poses the most significant obstacle in gaining a common understanding between all elements of national power, which is necessary when attempting to assess systems. Without a single entity to mix and blend information there cannot be a common understanding of systems that all elements of power can agree on and therefore synchronize efforts and capabilities in order to solve complex problems. Red teaming can be a method for overcoming this challenge. Red teaming is in a sense a "wargame" in which one side replicates the friendly forces and the red team plays the part of the adversary. Wargaming is an interactive process that seeks to visualize and anticipate the actions, reactions, and counteractions that elements in conflict against each other will take to obtain victory. Red teaming is not new, and in a sense combatants in warfare have always tried to anticipate what their opponent will do in any given situation.

⁸⁷ LTG John M. Curran, USA, Memorandum for distribution to CDR's, U.S. Military Education Centers, Subject: Effects Based Concepts and Doctrine in Army Education, (Department of the Army US Training and Doctrine Command Futures Center, Fort Monroe VA, 22 Dec 2005).

Kriegspiel (wargaming), where one side simulates the enemy forces against friendly forces was used by the Germans in the 19th Century. The German General Staff utilized it in training as a method for testing concepts and plans, and evaluating leadership. In 1879, Captain W.R. Livermore of the US Army adopted the concept and published a set of rules for wargaming called *The American Kriegspiel*.⁸⁸

Wargaming is still used by the U.S. Military, which describes it as “a conscious attempt to visualize the flow of the operation, given joint force strengths and dispositions, adversary capabilities and possible courses of action, the operations area, and other aspects of the operational environment.”⁸⁹ Red teaming can assist U.S. Military forces to wargame, but red teaming is not the same as wargaming.

Traditionally in U.S. Military wargaming a representative from the staff, usually the intelligence officer, portrays the part of the enemy. In this sense the intelligence officer is dually tasked in planning, as he is also responsible planning friendly intelligence collection for a campaign or operation, which could lead to personal bias towards faith in the friendly plan. Intelligence officers are trained to understand enemy methods and tactics, but for them to be fully skilled and qualified in understanding all aspects of any potential enemy the U.S. Military might face, including the enemy PMESII, is much more than can be expected. Since the intelligence officer is a part of the staff and the chain of command, and is not typically the highest ranking officer in the wargame, his portrayal of the enemy can also be overruled, allowing a much more favorable and not necessarily accurate outcome for the wargame. This is where red teaming differentiates itself from wargaming. Colonel Gregory Fontenot, US Army Retired, identifies that although red teaming is utilized in both government and industry, there is no formal doctrinal process that is being utilized by U.S. Military forces.⁹⁰ The concept of Red teaming that is currently being developed and tested for the U.S. Military at Fort Leavenworth by COL Fontenot envisions an expert red team that is separate from and not a part of any particular military organization, but rather a team that can

⁸⁸ Peter P. Perla, *The Art of Wargaming: a Guide for Professionals and Hobbyists* (Annapolis, MD: UNSI Press, 1990).

⁸⁹ JP 5-0, III-12.

⁹⁰ COL Gregory Fontenot, *Seeing Red: Creating a Red Team Capability for the Blue Force*, (Military Review: Sept-Oct 2005), 5. Available at <http://usacac.leavenworth.army.mil/CAC/milreview/download/English/SEPOCT05/fontenot.pdf>. Last accessed on 3 Jan 2006.

liaison with and assist military units in planning for campaigns and operations by traveling to the unit and playing the part of the enemy in wargame procedures. A red team staffed by experts knowledgeable of a particular adversary and not subject to unit or institutional biases has the potential to portray an enemy that may adapt and act in ways military commanders and planners would not have predicted without the insight and knowledge of a red team. But red teaming as it is currently being developed does not visualize the full potential that red teaming could aspire to.

This monograph proposes that red teaming could be a method for bridging the gaps in gaining a common assessment of an adversary across all elements of US national power. A red team that is staffed by elements of all government agencies as well as the military, with access to classified materials, allies, embassies, and various subject matter experts could produce an accurate and common ONA that all elements of national power could understand and agree on both vertically and horizontally across the DIME. This shared knowledge could allow not only common understanding of problems within particular systems, but also a method for coordination between agencies within the red team. In essence, red teaming could provide a simultaneous understanding of the problem between all agencies that have means available to solve it. The shared knowledge, mutual understanding, and the ability to coordinate efforts between government agencies could reduce friction between them and allow the President and the Secretary of Defense to more effectively and efficiently synchronize actions across all elements of national power to solve problems. If one red team were developed for each theater of operations, they could have a routine interaction with the combatant commands to provide them not only an accurate ONA, but also a means to wargame concepts and plans. This proposed red teaming concept would have to be staffed, resourced, tested, and evaluated in order to be implemented. The depth of this monograph cannot attempt to further refine the details of how this red team could be created, but rather proposes it as a potential method for generating and maintaining interagency coordination across the DIME that could be further researched and developed.

The value of such a red team capability is that it could enhance accurate visualization and understanding of systems, allowing a more detailed understanding of how forces and actions can be

arranged to solve problems. It would increase the ability of planners and commanders to visualize and think through an entire operation or campaign and to define requirements in terms of forces, resources, time, space, and purpose. If objectives cannot be achieved concurrently, requiring transition of efforts, phases can be planned more accurately to visualize the sequence of actions and activities that must occur to achieve the desired end-state.

Conclusions

The first conclusion of this chapter is that the emerging concepts of ONA, EBO, and NCW need to be further developed and implemented into operational design within U.S. Military doctrine. ONA increases understanding of what must be done to solve a problem and minimizes the risk of taking actions that will cause failure. EBO enables commanders and planners to visualize how actions should be taken to succeed in achieving a desired end-state. Both ONA and EBO have the ability to continuously assess and adapt to changes in the operational environment. NCW is the means of communication that allows information analyzed by ONA to be transmitted to forces, and a means to allow commanders to describe for and direct military efforts in applying EBO. Since these emerging concepts are continuously evolving they must be kept separate from doctrine and military education and forums until they are fully developed and can be phased into doctrine and use once fully tested and evaluated. Phasing compatible packages of ONA, EBO, and NCW at certain stages as they evolve can be planned in logical sequences that will not disrupt or further convolute U.S. Military doctrine. Allowing these concepts to seep into doctrine before they are fully developed will convolute the language of doctrine and cause confusion among military forces. Furthermore these concepts must be defined and described the same way across all doctrinal volumes in all services, starting with Joint Doctrine.

Second, a means of assessing and understanding systems that is common to all elements of national power is essential for solving complex problems through unified understanding and action across the DIME. Red teams that include representatives from all necessary elements of national power have the potential to simultaneously understand problems and know what means can be applied and synchronized

to solve them. The goal should be to visualize potential problems before they evolve, and therefore be able to implement peaceful means to prevent problems from ever occurring. A single commonly agreed on ONA across all elements of national power could facilitate prevention of conflict, but if conflict does break out it could be resolved more quickly and efficiently, and possibly with less damage and death.

Finally, the concepts of ONA, EBO, NCW, and red teaming all have great potential for improving planning and achieve the goal of Rapid Decisive Operations to resolve military conflicts rapidly, sparing blood and treasure. They can create a more accurate and mutual understanding of problems, enabling commanders and planners to more accurately visualize the proper types of actions and activities and how they should be sequenced to most effectively solve problems and influence systems to a desired end-state. The ability to communicate and create mutual understanding allows commanders to synchronize his forces and capabilities with greater unity of effort toward desired end-states.

SYNTHESIS OF EMERGING CONCEPTS AND PHASING

The purpose of this chapter is to synthesize how the emerging concepts of ONA, EBO, and NCW can improve phasing throughout the 6 phase model described in JP 5-0 and be applied to full spectrum operations that include all elements of national power. The end-state will emphasize the importance of not discarding phasing as a framework for assisting planners and commanders to systematically achieve objectives that cannot be accomplished concurrently. Phasing also simultaneously communicates what the priority of effort is to all forces, all levels of government, and all citizens both national and international without jeopardizing how operational objectives will be achieved.

The phasing model outlined in JP 5-0 identifies six potential phases that can be used to frame any element of full spectrum operations. They are “shape”, “deter”, “seize the initiative”, “dominate”, “stabilize”, and “enable civil authority”. The shaping phase is designed to exert continuous influence by conducting operations that include military, interagency, and multinational assets working together to dissuade or deter potential adversaries and to assure and solidify relationships with friends and allies. Shaping is done to enhance legitimacy, influence behavior of allies and adversaries, and gain

multinational cooperation in support of defined military and national strategic objectives. Shaping activities must adapt to their particular theater environment, but activities in one theater may be conducted to achieve effects in another.⁹¹ The priority of effort in shaping is to prevent creation or escalation of hostilities towards the US or its allies' national objectives. Shaping requires continuous assessment and close interaction between the military, interagency, and multinational organizations to be most effective. An Operational Net Assessment that is common to and agreed upon by the US and its allies could enhance the success of a shaping phase by identifying potential problems and utilizing Effects Based Operations to influence problems before they escalate into violence or create conditions that are unfavorable to US interests. In order for ONA to accurately conduct a system-of-systems analysis of a theater of operations it requires accurate information to analyze. The enhanced information gathering and communication capability that Net-Centric Warfare concepts can provide to planners and decision makers could enable earlier identification of potential problems, and if the information can be shared with allies it could allow a mutual understanding that could result in faster reaction for decision makers and enhanced synchronization of efforts. Even if shaping efforts are unsuccessful an accurate assessment will allow planners and decision makers to take advantage of time saved by earlier identification of potential problems. Anticipation is another important element of operational design, and allowing military and interagency organizations more time to anticipate what may be required of them allows them to focus their efforts in terms of training and information gathering if it should be necessary for them to transition efforts and apply different means to address problems. A military force that is trained and ready to operate in a theater under conditions that it understands will allow greater chance of success in planning and execution. Articulating to an adversary that forces are trained and ready to take action against them can also serve as a deterrent to their unfavorable actions and avoid a crisis.

The deter phase is predicated on required response to solve a crisis. Transition to the deter phase builds on activities that occurred in the shape phase. The purpose of the deter phase is to demonstrate

⁹¹ JP 5-0, IV-33.

capabilities and the resolve to escalate to actions that may be necessary to solve a problem and to set the conditions for subsequent actions that may need to be planned and executed. Activities in the deter phase could include mobilization and tailoring of forces to prepare them for deployment. Assets to gather information and conduct surveillance reconnaissance (ISR) could be employed. Planning can be further developed to include initial deployment to a theater, assessment of logistical requirements, necessary command and control structures, force protection measures, and Combatant Commander's engagement with multinational partners. Liaison can be conducted between the military and other government and non government agencies to coordinate activities.⁹² The value of ONA and the proposed concept for red teaming is that combined they can speed transition between the shape and deter phases. Earlier identification of a crisis through ONA allows planners more time to prepare and produce detailed orders that will synchronize efforts to solve the problem, and more rapid deployment of necessary assets to the theater of operations as a show of force to deter an adversary. Red teaming will already have set the foundation for coordination and cooperation between the military and interagency organizations including, initial wargaming of the potential problem before it escalated into crisis. Friction between coordinating agencies will be reduced through a shared understanding of the conditions creating the problem and initial visualization of the means available to solve it. Based on the ONA, NCW assets can be more accurately deployed to conduct ISR because they will know where to focus their collection efforts and what to look for. Combined, ONA, red teaming, and NCW can more effectively set conditions to successfully deter an adversary from achieving its objectives, and set the conditions for US forces to seize the initiative.

U.S. Military forces seek to seize the initiative in both combat and non-combat situations. The "seize the initiative" phase described by JP 5-0 involves going on the offensive as rapidly as possible to degrade the adversary's offensive capability and prevent him from seizing his initial objectives. The purpose of the "seize the initiative" phase is to resolve the conflict as quickly as possible by setting the

⁹² Ibid, IV-34.

conditions for decisive operations. Actions during this phase could include expanding friendly freedom of action and gaining access to theater infrastructure.⁹³ Effects Based Operations coordinated with multinational and interagency organizations can enhance the effectiveness of this phase of operations. NCW capabilities can provide live feeds of enemy activity through satellite and unmanned aerial vehicle (UAV) collection assets and the information can be instantaneously broadcast to commanders, allowing them to engage targets accurately while reducing collateral damage and harm to non-combatants. Access to this information will allow planners to rapidly react to the enemy actions by creating branches and sequels to existing plans. This will allow US and coalition forces to disrupt and manipulate the enemy's decision cycle by maintaining the flexibility to act and react faster than the enemy. The timeliness of commander's ability to provide guidance through the issuance of orders that have been staffed and analyzed by planners can prevent US forces from losing momentum or culminating. Plans can be continuously refined based on changing conditions on the battlefield and in the environment to rapidly transition to the "dominate" phase of the operation before the enemy can consolidate and reorganize.

The purpose of the "dominate" phase is to break the adversary's will to conduct organized resistance, or in no-combat environments his ability to control the operational environment. This is done by sequencing appropriate forces into the area of operations as quickly as possible. In combat this phase is mostly characterized by offensive and defensive operations, but stability and support operations can be executed as appropriate to ease any suffering by the populace.⁹⁴ U.S. Military forces are traditionally most comfortable and currently the most formidable at accomplishing objectives in the dominate phase. The enhanced potential for success that ONA, EBO, NCW, and red teaming provide could allow US forces to maintain that advantage in the future. As an expeditionary force, it is essential for the U.S. Military to be capable of dominating the operational area. As proven in Iraq during OIF, decisive victory in major combat operations may not end the conflict, but it is necessary to defeat organized resistance in order to allow efforts to transition to conducting stability and support operations that will include

⁹³ Ibid, IV-35.

⁹⁴ Ibid, IV-35.

activities by non-combatants from other government and non-government organizations. For example, contractors will likely be required to rebuild damaged infrastructure, and a safe environment for them as well as the populace is difficult to maintain if an organized adversary is still operational.

The advantages of EBO, NCW, and red teaming carry over in the dominate phase. An accurate ONA during planning for the dominate phase will provide planner's and commanders a better understanding of how the adversary system functions in order to identify what elements of the system need to be neutralized, defeated, or destroyed, and what systems need to remain functional to set the conditions for transition to consecutive operations or phases. This will allow commander's to give more specific guidance for priority of targeting and safeguarding of vital infrastructure. Ordinance will therefore not be indiscriminately wasted on targets that will do little or nothing towards achieving operational objectives and lead to the desired end-state. ONA can allow efficiency in planning for targets and objectives while reducing the risk of conducting an operation that will create undesired effects and failure. This will also reduce the cost for the overall operation if it is determined that stability and reconstruction operations, as well as enabling civil authorities will need to be executed in order to achieve the desired end-state. It is therefore necessary to plan an entire operation from start to finish, which allows commanders and planners to understand the relationship between phases, and then understand the impact that objectives and targeting will have on them.

There may be operations that do not require a transition to stability and support operations, such as a punitive raid that only has an objective of destroying or neutralizing particular capabilities that an adversary possesses determined to be a threat to the US or its ally's interests. In operations that require stabilization to reduce further threat, relieve the suffering of the populace, or setting the conditions to enable civil authority in the theater of operations, the planning and arraying of forces to conduct stability operations can continue during the dominate phase. Once the organized threat is defeated a rapid transition to stability and support operations can be facilitated by the ongoing ONA and EBO that can continue to monitor and adjust to the changing situation. This will allow planners and commanders to prioritize efforts during the "stabilize" phase. According to JP 5-0 the "stabilize" phase is required when

there is no functioning legitimate civil government entity present. US forces may be required to perform limited local governance with the assistance of other government and non-government agencies until local government can be enabled. Activities in this phase include continuing to reduce the threat to a level that potential civil authorities can manage, humanitarian assistance and relief, providing basic services to the populace, and rebuilding critical infrastructure. Commanders continuously assess the situation during this phase in order to determine the ability to transfer overall civil authority to a legitimate civil entity.⁹⁵ ONA and EBO can enhance the accuracy of the commander's assessment, allowing them to identify conditions that must be addressed to facilitate transition. The secondary effect of swifter transition is that it will allow some combat forces to redeploy as soon as possible, transitioning the primary effort to enabling civil authority.

The sixth phase outlined in JP 5-0, "enable civil authority", is where the strategic end-state is achieved. US forces in coordination with other government agencies, non-government agencies, and international government organizations become the supporting effort to the legitimate local civil authority. Shaping and stability activities may overlap in this phase to influence favorable attitudes towards friendly forces and the established local government. This phase ends when the strategic end-state is achieved and the campaign is concluded when redeployment of forces is complete.⁹⁶ The relationship established between US forces and the legitimate civil government can facilitate monitoring the region with a more accurate ONA in the future, allowing more effective shaping of the region to prevent future crises.

Conclusions

The phasing model outlined in JP 5-0 can provide an effective framework for planners and commanders to visualize potential operations from start to finish, including the visualization of priorities of effort over time and space, arranging of forces in terms of capabilities and purpose, allocation of

⁹⁵ Ibid, IV-35

⁹⁶ Ibid, IV-35.

resources, identification of objectives, and coordination with other necessary agencies. The model is not meant to be prescriptive, meaning commanders can decide if phasing will be an effective framework for visualizing how to solve a particular problem and if so what phases will be required and what they will be named. The added benefit of allowing commanders to name phases is that it articulates the priority of effort vertically and horizontally across the chain of command. Subordinate commanders are not restricted from creating their own phases within their own operation, as long as they are still nested in purpose within the overall scheme of the operation or campaign.

Joint Publication 5-0 does not sufficiently emphasize that planning by phases should not be done as a replacement for not being able to visualize how you will achieve the desired end-state. A campaign must first be visualized from start to finish, and then broken down into logical phases to increase visualization and focus if it is determined advantageous. As time permits plans can be continuously refined, but planners and commanders should never stop assessing how activities in one phase will effect the others. Not doing so results in sequential planning where planners do not understand how their currently planned actions will effect the next phase or phases of the overall operation or campaign. Doing so could create an increase in unexpected changes in the battlefield environment and allow the enemy to gain and maintain the initiative by making US forces react to his actions. Branches and sequels would have to be planned more often, and likely be produced in a time constrained crisis situation. Even if the enemy is militarily inferior, if he maintains the initiative he can adapt in ways he desires in order to survive and continue the fight, prolonging the conflict. That would be the opposite of what commanders want from a plan. US commanders want plans that allow their military capabilities to stay ahead of the enemy's decision cycle, forcing the enemy to react in desirable ways or at least predictable ways that can be anticipated and countered, ending the conflict as quickly as possible. Prolonged wars drain national treasure as well as national will.

ONA, EBO, NCW and red teaming cannot replace phasing as a way of arranging operations and forces, and they are not intended to do so. They are methods for identifying and increasing the understanding of problems and what can be done about them, which can assist in planning and executing

operations and campaigns, but they cannot be substituted as a way of arranging operations and forces in terms of resources, time, space, and purpose. All of these concepts may have merit in determining what should be done and even how, but they do not address how operations and forces should be arranged to do so. They can enhance the effectiveness of phasing by increasing the accuracy of assessments to provide improved visualization, improved communication to describe for and direct forces, and improve the likelihood that plans will succeed to achieve the desired end-state. Solving complex problems requires more visualization of what must be done. Phasing of operations and campaigns can be greatly enhanced by the increased visualization capabilities that the concepts of ONA, EBO, NCW, and red teaming as described in this monograph could provide to operational design and campaign planning. These concepts can reinforce the utility of phasing in U.S. Military operational design to ensure success in future operations, and they may also serve to shape and deter future adversaries in ways that will prevent the escalation of hostilities, preventing the necessity of costly combat operations to resolve problems.

The nature of modern warfare will continue to require action to be taken in order to solve problems. Military operations will therefore continue to require the ability of commanders and planners to visualize the logical arrangement forces and sequence of actions and objectives in order to plan successfully. This ability is provided in current U.S. Military doctrine, and although doctrine is continuously revised in order to improve how military operations are executed, the requirement to arrange operations and forces will not fundamentally change in such a way that eliminates the utility of phasing operations when it is advantageous to do so.

Planning by phases has not lost its utility because of our current contemporary operating environment, new technologies, concepts, and problem solving theories. Because warfare is a complex undertaking without easy solutions that require actions to be taken, U.S. Military phasing constructs will continue to have utility in planning military campaigns and operations that require arrangement of operations and forces in terms of resources, time, space, and purpose in order to achieve objectives that cannot be achieved concurrently, all leading to a desired end-state. Phasing is the only proven method for arranging forces to achieve objectives that cannot be achieved concurrently or require a transition of

forces and efforts in order to accomplish the succession of objectives and operations that will lead to the desired end-state. Phasing will continue to be a very useful framework to assist commanders and planners to visualize plans to solve problems in our current operating environment, but it must be doctrinally understood and applied correctly in operational planning.

APPENDIX 1: DEFINITIONS AND TERMS

Joint Publications

branch. 1. A subdivision of any organization. 2. A geographically separate unit of an activity which performs all or part of the primary functions of the parent activity on a smaller scale. Unlike an annex, a branch is not merely an overflow addition. 3. An arm or service of the Army. 4. The contingency options built into the basic plan. A branch is used for changing the mission, orientation, or direction of movement of a force to aid success of the operation based on anticipated events, opportunities, or disruptions caused by enemy actions and reactions. See also sequel. (JP 1-02)

campaign. A series of related military operations aimed at accomplishing strategic and operational objectives within a given time and (JP 1-02)

campaign plan. A plan for a series of related military operations aimed at accomplishing a strategic or operational objective within a given time and space. (JP 1-02)

centers of gravity. Those characteristics, capabilities, or sources of power from which a military force derives its freedom of action, physical strength, or will to fight. Also called COGs. (JP 1-02)

culminating point. The point at which a force no longer has the capability to continue its form of operations, offense or defense. In the offense, the point at which continuing the attack is no longer possible and the force must consider reverting to a defensive posture or attempting an operational pause. b. In the defense, the point at which counteroffensive action is no longer possible. (JP 1-02)

economy of force. To allocate minimum essential combat power to secondary efforts. (JP 5-0)

end state. The set of required conditions that defines achievement of the commander's objectives. (JP 1-02)

military objective. The goals, derived from the strategic direction and guidance of the President and Secretary of Defense, toward which military actions are taken in support of national objectives. A military objective defines the results to be achieved by the military and assigns tasks to commanders. (JP 1-02.)

mission. 1. The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore. 2. In common usage, especially when applied to lower military units, a duty assigned to an individual or unit; a task. 3. The dispatching of one or more aircraft to accomplish one particular task. (JP 5-0)

objective. 1. The clearly defined, decisive, and attainable goals towards which every military operation should be directed. 2. The specific target of the action taken (for example, a definite terrain feature, the seizure or holding of which is essential to the commander's plan, or, an enemy force or capability without regard to terrain features). (JP 1-02)

operation. 1. A military action or the carrying out of a strategic, tactical, service, training, or administrative military mission. 2. The process of carrying on combat, including movement, supply, attack, defense and maneuvers needed to gain the objectives of any battle or campaign. (JP 1-02)

operational art. The employment of military forces to attain strategic and/or operational objectives through the design, organization, integration, and conduct of strategies, campaigns, major operations, and battles. Operational art translates the joint force commander's strategy into

operational design, and, ultimately, tactical action, by integrating the key activities at all levels of war. (JP 1-02)

operational design. The key considerations used as a framework in the course of planning for a campaign or major operation. (JP 1-02)

operational level of war. The level of war at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or other operational areas. Activities at this level link tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events. These activities imply a broader dimension of time or space than do tactics; they ensure the logistic and administrative support of tactical forces, and provide the means by which tactical successes are exploited to achieve strategic objectives. See also strategic level of war, tactical level of war. (JP 1-02)

phase. In joint operation planning, a definitive stage of an operation or campaign during which a large portion of the forces and capabilities are involved in similar or mutually supporting activities for a common purpose. (JP 1-02)

risk management. The process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk cost with mission benefits. Also called **RM**. (JP 1-02)

sequel. In a campaign, a major operation that follows the current major operation. In a single major operation, a sequel is the next phase. Plans for a sequel are based on the possible outcomes (success, stalemate, or defeat) associated with the current operation. See also branch. (JP 1-02)

strategic level of war. The level of war at which a nation, often as a member of a group of nations, determines national or multinational (alliance or coalition) security objectives and guidance, and develops and uses national resources to accomplish these objectives. Activities at this level establish national and multinational military objectives; sequence initiatives; define limits and assess risks for the use of military and other instruments of national power; develop global plans or theater war plans to achieve these objectives; and provide forces and other capabilities in accordance with strategic plans. See also operational level of war; tactical level of war. (JP 1-02)

tactical level of war. The level of war at which battles and engagements are planned and executed to accomplish military objectives assigned to tactical units or task forces. Activities at this level focus on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives. See also operational level of war; strategic level of war. (JP 1-02)

APPENDIX 2: HISTORY OF PHASING IN U.S. DOCTRINE

<i>History of Phasing in U.S. Doctrine (1925-1968)</i>		
<i>Year</i>	<i>Publication</i>	<i>Definition or Description</i>
1925	<i>Tactical and Strategical Studies, Corps and Army (Page 1)</i>	The campaign plan: ... may also contemplate probable successive operation phases to continue the success of the primary operations, and consider steps to be taken contingent upon results being different from those expected.
1936	<i>Principles of Strategy for an Independent Corps or Army in a Theater of Operations (Page 16, 28)</i>	In regards to successive or phased operations, it was noted that the commander "must look further into the future and must see beyond the battle itself." Indeed, modern conditions meant that, "Final victory will be achieved only through a succession of operations or phases."
1950	<i>FM 100-15 Field Service Regulations-Larger Units (Page 19)</i>	Used but never defined term.
1957	<i>JCS Publication 1 Dictionary of U.S. Military Terms for Joint Usage (Page 80)</i>	Defines the term only in reference to amphibious operations, as "A step in the operation, at the end of which a reorganization of forces may be required and another action initiated. Although certain phases may overlap in time, they usually occur in the following order..."
1960	<i>FM 101-5 Staff Officers Field Manual Staff Organization and Procedure (Page 310)</i>	Phases of Accomplishment- (under Concept of Operation, Joint Staff) -Provide a phase for each step in the operation at the end of which a reorganization of forces may be required and another action initiated.
1963	<i>FM 100-15 Field Service Regulations Larger Units. (Page 24)</i>	A phase is a distinct period or subdivision of an activity or operation at the conclusion of which the nature and characteristics of the action change, and another type of action is initiated. Phasing is an asset in planning and controlling an operation. Field Armies frequently phase their operations when A reorganization or major regrouping of forces is planned Major adjustments are envisioned in logistics support A change in nature of operations is contemplated.
1964	<i>JCS Publication 1 Dictionary of U.S. Military Terms for Joint Usage</i>	Term dropped, only phases of Government and Phase Lines used.
1968	<i>FM 100-5 Operations (Page 5-6)</i>	At higher echelons of field command, corps and field army, it is normal to phase operations based on expected duration, complexity, the friendly or enemy situation, terrain, or the scope of the mission. A phase is a distinct period of an operation, at the conclusion of which the nature and characteristics of the action change. As an aid in planning and controlling and operation, phasing is used to simplify a lengthy action. Phasing is normally necessary when a Commander is unable to visualize the operation through its completion or contemplates a major organizational change. Phasing of an operation may be described in terms of time, distance, attainment of intermediate objectives (or phase line), terrain or occurrence of a specific event.

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