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Mission

The Joint Advanced Warfighting School produces graduates that can create campaign-quality concepts, plan for the employment of all elements of national power, accelerate transformation, succeed as joint force operational / strategic planners and be creative, conceptual, adaptive and innovative.

We have been very fortunate for the continued willingness of practitioners of campaign planning and operational art to provide interesting and thought provoking articles for publication in *CAMPAIGNING*. This issue includes articles from Dr. Milan Vego on the Systems Approach and its implications for the center of gravity. We are extremely grateful for Dr. Vego's continued support of *CAMPAIGNING* and, equally important, his willingness to participate in the academic enrichment of the students of the Joint Advanced Warfighting School (JAWS). Major General Mihail Orzeata, Deputy Chief of the Romanian Air Force Staff, was very kind in finding time to prepare a very thoughtful piece on the effects air power has on achieving national objectives during conflict. We are especially happy to have this international contribution to *CAMPAIGNING* and hope other nations will contribute to our journal as well. Peter Harling has written an extremely enlightening analysis on the significance of the Battle of Falluja. We are very excited by Mr. Harling's work based on his extensive experience in the region, especially Iraq. Commander Cary Krause has provided an analysis of sea basing and the relevance it will play during the 21st Century. And finally, Major Dave Jones provides the second part of a three part series, Planning to Plan. We hope you find each of these articles informative and enlightening.

In every organization there are those "Silent Heroes" whose diligent work always insures the success of their organization while their tremendous contributions go unnoticed. The "Silent Heroes" of *CAMPAIGNING* are CAPTAIN Shannon Hurley, Ms. Monica Clansy and Ms. Cheryl Edwards, without their efforts the publication of *CAMPAIGINING* wouldn't be viable. We are extremely grateful for their contributions that have made *CAMPAIGNING* possible.

The continued success of *CAMPAIGNING* is dependant upon the quality of articles submitted for publication to continue the debate on planning issues at this critical time in history. If you would like to be placed on the electronic distribution list for *CAMPAIGNING* or would like to submit an article or comment on an article contained in this edition, please email your submission or comments to bollenbergc@jfsc.ndu.edu.

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Index

Systems Approach to Center of Gravity

By
Milan Vego

In the U.S. military today, the proponents of effects-based warfare are using the so-called systems approach to evaluate the situation and then determine the enemy's center of gravity. Advocates of the systems approach seek scientific certainties and rationality where uncertainty, chaos, and irrationality abound. They assume that all the elements of the situation can somehow be precisely determined and that no mistakes will be made. The enemy is essentially passive and will behave in a way that will ensure one's success. This view of warfare is overly simplistic because it does not recognize the Clausewitzian factors of friction and the fog of war and the role of psychological factors.

The proponents of the systems approach define "system" as a network of nodes and links within a battlespace that represents any combination of people, material, facilities, and information and their relationships to each other. A system is also understood as any organized assembly of resources and procedure united and regulated by interaction or interdependence to accomplish a set of specific functions. A "system of systems" is a grouping or assembly of resources, methods, and procedures regulated by interaction or interdependence to accomplish a set of specific functions. Vulnerabilities are defined as the characteristics of a system that cause it to suffer a definite degradation or inability to perform the designated mission because of being subjected to a certain level of effects in a man-made hostile environment. A model is described as the intellectual construct composed of sets of categories, assumptions, and postulates that help one to sort, analyze, and examine the relationships between and among elements of data and predict the course of events. If a model does not correspond in some way to what it claims to represent, it will have limited utility because it fails to mirror reality faithfully.[1]

The origin of the systems approach in evaluating the military situation is the so-called Five-Ring Model, named after John Warden, Colonel, U.S. Air Force. More recently, some proponents of effects-based operations (EBOs) adopted Barlow's National Elements of Value (NEV) model, named after Jason Barlow, Major, U.S. Air Force. The U.S. Joint Force Command (USJFCOM) is developing a so-called System of Systems Analysis (SoSA) model for the EBO concept. Common to all three models is that they view the enemy as a complex and adaptable system. Except for Warden's, the systems models only vaguely address the question of centers of gravity.

[1] Lewis Ware, "Some Observations of the Enemy as a System," *Airpower Journal* (Winter 1995), http://www.airpower.maxwell.af.mil/airchronicles/apj/ware.html, p. 2; a system is a functionally, physically, or behaviorally related group of elements that interact together as a whole; Joint Warfighting Center, Joint Doctrine Series, Pamphlet 7, *Operational Implications of Effects-based Operations (EBO)* (Norfolk, VA: United States Joint Forces Command, 17 November 2004), p. 2.

Warden's Five-Ring Model

The Five-Ring Model provides the basis for what Warden calls strategic paralysis through parallel attacks against the enemy's main sources of power at the strategic level. It provides the framework for target set analysis. Warden contends that to think strategically one must view the enemy as a "system" that is composed of numerous subsystems. In his view, the first thing to do is to view the enemy as a whole; the second step is to consider one's objectives; and the next step is to focus on what must happen to the enemy before one's objective become the enemy's objective.[2]

Needless to say, this logic is deeply flawed. Normally, one should determine the objective first, then identify and assess all the aspects of the military situation—friendly, the enemy, and neutral-and after that, determine which method of combat force employment one should select to accomplish a given military objective. Also, the enemy has a will of his own; hence, it is highly questionable whether any enemy, no matter how weak, would in fact choose his objectives to be identical with the attacker's objectives.

Warden claims that systems are collections of many disparate items that relate to each other in some way; they also have some common characteristics. They all have energy, the need for information in order to function, and resistance to change; they do not instantly react to the force applied against them (hysteresis effect); they are similarly organized; and they contain centers of gravity.[3] He perceives the enemy's system of systems as consisting of physical and psychological sides. He contends that the first is theoretically knowable. With perfect intelligence, one could be aware of every physical thing in an enemy entity that contributes to its capability as a system; physical things are determinate, and in the aggregate, generally don't change much.[4] Yet this statement is highly suspect. First, there is rarely, if ever, perfect intelligence. This is true at all levels of war and at the operational and strategic levels of war in particular. Second, even so-called tangible elements of a situation are not always knowable. Among other things, information on some physical aspect of a situation can be intentionally or unintentionally misinterpreted or misunderstood. The enemy can hide physical things from one's observation, or he can feed one partially or completely wrong information. Also, there are the true facts of a situation, but there are also one's impressions of the situation, which are highly subjective. It is the human element that complicates any military situation, especially at the strategic and operational levels, even when dealing with purely physical aspects.

Warden firmly believes that the emphasis in conducting a strategic attack should be on the enemy's physical side, because it is determinate and one can be fairly sure of what will happen if

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[2] Christopher Bence, "Warden vs. Pape," *Air & Space Power Chronicles—Chronicles Online Journal*, 28 February 2000, p. 2.

[3] John A. Warden III, "Thinking and Acting Strategically in Peace and War," in *Strategische Studien I. Strategische Denken in 21, Jahhundert,* (Zurich: Militaerakademie an der ETH), no. 3, 2006, p. 25.

[4] Ibid., p. 17.

one's actions are successful. The same is not true, in his view, of the enemy's psychological side, because it is indeterminate. Warden also insists that one should not neglect the psychological side in war. There are cases in which one cannot do much against the physical side but the psychological side is open to one's attack. Yet it is simply wrong to believe that somehow the physical and psychological aspects of war can be neatly differentiated from each other; both aspects are meshed and cannot be considered in isolation. One also must accept the fact that no one can precisely predict what effect one's actions will have on the enemy's psychological side.[5]

Warden correctly notes that the psychological aspects of a situation are only slightly knowable; they are indeterminate and can change dramatically in a given timeframe.[6] However, he errs in contending that the advent of airpower and precision weapons made it possible to destroy the physical side of the enemy, as past wars have clearly demonstrated. Warden contends that although morale, friction, and fog of war have not disappeared, they can be considered separately from the physical side of the situation.[7] This is one of his major errors, because the tangible and intangible aspects of a situation are closely intertwined and mutually affect one another.
Warden generally ignores the importance of intangible or hard-to-quantify elements in his system of systems. He justifies ignoring intangibles by insisting that if one destroys the enemy's physical side; all the moral factors combined will not change the outcome.[8] This view is clearly wrong—there are many instances in which moral and psychological factors did in fact decide the outcome of a conflict or war. As one example, The Vietnam War proved that inflicting physical destruction may not necessarily lead to one's victory.

The essence of Warden's systems approach is the Five-Ring Model. He believes that any modern state, business organization, military, terrorist organization, or criminal gang can be seen as consisting of a system of five interrelated rings that enable it to perform its intended function (see Figure 1).[9] All systems are arranged in the same way. They have the "leadership" elements that provide general direction; the "processes" (formerly "organic essentials") elements, which convert energy from one to another; the elements of the "physical infrastructure;" the

[5] Ibid., p. 18.

[6] Ibid., "Strategy and System Thinking," *Air Power Revue der Schweizer Armee*, No. 3, Addendum to *Allgemeine Schweizerische Militaerische Zeitschrift* (ASMZ), 12 (December 2004), Ibid., pp. 17–18.

[7] Ibid., "The Enemy as a System," *Airpower Journal* (Spring 1995), http://www.airpower.maxwell.af.mil/airchronicles/apj/warden.html, p. 2.

[8] Bence, "Warden vs. Pape," p. 3.

[9] Dale C. Eikmeier, *The Center of Gravity Debate Resolved* (Fort Leavenworth, KS: School of Advanced Military Studies, U.S. Army Command and General Staff College, 16 December 1998), p. 27.

"population" elements; and what he now calls "agents" (formerly "fielded forces"), consisting of some demographic groups and agents.[10]

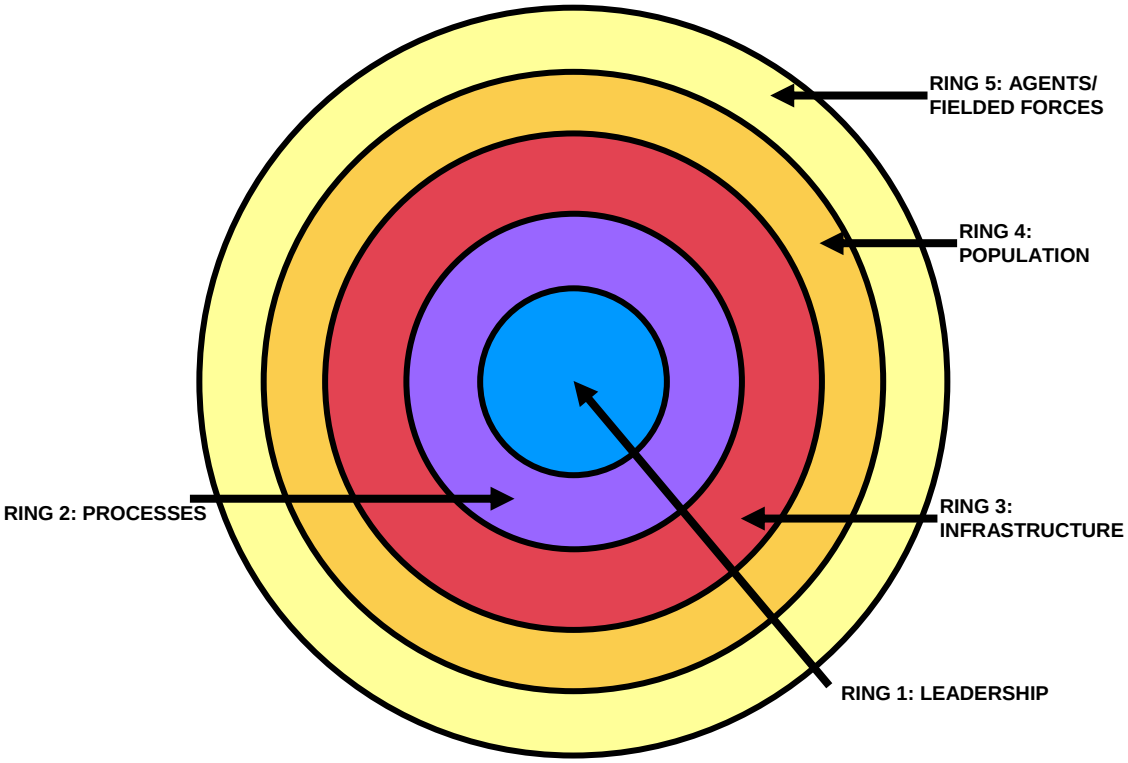

Figure 1: Warden's Five-Ring Model (2004)

The first ring, located in the very center of a system of systems, is the *leadership* ring. It provides direction, guidance, and control over the entire system. In Warden's view, the first ring alone is absolutely essential, in the sense that there can be no substitute for it and without it the body, even though technically alive, is no longer operating at the strategic level. It is also a defensive mechanism that forms the organism's protective capability, its ability to defend itself.[11] The second ring—*processes*—encompasses raw materials, power generation facilities, etc.[12] It converts energy from one form to another. At the national level, this ring is composed of several

[10] Warden uses this term now because he subsequently applied his model to the business world; the term "agent," in his view, has a broader meaning and is somewhat preferable to the fielded forces; Warden, "Strategy and System Thinking," pp. 19–20.

[11] Cited in D. F. Stitt, *Centers of Gravity Are Relevant Today* (Toronto: Canadian Forces College, CSC 30/CCEM 30, 30 April 2004), Ibid., p. 18.

[12] Bence, "Warden vs. Pape," p. 7.

subsystems, such as electricity, petroleum, communications, finance, transportation, agriculture, and so on.[13] Warden explains that the number of targets in this ring, even for a large state, is reasonably small, and each of the targets in subsystems, such as power production and petroleum refining, is fragile.[14]

The third ring, *infrastructure*, includes at the national level the enemy's transportation system that moves civil and military goods. It includes all the rail lines, airlines, bridges, airfields, ports, and a number of other similar systems. It contains the majority of the country's industry. This ring has more redundancy than the processes ring. Hence, a greater effort may be required to do enough damage to have an effect.[15]

In Warden's view, the fourth ring, *population*, is very difficult to target directly because of the moral issues involved.[16] Also, there are too many targets in this ring.[17] In many cases, especially in police states, the population may be willing to suffer grievously before it will turn on its own government.[18]

The fifth ring, *agents*, is the least critical, and at the same time the most hardened by design.[19] Agents execute policy but do not have the authority to create it. They are instruments of the system.[20] They are important, but they are appendages of the state, are resistant to attack, can normally be reconstituted quickly by an intact state system, and are a means to an end. In Warden's view, agents are not a starting point for war thinking.[21] Their function is to protect their own rings or to threaten those of an enemy.

Warden explains that his five rings are arranged in descending order of criticality. The leadership ring in the center of the model is the most important of all, while the least important, in his view,

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[13] Warden, "Strategy and System Thinking," p. 20.

[14] Warden, "The Enemy as a System," p. 8.

[15] Ibid.

[16] Bence, "Warden vs. Pape," p. 7.

[17] Warden, "Strategy and System Thinking," p. 20.

[18] Ibid., "The Enemy as a System," p. 8.

[19] Bence, "Warden vs. Pape," p. 7.

[20] Warden, "Strategy and System Thinking," p. 20.

[21] Ibid.

is the agents ring.[22] In his system of systems, if one ring is affected, it adversely affects the rest of the system.[23] Each ring has in turn its own set of rings that expands to reveal more details as the system is further aggregated. The initial set of rings constitutes the enemy's center of gravity; the subrings are called target systems and are further broken down into target sets, which are used to identify specific targets.[24]

Warden also applied his Five-Ring Model to the operational level of war. The only difference is that each of the rings pertains directly to military sources of power. For example, the leadership ring consists of the enemy's commander plus the C3 systems. The commander is the operational center of gravity, because he is the only one who can make a decision to, as Warden wrote, "concede something to the enemy." The processes ring also includes military logistics. The infrastructure ring includes roads, rails, communications lines, and pipelines. The fifth ring at the operational level is enemy forces—troops, ships, and aircraft; it is the hardest to reduce. Warden asserts that any campaign focused on the fifth ring will be the longest and bloodiest for both sides. Yet he acknowledges that sometimes it is necessary to concentrate on the fifth ring to reduce it to some extent in order to reach inner operational or strategic rings.[25]

Warden contends that once the five-ring pattern as a system is understood, it is easy to find centers of gravity for any system.[26] He claims that if one can destroy or neutralize the leadership ring, the entire organization is incapacitated or decapitated. Hence, one's strategic objective is to force the leadership to make concessions due to the force applied to itself or the rest of the system.[27] Warden insists that by eliminating or neutralizing leadership, the rest of the system becomes a useless appendage incapable of functioning.[28] However, this assertion is unproven. Also, not all systems have leadership as the most critical strength.

Warden explained that targets are not independent entities but rather are part of a system. He contended that everything is part of a system, and every action takes place in a system. Hence, an

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[22] Eikmeier, *The Center of Gravity Debate Resolved*, p. 27.

[23] Bence, "Warden vs. Pape," p. 2.

[24] Concept of Operations for Effects Based Operations, prepared by Dr. Morris "Buster" McCrabb, OPR Dan Fayette, AFRL/IFTB, pp. 11–12.

[25] Warden, "The Enemy as a System," pp. 11–12.

[26] Ibid., "Strategy and System Thinking," pp. 20–21.

[27] Bence, "Warden vs. Pape," p. 2.

[28] Ibid., p. 3.

action against one target will have some impact on other targets.[29] Any system has many targets, but out of these thousands of targets, some small number will be far more important and valuable than the rest. He called these more important targets centers of gravity, because when they are affected, they have a disproportionate impact on the rest of the system. Initially, a center of gravity for Warden was that point where the enemy is most vulnerable and the point where an attack would have the best chance of being decisive.[30] He later apparently changed his views, warning that one should not confuse vulnerabilities and centers of gravity.[31] Warden recently explained that centers of gravity are those "handfuls of things in a system which have disproportionate impact on the system." They are the "leverage points" in the system.[32] For him, an enemy vulnerability is of interest only in relation to the attack on the enemy's center of gravity.[33]

Each ring in Warden's model consists of one or more centers of gravity, which may be directly or indirectly tied to the innermost ring.[34] He believes that each ring is also a vulnerability.[35] Within each ring exists a center of gravity or collection of centers of gravity. If these centers of gravity are destroyed or neutralized, the effective functioning of the ring ceases. This, in turn, would impact the entire system in a more or less significant way. To accurately identify these hubs within each ring, any given ring can be divided into five subrings, each having the same name as the five main rings. If necessary, each of these five subrings can be divided again into five more subrings "until the true center of gravity surfaces."[36]

Warden explains that center of gravity is simple in concept but difficult in execution because of the likelihood that more than one center of gravity exists at any time and that each center has some kind of effect on the others.[37] One center of gravity of any post-agrarian state is the power

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[29] Warden, "Thinking and Acting Strategically in Peace and War," p. 24.

[30] David S. Fadok, *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis* (Maxwell AFB, AL: School of Advanced Airpower Studies, Air University Press, February 1995),

[31] Warden, "Strategy and System Thinking," p. 21.

[32] Warden, "Thinking and Acting Strategically in Peace and War," p. 27.

[33] Ibid., "Strategy and System Thinking," p. 21.

[34] Bence, "Warden vs. Pape," p. 2.

[35] Eikmeier, *The Center of Gravity Debate Resolved,* p. 27.

[36] Fadok, *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis*, p. 25.

[37] Warden, "The Enemy as a System," p. 7.

generation system; without electric power, production of civil and military goods, distribution of food and other essentials, civil and military communications, and life in general become difficult to impossible. Unless the stakes in the war are very high, most states will make desired concessions if their power generation system is put under sufficient pressure or actually destroyed. In his view, the prosecution of war for such states would be extraordinarily difficult, especially if the power system is shut down quickly, in days rather than months or years.[38] However, the power generation system is actually one of the sustainers—not a center of gravity—and if open to enemy attack it can become a critical vulnerability. In short, the power generation system, although critical to the functioning of a state, is not the enemy's center of gravity.

Warden insists that a commander should attack a center of gravity as close as possible to the leadership ring. Yet, in some cases, a commander might be forced to deal with the enemy's field forces, either because he cannot reach a strategic center of gravity without first removing enemy defenses, or because the enemy protects his strategic or operational centers of gravity, or because the commander's own political leadership will not allow him to attack the enemy's strategic center of gravity.[39] Warden implies that the destruction or neutralization of the leadership center of gravity would produce a total physical paralysis of the system, while successful attack upon centers of gravity within other rings would produce only a partial physical paralysis but would place unbearable psychological pressure upon the leadership.[40]

Warden explains that his Five-Ring Model consists of a number of nodes and links. If one wants to affect a system like the Internet, one gets far more leverage by identifying and then affecting the nodes with a lot of links than by targeting the ones with only one or two links. If something positive or negative happens to a node with just one link, the system hardly notices that anything has happened.[41] Yet one should think that if a system depends on a single or a few nodes, it is less robust than one with many links. Hence, it would also be more vulnerable to the enemy's decapitation.

Warden's ring model is highly useful as a framework for defining target sets for the most effective application of air power. However, no war can ultimately be won solely by the use of airpower unless the strategic objective is predominantly or exclusively political, diplomatic, or psychological, as the example of the Kosovo Crisis of 1999 (Operation Allied Force) demonstrates.

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[38]Ibid.

[39] Ibid., p. 11.

[40] Fadok, *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis*, p. 25.

[41] Warden, "Strategy and System Thinking," p. 19.

Warden's system of five rings is rigid and hence highly predictable to the enemy. Warden also has a rather simplistic and essentially unproven view that an opponent can be defeated through exclusive attack upon the physical components of his power: If the physical power is reduced to zero and morale remains at 100 percent, the enemy's combat effectiveness will be zero. Yet the total reduction of the enemy's physical powers to resist is a rare event. There are also moral concerns in trying to achieve such an extreme objective. In practical terms, total destruction of the enemy is normally not very useful because of the unintended consequences it engenders.[42]

Another problem with Warden's explanation of his Five-Ring Model is that the enemy is essentially a target of one's attack. The enemy is essentially lifeless, passive, and unable or unwilling to respond in any meaningful way to the attacker's actions. Apparently, the fog of war or friction, so pervasive in real war, plays a small role, if any, in Warden's paradigm. Warden also makes some highly dubious claims that in the so-called parallel warfare he advocates, the possibility of enemy reaction will be eliminated at the strategic and operational levels.[43]
The Five-Ring Model presupposes the existence of a complex organism whose various parts are linked in such a way that the organism functions as a synergistic whole. It is simplistic to insist that because the rings are linked organically in descending order of importance, the degradation or destruction of any ring must necessarily have a negative impact on all the other rings. Although that could conceivably happen, the five-ring theory does not demonstrate empirically, in terms of a cause-and-effect relationship, why such a chain of event would actually occur. The Five-Ring Model also falsely assumes that links between events are causal and direct. In reality, they are not. They only appear to be connected by an observable sequence of time.[44]

Barlow's NEV Model

Some proponents of effects-based planning have adopted Barlow's National Elements of Value (NEV) model. This systems approach to center of gravity is in many ways very similar to Warden's reductionist Five-Ring Model (see Figure 2). The most current situation of the enemy, the allies and the neutrals is depicted as a system. It encompasses the essential political, military, economic, information, and infrastructure elements. They are all portrayed as consisting of a network of nodes and their links. In contrast to Warden's five rings, Barlow identified seven NEVs: leadership, armed forces, education, alliances, communications, transportation, and industry. The size of each NEV is related to its importance to the system, while the thickness of the links between various NEVs relates to the importance of the connection. Each NEV represents a strategic center of gravity.[45]

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[42] Fadok, *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis*, p. 29.

[43] Ibid.

[44] Ware, "Some Observations of the Enemy as a System," pp. 3-4..

[45] AFRL's Information Directorate, Information Technology Division, Dynamic Command and Control Branch, Rome, NY, *Effect-Based Operations*, http://www.afrlhorizons.com/Briefs/June01/IF00015.html, p. 4.

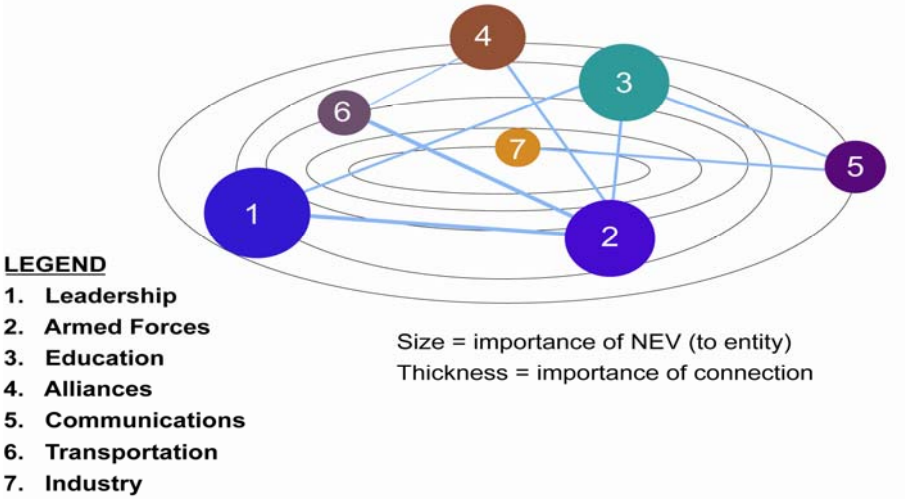

Figure 2: Barlow's National Elements of Value (NEV) System with Interlinking and Variable Lines of Influence

In the NEV model the focus is on understanding what are called key relationships, dependencies, and vulnerabilities. Then the leverage points to influence capabilities, perceptions, decision making, and behavior are identified. A system construct is a means to identify potential sources from which to gain indicators about and warning of adversary action. It is a checklist against which to build an assessment plan to evaluate the potential impact of executing one's planned actions. It allows a broadening of one's options to achieve objectives and focus limited resources.

Systems-of-Systems Analysis (SoSA)

This systems approach for evaluating what is called the "operational environment" is in its essence a variation of Warden's systems approach to warfare. It is being adopted by U.S. joint doctrine. The operational environment is defined as a composite of the elements, conditions, and influences that affect the employment of resources and capabilities and that bear on the decisions of the unit commander. The main aspects of the operational environment are currently political, military, economic, social, infrastructure, and information (PMESII) systems (see Figure 3).[46] Supposedly, SoSA enables a systemic situational awareness and understanding of the enemy and the operational environment.[47]

[46] Joint Warfighting Center, Joint Doctrine Series, Pamphlet 7, *Operational Implications of Effects-based Operations (EBO)* (Norfolk, VA: United States Joint Forces Command, 17 November 2004), p. 2.

[47] Ibid., p. 6.

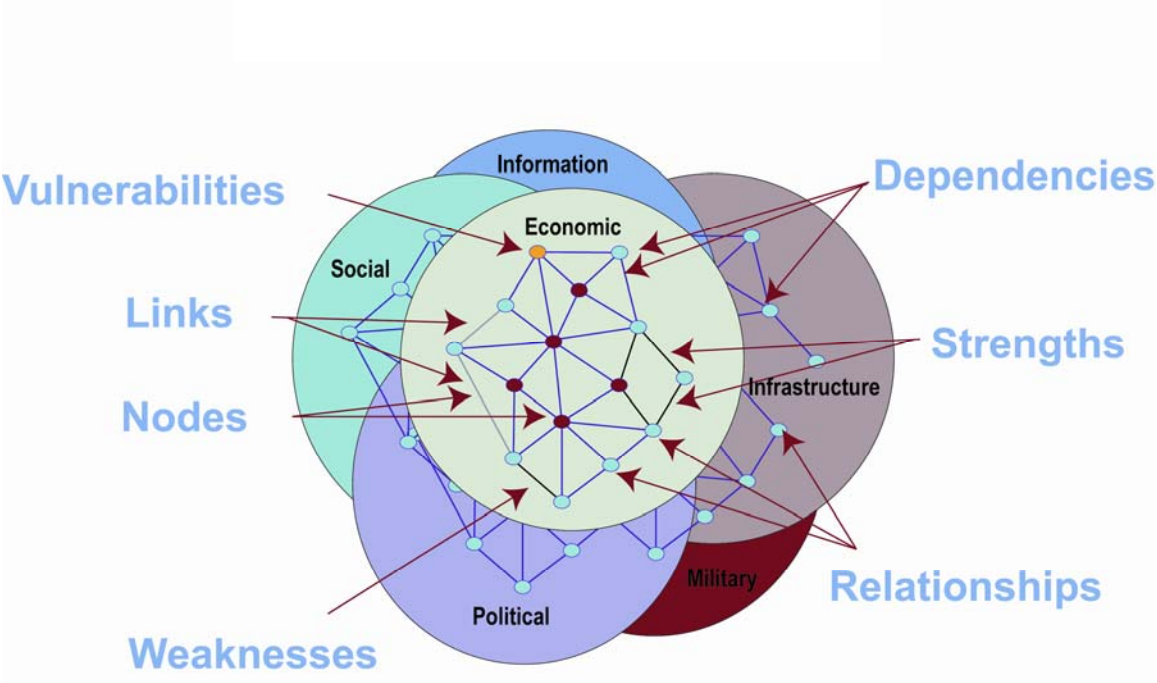

Figure 3: System of Systems Analysis

SoSA's proponents emphasize a multidimensional approach to understanding the battlespace, based on an analysis of six interrelated PMESII systems. Each of these systems consists of nodes (which may be a person, place, or physical thing that is a fundamental component of the system) and links (the behavioral, physical, or functional relationships between the nodes). SoSA identifies the relationships between nodes within individual systems and across systems. The nodes and associated links are then targeted for diplomatic, information, military, and economic (DIME) actions to influence or change system behavior and capabilities in order to achieve desired objectives. SoSA produces a nodal analysis that, together with effects development, forms the basis for coupling nodes to effects, actions to nodes, and resources to established effects-nodes-action linkages.[48]

The systems approach to analyzing the situation is overly simplistic. Its advocates apparently ignore the reality that the tangible and intangible elements of the situation cannot be simply reduced to nodes and links. The human factor is the key element in analyzing the situation at any level. The higher the level of war, the more complex the interplay among various intangible elements of the situation. Military and nonmilitary sources of power have both tangible and intangible elements. The tangible elements of the situation are for the most part measurable in some way. Nevertheless, tangible elements of combat potential or power can be either partly known or completely unknown.

[48] Ibid., p. 10.

In contrast to tangibles, intangibles are hard or even impossible to quantify with any degree of precision. Intangibles pertain for the most part to human elements, such as leadership, command and control, morale and discipline, and training. Some of these elements, such as training and combat readiness, can be evaluated in very broad terms: low, medium, high, or excellent. Other intangible elements—such as leadership, will to fight, morale and discipline, small-unit cohesion, combat motivation, and doctrine—are extremely difficult to quantify with any degree of precision or confidence.

At the strategic level, the quality of the top leadership and its future intentions and reactions are difficult, if not impossible, to evaluate. Likewise, such intangible elements such as will to fight, degree of public support for war, or cohesion of an alliance/coalition can be evaluated only in broad terms. The effectiveness of military force is also influenced by the overall posture—offensive or defensive—and the effects of the physical environment, weather, and seasonal factors. Because the factor of force has so many unquantifiable elements at any level, often too much emphasis is given to a simple tabulation of forces, weapons, and equipment.

Despite the widely held belief that tangible elements can be quantified, this is actually not always the case. The tangible and intangible elements of the factor of force are usually mixed. This is especially true in the case of forces employed at the operational and strategic levels of war. Additionally, friction and the fog of war are ever-present. Tangible factors can be properly or improperly evaluated; they can be changed over time; and they can be intentionally or unconsciously falsely reported. They can be falsely understood because of emotions of fear, hate, confidence, fatigue, and nervous stress. Tangible elements can also be falsely evaluated. For example, the number or size of enemy forces or weapons/equipment might be accurately observed or obtained but falsely reported. Information received might be accurate but be wrongly interpreted by commanders and their staffs. This can occur intentionally or unintentionally, due to incompetence, lack of operations security, or treason. The commander can falsely evaluate the enemy's capabilities or intentions. Misunderstandings between commanders and subordinates are frequent occurrences in combat; they cannot be predicted or quantified. The breakdown of weapons or technical equipment can occur at any time. The effects of atmospheric influences cannot usually be measured precisely. Except in some rare cases, natural events cannot be timely predicted. Hence, the unreliability of humans and technology considerably affects the performance of the factor of force on both sides in a conflict. The boundaries between tangible and intangible factors are in the area of chance and are fluid.[49]

The Clausewitzian friction and fog of war are inherent features of warfare at any level. They also play a considerable role in the conversion of one's available combat potential into combat power. Friction consists of the infinite number of unforeseen things, large and small, that interfere with

[49] August Winter, "Waegbares und Unwaegbares bei der Entstehung von Fuehrungsentschluessen" (I) *Wehrkunde* 3 (March 1965), p. 117.

all activities in war.[50] It encompasses uncertainties, errors, accidents, technical difficulties, and the unforeseen, and their effects on one's decisions, morale, and actions.[51] Clausewitz wrote that the most serious source of friction in war is the difficulty of accurate recognition. This, in turn, makes things appear entirely different from what one had expected. [52] He also emphasized that friction in war cannot be reduced, as in mechanics, to a few points. Friction is everywhere in contact with chances, and brings about effects that cannot be measured because they are largely due to chance.[53]

Because combat is a clash of wills, uncertainties and unknowns abound. This so-called fog of war, when combined with friction, creates ambiguities in which a commander must make his decisions. The higher the level of war, the more uncertainties the military situation entails. The chances of achieving surprise and deception increase as the fog of war increases. Clausewitz wrote that the only situation the commander knows fully is his own. He knows the enemy's situation only from unreliable intelligence. It is human nature to either underestimate or overestimate the enemy's strengths.[54] The effectiveness of military forces is reduced when decisions are made—as they often are—on the basis of imperfect, incomplete, or even false information. The fog of war is the main factor that makes some commanders willing to take high risks and others extremely cautious in making their decisions.

Effects-based warfare advocates apparently believe in the great value of the concept of center of gravity for sound planning. Yet, like Warden, they, with their PMESII construct, believe that any system has multiple centers of gravity. The purpose of SoSA is to identify "adversary" and friendly centers of gravity, to include key systems, nodes, and links and their relationships to each other. In the view of proponents of effects-based warfare, centers of gravity in a given system may consist of a "key node," but typically they will encompass a number of key nodes and links that comprise a subsystem within a system. Their rather rigid and reductionist view of the situation has its counterpart in the view of warfare of the proponents of the mathematical or geometrical school prevalent in Europe just prior to the French Revolution and the Napoleonic Wars.

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[50]. Charles D. Franklin, *Time, Space, and Mass at the Operational Level of War: The Dynamics of the Culminating Point* (Fort Leavenworth, KS: School of Advanced Military Studies, U.S. Army Command and General Staff College, 28 April 1988), p. 9.

[51] Peter Paret, "Clausewitz," in Paret, editor, *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* (Princeton, NJ: Princeton University Press, 1986), p. 202.

[52] Carl von Clausewitz, *On War*; edited and translated by Michael Howard and Peter Paret (New York, NY: Alfred A. Knopf, 1993), p. 137.

[53] Ibid., p. 139.

[54] Ibid., p. 95.

This school focused almost exclusively on various geometrical constructs and in the process overemphasized their importance in warfare. The art of war was based on possessing and then using a base of operations, supply depots, decisive points, and lines of operations. Among the key considerations were angles at which various lines linking bases, decisive points, and objects crossed each other. One of the leading proponents of that school, the Prussian military theoretician Adam Heinrich Dietrich von Buelow (1757–1807), wrote the book *Spirit of the New War System* (*Geist des Neueren Kriegssystems*), published in 1799 and 1805 (2nd ed.). Clausewitz was one of the harshest critics of Buelow and the proponents of the mathematical school. He observed that while various individual elements of their concept, such as base of operation, were solidly based, they did violence to the facts in the manner in which they described these elements. This, in his view, made their concepts "completely useless."[55]

The advocates of effects-based warfare contend that key nodes in a system are related to "a strategic or operational effect or center of gravity." To make the situation more confusing, they claim that key nodes "may become decisive points for military operations."[56] In short, they imply that effects, centers of gravity, and decisive points have the same meaning. Proponents of the effects-based approach also explain that a center of gravity would typically encompass a number of key nodes and links that comprise a subsystem within a system. The number of links to a node or set of nodes and the strength of those links can be indicators of a potential center of gravity. Advocates also clearly imply that there are numerous centers of gravity.[57]

Nowhere do advocates of the effects-based approach link the objective to be accomplished with the corresponding center of gravity. Yet a center of gravity cannot be considered in isolation from the objective; it is the objective that determines the situation and, subsequently, the level and scope of the analysis of the enemy's and friendly critical strengths and weaknesses. A center of gravity is invariably found among enemy or friendly critical strengths, not critical weaknesses or critical vulnerabilities. Hence, a center of gravity is not a location/place, some critical weakness/vulnerability, or a decisive point. It is also not found among those critical strengths that lack the capability to endanger, physically or otherwise, the enemy's center of gravity, such as logistics, intelligence, C4I nodes, etc. If the center of gravity is disconnected from the objective, as it is in SoSA, then there is no larger purpose to which everything must be subordinated.

Also, the objectives limit the number of centers of gravity against which the major part of one's efforts must be directed. The higher the level of war, the fewer the objectives to be accomplished, and the fewer the centers of gravity. The entire concept of center of gravity loses its meaning when a large number of centers of gravity is determined. Also, the disconnect

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[55] Ibid., p. 156.

[56] *Commander's Handbook for an Effects-Based Approach to Joint Operations* ((Norfolk, VA: Joint Concept Development and Experimentation Directorate, Standing Joint Force Headquarters, USJFCOM, January 2006), p. II-3.

[57] Ibid., p. II-9.

between the objective and the corresponding center of gravity makes it difficult or impossible to make a determination as to which center of gravity at the same level of war is more important than the others. Another serious problem with the systems approach is that the focus is entirely on the enemy's center of gravity. Apparently, no thought is given to the critical importance of analyzing friendly critical strengths and weaknesses, determining friendly centers of gravity, and then providing sufficient resources to protect them.

Conclusion

The systems approach for evaluating a military situation is essentially the air force concept of determining target sets and specific targets for attack. It has been proved a highly practical and effective way of analyzing target categories and sets for the most effective use of one's airpower. However, a method valid at the tactical level is not necessarily sound for the operational and strategic levels of war. The methods of analyzing the target sets are different at these two levels of war, where hard-to-quantify or unquantifiable aspects of the situation predominate. The physical aspects of warfare cannot be neatly separated from psychological aspects or, even worse, simply ignored.

The enemy cannot be viewed as a system of systems. Humans are not machines. They do not behave the way one wants them to behave. The enemy has a will of his own and is bound to respond to one's action, regardless of one's real or perceived superiority. The enemy cannot be considered completely devoid of emotions and irrational behavior. Hence, attempts to identify so-called nodes and to arbitrarily assign values or importance to links between various nodes might be intellectually challenging, but they are not very useful. In fact, System-of-Systems Analysis proponents are trying to take the "art" out of warfare and substitute "science." This is not only futile but dangerous.

The systems approach to determining centers of gravity is deeply flawed. No matter what military action is contemplated, it must be part of something larger and more important. Hence, a center of gravity cannot be considered in isolation from the military objective to be accomplished. The number of centers of gravity is directly related to the number of objectives one intends to accomplish. The mission and situation form the very basic of any military action. One cannot simply view the enemy, friendlies, or neutrals and arbitrarily dissect a situation into five rings or seven so-called NEVs. Every situation is different and is constantly changing.

The System-of-Systems Analysis approach to war fighting is overly rigid and predictable. In practice, such a concept is bound to fail when dealing with resourceful and skillful enemies. Any systems approach is inherently "reductionist"—that is, it seeks to reduce the situation to a number of basic parts and simple elements. In its essence it is not much different from the emphasis the failed mathematical school of warfare gave to various lines, points, and angles. Certainly the reductionist approach greatly simplifies the analysts' problem, but it does not necessarily result in a sound assessment of a given situation; more likely, the result would be just the opposite.

There is no greater danger than to put too much faith in technology and various assertions made without proof. Buzzwords and the proliferation of various acronyms are not a substitute for

sound and deep thinking. The military situation can be properly evaluated only if one tries to properly assess all its aspects and the human factor in particular. This process cannot be replaced by a highly rigid, architecture-like process like SoSA. There is no substitute for experience, judgment, and wisdom in determining both enemy and friendly centers of gravity. This is largely an art and not a science and is not going to change any time in the future.

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The Misapplication of Air Power and its Effects at the Strategic Level

By
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As an outgrowth of the creative imagination of some visionary builders, the airplane embodied the hope of many enthusiasts who deeply believed that they, finally, found the key for rapid victory in war. By overestimating the capability of the new weapon and choosing targets without considering strategic and operational objectives, several strategists and even military theoreticians created the impression that the airplane was an "oversold stock" since it did not meet expectations during World War I.

Another category of military experts, people generally with a limited creative imagination, exerted great efforts to create, and succeeded for a rather long time in expanding, a false impression that air power was "long-range artillery" and that it should, therefore, be particularly employed in support of ground forces and not to accomplish missions directed towards strategic purposes.

Practice mostly disproved the theories of those who overrated the impact of the airplane as well as those who lacked imagination and creativity, and also limited the initiative of some military commanders' to employ air force congruent with its combat capability. Over the years, aviation has evolved conceptually, technologically and structurally into Air/Aerospace Forces. For the last few decades, military experts have started to make use of a new concept clearly expressed by "Air Power" which is defined by the ability of a country or alliance to project air power.

Evolutionary process from aviation, through Air (Aerospace) Forces, to Air (Aerospace) Power has been rather sinuous and marked by a chain of events that led to significant negative consequences, both immediate and long term. In this era of information and continuous learning we must recall several lessons history taught us and which must not be forgotten. Otherwise, history will teach us again and the price to be paid may include many human lives and damages along with, most frequently, loss of the battle, operation or war.

Aviation: Blitzkrieg or "Long-Range Artillery"

Designed as an operation of armored vehicles and assault troops supported by fighters and fighter-bombers, Blitzkrieg was a German experiment during the civil war in Spain and produced spectacular effects during World War II in the campaigns in Poland and France. Deafened by euphoric shouts of victory, few Nazi leaders could remember strategy is more than a sum of operational actions; the error of the concept was more obvious when Germany extended the front eastwards, to the USSR, and southwards, to Africa. That was the time when the need for strategic aircraft to perform reconnaissance, transport and bombing deep into enemy lines was most felt. Front extension called forth an increase in airlift requirements as land and maritime assets were

incapable of providing the necessary weapons, ammunitions, materials and manning within time limits and for the areas required by theater commanders. Lack of adequate airlift assets was the result of both Nazi warfare concept, firmly entrenched in operational field, and the difference between economic potential of Germany and its allies on one hand and the USA, USSR, Great Britain, France and their allies, on the other. The first signs showing Nazism decay appeared during the "Battle of Britain" from May to November 1940, when the Luftwaffe did not succeed in achieving air supremacy in spite of its superiority in numbers.

With Operation Barbarossa, the attack on the Soviet Union, 22 June 1941, the first remarkable results of air attacks on Soviet airfields led to establishing air supremacy on the Eastern front and created the illusion of a new means for rapid military victory. While land forces were moving eastwards, the Luftwaffe was constrained to act more and more as "long-range artillery" neglecting the strategic tasks of maintaining air supremacy and air interdiction. This concept gradually resulted in losing air supremacy, the strategic initiative, and ultimately the war.

Vietnam: Conventional Air Tactics to Combat Guerrillas

During the Vietnam War, South Vietnam forces, supported by the United States and their allies in Southeast Asia, opposed Vietnamese guerillas (Vietcong). The Vietcong received direct support from North Vietnam and indirect support from China, the USSR and other countries belonging to the "socialist block."

The experience from the Korean War (1950-1953) instilled a fear of an open war between the United States and the Soviet Union which had the potential of escalating to nuclear war and which therefore impacted the US political decision-makers' concept for conducting military operations. To avoid escalation of the war and also Soviet and Chinese direct involvement in military operations, they directed in-theatre military commanders to request approval of their major decisions.

This way of thinking and acting proved ineffective because, on one hand, it increased the probability of losing the advantages brought about by the course of action and, on the other hand, it denied the military commanders their right to initiative, turning them from decision-makers into "decision transmitters" or simply executors. As a consequence of this situation, the Air Forces were operationally employed based on concepts, equipment, tactics required to fight a conventional ground force based on the Korean experience against guerillas. Such a policy caused reduced operational effectiveness of air assets. For example, B-52 bombers were used in air support tasks which resulted in heavy losses of life and equipment. As a result, the morale of American and South Vietnamese soldiers declined while the success of North Vietnam forces increased, culminating in the General Giap-led offensive operation and appearance of the terrible specter of an inglorious defeat.

To avoid being defeated and drive the North Vietnamese government to peace negotiations, "Operation Linebacker I" was launched from April to November 1972, marking the first adequate employment of the Air Forces in the war. It resulted in the destruction of airfields, command posts, antiaircraft artillery elements, surface-to-air missiles, depots, bridges, road and railway junctions, etc. Considering the situation, North Vietnamese leadership had to ask for

peace negotiations. Under the increasing pressure of public opinion against the war, the President of the United States accepted the North Vietnamese request.

North Vietnam tried to delay peace negotiations in Paris in order to replace their losses and recover the damages from the American air campaign. The Americans conducted Operation Linebacker II from 18-29 December 1972 to ensure North Vietnam abided by their commitments. President Nixon's goal was an "honorable peace" but military planners aimed at gaining victory by causing the economic and military destruction of North Vietnam. Operating for the first time almost without restriction against selected targets according to combat principles in correlation with a strategic goal, the Allied Air Forces succeeded in only 11 days in forcing North Vietnam back to the negotiating table to make peace with South Vietnam in March 1973. Thus, the ultimate political goal (honorable peace) was reached but not the military goal. The final result of the war generated a strong reaction of dissatisfaction among the military, particularly air personnel. They decided that the war was lost because the political leadership prevented them from fully doing their duty.

Air Power in the Yom Kippur War

After the Six Day War in 1967 ended in Israeli victory and occupation of the Sinai Peninsula, Gaza Strip, Golan Heights, and West Bank, both the winner and losers prepared for a new round that occurred in 1973. Reviewing the strategic background, the following conclusions are to be drawn:

- The Israelis had a superior Air Force and combat equipment; they had a capable ground based air defense system and highly trained personnel.

- In combat, they were at a disadvantage by the small dimension of their national territory; limited human resources so that they could not afford heavy losses; limited economic potential which did not enable sustained operations; and lack of respect towards Arabs.

- Arab forces were superior in numbers but inferior to the Israelis in combat equipment and personnel training.

- International public opinion still was under the impression of the Six Day War when Israel took Egypt by surprise with a successful air operation and which led to a rapid victory; a repetition of the events in1967 would have led to Israel isolation or at least an extremely reduced support.

The sides knew each other well and after a careful consideration Arab forces made the decision to launch a surprise attack with an offensive air operation. The ultimate goal of the war was to regain the territories lost in 1967. The air operational aim was to gain air supremacy. Therefore, the following tasks were assigned to Arab air forces:

- Destroy the forward positions of radars, antiaircraft artillery and surface-to-air missiles in the Sinai Peninsula and Golan Heights and gain limited control over the combat air space to prevent Israeli Air Forces (IAF) from capitalizing on their technical superiority;

- Force the IAF to scatter its efforts by operating in two theaters – Sinai and Golan – to diminishing their responsiveness;

- Strike IAF airfields and its logistic support elements to reduce its offensive potential;

- Focus air efforts on land support and employ air combat only in strategic depth or when ground based air defense within the combat area was unable to operate.

Arab military planners planned to start the war on Yom Kippur, a significant holy day in Israel, through an offensive air operation. However, the air strike employed only about 200 aircraft from 12 airfields while utilizing several other sites where radars, antiaircraft artillery surface-to-air missiles, land batteries and depots were located. Israeli sources concluded that further strikes were not carried out because of heavy losses (over 60 aircraft) and marginal point effects. Other sources said that the reason for not performing further strikes was that the first air attack accomplished the offensive air operation goals. The truth is likely to be known when the records are disclosed. Noteworthy is the fact that the initial plan of the Arabs changed and they deliberately gave up initiative and air force employment in offensive missions, thus limiting its capability and negatively affecting chances of gaining victory. The result was a truce, not a victory as the Arab participants planned. It has also to be noted that the truce conditions were detrimental to Arab forces. Therefore, the reasonable conclusion is that air force employment in mostly defensive tasks means a deliberate limitation of its capability which leads to the chance of victory being tipped to the enemy's favor.

Conclusions

We must learn the lessons history teaches us, or we will learn it again at the cost of human lives and combat equipment. The simplest and most beneficial way of avoiding errors and minimizing irretrievable losses is learning from others' experience. Although lessons learned represent a constant concern all over the world, learning appears to be more a desire than a real fact; otherwise how could someone explain why mistakes repeatedly occur. Recently Israeli air forces were employed against Hezbollah guerillas in Lebanon the same way the American air forces were employed in Vietnam. The lessons learned from the above include the following:

- Air force employment on mostly tactical missions will inevitably lead to losing air supremacy, strategic initiative and eventually the war.

- Aiming at an unattainable goal along with incompetence most frequently result in the wrong employment of an air force during war.

- No major war or conflict has been won without air supremacy and that is why it must be the primary task of a strategic commander.

- To assign only defensive tasks to air forces means to deliberately diminish their capability, to focus on the present rather than the future, and on the operational not strategic area. To use a metaphor, it is similar to keeping a dog chained when he is supposed to guard the entire yard.

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The Falluja Syndrome: Taking the Fight to the Enemy that Wasn't

By
Peter Harling

The Iraqi town of Falluja offers an excellent case study of how the US military in Iraq, by responding to threats in oblivion to a specific cultural and political context, exacerbated those very threats and thus created a much harder task for itself.

Much has been said about the US military's distaste for stabilization and reconstruction operations, its doctrinal gap pertaining to these issues, its particular lack of preparedness for "phase four" of Operation Iraqi Freedom, its human intelligence shortcomings, its foreign language deficiencies, and its overall cultural insensitivity. But the level of knowledge and assets needed to ensure a seamless transition from Saddam Hussein's rule of tyranny to a functional democracy was, if truth be told, fundamentally unattainable.

This is not to imply that simply "stuff happens" as Defense Secretary Donald Rumsfeld said of the crippling looting that followed the former regime's downfall. Success in "phase four" could have derived from more foresight and adaptability at the political, strategic and operational levels. The responsibility for failures, nevertheless, too often has been laid at the feet of the tactical player, whose personal qualities can't be expected to make up for the ambiguities or irrelevance of his assignments, inadequate training and equipment, insufficient resources, or the intrinsically fluid nature of post-conflict situations. The purpose of this article is therefore to illustrate how intuitive assumptions and routine behavior at the tactical echelon, filling in the void left by the absence of proper guidance percolating down from the political, strategic and operational heights may add up and generate effects that extend far beyond their limited initial focus.

What made Falluja, a relatively small provincial town of the governorate of al-Anbar, a symbol of resistance to the US presence in Iraq, requiring in 2004 a massive American onslaught to reestablish some degree of coalition—and central government—rule, and subsequently extreme measures in terms of population control? Falluja remains cordoned off and isolated, its inhabitants have been comprehensively screened and put on record, cars are banned, etc.

In fact, anti-US violence in Falluja can be traced back to as early as May 2003, even before the Iraqi armed forces and security apparatus were disbanded by Paul Bremer—a decision usually seen as the root cause of the insurgency's rapid escalation. A widely accepted interpretation of Falluja's insubordination and unruliness is that the town had long been both a former regime hotbed and a capital of radical Islam.

This article purports not only that both explanations are based on faulty assumptions, but that it was these faulty assumptions that led to a "self-fulfilling prophecy" effect. Interestingly, a candid observer circulating in Iraq immediately after the regime's demise could notice variations in the

overall attitude of US forces (regardless of the Army/Marine divide) according to the areas they where deployed in. The general expectation among US forces was that Sunni Arabs were regime loyalists and, as such, would be inherently hostile to any US presence, generating a far more defensive mindset than was perceptible in non-Sunni Arab zones. US forces were in part perceived accordingly. In Falluja, the first few weeks following the regime's collapse, and the *first few days* following the arrival in Falluja of the 82nd Airborne, the US unit charged with securing the town, were indeed decisive in setting the scene for Iraqi/US relations in the longer term.

In fact, Falluja, when the former regime fell, was in fact neither particularly a "Saddamist stronghold" nor a breeding ground for religious fanatics.

Undeniably, Falluja has long been renowned for its religious conservatism—it is, after all, nicknamed the city of mosques (Madinat al-Masajid). But this conservatism, overall, remains of a social and cultural character, rather than reflecting a militant bend—and the former regime made sure things stayed that way. Falluja thus bore the brunt of the regime's repression of the Muslim Brotherhood in the late 60's and the early 70's. The first cleric to be assassinated by Saddam Hussein's henchmen was a Sunni imam, 'Abdul 'Aziz al-Badr, who was tortured to death in 1969) Numerous military officers from Falluja were marginalized at this time due to their strong religious beliefs. In the 90's, the regime strived to contain or even eliminate local agitators belonging to a new salafist trend, including some future insurgent leaders such as 'Umar Hadid al-Muhammadi or 'Abdallah al-Janabi. Although one of the regime's foremost official clerics hailed from Falluja ('Abdul Latif al-Humayyim), he stood for mainstream Islam, and was instrumental in promoting Saddam Hussein's "Faith campaign", a policy designed to neutralize and "nationalize" Islam.

When it comes to Falluja as a hub of "Saddam loyalists", the same mixed picture arises. The strong tribal makeup of Falluja led to the co-optation in the former regime's security apparatus of some its most important tribes (al-Muhamida, Albu 'Isa, al-Zawba', Albu 'Alwan, as well as the Halbous and Alus clans). But some tribes were excluded—the Jumayla in particular suffered exclusion, for having been part of the previous dictatorship's powerbase. Being part of Saddam Hussein's powerbase also meant extremely high exposure to purges and humiliations of all kinds. The famous Albu Nimr tribe, based between Falluja and Ramadi, engaged in a cycle of reprisal killings with the regime after the gruesome assassination, in 1995, of one of its most distinguished members, Air Force General Muhammad Madhlum al-Dulaymi, who was arrested on suspicions of disloyalty and subsequently returned to his family cut up in pieces. The consequences of the ensuing feud were badly felt throughout the Dulaym tribal confederation, to which the Albu Nimr belongs.

Also needed here is a short discussion of the idea of a town lavished with privileges by the former regime. Whatever "privileges" were extended to Falluja inhabitants were both highly selective and dearly paid for. Absolute loyalty was expected in return for any form of sponsorship, however nominal, leading local chieftains, for example, to turn in clansmen pursued by the security apparatus, in contradiction with the most sacred traditions of tribal solidarity. Some local businessmen thrived through close interaction with the regime, such as the Humayim

family, following as similar pattern to the Kharbit or Ga'ud families from nearby Ramadi, all of whom are said to have contributed to funding the insurgency in Falluja in 2003 and 2004. But Falluja hardly ever was a major target for State investments in infrastructure. To date, its industrial capacities remain minimal. Up to the 2003 war, its economy relied rather on mom-and-pop stores and, above all, smuggling.

All in all, the prevailing frame-of-mind in Falluja before the war's outbreak was no doubt one of distrust toward the US, but also one of overriding lassitude, frustration and resentment inspired by the regime. The way the scale was tilting was illustrated during the 90's by various troubling signs of defiance, most notably friction between the regime and the tribes of al-Anbar.

Symptomatically, not a shot was fired in Falluja during the war in Saddam Hussein's defense. As the regime collapsed and its representatives went into hiding (even in Falluja), the town's religious and tribal figures set up a committee of elders to secure the city and ensure a smooth transition, while at the same time sending out a delegation to inform the US of Falluja's peaceful rendition. Saddam's early call upon his followers to rise up against the occupants was even formally rejected and denounced by Falluja's leaders in a joint statement—even though trouble between the US and the town's inhabitants had already began.

To understand how such violence could have been prevented, one has to understand what the Iraqi expectations were at the time of the coalition's deployment in Falluja. These expectations can be summed up as follows: a low military profile, a tangible reconstruction drive, and respect for existing structures—meaning coordination with the elders' committee, the only surviving authority and a genuine reflection of the town's social makeup and traditions. What happened instead came as a shock to inhabitants and leaders alike.

The US forces established a major base in the heart of the town, on the main street, heavily defended, and encroaching on the town's civilian infrastructure. The inhabitants thus immediately pointed out that the US had only days before been criticizing the former regime for using civilian infrastructure for military purposes. Outposts were also set up in residential neighborhoods with observation posts on their roofs, an insufferable behavior in the eyes of an extremely conservative society. Rumors instantly circulated accusing US soldiers of using vision devices that could see through walls and undress women. To make things worse, aggressive patrols in full body armor, weapons on the ready, were mounted throughout the city.

In terms of reconstruction, no clear perspectives were provided to the population. No particular recognition was afforded the committee of elders, which was clearly viewed by US forces with suspicion as the embodiment of an undesired, archaic order of affairs. From a US army standing point, priorities were still force protection, logistics and hot pursuit of the former regime's "last remnants," while stabilization and reconstruction activities were left to improvisation. This led to a degree of complacency toward looters: inhabitants even reported that US forces had actually facilitated their work by helping them into certain hangars.

In this context, what was initially a manageable incident degenerated into a vicious cycle of violence. What caused the incident in question was a small demonstration staged in front of one

of the schools used as an outpost which demonstrators wanted to see relocated. According to US reports, the protest had reflected pro-Saddam feelings. Portraits of the former President had been displayed, and shots had been heard, to which the soldiers had responded with lethal although legitimate force. Up to 20 people were killed, dozens others wounded. Various journalists claimed it had been a strictly peaceful and non-politicized rally. A sincere investigation would promptly have dispelled any controversy.

The author's own inquiry confirmed that posters of Saddam had indeed been on parade, and shots might well have resounded. But no impact whatsoever could be seen in the immediate aftermath of the event on the front of the school, no damage to the surrounding wall either. The garrisoned troops had obviously been under no pressing, critical threat, at least not threat that could have justified the level of response: buildings across the road were smattered with heavy machine gun rounds; people were killed inside their houses; and a car parked in its garage was hit by more than 70 bullets. Among the ordnance used were grenades and explosive bullets.

More importantly perhaps, similar demonstrations happened in Shiite zones without ever warranting the same response. In Diwaniya, a major recruiting hub for the former Iraqi army and nonetheless a 100% Shiite town, portraits of Saddam and "Baathist" slogans were also features of later protests staged against Paul Bremer's summary disbandment of military personnel. No incident was ever reported.

In Falluja, the US reaction of denial only alienated the population further. The above mentioned car was towed away by the 82nd Airborne before the media could arrive on site. Aggravating declarations were made to the press by US officials in Baghdad, while the local US commander remained essentially silent. No dialogue was initiated with local authorities or with the victims. No military official paid a visit to the town hospital until days after the event.

In response, new demonstrations occurred during the week, with more bloodshed. Then grenades were lobbed into the US headquarters in downtown Falluja. The US forces opted for a show of force. On the following Friday, tanks were positioned in front of every mosque. More patrols were mounted, with more aggressive assignments. Helicopter over flights at low altitude became routine. More muscle also meant further distraction from reconstruction efforts, and a breakdown in relations with local leaders.

This outcome was far from inevitable. At the end of the first week of violence, prayer leaders had in fact acted to prevent an escalation by calling upon their followers to come and pray, thereby instating a curfew of sorts to avoid greater bloodshed.

The point here is that the US military played a large part in creating the kind of hostility it expected in the first place. This came as a result of deeply ingrained assumptions regarding the Sunni Arab nature of the former regime. These basic assumptions were all the more decisive because no clear stabilization and reconstruction plan existed making for a vacuum conducive to the expression of preconceived ideas.

To conclude on the full bearing of such assumptions, one needs to go even further. There was, in essence, no such thing as a "Sunni Arab community" shaped by a common sense of identity and shared interests. There was no such thing as a "Sunni Triangle" that could be dealt with en bloc. Saddam Hussein's personal power was built at the expense of many of his presumed "natural allies". Powerful Sunni Arab tribes were expropriated from some of their lands, to close to Baghdad for the tyrant's comfort and many of their foremost members were publicly humiliated, ostracized, or purged for carrying too much weight not to become a threat. Saddam Hussein subverted the traditional hierarchy among the tribes of his hometown Tikrit, and within his very own tribe, to serve his particular purposes; he cracked down upon the core of Sunni Arab commanders hailing from Mosul and Baghdad, in order to promote a new generation of young, rural officers he could more readily control. By and large, Saddam cut off any head that dared surface above a sea of amorphous, interchangeable, and innocuous followers and he showed no scruples at doing away with those of his closest relatives who, for sound reasons or on a whim, lost his trust.

In no way should this description be understood as minimizing the sufferings of other components of Iraqi society, nor should these intense sufferings overshadow the true nature of this regime. Saddam was an equal-opportunity killer to say the least. Ample proof of Saddam Hussein's destructive rapport with his own kin was given after the regime's demise by the lack of obvious representatives for a Sunni Arab constituency that appeared more dislocated than its Shiite and Kurdish counterparts.

Ironically, the US-led coalition played a large part, through the establishment—de facto—of polarized relations with the different components of Iraqi society, in buttressing their specific and conflicting collective identities. The widespread sense of having been deposed, dispossessed, and disparaged in a political process serving what Sunni Arabs see as threatening agendas is a sentiment which followed to the regime's overthrow. Feeling "under siege" has come to be the primary building-block of an emerging, deeply resentful Sunni Arab identity, a fact that communication-savvy insurgent groups have incorporated as a key element of their propaganda efforts.

Sectarianism in Iraq was never a given, although mutual prejudices and distrust—however repressed—were rife long before the war. But US perceptions of Iraq's makeup were key to institutionalizing identity politics, thus inflaming the very sectarianism that has become the one major threat to US interests in Iraq.

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Sea Basing: A 21st Century Enabling Capability

By
Cary J. Krause

Sea basing is a concept being developed to project naval combat power ashore using the largest global common as a maneuver space and reducing the United States global anti-access concerns. The naval expeditionary power projection provided through sea basing is an effective joint force enabler for the 21st century security environment. However, in the current fiscally constrained budget, the integration of the lift necessary to fully deploy the Army via the sea base is not essential to the execution of the National Security Strategy.

As an emerging concept, sea basing exemplifies programs that require difficult budget and force planning decisions. Decisions need to be made by all the services for actions to be taken in a domain that in the past predominantly has been a naval realm. In essence, the magnitude of "being able to use the sea as a joint maneuver space, not just a naval maneuver space, ... is going to be one of the biggest engines for change."[1] Future sea basing is meant to be a Combatant Commander's joint force enabler by *closing the seams* within their Area of Responsibility. It is imperative for the budget and force planning decision making process to consider the employment of each of the services in order to optimize the effective joint combat power of the United States Armed Forces. At some point, however, a decision will have to be made to either fully fund, partially fund, or not fund sea basing and its integration within all Services. Additionally, decisions made on sea basing will have direct correlation with the funding of other programs.

Sea Basing

According to Thomas Hone, the Assistant Director of Risk Management, the Office of Force Transformation, sea basing is defined as the "elimination of the conceptual difference between operations on land and operations on or from the sea."[2] In the *Naval Transformation Roadmap 2003: Assured Access & Power Projection …From the Sea*, sea basing is defined as "the overarching transformational operating concept for projecting and sustaining naval power and joint forces which assures joint access by leveraging the operational maneuver of sovereign, distributed, and networked forces operating globally from the sea."[3] Within version 1.0 of the

[1] U.S. Department of Defense, "Sea Basing: Poised for Takeoff," *Transformation Trends*, Thomas Hone, Assistant Director, Risk Management, Office of Force Transformation, accessed 20 December 2005, from http://www.oft.osd.mil/library/library_files/trends_372_Transformation _Trends_15_February 2005%20Issue.pdf, (Arlington, D.C.: 15 February 05), 1.

[2] U.S. Department of Defense, "Sea Basing: Poised for Takeoff," *Transformation Trends*, Thomas Hone, Assistant Director, Risk Management, Office of Force Transformation, accessed 20 December 2005, from http://www.oft.osd.mil/library/library_files/trends_372_Transformation _Trends_15_February 2005%20Issue.pdf, (Arlington, D.C.: 15 February 05), 1.

[3] U.S. Navy/Marine Corps, *Naval Transformation Roadmap 2003: Assured Access & Power Projection …From the Sea*, (Washington D.C.: U.S. Department of the Navy, Headquarters, 2003), 2.

Sea Basing Joint Integrating Concept (JIC), sea basing is defined as the "rapid deployment, assembly, command, projection, reconstitution, and re-employment of joint combat power from the sea, while providing continuous support, sustainment, and force protection to select expeditionary joint forces without reliance on land bases within the Joint Operations Area (JOA). These capabilities expand operational maneuver options, and facilitate assured access and entry from the sea."[4] Although this definition is currently being used by the Joint Staff in its capabilities-based assessment process, the previously referenced definitions illustrate the importance of understanding the overall capabilities within the sea basing concept. As expressed by Admiral Mullen, the Chief of Naval Operations, during a January 10, 2006 Surface Navy Association National Symposium, sea basing is "about capabilities, not just ships."[5] Thus, using the Sea Basing JIC, sea basing will be considered as "the overarching framework within which the Navy and Marine Corps will transform our core capabilities to increase the effect of naval forces in joint campaigns."[6] Within this framework, combat logistics and associated offensive capabilities are the drivers of the sea basing concept along with the defensive abilities inherent with all naval operations.

Sea Basing Capabilities

All four services use ships for sustainment. As a standard operating procedure, the Navy uses combat logistics ships to provide stores necessary to sustain operations at sea. The other services use pre-position assets to ensure stores are available for combat at great distances from the United States. In the case of the Air Force, ammunition is forward deployed on ships that enable the initial and re-supply of overseas bases. However, in the context of sea basing, the pre-positioned logistics of the Army and Marine Corps are the focus of discussions pertaining to sustainment operations. Both the Army and Marine Corps pre-position materials, such as heavy equipment and ammunition, which are necessary for the beginning stages of sustained combat operations.

The Marine Corps pre-position ships are part of the Maritime Pre-positioning Force (MPF) which forward deploy in Maritime Pre-positioning Squadrons (MPS). Three Maritime Pre-positioning Squadrons are currently forward deployed to three different regions. In terms of sustainment capability, "One squadron of MPF ships can provide all the equipment and supplies to support a U.S. Marine Expeditionary Brigade of about 15,000 personnel for 30 days. The ships are capable of off-loading at piers or offshore with special lighterage equipment. Each ship has roll-on/roll-off capability and a flight deck for helicopter operations."[7] However, with the

[4] U.S. Department of Defense, *Seabasing Joint Integrating Concept: Version 1.0*, (Washington D.C., U.S. Department of Defense, 1 August 2005), 5.

[5] Admiral Mike Mullen, USN, Surface Navy Association National Symposium, speech, accessed 19 January 2006, from www.navy.mil, Arlington VA, 10 January 2006, 7.

[6] Department of the Navy, *FY2006/FY2007 Department of the Navy Budget*, accessed 7 January 2006, from http://navweb.secnav.navy.mil/pubbud/06pres/highbood/SECTION_1_Introduction.pdf, 4.

[7] U.S. Department of the Navy, *U.S. Navy's Military Sealift Command Fact Sheet: Afloat Prepositioning Force*, Military Sealift Command website, accessed 1 February 2006, from http://www.msc.navy.mil/ factsheet/apf.asp, January 2006, 1.

development of sea basing, these ships will selectively offload at sea and deliver sustained logistics directly to the Marine Corps ground combat forces. Additionally, with a forward operating base up to 2000 NM away in a safe location and high speed connectors, the MPF ships would be able to sustain up to two Marine Expeditionary Brigades for at least 30 days or even, conceptually, indefinitely. High speed connectors are transport aircraft and vessels that move materials and personnel within a theater of operations. As for the Army's Combat Pre-positioning Forces, "they provide afloat pre-positioning for the equipment, munitions and supplies to support U.S. Army combat units that would deploy to potential contingency sites. The Army has a similar design that is referred to as Afloat Pre-positioning Squadrons (APS). The ships within an Afloat Pre-positioning Squadron are part of the Combat Pre-positioning Force."[8]

Although the main focus on sea basing consists of the ability to project ground combat power ashore, it has other capabilities that can be an enabler for the Combatant Commander. Thus, it is important to assess all of the offensive capabilities inherent within this concept. While escorts that are part of the sea base will provide the necessary protection, cruise missiles and carrier launched aircraft project power ashore along with the ground forces that are embarked on forward deployed naval ships. Historically, ground forces have successfully projected combat power ashore in the form of amphibious operations and both the Army and Marine Corps have participated in such operations. While either service can be used as the ground force, the difference between amphibious operations and sea basing is the employment or maneuver of the ground forces. In amphibious operations, ground forces approach the shoreline and seize an amphibious lodgment. Then logistical support arrives to support sustained operations. In sea basing the employment of land forces is focused on Expeditionary Maneuver Warfare (EMW) through a Ship-to-Objective Maneuver (STOM) that is based around the concept of Operational Maneuver from the Sea (OMFTS).

The concept of OMFTS applies the principles and philosophy of EMW to the sea space."[9] The establishment of an Operational Maneuver from the Sea concept "codifies the many lessons of history regarding how command of the sea can create an operational advantage through a maneuver warfare approach."[10] During the Korean War, General MacArthur used the sea domain to out maneuver the adversary. The 1950 landing at Inchon demonstrated the effectiveness of using the sea as a maneuver space. With the execution of this envelopment from the sea, General MacArthur placed a ground force in the enemy's rear, severed the enemy's lines of communication, and dislodged the enemy from the southern Korean peninsula.[11] In essence,

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[8] U.S. Department of the Navy, *U.S. Navy's Military Sealift Command Fact Sheet: Afloat Prepositioning Force*, Military Sealift Command website, accessed 1 February 2006, from http://www.msc.navy.mil/ factsheet/apf.asp, January 2006, 1.

[9] U.S. Department of the Navy, "Warfighting Concepts, Emerging and Enabling Capabilities", 2005 *Marine Corps Concepts and Program*, 2005, accessed 4 February 2006, from http://www.usmc.mil/, 25.

[10] U.S. Department of the Navy, "Warfighting Concepts, Emerging and Enabling Capabilities", 2005 *Marine Corps Concepts and Program*, 2005, accessed 4 February 2006, from http://www.usmc.mil/, 25.

[11] Colonel Robert Heinl, USMC (Retired), "The Inchon Landing: A case study in Amphibious Warfare,"

control and utilization of the littorals as a maneuver space causes an enemy to defend the entire coastline and enables a sea based force to choose the optimum time and location for an attack or insertion.[12] Additionally, Korea also illustrates the necessity of access flexibility inherent in sea basing. The tidal conditions prevalent off the coast of Seoul were such that an amphibious landing was only feasible during a three to four day period each month.[13] With knowledge of this environmental window, an adversary can plan and establish a formidable defense based on limited access options. However, the capabilities envisioned within the sea basing concept, coupled with a Ship-to-Objective Maneuver, not only opens up the whole coastline for a possible assault; but also opens the possible window to any day of the year.

In concert with Operational Maneuver from the Sea, Ship-to-Objective Maneuver is a concept that focuses on the objective and will fundamentally change the way in which the United States fights in the 21st Century. It removes the previously established boundary between land and sea within the battlespace. In the past, naval expeditionary power projection relied on the establishment of a logistics hub on land prior to follow-on maneuvers against inland objectives. With the Ship-to-Objective Maneuver, ground forces will be employed and sustained directly from the sea which increases operational flexibility in terms of operational reach and reduces the military footprint and ground force logistic requirements.

In order to fully understand the coverage enabled through a Ship-to-Objective Maneuver using sea basing, operational reach potential must be assessed. In June of 2000, the Marine Corps Combat Development Command released a Mission Area Analysis Operational Reach Final Report (Operational Reach – 2015 Analysis)[14] that assessed the operational reach predicted by 2015.[15] Although the study addressed surface assault, it primarily focused on the vertical assault operational reach. Using a base employing force of a Regimental Landing Team which "consisted of three infantry battalions, an artillery battalion, a combat engineer company, and four LAAD firing sections,"[16] the analysis indicated that the capability exists to employ ground

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Naval War College Review, accessed 20 January 2006, from http://www.nwc.navy.mil /press /Review /1998/spring/art7-sp8.htm, May 1967, 1-11.

[12] U.S. Department of the Navy, "Warfighting Concepts, Emerging and Enabling Capabilities", 2005 *Marine Corps Concepts and Program*, 2005, accessed 4 February 2006, from http://www.usmc.mil/, 25-26.

[13] Colonel Robert Heinl, USMC (Retired), "The Inchon Landing: A case study in Amphibious Warfare,"

Naval War College Review, accessed 20 January 2006, from http://www.nwc.navy.mil /press/Review/1998/spring/art7-sp8.htm, May 1967, 4.

[14] Department of the Navy, "Mission Area Analysis Operational Reach – 2015 Final Report," Studies Management Branch (C453), Studies & Analysis Division, Marine Corps Combat Development Command, (Quantico, VA, 2 June 2000), 3.

[15] Lieutenant Colonel Stuart Dickey, USMC, "Seabasing and Ship-to-Objective Maneuver: An analysis of these concepts and their implications for the Joint Force Commander," Research Project, U.S. Army War College, (Carlisle Barracks, PA, 19 MAR 2004), received both the knowledge of the Mission Area Analysis Operational Reach – 2015 and the idea to use this analysis from this research paper.

[16] Department of the Navy, "Mission Area Analysis Operational Reach – 2015 Final Report," Studies

forces and sustain them up to a flight distance of 110 nautical miles from the afloat launching platform. However, the surface platforms would most likely operate initially from 15 to 25 nautical miles from the shoreline. Although technological advances may increase this distance, these ranges may suffice for 70% of the operations since a 1997 United Nations report states that about 60% of the world's population live within 62 miles from the coastline.[17]

Strategic Guidance

Common threads present throughout the national strategy documents are an uncertain global security environment (requiring a capability based approach to acquisition), access assurance (forward presence, globally sourced), modular rapid response (capable of escalating to major combat operations), joint integration, and transformation. Conceptually, sea basing meets these common threads within the national guidance.

Sea basing focuses on using the 75% of the earth which belongs to no country and hence can be used as a place from which to operate without regard to host nation permission due to Freedom of Navigation in International waters. With the number of permanent forward land operating bases diminishing, sea basing is able to fill a niche capability for the Department of Defense. The concept also addresses, at least as much as any capability can, an uncertain global security environment. In many ways, sea basing already has fulfilled the newly identified anti-access capability gap in the globalization era of the 21st century in an *ad hoc* manner in Haiti, Operation Enduring Freedom, the Horn of Africa, and even for crisis response along the Gulf Coast after Hurricane Katrina.

Major Combat Operations Considerations

Examples of major combat operations during World War II, the Korean War, Operation Desert Storm, and Operation Iraqi Freedom (OIF) provide different insights into the necessity of sea basing. In World War II, amphibious operations were essential in the success of both the Normandy landings in the Atlantic Theater and the island hopping campaign in the Pacific Theater. Since both of these theater operations provide different lessons learned that directly relate to sea basing, they are addressed separately. However, prior to examining these lessons learned it is important to note that prior to World War II, the integration of land, air, and sea operations to support amphibious operations was formalized in doctrine. Additionally, it is important to note that in 2006, over 60 years after the initial development of the Higgins amphibious landing craft used in World War II, the Secretary of Defense and Chairman of the Joint Chiefs of Staff used its creation as an example illustrating the necessity to "increase

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Management Branch (C453), Studies & Analysis Division, Marine Corps Combat Development Command, (Quantico, VA, 2 June 2000), 1-15.

[17] United Nations, "Global Environment Outlook-1" *Global State of the Environment Report, Executive Summary,* United Nations Environment Programme, accessed 4 February, from http://www.unep.org/GEO/geo1/exsum/ex3.htm, 1.

capabilities rather than to respond to any single threat."[18] Both of these developments changed the way the military would fight and in essence were truly transformational.

The Allied forces did not have access to continental Europe in World War II. Thus, the Allies decided that an amphibious assault was necessary to assist the Soviet advances from the east. Using the newly established amphibious doctrine that was developed by the Marine Corps, the allied forces used land, air, and sea integration to mass effects ashore during the landing. Operation Overlord included amphibious landings with concurrent insertions of airborne forces behind enemy beach fortifications in order to disrupt enemy reinforcements and interdict their lines of communication.[19] Additionally, the ground forces, mainly Army soldiers, were pre-staged and constituted in Great Britain prior to insertion via amphibious operations.

These events are important to the assessment of sea basing because they illustrate both its inherent joint force enabling capability and some insight into joint force integration. Without access to either a Sea Port of Debarkation (SPOD) or Air Port of Debarkation (APOD), forces must flow in a matter that supports immediate combat operations during insertion. Two concepts existed in the early 1940's and today that enable forces to accomplish Joint Forcible Entry Operations. First, troops can flow via amphibious operations and airborne operations. However, in World War II, the forces had to be pre-staged in Great Britain due to the operational reach considerations. The Sea Basing Concept of Operations also depicts using a *safe* forward access area for the flow of forces to the maritime base. In Normandy, forward basing proved to be quite effective in an integrated and force multiplying effort. Second, the particular ground force capabilities needed to accomplish the landing were resident in both the Marine Corps and the Army. The primary reason that the ground forces used in the amphibious landing consisted mainly of Army units was due to Soldier quantity. In the case of sea basing, only two brigades are available to directly utilize the capabilities. In an operation that only involves two brigades, such as seizing an SPOD/APOD or lesser contingencies the Service choice for participation becomes more about inherent capabilities.

The next major combat operation to be considered took place during the Korean War. In 1950, General MacArthur decided to utilize what the Marine Corps now refer to as Operational Maneuver from the Sea to position landing forces behind enemy lines. The General's Marine Corps amphibious force landed at Inchon and proceeded to Seoul. These forces received little resistance and caused the North Korean Army to retreat to the North. Although this was an extremely successful operation, it was risky. The effects of tides and currents at Inchon made a landing only possible along a single channel during a three to four day period each month.[20]

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[18] Secretary of Defense Donald H. Rumsfeld and Chairman, Joint Chiefs of staff General Peter Pace, *Department of Defense News Briefing*, 21 February 2006, transcript, accessed 27 February 2006 from http://www.defenselink.mil/transcripts/2006/tr20060221-12543.html, 1.

[19] Brian Williams, "The Airborne Landings," *Military History Online Website*, 2000, accessed 7 February 2006, from http://www.militaryhistoryonline.com/wwii/dday/airborne.aspx, 1-2.

[20] Colonel Robert Heinl, USMC (Retired), *The Inchon Landing: A case study in Amphibious Warfare,*

Naval War College Review, accessed 20 January 2006, from http://www.nwc.navy.mil/press/Review /1998/spring/art7-sp8.htm, May 1967, 4.

This made the landing site and time extremely predictable and susceptible to enemy defenses. Sea basing capabilities along with the sustainable Ship-to-Objective Maneuver Concept would remove many of the risks involved in a similar operation in the future by providing flexible landing options through emerging vertical and seaborne lift capabilities. The forces that can be supported by sea basing were comparable to those utilized during the actual amphibious assault. Had we had sea basing then, North Koreans would have been at risk for attack along the entire coastline.

It is important to note in Operation Desert Storm, almost 50 years later, which only the Marines were inserted via the sea since access authority was obtained for the insertion and build-up of Army ground forces from Saudi Arabia; such a base is not guaranteed in future operations. Three key insights affecting sea basing can be derived from this campaign. First, the Marine Corps forces were utilized as a deception prior to the commencement of ground operations. While Army forces were conducting a flanking maneuver within Saudi Arabia, the Marine Amphibious Force demonstrated the intent to land forces in Kuwait. This caused the Iraqi forces to remain in place and enabled the coalition joint force to envelop the enemy. Projected sea basing capabilities also could successfully deceive an enemy while providing greater flexibility for the insertion of Marines.

Second, mines were an issue in the Northern Arabian Gulf. Naval forces had to clear routes in order to introduce both forces and logistics into the theater. Of the logistics required, 95% arrived via sea lift.[21] This means that even with sea basing mine warfare is important and a factor in the littorals; however, the vertical lift capabilities of the sea base would enable the joint force to sustain up to a brigade size force that could seize and set up a necessary SPOD while mine clearance is achieved.

Finally, Operation Desert Storm called for a ground force that far exceeded the size that can be delivered and sustained through sea basing. With this in mind, sea basing provides an enabling capability; however, it cannot be utilized to support the delivery and sustainment of all the associated ground forces needed in a major combat operation.

Operation Iraqi Freedom provides additional study insights and reinforces thoughts or lessons learned from previously discussed operations. It shows that major combat operations against a country like Iraq require more forces than a sea base can support and reinforces the issue of access rights for future campaigns. If Kuwait would have refused basing rights instead of Turkey, forcible entry operations would have been required as part of the campaign. Sea basing is a concept made for this type of mission. With the support of joint air power, two brigades could seize key lodgments which could be utilized to establish the ground forces and logistics necessary for success and give the United States diplomatic and military flexibility. With a majority of logistics necessary for this operation coming via the sea, establishing and maintaining an SPOD is critical to success. From the 2004 U.S. TRANSCOM Annual

[21] Harold Kennedy, "Navy's Sealift Command Picks Up the Pace: Cargo is moving faster than in first Gulf War, 'but we need to be faster' yet, chief says," *National Defense Magazine*, accessed 27 February 2006, from http://www.nationaldefensemagazine.org/issues/2003/Jul/Navys_Sealift.htm, July 2003, 3.

Command Report, "sealift accounted for approximately 84 percent of the Operation Iraqi Freedom cargo" between January and June 2004.[22]

These different assessments of historical demonstrates that sea basing is an essential capability for the 21st century that supports the 2005 National Defense Strategy, the National Defense Posture, and the 2004 National Military Strategy. Sea basing follows the transformational guidance and supports the additional 2004 National Military Strategy and 2005 National Defense Strategy common threads of access assurance (forward presence, globally sourced), modular rapid response (capable of escalating to major combat operations), and joint integration. However, these strategies do not fully address how to effectively integrate the capabilities that sea basing brings to bear. In order to more fully gain a perspective of optimal integration of sea basing in joint operations, further exploration of the future and current environment is necessary.

In *The Pentagons New Map*, Thomas Barnett describes a projected security environment for the 21st century where fiscally constrained decisions are more manageable.[23] If this truly becomes the United States assumed security environment, will sea basing be an effective joint force enabler? Of the 127 military operations that occurred during the period of 1990 - 2003, only three could be considered major combat operations.[24] A sustained force of two brigades would be a considerable, lethal force for the remaining 124 operations. In these cases, concepts such as sea basing would enable the Combatant Commander to quickly respond to contingency operations, support declining governments, or provide the necessary assistance in order to provide additional stability without establishing permanent basing or having to support base security requirements. With the use of sea basing, either Marines or Soldiers could be used as the ground forces. Currently, the Navy is working to develop capabilities necessary to use Marines as the ground force. As for the Army, deliberations are being considered as to the use of Army forces within the sea basing concept. In order to use the Army within the context of sea basing, heavy lift assets required to transport Army equipment would need to be developed along with modifications to the Army combat logistic ships. These modifications would enable the use of the four Army Pre-positioned Sets in a sea basing context.

Conclusions

The removal of the historical seam between operations at sea and on land is a transformational leap necessary to support the 2004 National Military Strategy, 2005 National Defense Strategy, 2005 National Security Strategy, and the Global Defense Posture. The sea basing concept delineated in the corresponding Joint Staff's Joint Integrating Concept is a well founded means to remove this seam. Just as the development of formal amphibious doctrine in the 1930s laid

[22] General John W. Handy, USAF, Commander of U.S. Transportation Command, *2004 Annual Command Report*, accessed on 27 February 2006, from http://www.transcom.mil/annualrpt/2004acr.pdf, 2004, 4.

[23] Thomas P.M. Barnett, *The Pentagon's New Map: War and Peace in the Twenty-first Century*, (New York, New York: G.P. Putnam's Sons Inc., 2004), this reference (book) identifies trends that show where past and future threats exist during the information age of connectedness.

[24] Thomas P.M. Barnett, *The Pentagon's New Map: War and Peace in the Twenty-first Century*, (New York, New York: G.P. Putnam's Sons Inc., 2004), extrapolated data from the inside cover map to determine percentage of different types of operations within the identified gap.

the foundation for successful American influence in World War II and the Korean War, sea basing will provide another option for the United States to utilize globally in order to influence foreign policy with a minimal footprint. It truly represents a change in the way the Defense Department conducts operations.

The operational reach of two ground force brigades with sea basing reduces the requirement for an amphibious lodgment while being used to influence at least 60% of the world's population along with all of the global coastal economic trade centers. Independent of the Service providing the ground forces, sea basing provides political flexibility. History has demonstrated that major combat operations are few and far between compared to the United State's involvement in smaller contingencies that are necessary to protect America's vital national interests. Without employing ground forces from within another countries sovereign territory, the President can influence a region through forward presence, a scalable response up to two brigades, and assist in the transition to a potential major combat operation. The minimum footprint achieved through sea basing not only supports the Global Defense Posture, but also facilitates cooperation from the other countries because a perception of foreign occupation is non-existent.

Although sea basing is an effective enabler that may help to seize the early initiative with a more rapid response, it is not a capability that will independently win a major combat operation. The United States has never fought a major combat operation with two ground force brigades. World War II, the Vietnam War, the Korean War, Operation Just Cause, Operation Dessert Storm, Operation Enduring Freedom, and Operation Iraqi Freedom are just several examples of major combat operations where the number of ground forces was significantly larger. They are also examples of operations utilizing both Marine Corps and Army ground forces to successfully defeat the enemy. With an understanding of the extent to which sea basing can support two brigades, a decision must be made in a fiscally constrained environment as to which Service should be employed from the sea. Currently, the Marine Corps traditionally operates and employs expeditionary power projection from the sea. While the Army's expeditionary employment has traditionally centered on airborne operations integrated with the Air Force. Although both Services would successfully complete missions from the sea base, there is no significant advantage to employ and sustain Soldiers vice Marines from the sea. Sea basing is an effective joint force enabler without the need for employing Army forces from the sea.

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Planning-to-Plan: Techniques for Enabling Decisions in a Group Environment

By
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Part One of this series of articles (see the summer 2006 edition of Campaigning) introduced the concept of planning-to-plan as a loosely bound construct that focuses on optimizing the decision-making capacity of a planning group. Planning-to-plan enables one to balance the needs of decision-makers with a group's capabilities. By designing the architecture of a planning effort, a planner can shape its activities to better meet the decision-making needs of a command. This method of designing, building, and marshalling a planning group creates a scaffold-like approach to investigation, learning, and diagnosis and supports formal problem-solving models such as the military decision making process (MDMP). The attainment of synergistic collaboration between planners engaged in problem-solving, however, requires much more than the application of a procedural checklist. The development of innovative solutions to complex problems demands the skillful manipulation of planning techniques by a keenly aware leader. This second article addresses those techniques that many lead planners use to guide their groups towards uncovering the best decisions during planning.

There are numerous techniques that experienced planners regularly use to augment the conduct of planning in a group environment. Configuring involves choosing the optimum size of group to enable problem-solving. Scoping commits planning resources onto appropriate objectives for a specified amount of time. Orienting focuses a planning group onto planning objectives. Mind-maps and storyboards organize the variables of a complex problem in a logical manner. Dashboards depict information in a customized fashion. Storytelling allows an audience to visualize a situation or proposed courses of action. Brainstorming encourages unrestrained possibility thinking to uncover viable alternatives to a problem. Heretics cross-check logic prior to commitment to a decision or the publication of planning products. Third-party observers ensure decision-making products are complete, make-sense, and lead commanders to particular conclusions. Planning timelines synchronize people according to time and reinforce planning deadlines. Preprogrammed and ad hoc meetings create forums for dialogue that help planning groups stay on-track during a decision-making effort. Sensing assesses the progress of planning. Finally, transitioning shifts planning groups onto new planning objectives.

Configuring

Decision can ultimately be made by one person, small groups, large groups, and sub-groups. In some instances, one person may have all the relevant information necessary to make a good decision. Many operational commanders use this technique to save time when they are confident that they possess the situational understanding needed to commit to a course of action. One-person decisions are often expedient and can benefit an organization when additional perspectives are not available. But, they also risk correctness because they forego any sort of

validation by other people. To limit the risk of myopia during decision-making, commanders solicit staff recommendations when time is available.

Small planning group configurations expand the collective breadth and depth of knowledge available to a planning group. Small groups consist of no more than ten planners so that participants engage each other in dialogue and achieve consensus regarding decisions and planning products. Should a particular problem require additional subject matter expertise, the small group can still reach out to others 'outsiders.' To expedite understanding and timely planning outputs, however, the core decision-making group does not become inundated with an excessive number of people. During Operation Iraqi Freedom 05-07, the 101st Airborne Division G5 Plans Shop predominantly used small groups for planning and plans-products production. Because of this, decisions were generally reached in a timely fashion and proved effective when applied to ongoing operations in northern Iraq.

When circumstances permit, large groups can bring to bear more perspectives into a problem-solving process and achieve greater buy-in and understanding into a plan. To ensure a large group maintains focus and resists the urge to devolve into side-bar conversations, a planner can organize a large group into sub-groups that work on specific aspects of a problem, then reassemble to address the large group with their focused problem-solving results. One select member usually acts as the group's spokesman and represents the opinions of the sub-group within the context of the large group. This representative can reach-back into their represented group members for additional depth of knowledge when necessary. Similarly to the small group environment, sub groups facilitate dialogue amongst group members.[1] In light of time and complexity, a planner's configuration for a planning group invariably impacts upon the nature of a planning outcome. Configured into the appropriate size, a planning group stands better organized to address the dynamics of a complex problem and derive innovative solutions.

Scoping

Scoping is a technique in which planners commit the right planning resources onto the right planning objectives. Scoping focuses the efforts of a group onto what the lead planner needs at a particular moment in the planning process. It involves a plan-to-plan design that relates resources to decision-making requirements. These requirements may include events such as defining a problem, conducting mission analysis, or wargaming. Scoping defines what must be done at a particular juncture in a decision-making process and meshes those needs with the capabilities of the planning group. Take, for example, the analytic framework of PEMSII (political, economic, military, social, intelligence, and infrastructure) that is regularly used in the joint planning environment. When a planner assigns specific members to research topic areas within PEMSII, he is scoping his planning resources. With sufficient attention to design, scoping acts as an economy of force technique and also enables others to better understand a planner's prioritization of resources during the course of planning operations.

[1] Peter R. Scholtes, Brian L. Joiner, and Barbara J. Streibel, *The Team Handbook: Third Edition* (Madison, Wisconsin: Oriel Inc., 2003), p. 3-24 to 3-29.

Orienting

Orientating focuses the members of a planning group onto desired planning objectives. Orientation clarifies roles and responsibilities, lists requirements and expectations for work, emphasizes deadlines, discusses any changes that have been made since the conclusion of the previous planning effort, and communicates the sequence of intermediate planning objectives. A lead planner usually orients his entire assembled planning group at the onset of a planning effort and reorients them as required after transitions. This process promotes necessary cross-staff awareness that enables a group to maintain forward progress even as the characteristics of a problem evolve. Orienting augments collaboration and creates an element of common understanding with regards to process understanding during the conduct of planning. The North Atlantic Treaty Organization (NATO) deems orientation so important that it includes it as its second of five steps in its Operational Planning Process (OPP).[2]

Mind-maps and Storyboards

Planners use mind-map and storyboard diagrams to facilitate understanding and encourage critical thought. These techniques capitalize on the adage that a picture paints a thousand words.[3] Many concepts are too complicated to deconstruct through written-form in an efficient amount of time. Instead of relying on the descriptive capabilities of language, planners employ mind-map and storyboard illustrations to spatially relate variables, sequence activities over time, and graphically represent a train of logic. This technique allows an audience to correlate the elements of a problem in an organized and coherent manner so that they can see the forest and the trees.[4]

Mind-maps allow a planner to spatially relate the variables found in a complex problem by illustrating activities and required decisions. Consider the disparate activities associated with conducting a permanent change of station (PCS) move in the military (see Figure 1, Mind-map of a PCS Move). By mapping out the sequence of activities for a PCS moving from left to right, one garners a better understanding as to the flow of events the mover expects to encounter. It also depicts the decisions that will impact upon the operation as it unfolds. With the variables arranged on the diagram, a planner can now reflect upon how each relates to one another over

[2] North Atlantic Treaty Organization. *Guidelines for Operational Planning*, Revision One, Guidelines for Operational Planning Revision 1, July 2005, effective August 2005, as signed by the Supreme Allied Commander of Europe (SACEUR), 4-2.

[3] Motion picture directors started using storyboards in Hollywood as planning tools for upcoming shoots. Storyboards remain the primary method by which production designers organize and communicate logical sequences for movies. The film industry recognizes three components of storyboards that help production designers and storyboard artists tell a story: color, line, and texture. While texture may not directly apply to military planning, colors and lines do. Planners can create storyboards for a variety of functions, but the methods used to sketch diagrams should fall in-line with existing parameters established by Army doctrine. For instance, the color blue relates to a friendly graphic while red usually indicates enemy; reference FM 5-0, *Army Planning*, 1-16.

[4] Peter M. Senge, *The Fifth Discipline: The Art and Integration of the Learning Organization* (New York: Currency Doubleday, 1990), 127.

time. For example, the date for household-goods delivery depends upon the decision to live on or off base.

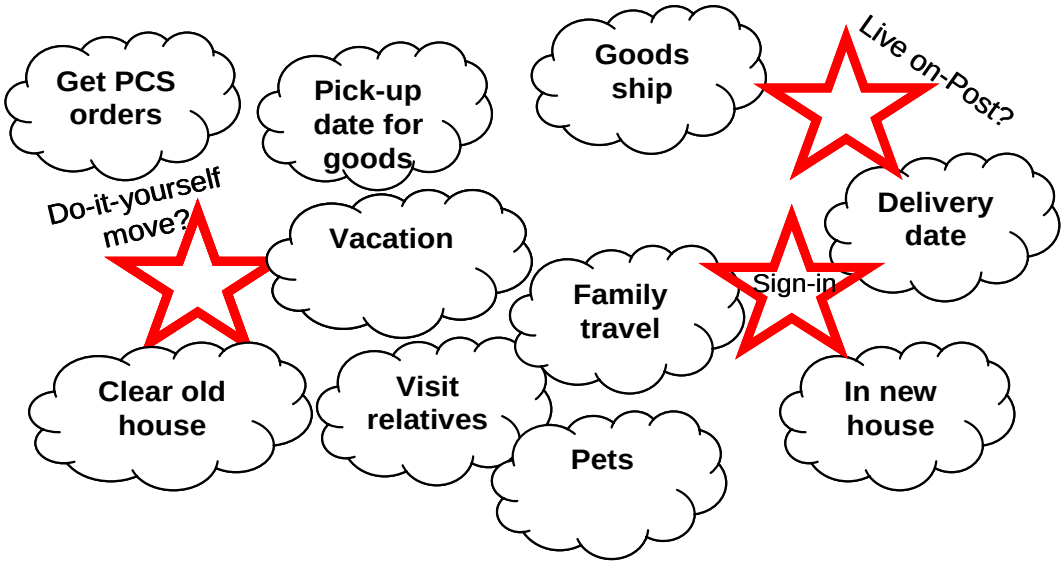

Figure 1 – Mind-map of a PCS Move[5]

The logic patterns that emerge from the use of a mind-map can then be applied to a storyboarded to further describe a flow of activities, events, and decisions over time (see Figure 2, Storyboard of a PCS Move). The illustration of a storyboard allows one to visualize the variables of a complex problem in an ordered manner. Because of this, planners commonly use storyboards to describe the sequence of activities found in a particular problem.

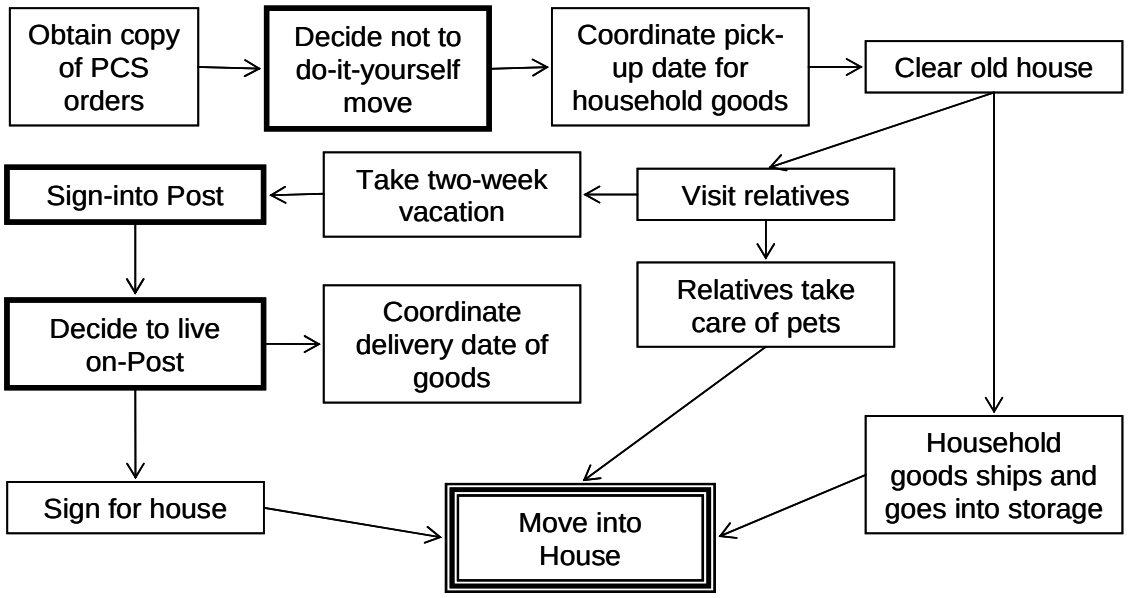

Figure 2 - Storyboard of a PCS Move

[5] John Garrett, "Plan to Plan Template," Presentation at the School of Advanced Military Studies, Fort Leavenworth, Kansas, 31 October 2005, inspired by slide 9.

Storyboarding can also be used to organize the flow of a briefing to ensure that it leads an audience to an intended objective of understanding by its completion.[6] Through the use of illustrations, effective mind-maps and storyboards facilitate learning and synchronization for those who view them making them instrumental as a communication technique in the planning community.

Organizing Information with Dashboards

A dashboard is an intellectual construct that provides an intuitive way to visualize a complex problem. Planners use computer technology to establish a personalized format for information delivery that reflects a commander's preference for absorbing the variables of a complex problem. Planners can hyperlink salient facets of information to a master web-page from which a commander can then access particular information as he needs it. Dashboards provide decision-makers with a holistic perspective of a situation and a capability to 'drill-down' into subject areas by selecting hyper-linked icons. One tremendous advantage of a web-page based dashboard is that an administrator can quickly modify and update information as the dynamics of a problem change. This helps ensure that a command group and planners have access to the most up-to-date information available. Web-pages can also be accessed over the Internet so that geographically separated planning group members can collaborate more effectively. The technique of using dashboards facilitates efficient information comprehension and diminishes time-lags associated with research.[7]

Storytelling

Planners sometimes use narrations to communicate the dynamics of a particular situation. In the late 1990s, the leaders at 3M recognized that their method of presenting business plans did not promote a cohesive understanding to its intended audience. The makers of Post-it Notes, Scotch and Masking tapes, and Scotch guard fabric protector had been using bullet points such as, "Increase sales by 10%, reduce distribution costs by 5%, [and] develop a synergistic vision for traditional products" to communicate complicated plans. These bullet points proved too generic and often left critical relationships and assumption unspecified. The result was inefficiencies with substantial cost expenditures to the company.

One 3M executive, Gordon Shaw, realized that there was a more coherent way to present business plans to inspire deep thought and commitment through telling strategic stories. Shaw hypothesized that narratives might improve the understanding of complex matters. Language researchers had recently determined that the recall-abilities of high school students increased threefold when American history texts were rewritten in narrative form. The texts enabled the students to "imagine a course of action, imagine its effects on others, and decide whether or not

[6] Ibid, interview by author, 29 October 2005.

[7] Ken Szmed, Commander, U.S. Navy at the School of Advanced Military Studies, Fort Leavenworth, Kansas, interview by author, 21 February 2006. Chief of Naval Operations, Admiral Michael G. Mullen and many subordinate Navy commands use dashboard constructs to organize information.

to do it."[8] Shaw's hunch paid off and won the praise and commitment of the top management. One particular narrative resulted in a very profitable joint venture with the German chemical giant, Hoechst. While storytelling may require more time, a narrative offers one alternative to promoting understanding amongst the members of a planning group.

Brainstorming

Innovative solutions to complex problems require creative thought and a dynamic dialogue. A group brainstorms to generate possibilities by breaking-free of any entrenched thinking norms that tend to constrain a group's imaginative powers. There are several dynamics to effective brainstorming. First, the session must include the right combination of people. This includes people who have the right subject matter expertise and the people with the right attitudes. Unsuccessful brainstorming sessions can often trace their failure to particular obstructionists who demonstrate either excessive disgruntlement with the brainstorming effort or attempt to control the session and overpower other members with their opinions. The best tact is to un-invite these sorts of people. Should detachment prove unfeasible, the lead planner should establish a strict set of rules to maintain order and forward progress.

Along with the objectives of brainstorming, a set of brainstorming rules should be published at the very beginning of the session. Rules such as 'never mock another person's idea' prevent obstructionists from derailing the proceedings of a brainstorming session. Overt criticism often causes the sponsor of an idea to withdraw from a brainstorming session out of fear that their next idea may be scoffed at as well. If a person proposes an idea that is way-off track, a savvy lead planner will simply record it and move onto the next idea. This continues forward momentum in the session while protecting each of the idea sponsors from critical attacks. Another effective rule is to encourage proactive listening. Some people become so engrossed in their own thoughts that they forget to listen to the other people in the brainstorming group. By reminding the group members to listen, a lead planner encourages dialogue necessary to reach third-alternative solutions. These solutions emerge as the result of two or more people improving and building upon an initial idea. One way to enable more understanding during a brainstorming session is to employ a recorder who devises some method of capturing ideas within view of all group members. Dry-erase boards, butcher charts, and overhead computer displays are common tools that work well. If properly managed, a brainstorming session can unleash a group's true creative, out-of-the-box problem-solving potential.

Employing a Heretic

A planning group must guard against lapsing into group-think. One technique that helps to combat the tendency to fall into group-think is to assign someone with the role of heretic. A heretic acts as a quality control mechanism focused on a group's logic. Also known as a 'devil's advocate,' a heretic checks the validity of floored ideas. Heretics spur debate by forcing sponsors to defend the reasoning behind their ideas. Debate induces learning which improves

[8] Gordon Shaw, Robert Brown, and Philip Bromiley, "Strategic Stories: How 3M is Rewriting Business Planning," *Harvard Business Review on Advances in Strategy* (Boston, Massachusetts: Harvard Business School Press, 2002), 51-69.

the quality of a group's decisions. A good heretic, in this sense, benefits connectedness and increases a group's level of understanding.[9] A heretic shocks a group out of the acquiescing lull of group-think and causes others to think more critically and listen more attentively. CAUTION: Do not employ a heretic in a brainstorming session! Brainstorming is the one safe-haven in which people should feel free to possibility-think without an antagonizing threat of a heretic. In all other cases, however, a heretic helps to unhinge weak theories and scrutinize decisions prior to their implementation.

Employing Third-Party Observers

Third-party observers provide a fresh look at a group's planning products. It involves bringing-in an individual who has not participated in the development of a group's output to provide an objective assessment on the proposals of a planning group. Like a heretic, a third-party observer looks for failure points in the logic of planning products. However, such observers specifically do not join a planning process so that they remain detached from a group's products. A third-party observer is entirely free to give an unbiased opinion based upon unemotional and objective observations. The group is then left to decide how to proceed based upon the outside assessment. Third-party observers are particularly helpful when rehearsing briefings prior to their final delivery. But, they can also help in other matters such as checking operations orders and decision papers. To qualify as a third-party observer, an individual must simply be capable of providing adequate and useful feedback. To do this, he should have at least a basic understanding of the problem-set that the group is addressing. To employ the right third-party observer, a lead planner must consider the context of the problem to the person he asks to assume the role.

Maintaining a Planning Timeline

Planning groups habitually operate in a time constrained environment and marshal their progress according to the decision-making deadlines of their command group. To ensure that planning efforts are relevant and timely with respect to decision-making requirements, planners generally use the operational timeline to form the basis of their planning timeline. For example, a brigade commander establishes a decision point of whether or not to cordon and search a particular urban area at the 48 hour point prior to the start of its action. In this case, a planner would reflect this decision point on the planning timeline and adjust planning requirements to align with this operational agenda. This requires him to backwards-plan any decision-making requirements from the decision point established by his commander. It also causes him to forward-plan for additional planning requirements associated with the cordon and search operation. A planning timeline, in this regard, focuses a planning group onto the decision-making needs of a command – note that most requirements are based upon contingencies that never actually occur.

[9] James J. Schneider, Ph.D. at the School of Advanced Military Studies, Fort Leavenworth, Kansas, interview by author, 3 March 2006.

Preprogrammed Meetings

Regularly scheduled, pre-programmed meetings keep a planning group on-track and alleviate some of the friction associated with the ever-changing planning environment. These meetings add regularity to a planner's schedule and function to promote information cross-leveling between the internal and external components of a decision-making group. They especially help a planner control large planning groups. One Division G3 described the challenge he faced during combat as more and more units attached to his headquarters. Preprogrammed meetings were the only conduit that enabled him to maintain control over the diverse entities that were joining the ranks of his unit. He admits that there was a natural tendency for some units to diverge from the intent of the division commander. So, he established a regular pattern of meetings to prevent the planners from these units from 'drifting' and encourage them to contribute to the planning effort.[10]

Preparation and purpose are essential components of meeting effectiveness. A planner might begin a meeting by stating, "This meeting will result in a decision in which our planning group will recommend one of three courses of action to the Commander." The planner should communicate his expectations for how the group will meet deadlines and achieve planning objectives. In particular, he identifies what interaction methods the group will employ to facilitate learning and derive solutions. There are three primary methods for achieving consensus within a planning group. The 'round robin' technique enables every person to contribute to a discussion. The 'popcorn' technique involves a group discussion in which people can randomly call-out their ideas at any time. 'Silent writing' is the third technique in which people write their ideas onto sticky-notes which are then posted onto a whiteboard for analysis. A planning group can further synthesize by appointing a meeting facilitator, a timekeeper, and a scribe to record the dialogue.[11]

Ad-hoc Meetings

A planner calls an ad hoc meeting according to the needs of the planning situation. A planning group should expect to hold ad-hoc meetings during the course of a planning effort for two reasons. The first reason is to cross-level information within the planning group. This helps them address changes, update and collaborate, or shift their approach or the underlying planning structure. The second reason is to engage key leaders who may visit a planning group location. Chance meetings with key leaders provide a forum for planners to pull information and insight from the people in important leadership roles. 'Drive-by' visits provide a great opportunity for the planning group to solicit guidance from commanders and obtain answers to specific questions regarding ongoing decision-making efforts. Planners should anticipate visits from senior leaders and prepare an information briefing that can be delivered upon request.

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[10] Jeffrey Ingram at the School of Advanced Military Studies, Fort Leavenworth, Kansas, interview by author, 16 September 2005. Colonel Ingram is better known for the heroic attack to seize Baghdad with his tank battalion in support of the 101st Airborne Division during Operation Iraqi Freedom (OIF).

[11] Scholtes, Joiner, and Streibel, *Team Handbook*, 3-1 to 3-14.

Sensing

Change and the dynamic planning environment require that a planner continually monitor the progress of his planning group. Frequent communication with individual members of a planning group is an informal way of keeping an entire group focused on the correct planning objectives. A planner can also hold observations meetings at various junctures to discuss where the planning group is within the context of a decision-making process. This type of meeting gives the members a forum to voice their reflections about the conduct of a planning effort. Observation meetings serve as a great feedback conduit so that enables senior planners to better understand the internal workings of a planning group so that he can refine the process. This requires the lead planner to listen to the thoughts of his subordinates and maintain a willingness to adapt should their concerns prove valid.

Professor Ikujiro Nonaka describes how several Japanese companies like Honda, Canon, Matsushita, and Sharp improved their productivity by learning from their employees. "Managers at these companies recognize that creating new knowledge is not simply a matter of mechanistically 'processing' objective information. Rather it depends on tapping the tacit and often highly subjective insights, intuitions, and ideals of employees."[12] Sensing promotes understanding, confidence, team unity, and trust within a planning group. Planners who invest the time necessary to obtain feedback from the members of their planning groups during the course of a decision-making process stand to increase the learning, synthesis, and performance that ultimately transpire from the group's efforts.

Transitioning

A planning group transitions when the current focus of planning is no longer relevant and the decision-making needs of a command group demand a shift onto a new set of planning objectives. A transition point is a risky juncture because a planning group can quickly loose momentum and focus. Individual members, moreover, have a propensity to disassociate from the group and loose track of the grander planning objectives. Transitioning helps to overcome the doldrums-effect that occurs at the completion of a planning project. The process begins once a planner recognizes that his planning group has either satisfied the current decision-making focus or that sufficient change has occurred that requires the group orient onto a new planning objective. The lead planner initiates the process of transitioning by conceptualizing a new design for the subsequent planning effort. Prior implementing this design, however, he must first stop any work associated with the last planning effort. Bringing closure to old projects minimizes any adverse effects that impact upon a group during periods of change. Once assembled, the planner communicates that the last project has ended and explains the context of the new project by orienting the members of the group onto the new planning focus. By taking time to transition, a lead planner maintains the focus of a planning group onto the current decision-making needs of a command group.

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[12] Ikujiro Nonaka, "The Knowledge Creating Company," *Harvard Business Review on Knowledge Management* (Boston, Massachusetts: Harvard Business School Press, 1998), 21-2. Professor Nonaka is the founding dean of the Graduate School of Knowledge Science at the Japan Advanced Institute of Science and Technology and a professor and former director of the Institute of Innovation and Research at Hitotsubashi University. He is also the senior editor of *Organization Science*.

Conclusion

The fifteen techniques presented in this article include some of the more popular methods used by planners to optimize a group decision-making process. Each has proven beneficial during actual military operations to include combat. However, no one technique guarantees carte-blanc success in every circumstance. This is because a planning effort unfolds as both an art and science. A group's ability to effectively solve problems depends upon a multitude of factors to include: the context of the problem, the complexity of the situation, the composition and competencies of the members of a planning group, the needs and expectations of a command, and the capabilities of a planning group's leader. An adept planning lead, therefore, possesses familiarity with a wide variety of techniques from which he can then select and employ that which best facilitates the needs of the planning situation he faces. Utilized appropriately, planning techniques such as those described herein can help a planning lead unleash a group's true potential as its members collaborate to derive innovative solutions to complex problems.

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Deans Corner

By
COL Fred Kienle

The Joint Advanced Warfighting School's Class 2006-2007 is well into the twelfth week of the forty-eight week curriculum. With thirty-six students divided among the three seminars, the class size is again in accordance with the program's educational design. Having our first officers from the United Kingdom has proven to be a great benefit in providing the ever important "other than U.S." view to the full range of issues. Based on inputs from previous classes and feedback from recent JAWS graduates and their supervisors, the program continues to evolve and implement modifications to ensure currency and relevance for our planners; we remain focused on delivering "world class" planners to the Joint Staff, the Combatant Commanders and the entire joint planning community.

Major General Kenneth Quinlan (USA), Commandant of the Joint Forces Staff College since 2003 and a key player in the establishment of JAWS, will retire on October 6th, 2006. His continued guidance, innovative approaches and unwavering support to the JAWS program will be missed, but long remembered. He and Lynn have left their mark on JFSC. Assuming the helm as the new Joint Forces Staff College Commandant will be Major General Byron S. Bagby (USA). General Bagby is coming to JFSC from his position as the Chief of the Office of Military Cooperation in Egypt where he led the largest security cooperation office in the world. Having served over six years in a variety of joint assignments, to include two years in the Joint Staff J5, General Bagby is no stranger to joint planning and joint processes. JAWS joins the entire College in welcoming General Bagby and his wife, Monique.

Finally, continued congratulations to Colonel Craig Bollenberg and the entire JAWS Operational Art and Campaigning Department for their efforts in producing this much needed journal and providing a ready forum for the discussion and exchange of ideas and issues related to the operational level of war. This "Campaigning" journal is receiving widespread circulation both electronically and in hard copies. It is turning up in several nations and finding its way into numerous professional military education venues. We appreciate the numerous submissions and high quality articles received from practitioners, educators and other with a strong interest in operational art – please keep the papers and articles coming.

Upcoming Events

- **13-17 November: Washington D.C. Field Research**
- **28-30 November: SOCOM, CENTCOM, SOUTHCOM visits**
- **20 December-2 January: Holiday Break**
- **11 January-Operational Art and Campaigning (OP6500) Begins**
- **19-23 March Information Operations Course**
- **2-5 April Joint Special Operations University Course**

JAWS Operational Art and Campaigning Publications

The following campaign planning publications are available from the Joint Advanced Warfighting Schools, Department of Operational Art and Campaigning web site.

http://www.jfsc.ndu.edu/schools_programs/jaws/publications.asp

Case Studies

- Horatio Nelson and the 1798 Mediterranean Campaign
- The Mexican American War

War Plans

The following collection of war plans are from the Joint Forces Staff College Library. These are original World War II campaign plans that have been scanned electronically to enable easy accessibility by students of campaign planning. Each campaign plan consists of a back ground introduction (Word document) followed by the original plan in PDF format.

- Introduction Reno IV Outline Plan
  - RENO IV Outline Plan 6 March 1944
- Introduction Mindoro Operations Instruction NO. 74 MINDORO
  - Operations Instruction NO. 74 MINDORO 13 October 1944
- Introduction to Operation “ECLIPSE”
  - Operation “ECLIPSE” Appreciation and Outline Plan 24 November 1944
- Introduction Operation Plan 14-44
  - Operation Plan 14-44 Operation Iceberg 31 December 1944
- Introduction to Tarakan Island Operations Instruction NO. 99
  - Operations Instruction NO. 99 Tarakan Island 21 March 1945

Intent

The Joint Advanced Warfighting School (JAWS) is envisioned to populate the Joint Staff and combatant commands with a cadre of officers expert in the joint planning processes and capable of critical analysis in the application of all aspects of national power across the full range of military operations. Graduates will be capable of synergistically combining existing and emerging capabilities in time, space and purpose to accomplish a range of operational or strategic objectives.

Disclaimer: The views expressed in this journal are those of the authors and do not represent the views of the Joint Forces Staff College, National Defense University or the Department of Defense