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Organizing for Effect: Assessing the Institutional Machinery Needed to Effectively Conduct Effects-based Operations

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This paper assesses the current state of joint organizational readiness to conduct Effects-based Operations (EBO). At the strategic level, the paper assesses the readiness of the national intelligence infrastructure to provide the "deeper understanding of the enemy" that the EBO concept envisions. It also examines proposed reforms of the National Security Council interagency process and assesses the regional commanders-in-chiefs (CINCs) ability to influence the coordination of the DIME instruments of power at the national level. Findings include: 1) the intelligence community must streamline its activities if it is to provide the kind of understanding of the enemy that the EBO concept envisions; and 2) the NSC system is likely to complicate the conduct of EBO from the CINC's perspective. At the operational level, the paper assesses the suitability of the 2001 Quadrennial Defense Review's proposed Standing Joint Task Force (SJTF) headquarters to support EBO. It finds that 1) the SJTF benefits the EBO concept; 2) a higher-order effects cell should be established within the SJTF headquarters to help the commander plan for and measure higher-order effects; and 3) officers manning this cell should receive special training in the DIME instruments of national power.

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THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDENT SHOULD INCLUDE THE FOREGOING STATEMENT.

EXECUTIVE SUMMARY

Issue: This paper assesses the current state of joint organizational readiness to conduct Effects-based Operations (EBO) and then makes recommendations that may better prepare the U.S. military to conduct these operations. The paper assesses organizational readiness both at the strategic and operational levels.

Background: Put simply, EBO seeks to *control* the enemy instead of annihilating it. Specifically, EBO seeks to focus both military and non-military power to produce cascading, systemic effects at the tactical, operational, and strategic levels that breaks an adversary's will to resist and produces the desired strategic outcome. EBO is knowledge based. It assumes that the United States' asymmetric advantages in information, intelligence, surveillance, and reconnaissance enables a deep understanding of an adversary's culture and sources of national power. Given this multi-dimensional understanding, it further assumes that the United States can coordinate its diplomatic, informational, military, and economic (DIME) instruments of power and can predict the effects their application will produce within the adversary "system." Finally, it assumes that the United States can assess the results (or effects) of the military and non-military force used against an adversary with enough fidelity to plan follow-on actions.

Strategic Level Findings. At the strategic level, the paper assesses the readiness of the national intelligence infrastructure to provide the "deeper understanding of the enemy" that the EBO concept envisions. Next, it explores the organizational challenges that the coordination of the DIME instruments of national power presents. Specifically, it examines proposed reforms of the National Security Council interagency process and assesses the regional commanders-in-chiefs (CINCs) ability to influence the coordination of the DIME instruments of power at the national level. Findings include: 1) the intelligence community must streamline its activities if it is to provide the kind of understanding of the enemy that the EBO concept envisions; and 2) the NSC system is likely to complicate the conduct of EBO from the CINC's perspective.

Operational Level Findings. At the operational level, the paper assesses the suitability of the 2001 Quadrennial Defense Review's proposed Standing Joint Task Force (SJTF) headquarters to support EBO. It finds that 1) the SJTF benefits the EBO concept; 2) a higher-order effects cell should be established within the SJTF headquarters to help the commander plan for and measure higher-order effects; and 3) officers manning this cell should receive special training in the DIME instruments of national power.

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PREFACE

Special thanks go to Professor Wray Johnson and Lieutenant Colonel Robert Fitzgerald, USMC, both members of the faculty of the Marine Corps Command and Staff College. Their patient reading, rapid turn-around of drafts, and constructive input was invaluable. Most importantly, my most sincere thanks go to my wife, Julie, who tolerated an all-too-focused husband during the writing and editing of this thesis.

ACRONYMS

ATO:	Air Tasking Order
BDA:	Battle Damage Assessment
C4ISR:	Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance
CA:	Combat Assessment
CCIRs:	Commander's Critical Information Requirements
CINC:	Commander-in-Chief of Combatant Commands
CJCS	Chairman of the Joint Chiefs of Staff
COA:	Course of Action
COG:	Center of Gravity
DCI:	Director of Central Intelligence
DIA:	Defense Intelligence Agency
DJTFAC:	Deployable Joint Task Force Augmentation Cell
DOD:	Department of Defense
DLAMP:	Defense Leadership and Management Program
DMA:	Defense Mapping Agency
DIME:	Diplomatic, Information, Military, Economic
EBO:	Effects-based Operations
GPS:	Global Positioning System
GWAPS:	Gulf War Airpower Survey
HOEC:	Higher Order Effects Cell
IWG:	Interagency Working Group
JDAM:	Joint Direct Attack Munition
JFC:	Joint Force Commander
JFSC:	Joint Forces Staff College
JPME:	Joint Professional Military Education
JWAC:	Joint Warfare Analysis Center
NSAM	National Security Action Memorandums
NSDD	National Security Decision Directives
MEA:	Munitions Effectiveness Assessment
MOP:	Measure of Performance
MOE:	Measure of Effectiveness
MOM:	Measure of Merit
NIMA:	National Imagery and Mapping Agency
NCA:	National Command Authority
NGO:	Non-Governmental Agency
NSA:	National Security Agency
NSC:	National Security Council
NRO:	National Reconnaissance Office
OMB:	Office of Management and Budget
PDD:	Presidential Decision Directive
PME:	Professional Military Education
PSYOPS:	Physiological Operations
PVO:	Private Volunteer Agency

QDR:	Quadrennial Defense Review
RDO:	Rapid Decisive Operations
SIGINT:	Signals Intelligence
SJTF:	Standing Joint Task Force
TPED:	Tasking, Processing, Exploitation, Dissemination
USCENTCOM:	United States Central Command
USJFCOM:	United States Joint Forces Command
USPACOM:	United States Pacific Command
USSBS:	United States Strategic Bombing Survey
VCJCS:	Vice-Chairman of the Joint Chiefs of Staff

CHAPTER 1

INTRODUCTION

> The year is 2012. A large regional power threatens to annex a weaker neighboring state by force. The President of the United States decides to act. However, nearby states deny use of their airfields and ports to U.S. military forces out of fear of their hegemonic neighbor. Further, the aggressor state possesses air, land and sea denial capabilities designed to slow any U.S. intervention. Given this scenario, how can the United States project sufficient military power across a great distance to coerce and incapacitate a capable regional power with multiple advantages over U.S. forces?

This question was recently posed to military wargamers at a United States Joint Forces Command (USJFCOM) analytical exercise to test a new transformation concept dubbed Rapid Decisive Operations (RDO).[1] RDO seeks to use greater speed and less mass (in terms of numbers of weapons systems) to obtain decisive results. The concept is composed of several elements.[2] First, it does not focus on seizing or occupying territory except to achieve a limited goal.[3] Second, it seeks to bring all aspects of U.S. diplomatic, information, military, and economic (DIME) power to bear in the conduct of operations against an enemy. Third, it envisions "parallel operations," whereby multiple parts of the enemy's centers of gravity are attacked simultaneously with massive, precisely targeted force. Finally, and most importantly, it is predicated on another transformation concept: Effects-based Operations (EBO).[4]

Put simply, EBO seeks to *control* the enemy instead of destroying it by attrition. Specifically, EBO seeks to focus both military and non-military power to produce cascading, systemic effects at the tactical, operational, and strategic levels that break an adversary's will to resist and produces the desired strategic

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[1] Department of Defense, *Joint Experimentation Concept Executive Report 01-01 Rapid Decisive Operations: Analytical Wargame Findings* (Norfolk, VA, United States Joint Forces Command, 2001), 9-10. Hereafter cited as DoD, *Rapid Decisive Operations Wargame Findings.*

[2] The definition of Rapid Decisive Operations is "a concept to achieve rapid victory by attacking the coherence of an enemy's ability to fight. It is the synchronous application of the full range of our national capabilities in timely and direct effects-based operations. It employs our asymmetric advantages in the knowledge, precision and mobility of the joint force against his critical functions to create maximum shock defeating his ability and will to fight." United States Joint Forces Command, *A Concept Framework for Effects-based Operations (Draft),* 01 August 2001, URL:<https://je.home.usjfcom.mil>, accessed 15 October 2001, 2. Hereafter cited as USJFCOM, *A Concept Framework for EBO*.

[3] DoD, *Rapid Decisive Operations Wargame Findings*, 5.

[4] USJFCOM, *A Concept Framework For EBO,* ii.

outcome.[5] EBO is knowledge based. It assumes that the United States' asymmetric advantages in information, intelligence, surveillance, and reconnaissance enables a deep understanding of an adversary's culture and sources of national power.[6] Given this multi-dimensional understanding, it further assumes that the United States can coordinate its DIME instruments of power and can predict the effects that their application will produce within the adversary "system."[7] Finally, it assumes that the United States can assess the results (or effects) of the military and non-military force used against an adversary with enough fidelity to plan follow-on actions.

With these assumptions in mind, this paper assesses the current state of joint organizational readiness to conduct EBO and then makes recommendations that may better prepare the U.S. military to conduct these operations. Chapter 2 sets the stage for this analysis by exploring the concept of EBO in greater detail. Chapter 3 is a strategic level analysis. It first assesses the readiness of the national intelligence infrastructure to provide the "deeper understanding of the enemy" that the EBO concept envisions. Next, it explores the organizational challenges that the coordination of diplomatic, informational, military, and economic (DIME) instruments of national power presents. Specifically, it examines proposed reforms of the National Security Council interagency process and assesses the regional commanders-in-chiefs' (CINCs) ability to influence the coordination of the DIME instruments of power at the national level. Chapter 4 focuses on the operational level. It assesses the suitability of the Quadrennial Defense Review's proposed Standing Joint Task Force (SJTF) headquarters to support EBO. Finally, Chapter 5 summarizes the findings and makes recommendations.

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[5] An effect is defined as "the physical, functional or psychological outcome, event, or consequence that results from specific military and non military action." USJFCOM, *A Concept Framework For EBO*, 4.

[6] *Ibid.*, 1. The hypothesis that EBO joint experimentation seeks to prove is: "**If** we can anticipate with any degree of certainty how an intelligent adversary should, can or could act and react to compensate for our actions; and if we can plan, execute, access and adapt our actions in terms of the effects we desire, **Then** we can identify and execute the most effective course of action in bringing about the desired change in the adversary's behavior."

[7] Efficient interagency coordination within the US Government is not a throw away assumption. As Joint Vision 2020 points out, "The primary challenge of interagency operations [outside of the Department of Defense] is to achieve unity of effort despite the diverse cultures, competing interests, and differing priorities of the participating organizations, many of whom guard their relative independence, freedom of action, and impartiality. Additionally, these organizations may lack the structure and resources to support extensive liaison cells or integrative

Notes continued on next page

CHAPTER 2

WHAT ARE EFFECTS-BASED OPERATIONS?

> **Effects-based Operations:** A process for obtaining a desired strategic outcome or "effect" on the enemy through the synergistic, multiplicative and cumulative application of the full range of military and nonmilitary capabilities at the tactical, operational, and strategic levels.
>
> **Effect:** The physical, functional or psychological outcome, event or consequence that results from specific military or nonmilitary actions.
>
> Department of Defense, *A Concept Framework For Effects-based Operations*[8]

Background—Seeking Effects Vice Destruction

The EBO concept grew out of the targeting strategy used in Operation DESERT STORM's air campaign. Rather than focusing purely on target *destruction*, planners sought to apply force in a way to achieve an *effect* on targets that supported the air campaign's objectives. For example, instead of destroying the individual Sector Operations Centers that made up the Iraqi integrated air defense system, Gulf War planners sought to sever the links that integrated the system. While this approach left individual sectors functional, it forced them into a less capable, autonomous mode and made them easier to avoid or attack. As an economy of force measure, effects-based targeting[9], as the concept came to be known, reduced the number of weapons required to achieve one of the first day's objectives—to degrade the enemy air defenses—and served to increase the number of targets that could be attacked in a given 24-

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technology." Department of Defense, *Joint Vision 2020* (Washington D.C.: Chairman of the Joint Chiefs of Staff, 2000), 18. Hereafter cited as DoD, *Joint Vision 2020*.

[8] USJFCOM, *A Concept Framework For EBO*, 4. As pointed out in Chapter 1, Rapid Decisive Operations and Effects-based Operations are not synonymous, though they are related. EBO describes what to attack—it is the process used to analyze the enemy system to determine the effects needed to break the enemy's cohesion or to force the enemy's capitulation. RDO describes how to attack—it employs the control theory of airpower, which uses the principles of parallel war to attack the enemy rapidly and simultaneously at all levels of war. RDO uses EBO to reduce total weapons requirements, thereby allowing more targets to be attacked in a given 24-hour period with less mass. For more information on the integration of RDO/EBO, see David Deptula, *Effects-Based Operations: Change in the Nature of Warfare* (Washington, D.C.: Aerospace Education Foundation, undated), 3-16.

[9] Effects-based targeting enters the joint lexicon with the introduction of Joint Pub 3-60. See Department of Defense, *Joint Pub 3-60, Joint Doctrine for Targeting (Second Final Coordination Draft)*, 23 August 2001, URL: < http://www.dtic.mil/doctrine/jel/ddrraafftt_pubs/3_60sfc.pdf>, accessed 15 November 2001. Hereafter cited as DoD, *JP 3-60: Second Final Coordination Draft*.

hour Air Tasking Order (ATO) cycle.[10]

The EBO concept expands this tactical thinking to encompass the operational and strategic levels of war as well. If one views an enemy nation as a "system of systems,"[11] it follows that disruption of part of one system will affect the other parts of the system—just as breaking the communications links in an integrated air defense system forces it into a less capable mode.[12] Therefore, EBO seeks to 1) identify the enemy's critical vulnerabilities and linkages that hold his system together; 2) determine the effects necessary to break the enemy's cohesion or compel the enemy to submit or to change his behavior; 3) apply all of the relevant diplomatic, informational, military, and economic instruments of national power required to produce the desired effects; and 4) assess the progress of the operation and to adjust as required.[13] This process, known as the EBO cycle, will be discussed in greater detail later. First, it is necessary to gain a deeper understanding of effects to appreciate the supporting requirements of the EBO cycle.

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[10] Edward Mann, Gary Endersby, and Tom Searle, "Dominant Effects: Effects-Based Joint Operations," *Aerospace Power Journal*, 15, no. 3 (2001), 92-93.

[11] There is disagreement in the literature over who coined this phrase "a system of systems." Some articles attribute it to a former Chief of Naval Operations, while others give credit to the former Air Force Systems Command. The source of its origin not withstanding, the idea that the phrase conveys—that the enemy is a complex series of interrelated systems—is useful. It helps one to conceptualize what effects are and how they propagate throughout the enemy's "system."

[12] EBO differ from Colonel John Warden's thinking outlined in his landmark paper, *The Enemy as a System*, undated, URL: <www.airpower.au.af.mil/airchornicles/apj/warden.html>, accessed 7 October 2001. Warden divides the enemy's system into five parts: Leadership, Organic Essentials, Infrastructure, and Population. Warden advocates a "decapitation" strategy whereby the enemy's leadership is targeted, thereby fatally disrupting the rest of the enemy's system, much as a body would cease to function without a head.

Major General David Deptula, the father of the RDO/EBO concept and a Warden protégé, outlines his thinking in *Effects-Based Operations: Change in the Nature of Warfare*. Maj Gen Deptula advocates a "control strategy" where "essential" systems are first identified and then targeted to produce specific effects "that render the entire system ineffective and can yield effective control over that system." He concludes, "Force used to effectively control a system—to achieve specific effects rather than destroy it—may lead to the same strategically relevant result, yet with significantly less force." Deptula, 5-6.

For an opposing, contemporary view of both Warden's and Deptula's constructs, see Robert A. Pape, *Bombing to Win: Air Power and Coercion in Warfare* (Iithaca, N.Y: Cornell University Press, 1996), 69-79. Pape argues in favor of a "denial strategy" that "entails smashing enemy military forces, weakening them to the point where friendly ground forces can seize disputed territories without suffering unacceptable losses." Such a campaign may "center on destruction of arms manufacturing, interdiction of supplies…disruption of movement and communication…, and attrition of fielded forces."

[13] USJFCOM, *A Concept Framework For EBO*, 5.

Understanding Effects

Today's Model for Operations: The Objectives-based Model

According to USJFCOM, effects-based thinking is an evolution in current objectives-based thinking.[14] To understand why this is true, it is first necessary to understand the concepts underlying objectives-based thinking. Table 1 defines current objectives related terms.

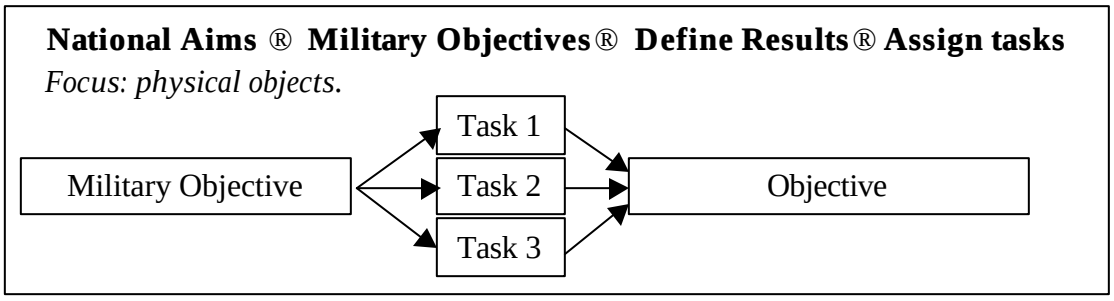
Table 1: Current Objective Related Definitions

National Objectives	The aims, derived from national goals and interests, toward which a national policy or strategy is directed and efforts and resources of the nation are applied.
Military Objectives	A derived set of military actions taken to implement National Command Authority guidance in support of national objectives. A military objective defines the results to be achieved by the military and assign[s] tasks to commanders.
Objective	The physical object of the action taken.

Source: Department of Defense, *JP 1-02: The Department of Defense Dictionary of Military and Associated Terms* (Washington, D.C.: Chairman of the Joint Chiefs of Staff, 12 April 2001).

The operative words from these definitions sketch the flow of the objectives based-planning model as shown in Figure 1. Simply put, the strategy to task linkage of the objectives-based model relies on translating strategy at one level into objectives at the next lower level until, finally, discrete, tactical actions and objectives are defined that support higher echelon objectives. Based on principles of Napoleonic warfare, this model values the attrition of physical objects.

Figure 1: The Objectives-based Model[15]



Its principal measure of combat success is target destruction—be it forces, industries, whatever—or the conquest of territory.[16]

[14] USJFCOM, *A Concept Framework For EBO*, 7.
[15] Derived from USJFCOM, *A Concept Framework For EBO*, 8.
[16] Mann, Endersby, and Searle, 94.

Looking Toward the Future: The Effects-based Model

In contrast, the effects-based model focuses less on tactical-level destruction and more on the higher-level effects that the application of force produces.[17] Table 2 lists the proposed definitions of EBO and effects. These definitions highlight the departure from a traditional destruction-based approach in two ways. First, their inclusion of both military and non-military capabilities dramatically widens the scope of the operational commander's strategic view. Second, and most significantly, by focusing on effects vice destruction, it offers a more intuitive way to understand how an information attack, a humanitarian drop, a Special Forces attack, an air strike,

Table 2: Proposed Effects Related Definitions

Effects-based Operations	A process for obtaining a desired strategic outcome or "effect" on the enemy through synergistic, multiplicative, and cumulative application of the full range of military and nonmilitary capabilities at the tactical, operational and strategic levels.
Effects	The physical, functional, or psychological outcome, event, or consequence that results from specific military or non-military action.

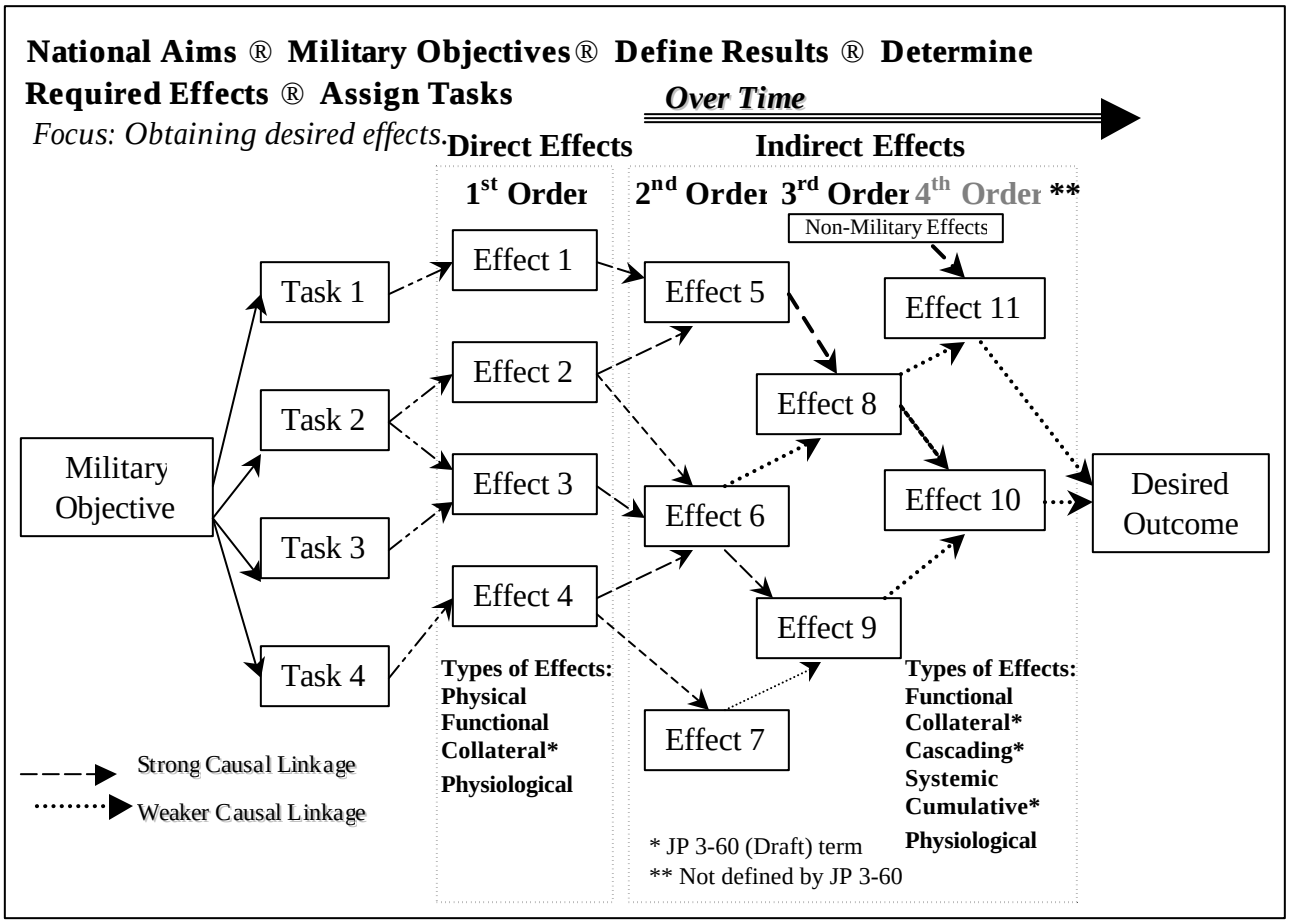
Source: USJFCOM, *A Concept Framework For EBO*, 4.

a psychological operation, a diplomatic negotiation, and an economic embargo might fit together to achieve a national objective than the traditional objectives-based approach.

Figure 2 illustrates the strategy to task framework of the effects-based model. Under the EBO construct, it is assumed that each task performed has one or more causal linkages that ripple throughout the enemy's system and ultimately have either a positive or negative influence on the desired outcome. According to USJFCOM, the idea of one task producing more than one effect is the evolutionary step that effects-based thinking provides over objectives-based thinking.[18] These causal linkages are broadly divided into two types of effects: direct effects and indirect effects.

[17] *Ibid*., 94.
[18] USJFCOM, *A Concept Framework For EBO*, 8.

Figure 2: The Effects-based Planning Model[19]



Types of Effects

Direct effects, or first order effects, are the immediate consequence of the task.

These effects are usually *easy to recognize and measure*. Mann, Enderby, and Searle further subdivide direct effects into:[20]

- Physical effects, or *effects created through physical alteration* of an object or system;

[19] Derived from USJFCOM, *A Concept Framework For EBO*, 8. Also see Mann, Endersby, and Searle, 97-8; DoD, *Joint Pub 3-60, Second Final Coordination Draft*, I-7-10; and T.W. Beagle, *Effects-Based Targeting: Another Empty Promise?,* SAAS Thesis (Maxwell AFB: School of Advanced Airpower Studies, 2000), 6-12.

[20] Mann, Endersby, and Searle, 98. Mann, *et. al.,* cite a combination of effects-based definitions from *Joint Pub 3-60: Joint Doctrine for Targeting, 6 June 2000, Preliminary Coordination Draft* with new terms to support effects-based experimentation. They contend that effects-based terms are slowly making their way into joint doctrine. An examination of both published and draft joint publications by the author paper supports this conclusion. For example, *Joint Pub 3-60, Joint Doctrine for Targeting, Second Final Coordination Draft*, uses the definitions of direct and indirect effects presented above; however, only three "characteristics", or sub-effects, are described: cumulative effects, cascading effects and collateral effects. Meanwhile, *Joint Pub 3-70, Joint Doctrine for Strategic Attack, Second Draft*, 11 May 2001, discusses physical effects and physiological effects, although EBO concepts and effects-based targeting, referenced in *JP 3-60*, are not described.

- Functional effects, or the direct and indirect effects an attack or operation has on the *ability of a target to function properly*;

- Collateral effects, or the positive or negative outcomes that result when *something occurs other than intended*; and[21]

- Psychological effects, or an operation's *impact on the mental domain* of a target audience.

Indirect effects, or higher-order effects (2nd order and 3rd order), are the effects created through an intermediate effect or mechanism, producing a final outcome or result.[22] Indirect effects may *take time to develop* and *may also be hard to recognize or measure.*[23] In general, the higher the order of the effect, the harder it is to predict or measure.[24] Mann, Endersby, and Searle divide indirect effects into:

- Functional, Collateral and Physiological effects. (See direct effects for definitions)

- Cascading effects, or indirect *effects that ripple* through an enemy target system, often influencing other target systems as well. These effects usually ripple through nodes that are common and critical to related target systems. While these effects may ripple upward or downward, they generally ripple downward—from higher echelons to lower echelons.

- Cumulative effects, or indirect effects resulting from *the aggregate of many direct or indirect effects*. They may occur at the same level or at different levels of employment as one achieves lower order effects. Cumulative effects typically occur at higher levels of employment.

- Systemic effects, or indirect effects that *impact the operation of a specific system.*[25]

Estimating the 2nd and 3rd order effects a direct effect may produce is difficult. However, the central idea of effects as promulgated by JP 3-60 is that "the impact of a single event can be magnified over time and distance that greatly exceeds the span of the direct effect associated with that one event."[26]

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[21] *Joint Pub 3-60, Joint Doctrine for Targeting, Second Final Coordination*, draft strikes the terms "positive and negative" in this definition.

[22] As shown in figure 2, effects arguably continue to ripple beyond 3rd order effects. However, since predicting effects becomes more tenuous with increasing order, the EBO Concept and draft joint doctrine documents do not deal with effects created beyond third order effects for purposes of planning and assessment. In the diagram, the effect of the other instruments of national power is shown as a 4th order effect. This may or may not be the case. It is purely intended to show that the effects these instruments produce are usually higher order when combined with military action.

[23] Mann, Endersby, and Searle, 98-9.

[24] Beagle, *Effects Based Targeting,* 96. Beagle notes that "airpower has become very effective at producing direct, physical effects and it is becoming increasingly capable of creating certain widespread systemic effects. Generally, though, the ability to even predict, much less generate, specific psychological effects [a 3rd or 4th order effect] remains a hope…"

If direct and indirect effects are the ends that EBO produce, the means lie in how knowledge is collected, arranged, and acted upon to produce these effects. This process is known as the EBO cycle.

Planning and Executing For Effect: The EBO Cycle

The fuel that powers the EBO concept and its associated planning cycle is knowledge—a "comprehensive understanding of the adversary as a complex, adaptive system of systems comprised of political, military, economic, social and infrastructure elements."[27] According to the USJFCOM EBO concept, this deeper understanding allows planning staffs to more accurately determine the strength and cohesion that binds the enemy's system together and motivates him to action. Using the full range of the DIME instruments of national power, the joint forces' commander can then delineate what instruments should be applied to produce the effects needed to either break the enemy's cohesion or force the enemy to choose another course of action (COA).[28] The process for making this assessment and implementing its recommendations is shown in Figure 3. A more in-depth discussion of each step in the EBO Cycle follows to provide context and background for the later chapters of this paper.

Understanding the Enemy

The EBO cycle begins by researching the strategic environment and gaining an understanding of the enemy. These two tasks begin well before any specific operation and seek to answer broad questions such as, "What kind of functional, systemic and psychological effects might one seek in certain situations and how might one produce them?" and "What kind of indicators are available to gauge the nature and extent of effects in an enemy's system?"[29] To answer these questions, designers of the EBO process envision fusing and leveraging information from across all U.S. governmental agencies and the private sector. With this information in hand, planners hope to profile the enemy's system by identifying key

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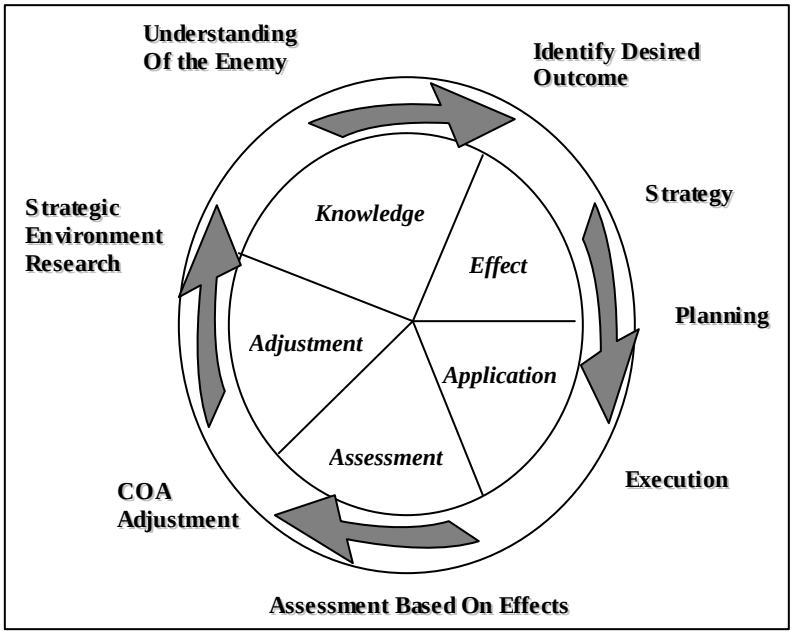
[25] Mann, Endersby, and Searle, 98-9.
[26] DoD, *JP 3-60: Second Final Coordination Draft*, I-9-10.
[27] DoD, *Rapid Decisive Operations Wargame Findings*, 15.
[28] USJFCOM, *A Concept Framework For EBO*, 4.
[29] Mann, Endersby, and Searle, 96.

links and nodes, strengths, weakness, and vulnerabilities using advanced predictive models and systems analysis.

Figure 3: The Effects-Based Operations Cycle[30]



The output of this effort is a "deeper understanding of the enemy"— an understanding that points to what he values and how to hold it at risk.[31] This understanding forms the foundation for EBO when a real world situation occurs. Handling such a situation begins by identifying outcomes and designing strategy at the national level.

Identifying Outcomes and Designing Strategy

According to the USJFCOM EBO concept, the process for identifying outcomes and formulating national strategy appropriately occurs above the level of the CINC. During this process, "national objectives are determined, options are reviewed and the appropriate instrument of national power, or a combination of instruments is identified to apply to existing [military] capabilities to produce effects that accomplish the desired outcome."[32] It further argues that military success is vitally dependent on CINC level participation in this national process to "provide the joint commander with the overall objective to be achieved, the underlying rationale for courses of action, and, most importantly, a knowledge of the depth and breath of actions to be conducted by all elements of national power and influence."[33] With the

[30] USJFCOM, *A Concept Framework For EBO*, 4.
[31] USJFCOM, *A Concept Framework For EBO*, 11 and 14.
[32] Mann, *et al.*, argues that the military needs to participate proactively in these discussions, even though it will not control them. Further, they argue that the military can enjoy better success if they present an effects-based plan encompassing all aspects of national power upfront, even though these recommendations may not be fully implemented. Mann, Endersby, and Searle, 96.
[33] USJFCOM, *A Concept Framework For EBO*, 17.

guidance of the National Command Authority (NCA) in hand, the CINC begins the process of planning for effects.

Planning for Effects

Up-front identification of both the effects to be achieved as well as the measures to be used to judge success (for example, effects-based Commander's Critical Information Requirements (CCIRs)) is key to effective EBO.[34] Planning for the military component of EBO begins with the issuance of commander's guidance and intent. This guidance 1) defines the end state in terms of desired effects; 2) directs appropriate interagency coordination with the other instruments of national power being utilized; and 3) outlines constraints and parameters that restrict how effects may be achieved given an understanding of the enemy and the potential for collateral direct or indirect effects.[35]

Using this guidance, COA development builds on a deep understanding of the enemy to plan operations against those systems that the adversary values most. Developing COAs is a collaborative process that includes close coordination with subordinate commands, the NCA, and other agencies supporting the operation. The result of this process is mission type orders that provide guidance in terms of effects, priorities, constraints, and intent to components and other agencies.[36] By using mission type

[34] Mann, Endersby, and Searle, 97. JP 01-2 defines CCIRs as a comprehensive list of information requirements identified by the commander as being critical in facilitating timely information management and the decision making process that affect successful mission accomplishment. CCIRs are stated as questions and serve, in part, to focus the intelligence collection effort.

As an example, a ground commander may wish to begin an offensive when the enemy force is no longer capable of fielding an effective defense. To support decision making, an attritionist might focus on the reduction of numbers of enemy weapon systems to determine when to begin an attack. The resulting CCIR might ask, "When have I destroyed 50 percent of the enemy's tanks?" To answer such a CCIR, the intelligence collection effort would focus on counting destroyed tanks.

On the other hand, an effects-based CCIR focuses on capabilities rather than on numbers exclusively. For example, an effects-based CCIR might ask, "When can the enemy no longer coordinate a defense above the battalion level?" In this case, the intelligence collection effort focuses not only on force on force comparisons, but subjective measures such as morale, ability to communicate and coordinate, and demonstrated fighting ability as well.

[35] USJFCOM, *A Concept Framework For EBO*, 17.

[36] JP 01-2 defines mission type orders as 1) orders issued to a lower unit that includes the accomplishment of the total mission assigned to the higher headquarters or 2) orders to a unit to perform a mission without specifying how it is to be accomplished. Major Michael Fischer notes in his paper, *Mission-Type Orders In Joint Air Operations*, that the United States military's use of mission-type orders dates to the 1930s and came into widespread use over the past two decades. A tenant of the maneuver warfare concepts developed by the U.S. Army in the 1980s, mission type orders are intended to communicate the who, what, where and when—but not the how—from higher

Notes continued on next page

orders, the USJFCOM concept hopes to maintain "the explicit linking of strategic objectives and desired outcomes to tactical actions, the strategy-to-task linkage, so that as resources are tasked to take actions, every tactical action has a clear and traceable link to the strategic objective."[37]

Also important during the planning process is the articulation of the lower-level Measures of Performance (MOP) and higher-level Measures of Effectiveness (MOE) on which assessment is based for both military and non-military actions later in the EBO cycle. According to the USJFCOM concept, MOPs are "objective metrics of the outcomes of tactical actions."[38] MOPs, roughly equivalent to traditional combat assessment (CA), are developed with the desired effects in mind and are the primary gauge of tactical effectiveness (i.e., was the level of damage on the target achieved? Did the computer network attack occur at the right time and on the right system?).[39] In contrast, MOEs are "subjective indicators of the outcomes that tactical actions have produced, or contributed to producing, towards the desired effect."[40] MOEs articulate 1) where to look to measure higher-level effects and 2) what to measure to determine the extent to which these effects have been achieved. Authors of the JFCOM concept acknowledge that defining and measuring MOEs for non-physical objects will prove one of the more difficult facets of EBO. With the planning complete, the EBO cycle moves to the execution phase. Following execution, the cycle enters its assessment phase.

Assessing Effects

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headquarters to subordinates headquarters. For example, an effects-based mission type order may read "Delay the advance of the enemy's lead regiments for 72 hours." For a discussion of the use of mission type orders in air combat see Michael Fischer, *Mission-Type Orders In Joint Air Operations: The Empowerment of Air Leadership* (Maxwell AFB, Al: School of Advanced Airpower Studies, 1995), 1-5.

[37] USJFCOM, *A Concept Framework For EBO*, 17.

[38] *Ibid*., 27.

[39] *Ibid*. Combat Assessment is composed of three components: Battle Damage Assessment (BDA), or how badly is the target damaged; Munitions Effectiveness Assessment (MEA), or how close did the weapons come to striking the target; and Reattack Recommendations, or a recommendation to restrike or not to restrike a target. For detailed information on combat assessment see Department of the Air Force, *Air Force Pamphlet 14-210: USAF Intelligence Targeting Guide* (Washington, D.C.: HQ USAF/XOI, 1999). For an abbreviated version see Mark Sopko, *Combat Assessment: Analyzing the Results of an Air Campaign*, 15 November 1999, URL: <http://www.airpower.maxwell.af.mil/airchronicles/cc/sopko.html>, accessed 9 October 2001.
The joint pub for combat assessment—*Joint Pub 2-01.1: Joint Tactics Techniques and Procedures for Intelligence Support to Targeting*— is in development.

[40] USJFCOM, *A Concept Framework For EBO*, 27.

EBO assessment gives commanders the knowledge needed to judge whether or not to adjust the current course of action. Effects-based assessment must go beyond traditional attrition-based combat assessment to determine 1) if some or all of the desired effects were produced; 2) what collateral or unintended effects were produced; 3) the overall impact on joint effort; and 4) how the tactical action contributed to the desired outcome.[41] Joint Pub 2-0 describes the intelligence cycle as consisting of planning, collecting, processing, analyzing, exploiting, and disseminating.[42] To understand how effects-based assessment works, a brief description of each the steps in the intelligence cycle follows.

Planning. As was pointed out earlier, assessment success begins in the planning phase. To understand what effects an anticipated sequence of events might have, predictive assessments must not only evaluate direct effects which are easy to measure, but also indirect effects which are harder to recognize and measure. Here again, pre-existing knowledge of the enemy nation is paramount, since, as Colonel Philip Meilinger points out, it is just as important to understand how a system fails, as it is to understand how it operates.[43] This clear articulation of predicted effects is key to the development of MOPs and MOEs. These measures must be 1) meaningful in that they are tied to theater objectives and 2) observable in that they consider the capabilities of available Intelligence, Surveillance, and Recognizance (ISR) assets.[44]

Collection, Processing, and Exploitation. Collection, processing, and exploitation use the measures developed in planning to task ISR assets and fuse intelligence information following the execution phase. The EBO concept envisions future ISR assets that allow for rapid retasking and observation of human behavior patterns. Similarly, it envisions new methods of fusing data so that it is both timely and useful.[45]

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[41] USJFCOM, *A Concept Framework For EBO*, 23.
[42] Department of Defense, *Joint Pub 2-0: Doctrine for Intelligence Support to Joint Operations* (Washington, D.C.:USGPO, 2001), II-1.
[43] Philip Meilinger, "Air Strategy: Targeting for Effect", Aerospace Power Journal 13, no. 4 (1999):58.
[44] USJFCOM, *A Concept Framework For EBO*, 23.
[45] USJFCOM, *A Concept Framework For EBO*, 23-4.

Processing, Analyzing and Disseminating.[46] Processing and analyzing is the heart of EBO assessment. Effects assessment "is a continuous, dynamic evaluation of associated MOPs and MOEs to determine if the desired effects have been achieved, are in the process of being achieved, or have not been achieved at all."[47] It uses fused data to assess the progress of the current course of action for the commander. According to the JFCOM EBO concept, it is a two-step process. Step one seeks to identify what physical and non-physical effects have been created in the enemy's system. Using the MOP and MOE developed in planning, this analysis assesses 1) if the predicted or intended effects were produced; 2) the magnitude of the direct effects produced; 3) what indirect effects, if any, were produced; and 4) what delayed effects are in motion and how long/what additional effort is needed to produce these effects.[48] Step two involves identifying whether direct or indirect collateral effects were produced and why these collateral effects occurred. The purpose of this review is to 1) identify what events lead to the collateral effect and why it was not predicted in the planning process and 2) to identify deficiencies in the information used for planning (Was information missing? Was it misunderstood? Was enemy deception acted upon?).[49]

Based on this analysis, the current COA is reviewed. Branch plans[50] are formulated, if required, and recommendations to modify the current COA are made to achieve the desired effect. With this step, the EBO cycle begins again.

"So What?"—The Promise of EBO

[46] USJFCOM, *A Concept Framework For EBO* uses a shortened intelligence cycle. In the document, the "Processing and Analyzing" step is deleted and its *Joint Pub 2-0* functions are grouped under "exploitation." For purposes of this study, *Joint Pub 2-0* definitions (page II-8) will be used; therefore, material found under the "Exploitation" heading in the USJFCOM, *A Concept Framework For EBO* document is described here.
[47] USJFCOM, *A Concept Framework For EBO*, 27
[48] *Ibid*., 24-8.
[49] *Ibid*., 24-5.
[50] "A *branch* is a contingency plan or course of action (an option built into the basic plan or course of action) for changing the mission, disposition, orientation, or direction of movement of the force to aid success of the current operation, based on anticipated events, opportunities, or disruptions caused by enemy actions." Department of the Army, *Field Manual 3-0: Operations* (Washington, D.C.:USGPO, 2001), 6-5.

This chapter outlined the concept of Effects-based Operations. The promise of EBO is that it provides a framework in which to leverage one of the sweetest fruits of the ongoing revolution in military affairs, namely the capability to develop *high fidelity knowledge of the enemy*, in order to rapidly and precisely focus all aspects of US diplomatic, informational, military, and economic power toward the task of bending the enemy to our national will. By applying the instruments of national power in such a coordinated manner to produce specific effects, EBO hopes to achieve US objectives more rapidly and with greater impact than would otherwise be the case with military power alone.

At the operational level, by using our knowledge of the enemy to think in terms of direct and higher-order effects, commanders gain a greater insight into how to apply not only traditional military force, but also non-kinetic capabilities that lie within the domain of information operations. Further, by expanding his viewpoint beyond the battlespace to also include the effects created by diplomatic and economic actions, the commander can gain insight into how to adjust the application of military power to complement and enhance these strategic level effects. Finally, by considering the collateral effects of his actions (such as the effects caused by the destruction of critical infrastructure), the commander can avoid taking an action that unintentionally strengthens enemy morale or makes the transition to the post-war environment more difficult.

At the tactical level, effects-based thinking widens the commander's view of the battlespace beyond force on force actions and measures. It allows commanders to consider the synergies of Joint actions on the battlefield and the objective and subjective effects they create. By focusing on effects instead of attrition, commanders can increase the tempo of their operations thus multiplying the combat effectiveness of their forces.

EBO and its big brother, RDO, are undergoing testing in joint experimentation labs. Results show the concepts appear to be promising in theory assuming the following three critical capabilities exist: 1) the capability to fuse volumes of data from both classified and unclassified sources; 2) the capability to predict and measure higher order effects; and 3) the capability to coordinate the actions of the instruments of national power at some level. On the surface, it may seem that these critical

capabilities can be easily realized through the pursuit of technological solutions. Unfortunately, reality is not that simple. While technology will undoubtedly play an important role, the most important changes needed are *organizational* in nature. At the strategic level, Cold War institutions and organizational structures are inefficient, stove-piped, and ill suited for today's intelligence and interagency environment. Meanwhile, organizational problems at the operational level include: 1) ad-hoc planning staffs formed on short notice for specific events; 2) the unfamiliarly of these ad-hoc staffs with complex, automated planning systems; and 3) a lack of staff expertise (ad-hoc or otherwise) in non-military disciplines needed to understand effects outside of the military realm. Organizational change is needed at both of these levels if the true promise of Effects-based Operations is to be realized. The remainder of the paper is devoted to defining the kinds of organizational changes needed at both the strategic and operational levels and their implications for the success of the EBO concept.

CHAPTER 3

ASSESSING ORGANIZATIONAL READINESS FOR EBO AT THE STRATEGIC LEVEL

Effects-based Operations requires a deep understanding of the enemy, obtained from widely distributed and diverse centers of expertise, so that the relevant instruments of national power can be selected, coordinated and targeted precisely to produce direct and indirect effects on the enemy that force him to either change his course of action or submit. Implicit in this concept is that 1) this level of understanding can be achieved; 2) that higher order effects can be predicted and measured; and 3) instruments of national power can be coordinated and targeted to produce these higher order effects. This chapter examines these presumptions in further detail by assessing the national intelligence infrastructure's ability to support the CINCs with this level of understanding and assessing the issues that the coordination and application of the national instruments of power presents.

A Deep Understanding of the Enemy: Assessing the National Intelligence Infrastructure's Ability to Support EBO

Today, the United States enjoys, and is likely to continue to enjoy, a distinct technological advantage in the information domain.[51] Today's space, air, ground and sea-based sensors collect data from the full range of the radio, visual, and acoustic spectra. The future looks so bright in this area that General Ronald Fogleman, then Chief of Staff of the Air Force, posited that in the first quarter of the 21st century, the United States will have the capability to "find, fix or track, and target anything that moves on the surface of the earth."[52] However, a large volume of *data about the enemy* is useless in the EBO process unless it can be converted to *knowledge about the enemy* through fusion and analysis. Critics of the current intelligence infrastructure argue that the analysis of information has taken a back seat to

[51] DoD, *Joint Vision 2020*, 30. The information environment [domain] is defined as "the aggregate of individuals, organizations, or systems that collect, process, or disseminate information; also included is the information itself." Department of Defense, *Joint Pub 1-02: Department of Defense Dictionary of Military and Associated Terms* (Washington, D.C.:Joint Chiefs of Staff, 2001), 203.

[52] Ronald R. Fogleman, "Strategic Vision and Core Competencies", speech delivered to the Air Force Symposium, 18 October 96 (available online URL: < www.au.af.mil/au/awc/readings/csafafa.htm >, accessed 15 November 2001).

Notes continued on next page

collection.[53] The intelligence community's performance leading up to Operation ALLIED FORCE seems to support this contention that there are "analysis gaps" within the broad capabilities of the US intelligence community.

Serbia 1999: A Case Study in Poor Intelligence Analysis and Prediction

According to Ivo Daadler and Michael O'Hanlon of the Brookings Institution, the ability of the intelligence community to predict events in Serbia both before and during 1999's Operation ALLIED FORCE was poor. For example, the Defense Intelligence Agency's February 1999 survey of the world's trouble spots did not even mention Kosovo.[54] Meanwhile, the performance of the CIA was only slightly better. The CIA did expect that Serbian leader Solbidan Milosevic would begin a more intensive campaign in 1999 against ethic minorities in Kosovo then he had in 1998. This assessment led directly to the Rambouillet talks in France and ultimately to the use of force when those talks failed.[55] However, the overall view of the CIA was that Milosevic could be quickly coerced into an agreement. This estimate contributed substantially to the view of the Clinton Administration that a few days of bombing would cause Milosevic to relent at the negotiating table.[56] In turn, this lead to a strategy of gradual escalation in the air campaign. Further, Mr. Daalder and O'Hanlon contend that the intelligence community did not predict—or even raise the possibility— that the start of bombing might free Milosevic to dramatically step up his operations in Kosovo and even to expel the Albanian minority.[57] In the end, they argue, NATO was lucky that the consequences of these unforeseen strategic level collateral-effects were not worse.[58]

While criticism of the intelligence analysis supporting U.S. strategy in the Balkans benefits greatly from hindsight and no level of analysis can produce omnipotence, the point is that analysis is

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[53] Robert Herrman, "Keeping the Edge in Intelligence, " in *Keeping the Edge: Managing Defense for the Future*, ed. Ashton Carter and John White, (Cambridge, MA: Preventive Defense Project, 2000), 103-17.
[54] Ivo Daalder and Micheal O'Hanlon, *Winning Ugly – NATO's War to Save Kosovo* (Washington, D.C.: Brookings, 2000), 107.
[55] *Ibid.*
[56] *Ibid.*
[57] *Ibid.*

undervalued in the present intelligence infrastructure—that an analysis gap does, in fact, exist. The Quadrennial Defense Review (QDR) acknowledges this fact when it points out, "Investments need to focus on building a workforce with the required skills, and with the analytical tools and databases needed to improve support to planning."[59]

The analysis gap within the US intelligence community is an important limitation to fully implementing the EBO concept, since it envisions drawing on "centers of excellence" residing within the various intelligence agencies for expertise and in-depth knowledge.[60] If the intelligence community is unwilling to resource and staff these centers adequately and the quality of knowledge used for EBO decision-making becomes questionable, then it is unlikely that the concept can succeed. Therefore, the organizational trend within the intelligence community that undervalues analysis must be reversed. To understand the organizational solutions, it is first necessary to understand the underpinnings of this analysis gap.

Underpinnings of the Analysis Gap

Robert Hermann, a former NSA senior executive and a former Assistant Secretary of Defense for Command, Control, Communications and Intelligence, contends that two problems contribute to the analysis gap: 1) bureaucratic one-sidedness favoring collection over analysis and 2) a residual Cold War intelligence culture that focuses more on secret sources and methods than on exploiting open-source material.[61]

Mr. Hermann contends that the incentives in the budgeting system favor collection since it offers measurable improvements such as more resolution, more precision, or more speed. Analysis, on the other hand, is less tangible and is viewed as "infrastructure," which has a negative connation in a tight budget environment. Further, he argues that while military commands are unanimous in their need for more analytic support, the champions of collection—the NRO, the Air Force and the Navy—wield greater

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[58] *Ibid*., 108.
[59] Department of Defense, *Report of the Quadrennial Defense Review*, (Washington, D.C: Department of Defense, 2001), 38-9. Hereafter cited as DoD, *QDR*.
[60] USJFCOM, *A Concept Framework For EBO*, 19.

bureaucratic power than agencies who value analysis.[62] The intelligence related recommendations offered in the *Kosovo/Operation ALLIED FORCE After-Action Report: Report to Congress* seem to support this bias. Of the seven recommendations offered, six were related to collection.[63] Brent Scowcroft, former National Security Advisor, Arnold Cantor, former Under Secretary of State, and John Deutch, former Director of Central Intelligence (DCI) agree stating, "With the explosion of information technologies, the intelligence community faces a shift from its historic priority on technical collection to a priority on processing, validating, analyzing and communicating information of value to policymakers."[64]

Mr. Hermann also argues that the nature of intelligence collection has changed, shifting away from "the study of secret data in closed societies" (requiring public sector experts) and toward analysis of open societies based on "knowledge of the society and familiarity with its public behavior" (requiring private sector experts).[65] Just as the JFCOM EBO concept envisions forming "Centers of Excellence" and tighter interagency arrangements (discussed later in this chapter) where forward units can "reachback"[66] for specific, expert-based information, Mr. Hermann argues that it is important for the United States to create incentives for "the most knowledgeable scholars" to assist in the formulation of intelligence estimates.[67]

While these strategic level intelligence problems are not fatal to the EBO concept, they do constrain what could otherwise be accomplished in a more efficient environment—particularly with regard to predicting and measuring higher order effects. One possible solution involves strengthening the role of the DCI by empowering him to prioritize and apportion resources between collection and analysis

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[61] Herman in *Keeping the Edge*,105-6.
[62] *Ibid*., 107.
[63] Department of Defense, *Kosovo/Operation ALLIED FORCE After-Action Report: Report to Congress* (Washington, D.C. Chairman of the Joint Chiefs of Staff, 2000), 59-60. Hereafter cited as DoD, *Kosovo After-action Report.*
[64] John Deutch, Arnold Kanter, Brent Scowcroft, "Strengthening the National Security Interagency Process, " in *Keeping the Edge: Managing Defense for the Future*, ed. Ashton Carter and John White, (Cambridge, MA: Preventive Defense Project, 2000), 279.
[65] Hermann in *Keeping the Edge*, 107-8.
[66] "Reachback" is a concept whereby forward deployed staffs work with rear staffs in an interactive, collaborative information environment. The promise of "reachback" is to reduce the footprint of forward deployed units.
[67] USJFCOM, *A Concept Framework For EBO*, 179; Hermann in *Keeping the Edge*, 107.

activities. Such a move would overcome current institutional biases by vesting sole power for resourcing in the DCI.

One Approach to Solve the Analysis Gap: Create a "Super CIA" To Streamline the Intelligence Infrastructure

While countless committees have recommended changes to the national intelligence infrastructure, the terrorist events of 11 September 2001—an event the nation's intelligence community failed to predict or detect—have created a legislative window of opportunity for intelligence reform.[68] Due to release its final report in late 2001, the President's Foreign Intelligence Advisory Board, chaired by retired Lt Gen Brent Scowcroft, is expected to recommend that the NRO, the National Imagery and Mapping Agency (NIMA), and the NSA be transferred from the Pentagon and brought under the direct control of the DCI within the organizational structure of the CIA.[69] The advantages of such a plan would give the DCI three capabilities: 1) the ability to develop and implement an integrated collection plan that leverages the full spectrum of U.S. collection capabilities; 2) the ability to balance the needs of collection with the needs for analysis in a more analytic and less political way; and 3) more budgetary control to deal with new threats.[70]

However the Department of Defense opposes such moves, since much of today's collection centers on the needs of tactical military operations.[71] The DoD's concerns lie primarily in past disputes with CIA, not to mention the loss of control of $30 billion in budgetary authority. Further, some current officials remember well the CIA's last minute questioning of the theater's battle damage assessment during the Gulf War. Just before the land phase of the operation began, then DCI William Webster

[68] Walter Pincus, "Senate Clears Bill Raising Intelligence Spending 7 Pct.," *Washington Post*, 9 November 2001, A13.
[69] Walter Pincus, "Intelligence Shakeup Would Boost CIA: Panel Urges Transfer of NSA, Satellites, Imagery From Pentagon, " *Washington Post*, 8 November 2001, A01. Senator Richard Shelby, minority co-chairman of the Senate Select Committee on Intelligence hinted at support for the Scowcroft Committee's recommendation saying when asked about restructuring of the CIA, "I think it's going to take a restructuring, legislatively, of our entire intelligence committees—I mean, communities, in the future. But this could come from a blue ribbon commission recommendation, something the president could put together." Richard Shelby, interviewed by Tim Russert, on *Meet the Press*, National Broadcasting System, 25 November 2001.
[70] Deutch, Kantor, Scowcroft in *Keeping The Edge*, 279-80.

questioned the number of tank kills claimed by theater intelligence and suggested that the coalition would meet fierce resistance when the ground invasion began. This notion, ultimately rejected by President Bush himself, cast the CIA in an exceptionally bad light and portrayed the CIA as out of touch with events.[72]

On the other hand, proponents of such a plan counter that centralizing these organizations will increase DOD access to information. In a 2000 article with John Deutch and Arnold Cantor, Lt General Scowcroft argued that this "centralization of responsibility under the DCI for intelligence related to new threats should also be an opportunity to provide more timely and responsive intelligence to the regional commands (the 'CINCs'), since it would give military commanders access to information previously difficult for them to obtain."[73] The authors argue that such a move would not limit DOD influence, since 1) the Secretary of Defense would still be heavily involved in setting intelligence priorities and 2) Congressional committees would oppose any plan that does not assure full support to military activities.[74]

Nevertheless, removing elements of the national intelligence infrastructure from DoD's administrative control will likely be an uphill fight given the size of the budgetary turf. Therefore, a more feasible solution (at least legislatively speaking) to the analysis gap would respect the overarching organizational boundaries and turf that exists today within the intelligence community. One such proposal would streamline the intelligence organizations within DoD itself by consolidating NIMA and the NRO under the NSA,

Another Approach To Solve The Analysis Gap: Streamline The DOD Intelligence Community

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[71] Pincus, "Intelligence Shakeup Would Boost CIA," A01. Also not to be lost in the debate is the transfer of $30 billion in budget authority that dwarfs the CIA's $3.5 billion budget.

[72] Bernard Trainor and Michael Gordon, *The General's War: The Inside Story of the Conflict in the Gulf* (New York: Little Brown and Co, 1995), 332-9. Also see Norman Schwarzkopf, *It Doesn't Take a Hero*, ed. Peter Petre (New York:Bantam Books, 1992), 279-480, *passim.* General Norman Schwarzkopf, USCENTCOM commander during the 1990-1991 Gulf War, is critical of the CIA throughout his book. From the CIA's analysis of the Iraqi invasion of Kuwait to psychological assessments of Saddam Hussein to this event, Schwarzkopf characterizes the CIA's analysis as "skimpy" and "disjoined." Writing in 1992, he concluded, "If we'd waited to convince the CIA that it was time to begin the ground offensive, we'd still be in Saudi Arabia."

[73] Deutch, Kantor, Scowcroft in *Keeping the Edge*, 280. The plan offered by this group is similar to the current proposal being developed by the Foreign Intelligence Advisory Board which is headed by Scowcroft.

[74] *Ibid.*

Like General Scowcroft, Mr. Deutch, and Mr Kantor, Robert Hermann agrees that consolidation is a positive course of action, but from an acquisition and systems integration point-of-view. His proposal suggests that the NRO and NIMA should be combined with the NSA and remain within the DoD's organizational and administrative umbrella. He argues that military commanders at the operational level best perform integration of the mountains of intelligence data; therefore, the necessary information systems must be integrated at this level.[75] He builds on this argument by suggesting that many intelligence needs increasingly require coordination of sources and real-time response, a development acknowledged by the 2001 QDR as well as the Operation ALLIED FORCE after-action report to Congress.[76] Unfortunately, parallel structures for imagery and SIGINT require duplicative systems for request, tasking, and dissemination and make such coordination and speed difficult, if not impossible to achieve.[77] Most importantly, such duplication has resulted in under-funding of tasking, processing, exploitation, and dissemination (TPED) functions—another area the QDR identifies as ripe for revolutionary change.[78] By placing NIMA and the NRO under NSA, Mr. Hermann argues that 1) resources can be better balanced between analysis and collection since the NSA is accustomed to balancing both requirements in its budget and 2) the NSA has a better track record as a system integrator than NRO or NIMA.[79]

Like the proposal to merge all intelligence functions organizationally under the DCI, Mr. Herman's proposal is not without downsides. Reorganizing three large institutions, each with their own cultures and identities, into a single entity would be a difficult undertaking. The 1996 reorganization of the Defense Mapping Agency (DMA) and several smaller CIA agencies into NIMA highlights some of the challenges. The NIMA reorganization was plagued by a loss of senior leadership due to the

[75] Hermann in *Keeping the Edge*, 109-10.
[76] DoD, *QDR*, 38; DoD, *Kosovo After-action Report*, 60.
[77] Hermann in *Keeping the Edge*, 112.
[78] Derived from Hermann in *Keeping the Edge*, 112-13 and DoD, *QDR*, 38-9.
[79] Herman in *Keeping the Edge*, 112-13.

consolation and by cultural resistance to change.[80] Today, the overall impression of the effectiveness of the NIMA consolidation is negative within the intelligence community, according to Jeffery Smith, former General Counsel of the CIA.[81]

Streamlining the National Intelligence Infrastructure: Implications for EBO

While the issue of organizational streamlining of the national intelligence infrastructure may not seem to intersect the circular bounds of the EBO universe, the issues that streamlining raise are highly relevant. The "deeper understanding of the enemy" that the EBO concept assumes information technologies and "centers of excellence" will provide cannot be realized without adequate resources to improve overlooked national-level intelligence functions areas such as analysis. Furthermore, unless parallel TPED structures are combined, it will be difficult to fund, design, integrate, and field information systems that allow analysis of higher order effects. Until such changes are made, the quantum leaps in knowledge that the EBO concept relies on will continue to be more visionary than real.

Streamlining the national intelligence infrastructure is one way the strategic level organization could be improved to better support EBO. Another strategic level function needing attention is the National Security Council interagency process.

Coordinating the Instruments of National Power: EBO and the Interagency Process

> Wargame participants observed that RDO [and by extension, EBO] was most effective when all appropriate elements of national power were applied in a single integrated, coordinated, and synchronized plan to accomplish NCA objectives. These elements go beyond military or political components and may include a wide range of interagency organizations. RDO must enhance military and interagency community collaboration through closer and more continuous links between national agencies, regional Commanders-in-Chief [CINCs], and the Joint Force Commander. To fully and effectively execute RDO, wargame participants called for improved interagency policy and procedures and increased cross training among applicable interagency elements, to include the military.[82]
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> Department of Defense, *Rapid Decisive Operation: Analytical Wargame Findings*

[80] James Thurman, "Are U.S. Military Mapmakers Missing the Mark?," *Christian Science Monitor*, 27 May 1999, A1.

[81] Jeffery H Smith, former General Counsel of the CIA, "The American Intelligence Community: Case Studies in Reform," summary of remarks delivered to the Culture of National Security Lunch Forum Series, Washington, D.C., 26 September 2000, URL:< http://www.tcf.org/Events/Cosmos/smith.html>, accessed 31 January 2002.

The system is badly broken…We use chewing gum and bailing wire to keep it together.

General Anthony Zinni on strategic-level interagency coordination, *Washington Post*[83]

As these two views imply, perhaps the most ambitious component of the EBO proposal involves the coordination of all of the DIME instruments of national power to produce effects in the enemy's system. Yet, this concept and the problems it presents are not new. In 1961, President Kennedy charged the members of his Joint Chiefs of Staff to help him in "fitting military requirements into the over-all context of any situation, recognizing that the most difficult problem in Government is to combine all assets in a unified, effective pattern."[84] Today, coordinating the DIME instruments of power remains challenging for several reasons.

The Challenges of Strategic Level Interagency Coordination

At the strategic level, policy formulation and coordination occurs above the level of the CINC via the President's NSC interagency process. This system uses ad hoc mechanisms and working groups, as shown in Table 3, to develop policy that are usually formed in response to a specific event—there is no standardized process that describes how to handle every contingency. When specific mechanisms are established to counter anticipated threats, the President issues coordinating instructions to government agencies via written directive.[85] For example, President Clinton issued Presidential Decision Directive (PDD) 62 that designated the interagency roles, coordinating functions, and responsibilities for combating terrorism; PDD 56 that delineated interagency responsibility for peacekeeping operations; and PDD 63 that outlined roles and responsibilities for dealing with critical infrastructure protection. Although this direction is on the books, it is not always implemented or embraced. For example, portions of PDD 56 (issued in 1997) applied to Operation ALLIED FORCE; yet as the Department of Defense after-action

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[82] DoD, *Rapid Decisive Operations Wargame Findings*, 16.
[83] Dana Priest, "A Four Star Foreign Policy? U.S. Commanders Wield Rising Clout, Autonomy," *Washington Post*, 28 September 2000, A1.
[84] U.S. President, National Security Action Memorandum # 55, "Relations of the Joint Chiefs of Staff to the President in Cold War Operations," 28 June 1961, 1.
[85] The title of these directives varies by administrations. For example, President Kennedy issued interagency coordinating instructions via National Security Action Memorandums (NSAM); President G.H.W Bush referred to
Notes continued on next page

report to Congress indicated, by 1999 the direction contained in PDD 56 "had not been fully institutionalized throughout the interagency planning process."[86] Moreover, when administrations change, the guidance often changes as well.

Added to the fluid nature of the system, relevant criticisms of the NSC system with regard to EBO include: 1) it has historically lacked the expertise needed to address the economic instrument of national power[87]; 2) it does not do a good job of transcending the boundaries between "foreign" and "domestic" agencies; and 3) it does not do a good job of interagency planning, budgeting, or coordinating for programs requiring sustained effort.[88]

Table 3: NSC Interagency Coordination Groups [89]

The National Security Council Principals Committee (NSC/PC)	A cabinet-level senior interagency forum for consideration of national security policy issues and resolution of issues not requiring the President's participation. The Chairman of the Joint Chiefs of Staff (CJCS), or in his absence the Vice CJCS (VCJCS), attends these meetings.
The National Security Council Deputies Committee (NSC/DC)	The senior subcabinet-level interagency forum for national security policy issues. The NSC/DC reviews and monitors the work of the NSC interagency coordination process (including the Interagency Working Groups (IWG), and focuses much of its attention on policy implementation. VCJCS attends these meetings.
***The NSC/DC Crisis Management (NSC/DC/CM)* Group**	A group responsible for day-to-day crisis management and crisis prevention, including contingency planning for major areas of concern. VCJCS attends these meetings.
The NSC Interagency Working Groups (NSC/IWG)	Groups that convene regularly as determined by the Deputies Committee, and review and coordinate implementation of Presidential decisions in their policy areas. The Assistant to the Chairman, the J-directors, or their deputies attend these meetings.
The Interagency Working Groups/Subgroups (IWG Subgroups)	Specialized groups that meet under the sponsorship of the IWG to develop background material, review working papers, and discuss and develop policy options on national security issues, including those arising from the implementation of NSC decisions. The Joint Staff division chief or action officer (AO) with functional responsibility for these issues represents CJCS at these meetings.

Moreover, despite being hailed (and criticized) as Roman proconsuls,[90] the CINCs do not play a

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his instructions as National Security Decision Directives (NSDD); meanwhile President Clinton used the term Presidential Decision Directives (PDD).

[86] DoD, *Kosovo After –action Report*, 126.

[87] The Operation ALLIED FORCE After Action Report seems to bear this out. As the report delicately notes, economic sanctions were only considered after Milosevec demonstrated he intended to outlast the Alliance. It concludes that "more advance planning might have made them [economic sanctions] more effective at an earlier date." DoD, *Kosovo After –action Report*, 126.

[88] Deutch, Kantor, Scowcroft in *Keeping the Edge*, 271.

[89] Department of Defense, *Joint Staff Officer's Guide 2000* (Norfolk, Va: Joint Staff College, 2000), 2-6.

[90] This description is widely attributed to General Anthony Zinni, former CINC of U.S. Central Command (USCENTCOM).

leading role in policy formulation at the NSC level.[91] This makes coordinating the other instruments of national power in perfect consonance with the military instrument difficult from a CINC's perspective. While the CINCs may provide input to the process, the CJCS is the President's primary military advisor. In the end (and in accordance with Title 10 of the United States Code), the President and the Secretary of Defense set policy while the CINCs execute it. As Joint Pub 1 states, perhaps the best the CINC can hope for is a policy designed around the concept of "unity of effort," whereby lead agencies and supporting agencies are delineated and all agencies work toward a common end state.[92]

The Challenges of Operational Level Interagency Coordination

At the operational level, Joint Vision 2020 points out that the primary challenge of interagency operations is achieving unity of effort despite differing cultures, competing interests, the lack of formal command relationships, and, in many cases, a lack of adequate resources.[93] To cope in this environment, Joint Vision 2020 recommends that military forces be "proactive" in dealing with outside organizations or—to put it another way—commanders should "just make the coordination happen."[94] Further evidence of the complexity of interagency coordination is noted in joint doctrine, which devotes two volumes (Joint Pub 3-80 Volumes I and II) to explain the process and methods for interagency coordination.[95]

While many in the national security community, both civilian and military, recognize the importance of coordination of the DIME instruments of national power in the current era, coming up with a specific proposal that solves the systemic problems on the one hand, and can be legislated and

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[91] Dr. Ashton B. Carter, Ford Foundation Professor of International Security Policy at Harvard's Kennedy School of Government and a former Assistant Secretary of Defense for International Security Policy in the Clinton Administration, Cambridge, MA, e-mail interview by author 03 November 2001.

[92] Unity of effort is critical since "Operations of agencies representing the diplomatic, economic, and informational instruments of power are not under command of the Armed Forces of the United States or of any specific combatant commander. Department of Defense, *Joint Pub 1: Joint Warfare of the Armed Forces of the United States* (Washington, DC: Chairman of the Joint Chiefs of Staff, 2001), III-16.

[93] That CINCs are well resourced in terms of staff and funding relative to other agencies such as the State Department is one of the sources for the proconsul legend. For a better discussion of the funding challenges of the State Department see Georgetown School of Foreign Service, *The United States in a 21st Century World: The High Cost of Low Investment*, undated, URL:<http://www.georgetown.edu/sfs/programs/isd/us/environment.html>, accessed 18 November 2001.

[94] DoD, *Joint Vision 2020*, 18.

implemented on the other, has proven to be a serious challenge.

So how can the system be improved to better support military operations in general and EBO in particular? The following is a summary of some the recommendations proposed by General Scowcroft, Mr. Deutch, and Mr. Kantor.

A Possible Strategic Level Solution: Balance Resources With Responsibilities

General Scowcroft and company argue that new threats and the post-Cold War international environment present challenges for the current system of interagency coordination because:

- There is no longer a clear distinction between peace and war;
- The distinction between foreign and domestic matters has blurred;
- There is no longer a clear distinction between "domestic" law enforcement and national security;
- Coalitions have become an indispensable feature of international response; and
- Effective outcomes require integration of economic and military measures.[96]

To overcome these challenges, they suggest three conceptual approaches deserve consideration: 1) greater centralization through a "super NSC"; 2) migrating to a regional, integrated structure with "double hatted" regional under secretaries at State and Defense or even combining the State and Defense Departments to functionally organize them along the lines of the 19th century British Colonial Office; or 3) developing a Department of Homeland Protection to deal exclusively with domestic and international terrorism.[97]

However, after examining the pros and cons of each of these models (legislative feasibility is a major hurdle for most of these ideas—Homeland Defense notwithstanding), they recommend the best course of action to be a new role for the Office of Management and Budget (OMB) in the NSC process. Under their plan, the NSC would take the lead role in coordinating multi-agency programs, while the OMB would be charged with 1) developing the budgets required to implement such programs and 2) ensuring that these programs are implemented. The intent of such a move is to avoid another critique of

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[95] For a detailed overview of the challenges of interagency coordination at the operational level as well as the NSC policy process, see William Hamblet and Jerry Kline, "Interagency Cooperation: PDD 56 and Complex Contingency Operations," *Joint Forces Quarterly*, Spring 2000, 92-7.

[96] Deutch, Kantor, Scowcroft in *Keeping the Edge*, 268-9.

uneven interagency implementation of PDDs such as those levied in the Operation ALLIED FORCE After-action Report. Further, they recommend that OMB and Congress create a separate budget category for these operations, much like the categories that cover the nuclear activities of Defense and State, to allow for greater oversight. Creating such a system, they argue, would ensure that necessary resources are allocated for agencies other than DOD participating in peacekeeping operations such as the Department of State, the Agency for International Development, or the Immigration and Naturalization Service.[98]

A Revamped NSC Interagency Process: Implications for EBO

The nature and structure of the NSC process makes it impossible for a CINC to *dictate* how or where the instruments of national power, outside of the military instrument, should be applied. Therefore, organizationally, it is difficult during deliberate planning to anticipate effects using *all* of these instruments. Moreover, the environment in which these instruments are applied is *highly situational.* Therefore, the EBO process should view the actions of the other instruments of national power (such as economic or diplomatic effects) as inputs to the military effects equation. For example, if economic sanctions produce critical shortages, then military actions should be adjusted to amplify or leverage these effects.

In areas where the application of other instruments can be deliberately planned, the CINC should use his voice in the NSC process to recommend specific courses of action and explain the effects he wishes to achieve. The information instrument may be good example where deliberate planning may be useful. As CJCS General Richard Meyers pointed out in a recent speech, an information operations campaign must be in place "upfront." Unfortunately, in Afghanistan, it took too much time for the system to work. He concluded, "We missed the opportunity to send the right message, sometimes we sent mixed

[97] *Ibid*., 273-5. President Bush implemented a version of their recommendation for Homeland Protection following the terrorist attacks on 11 Sept 2001.
[98] Deutch, Kantor, and Scowcroft in *Keeping the Edge*, 281-3.

signals, and we missed opportunities as well."[99]

At the operational level, changes in the NSC structure such as those recommended by Scowcroft, Deutch, and Kantor may help to mitigate some of the frustration interagency coordination presents. However, such approaches will not eliminate the friction created when large bureaucracies work together. Perhaps the best solution for improved interagency cooperation occurred on 11 Sept 2001—the creation of an overriding, shared sense of purpose. General Meyers characterized the quality of interagency coordination since 11 Sept 2001 this way, "In fact, I've never seen the different agencies of our government work so well together."[100]

This chapter focused on the organizational readiness of the United States to conduct EBO at the strategic level. The next chapter focuses on organizational issues at the operational level.

[99] Jim Garamone, "Myers Speaks Out About the Importance of Focused National Power," *Air Force News*, 16 November 2001,URL:<http://www.af.mil/news/n20011116)1644.shtml>,accessed 16 November 2001.
[100] *Ibid.*

CHAPTER 4

ASSESSING ORGANIZATIONAL READINESS FOR EBO AT THE OPERATIONAL LEVEL

> The point is that there appears to be no tidy relationship between information available to the commander and the best way to proceed. [101]
>
> Richard Darilek, *et. al., Measures of Effectiveness for the Information-Age Army*

As this observation suggests, the pillar of the EBO concept, superior knowledge about the enemy, is not necessarily a guarantor of success. The real question for military leaders and planners is how does one act on information? CINCs and JTF commanders assemble large staffs to formulate detailed answers to this question. As one considers organizational readiness for these staffs to conduct EBO, three top-level observations come to light.

Top Level Issues for Operational Level EBO Organizational Readiness

Effects-based Thinking Requires A Different Intellectual Approach

Effects-based thinking requires a different intellectual approach than traditional attrition-based thinking. Targeting X, Y, and Z does not automatically mean a higher order effect will be achieved. Further, fire and steel on the target is not the only method of achieving the direct effect desired—the options under EBO extend to non-lethal and even non-military means as well. Additionally, collateral effects extend well beyond the current notion of collateral damage. For example, an operation can be carried out perfectly, without civilian loss of life or property, and still produce negative effects. Therefore, internalizing the effects-based paradigm goes well beyond the traditional "direct effects" education available.

[101] Richard Darilek, Walter Perry, Jerome Bracken, John Gordon, and Brian Nichiporuk, *Measures of Effectiveness for the Information-Age Army* (Washington, D.C.: Rand Corporation, 2001), 8. Taken from a briefing by Dr Roger W. Barnett, Chief of Information Operations, Naval War College, delivered 24 April 2001.

Planners Require Training Tailored To EBO

Planners for EBO require intense training to overcome traditional attrition-based thinking. EBO experiments to date have "identified the propensity for individuals and staff elements to digress back to the familiar fight-centric or force-on-force mindset and focus on the number of targets killed instead of asking [effects related questions with regard to targeting]."[102] Understanding and internalizing an effects-based mindset requires training and education as well as experience to build confidence in the concept. However, many JTF staffs are ad hoc affairs, brought together in response to a specific event. For the personnel manning these ad-hoc staffs, they are "come-as-you-are" affairs with little time for training or spin-up on effects-based thinking.[103]

The EBO Concept Is Not Universally Accepted By the Services

Although some effects-based ideas are being introduced in joint doctrine, the EBO concept is not universally embraced by all the services. While the Air Force and Navy are on board, the Marine Corps is skeptical and the Army is "at least mildly opposed" to incorporating EBO into service doctrine.[104] This further complicates implementing EBO in the joint environment.

Fortunately, a solution to mitigate these top-level issues may be available with the introduction of the Joint Standing Task Force headquarters.

A Top-Level Solution: The Standing Joint Task Force Headquarters

In surveying future trends that will shape doctrine, organization, and training, Joint Vision 2020 identified the following:

- Future commanders will need a broad understanding of new capabilities and new highly automated supporting tools to coordinate and direct force;
- Supporting staffs must be organized and trained to take advantage of new capabilities, while maintaining the ability to operate in the event of technology failure;

[102] USJFCOM, *A Concept Framework For EBO*, 35.
[103] For a real world example of this dynamic see Leonel Nascimento, "Army Lessons Learned and Successful TTPs for Hurricane Mitch Humanitarian Assistance: JTF Commander's Initial Impressions," in *News From The Front*, online edition, (Center for Army Lessons Learned: Fort Leavenworth, KS, January/February 1999), URL: http://call.army.mil/products/nftf/janfeb99/nascimento.htm, accessed 02 February 2002.
[104] Mann, Endersby, and Searle, 100.

- Future commanders must be able to formulate and disseminate intent based on real time knowledge of the battlespace;
- Future headquarters will be smaller, dispersed and networked;
- Faster tempos, increased choices of weapons and effects and greater weapons ranges will require continuous, parallel planning and execution at all levels; and
- Dealings with multinational and interagency partners will require collaborative planning capabilities, technology interoperability and mechanism for efficient information sharing.[105]

In recognition of these requirements, the 2001 QDR called for Standing Joint Task Force (SJTF) headquarters to be prototyped and established. For EBO, SJTF headquarters offer several advantages.

A Common C4ISR Systems Architecture

The purpose of the SJTF headquarters is to provide "uniform, standard operating procedures, tactics, techniques, and technical system requirements, with the ability to move expertise among the commands."[106] The common Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities of these headquarters will steer joint technology requirements and acquisition allowing for better interoperability of military forces. Further, common joint requirements for these headquarters will feed requirements to other acquisition programs for national level intelligence support as described in Chapter 3.

Better Planning and Execution

An equally important advantage of the SJTF headquarters is the higher-level of staff readiness at the outset of a campaign as opposed to an ad hoc JTF headquarters formed in response to a crisis. In the EBO context, participants in the RDO wargame found that EBO requires more advanced planning and enhanced command and control than the current ad hoc system can achieve. They concluded a SJTF headquarters could provide the required level of responsiveness as well as greater unity of action.[107] Further, wargame participants noted that the higher level of staff readiness made the transition from planning to execution easier, since the core of the current operations team was already in place. As the report noted, "Even before a crisis emerges, SJTF headquarters can develop joint operational net

[105] DoD, *Joint Vision 2020*, 32.
[106] DoD, *QDR*, 32.

assessments, contingency plans that support CINC-directed deployment plans [*sic*]. As a crisis develops, the standing headquarters shifts from planning to execution without the significant learning curve of a reinforced component headquarters."[108]

Better Training To Reinforce An "Effects-based Mindset"

Not surprisingly, the RDO wargame results also found that internal training and cohesion were better in the SJTF headquarters environment than in other ad hoc arrangements.[109] The information systems needed to operate the information intensive headquarters of the future will require software skills extending beyond that required to operate the Microsoft Office suite of products. As evidence of this trend, the Air Force recently declared its Air Operations Center as a weapons system. This move implies that the level of sophistication of the information technologies in the AOC requires staff officers to 1) undergo formal qualification training on the systems and procedures of the AOC and 2) to maintain currency and proficiency in the use of these systems.[110]

Equally important, a SJTF headquarters provides the environment needed to establish an effects-based culture. Establishing such an environment will be critical if EBO is to become more than the transformation buzz word *de jour*, to instead become institutionalized in thought and process. Arguably, other JTF headquarters staffing mechanisms such as U.S. Pacific Command's (USPACOM) Deployable Joint Task Force Augmentation Cell (DJTFAC)[111] could provide the level of training needed to conduct EBO. The DJTFAC consists of a cadre of trained experts in joint and area matters from the USPACOM staff that rounds out a JTF headquarters' staff. Detractors of the SJTF concept may argue that once these

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[107] DoD, *Rapid Decisive Operations Wargame Findings*, 16-7.
[108] *Ibid*., 17.
[109] *Ibid*.
[110] Stefan Alford, "AOC Declared Official Weapons System", *Air Force News*, 12 September 2000, URL: <http://www.af.mil/news/Sep2000/n20000911_001380.html>,accessed 18 November 2001.
[111] To mitigate the negative effects of a purely ad-hoc JTF headquarters, some CINCs (most notably, U.S. Pacific Command (USPACOM)) have designated, trained, and placed on-call several service headquarters within their commands to serve as a core JTF headquarters. When a new JTF is required, the on-call service headquarters is activated and augmented further by a Deployable Joint Task Force Augmentation Cell (DJTFAC). The DJTFAC is a cadre of trained experts in joint and area matters from the USPACOM staff that rounds out the on-call headquarters' core capabilities. Although its members receive specialized training in JTF headquarters operations, the DJTFAC is not a standing organization and its members do not routinely work together as a unit. For more
Notes continued on next page

DJTFACs are trained in the systems that support EBO that the rationale for SJTF headquarters is invalidated. However, since the DJTFAC is not a standing organization and its members do not routinely work together as a unit, it is unlikely an effects-based culture can be created that can carry over to the augmented JTF headquarters. This is potentially fatal to a successful EBO since, as was noted earlier, planning staffs tend to fall back on traditional attrition-based planning models very quickly unless an effects-mindset is established.

Promotes And Enables a "Reachback" Environment

One of the key concepts of both Joint Vision 2020 and the USJFCOM EBO construct is the idea of drawing on widely dispersed, rear elements to assist staff planning functions—a concept known as "reachback." By using collaborative software tools to reach back for support, planning staffs can draw on a much larger store of expertise and assistance (such as Foreign Area Officers, DoD agencies, other government agencies, universities, think tanks, U.S. corporations, etc.) without having to deploy the personnel physically into the theater. This concept saw its first extensive use during Operation ALLIED FORCE with good results, although limited long haul bandwidth sometimes affected operations.[112]

The EBO concept envisions drawing on "centers of excellence" for specific analytic support related to the DIME instruments of national power. A prototype for these "centers of excellence" may be found in organizations like the Joint Warfare Analysis Center (JWAC) in Dalhgren, Virginia. Comprised of military personnel, scientists, and engineers, the JWAC provides effects-based precision targeting options for infrastructure networks and systems within countries of interest, such as electrical power, petroleum/oil/lubricants (POL), lines of communication, telecommunications, critical industries, commodities and military logistics.[113] By combining intelligence from human sources and imagery with computerized analysis, JWAC analysts provide targeting recommendations, effects prediction, and combat assessment (CA) with re-attack recommendations to the Joint Force Commanders (JFC) via

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information, see Jay B. Yakeley III and Harold E. Bullock, "Training the Pacific Warriors," *Joint Forces Quarterly* 12, (Summer 1996): 17-18.

[112] DoD, *Kosovo After-action Repor*t, 53-5.

electronic links.[114] Using such a model, "centers of excellence" could be established to harvest information not only from governmental sources, but from a host of private sector sources such as universities, think tanks, and corporations as well. These centers could leverage ongoing theatre engagement activities and such diverse and insightful perspectives as those of coalition students attending programs such the Asia-Pacific Center for Security Studies or the Marshall Center for European Security Studies. These centers routinely develop first-hand, regional perspectives on cultures, regional issues, and alliances from country experts, dignitaries, and future leaders that add significantly to a "deeper understanding of the enemy."

Building on the concept of dispersed support, another USJFCOM concept dubbed Precision Engagement seeks to further integrate the operations and intelligence communities in the target nomination and development process though a distributed, collaborative network.[115] As shown in Figure 4, the concept integrates intelligence, operations, and targeting expertise literally from around the world.

In a USJFCOM experiment conducted at the ULCHI FOCUS LENS 00 exercise in Korea, 39 sites with over 1000 users were networked together to produce 107 targets in six weeks under deliberate planning conditions and 11 targets in a single day under crisis planning conditions.[116] A SJTF headquarters can only improve the performance of a distributed network approach like this since 1) the staff will be more familiar with the technology and its operating procedures than an ad hoc headquarters; 2) the staff will have crossed the distributed planning learning curve and will understand the processes bottlenecks; and 3) procedures for technology failure can be developed and rehearsed.

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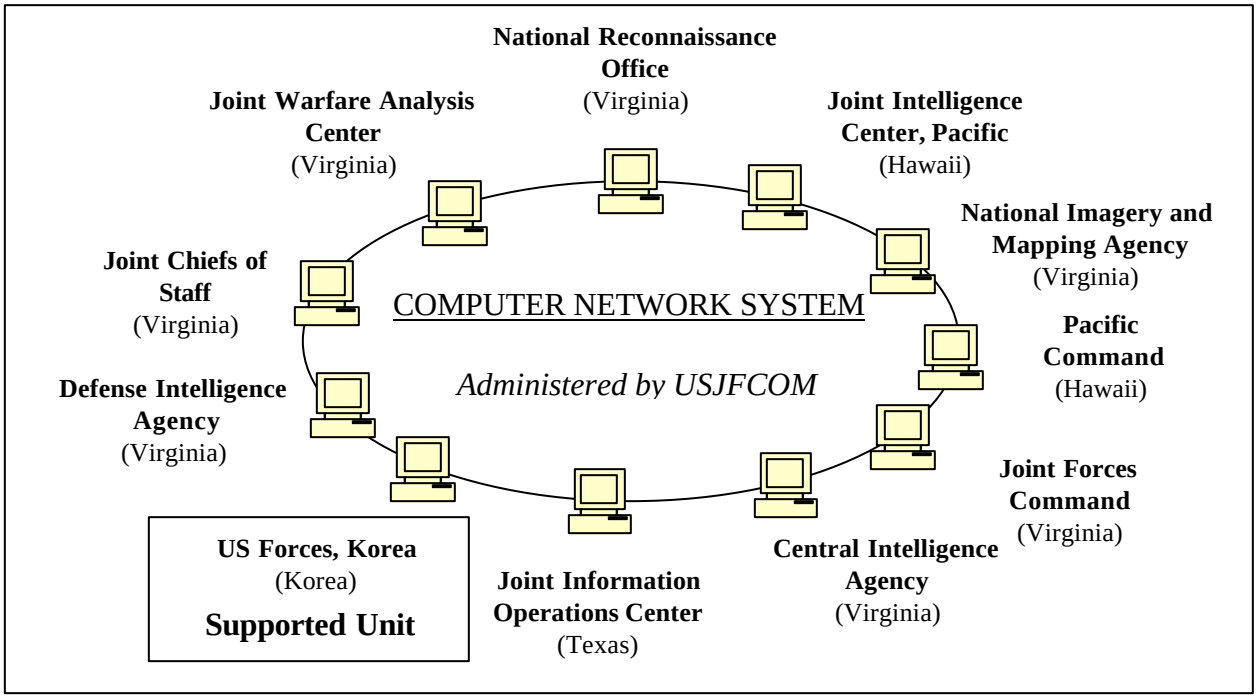
[113] Beagle, *Effects Based Targeting*, 85. The specific activities of JWAC are classified and the JWAC unclassified homepage Beagle references in his thesis has been disestablished.

[114] Established in 1994 by the Navy, the JWAC was almost disestablished after the Defense Intelligence Agency (DIA) and NSA refused to take over its operation and funding. Ultimately, the Joint Staff J3 assumed control, over the objection of the DIA and NSA. As a compromise, the DIA supports the JWAC in exchange for access to their modeling capability. Meanwhile, the Joint Staff J3 retains tasking authority over the organization. For more information on intelligence support to targeting, see Mark Christain and James Dillard, *Why We Need A National Joint Targeting Center*, 6 January 2000, URL: <http://www.airpower.maxwell.af.mil/airchronicles/cc/Dillard.html>, accessed 19 November 2001.

[115] Sam Helland, *Leading Change: Precision Engagement Brief*, undated, URL: <http//:www.ditc.mil/ndia/recovery.helland.prdf>, accessed 19 November 2001, 2-10.

[116] Helland, 14.

Figure 4: USJFCOM Precision Engagement Network Architecture [117]



While the SJTF headquarters provides the foundation for institutionalizing EBO, two deeper issues exist that merit consideration for an organizational solution.

Deeper Issues for Operational Level EBO Organizational Readiness

EBO Requires A Better Understanding of Planning Presumptions

> We thought the Serbs were preparing for a spring offensive that would target KLA strongholds…But we never expected the Serbs would push ahead with the wholesale deportation of the ethnic Albanian population [as a result of NATO bombing].[118]
>
> General Wesley Clark, SACEUR, Operation ALLIED FORCE

NATO began the bombing of Serbia presuming that Serbian President Slobodan Milosevic would cave in after a few days of bombing and acquiesce to NATO's demands at the negotiating table. Instead, NATO was shocked by Serbian actions in Kosovo once the bombing began, despite their previous

[117] Derived from Helland, 10.

experience with Milosevic's ethnic cleansing in the Balkans in the 1990s. Michael O'Hanlon and Ivo Daadler of the Brookings Institution suggest that NATO's *presumptions* about Milosevic were flawed—that they should have realized that he might try to forcibly change the ethnic balance in Kosovo.[119] Instead, the "short war" mentality extended even into the military planning cells, mainly because of the previous experience of Operation DELIBERATE FORCE, a successful 15-day campaign conducted in Bosnia less than four years earlier.[120]

Richard Nuestadt and Earnest May argue in their landmark work, *Thinking in Time: The Uses of History for Decision Makers*, that when dealing with issues of cause and effect, the first step in any decision making cycle is to examine the presumptions behind the pros and cons of the recommended course of action. [121] In essence, presumptions describe how well we are able to "get inside the head" of the enemy and view our actions from his perspective and vice versa.

May and Nuestadt argue that understanding and validating the *presumptions* behind decisions are key to success because 1) presumptions define the situation; 2) presumptions help to establish concerns, shape definitions of aims and of concrete objectives; and 3) presumptions influence options and choices among them.[122] Therefore, they advocate that organizations implement a decision making process whereby presumptions are aired and validated up front and are reviewed periodically as the situation changes.[123]

For example, they argue that the decision to widen the war in Vietnam was based not on poor empirical data, but on poor presumptions. According to May and Nuestadt, President Johnson (LBJ) believed that a government would respond to pain much as a person would. Therefore, if the United States bombed North Vietnam, the North Vietnamese government would cease aiding the Viet Cong. LBJ further presumed that previous experience with strategic bombing (from World War II) validated this

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[118] Daadler and O'Hanlon, 107.
[119] *Ibid*., 106-7.
[120] Beagle, *Effects Based Targeting*, 81.
[121] Richard Nuestadt and Earnest May, *Thinking in Time: Uses of History in Decision Making* (New York:, The Free Press, 1986), 135-8.
[122] *Ibid*., 135-6.

decision and that the "slow squeeze" approach (i.e., stepping up the pain gradually) was the way to conduct the war based on President Kennedy's Cuban experience.[124]

Nuestadt and May conclude that the beliefs influencing LBJ's Vietnam policy were not necessarily wrong, but were subject to more qualification than LBJ or his advisors realized. For example, they argue that LBJ and his advisors knew that strategic bombing had not always provided the results they were hoping for in Vietnam. While bombing did force capitulation in Italy and Japan during World War II, it only served to make the governments of Britain and Germany more stubborn.[125] They suggest that a simple question, "Why won't Ho Chi Minh react to bombing the way Churchill and Hitler did?" might have exposed their poor presumptions.[126] Further, they argue that evidence of poor results from the "slow squeeze" approach was also common knowledge among LBJ's military advisors. When the full resources of the United States were not behind the armed forces, the U.S. military tended to fair poorly, as in the Indian Wars, the Philippine occupation, and Korea.[127]

The implications for EBO are obvious. The debate over Vietnam policy as well as the decision to bomb Serbia was essentially a discussion of how to create higher order, strategic level effects. In both instances, the presumptions were not fully mapped out and understood. The result was shock and surprise as old paradigms collapsed in the face of the enemy. Therefore, when considering organizational adjustments of the SJTF headquarters to accommodate EBO, a Higher-Order Effect Cell that serves as the strategic "conscience" of the commander is a "must have." Additionally, this accommodation must also take into consideration the second deeper issue for the operational level organization, the difficulty of planning for and measuring effects.

Predicting and Assessing Effects in EBO Is Hard

> …the recuperative and defensive powers of Germany were immense; the speed and ingenuity with which they rebuilt and maintained essential war industries in operation

[123] *Ibid*., 273-5.
[124] *Ibid*., 137-8.
[125] *Ibid*., 138.
[126] *Ibid*.
[127] *Ibid*.

clearly surpassed Allied expectations. Germany resorted to almost every means an ingenious people could devise to avoid the attacks upon her economy and to minimize their effects.[128]

United States Strategic Bombing Survey, 1945

The real effect of our strategic air assaults, unlike that of tactical air attack, was seldom immediately apparent. Its effect was more like that of cancer, producing internal decay ultimately resulting in death. [129]

General Hap Arnold, 1945

Assessments of military effectiveness cannot, therefore, be reduced to the amounts of physical damage or destruction inflicted on targets, the quantities of military equipment damaged or destroyed, or even to the numbers of combatants directly wounded or killed. Instead, issues of operational-strategic effectiveness will also necessarily involve human plans, intentions, psychology, political ends, and other hard-to-quantify factors and considerations. This conclusion follows directly from war's necessary subordination to political ends. [130]

Gulf War Airpower Survey (GWAPS), 1992

Battle Damage Assessment had traditionally been an art…But the intelligence community had been trying to turn it into a science for years… Analysts had accordingly been trained to depend largely on "hard" evidence collected by reconnaissance planes and satellites…So, a pilot came back and said "The bunker blew up before my eyes," they [intelligence analysts] gave it no credence …So while their analyses were sometimes superb, just as often they made no sense in terms of the criteria I'd defined for assessing damage to [the] enemy…[131]

General Norman Schwarzkopf, 1992

The Department must devise better means to counter the use of camouflage, concealment and deception tactics by potential adversaries. Greater emphasis needs to be placed on the development of advanced sensors and improved training [to detect and counter deception].[132]

Kosovo After-action Report, 2000

[128] Department of War, *United States Strategic Bombing Survey (USSBS) Summary Report (European War)* (Washington, D.C.:USGPO), 16. Hereafter cited as War Department, *USSBS.*
[129] Department of Defense, *Operations and Effects and Effectiveness*, vol. 2 of *Gulf War Airpower Survey* (Washington, D.C.:USGPO, 1993), 49. Hereafter referred to as DoD, *GWAPS Vol 2*.
[130] *Ibid*., 28.
[131] Schwarzkopf, 430-1.
[132] DoD, *Kosovo After-action Report*, 132. . Internal arguments over the "tank count" forced high-level directed reviews of BDA claims for Operation ALLIED FORCE. See Bradley Graham, "Up in Arms: Department of Defense War Review Extended a Month," *Washington Post*, 15 September 1999, A23.

As the passages above imply, the challenge of assessing effects, whether direct or indirect, remains as daunting a task today as it was 50 years ago. Despite the best efforts of science to quantify and predict effects, Clausewitzian theory regarding chance, fog, friction, and cause and effect continues to assert itself and renders analyses of intelligence based on quantitative analyses alone inadequate—a lesson relearned as recently as Operation DESERT STORM.[133] Indeed, a major component of "operational art" involves balancing quantitative intelligence with subjective intelligence to form a more nuanced intelligence picture that can be used to plan and adjust the actions of military forces in concert with the other instruments of national power.[134] However, three observations highlight the difficulty that striking this balance presents.

1) Photo intelligence, while highly capable, has limits. While technology has enabled the use of more spectra with higher resolutions than ever before, photo intelligence is still limited by what can be seen in the visual, radar, or heat spectra. Although the concept of operations for EBO is based on federated knowledge (i.e. data fused from many sources), it is reasonable to assume a large part of what is known about an enemy is based on what can be seen via satellite or from airborne platforms. The limitations of this medium are important to understand, particularly as one considers the challenges of planning for and measuring effects.

Perhaps the most significant limitation of photo intelligence is dealing with decoys, camouflage, dispersion, or "going underground." For example, in 1991, the Iraqi nuclear program was much more advanced and redundant than US intelligence imagined at the outset of DESERT STORM. Once the war began, the Iraqis took unorthodox measures to dismantle and disperse key elements of the program to make them less venerable to bombing. To illustrate the point, in January 1991, theater air planners had

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[133] As the GWAPS put it, "Perhaps the most disconcerting in the air campaign's execution was an inability to determine, as the war progressed, what levels of effectiveness were being attained on the target sets, so that adjustments could be made." DoD, *GWAPS Vol 2*., 96

[134] During Operation DESERT STORM, General Schwarzkopf, unhappy with the quantitative intelligence analysis he was receiving, asked his intelligence advisor, Colonel Chuck Thomas, to develop an alternative intelligence methodology. The result was a process that combined both objective data and subjective data. This is similar to the Measure of Effectiveness and Measure of Performance approach envisioned by the EBO concept, described in chapter 2.

only one nuclear target on their master target list. As the war progressed, later intelligence increased the list to eight. After the war, UN teams on the ground identified 25 nuclear facilities.[135] The GWAPS concluded that Coalition planners failed to consider how active deception and concealment measures might complicate targeting.[136]

Similarly, during World War II, the Germans were able to disperse a large portion of their aircraft manufacturing tooling and continue production, despite the razing of their factories by Allied bombing.[137] Intelligence estimates predicted that German production would plummet after the delivery of 38,220 tons of bombs during 1944; instead, it continued to climb, topping out at 39,807 aircraft.[138] While factories appeared to be destroyed, what could not be seen on the imagery was the absence of machine tools in the wreckage.

For EBO, the implication is that photo intelligence has gaps—filling in these gaps or at least understanding where these gaps are is critical to EBO success.

2) Higher order effects are difficult to predict and measure. The central challenge of the EBO concept is predicting, creating, and measuring higher order effects. While some of these effects may manifest themselves quite quickly and require little persistence, others may take time to have effect and require substantial persistence.[139] Some lower order effects may ripple, creating higher order effects. Still others may produce collateral effects that outweigh the benefit of the intended primary effect.

One example that illustrates this difficulty is the effort to disrupt the Iraqi power grid during Operation DESERT STORM. Targeting electrical power produces second order effects that are relatively easy to create and measure. They manifest themselves quickly and require little persistence to maintain.[140] Planners hoped that targeting electrical power would produce higher order effects by increasing tension

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[135] DoD, *GWAPS Vol 2*, 326-9.
[136] *Ibid*., 329.
[137] War Department, *USSBS,* 18. Allied estimates were that 90 percent of German aircraft production was destroyed during the "Big Week" bomber offensive in 1944. However, in reality 90 percent of the BUILDINGS were destroyed. The machine tools had been either dispersed beforehand or were recovered.
[138] *Ibid*., 14-9.
[139] For more information on imposing psychological effects, see Jon Huss, "Exploiting the Psychological Effects of Airpower: A Guide for the Operational Commander," *Aerospace Power Journal* 13, no. 4 (1999):23-32.

among the national leadership and creating a public outcry from the people. During the first 10 days of operations, planners were able to reduce the electrical capacity of Iraq by 80 percent. It remained at this level throughout the rest of the war.[141] However, the anticipated higher order effects of targeting power did not occur.[142] Instead, higher order collateral effects were produced. No power meant no water in the major cities. Further, no power and no water meant no public sanitation, which negatively impacted public health. Additionally, power to public hospitals failed, disabling life support equipment and preventing surgeries.[143]

In making the decision to target electrical power, planners had assumed that Saddam Hussein would be deposed in the aftermath of a military defeat and the damaged electrical facilities would be quickly repaired. When these events did not come to pass, Saddam Hussein ultimately used the targeting of electrical power grids as propaganda, asserting that the high infant mortality rate following the war was a direct result of the US targeting of electrical power.[144]

For EBO, the implication is that cost of potential higher-order collateral effects of an action must be weighed against the benefit provided by the desired higher-order effect. Moreover, the potential collateral effects must be weighed politically against the potential for degraded coalition cohesion or undesired international criticism. Whenever possible, efforts to mitigate negative effects through perception control measures or physiological operations (PSYOPS) should be integrated early in the plan.

3) Effects, once achieved, can be reversed over time. Even when effects can be measured, care must be taken before declaring the effect to have been "achieved." Another DESERT STORM example, the interdiction of Iraqi supply routes, highlights this limitation. The prewar capacity of the Baghdad to Kuwait road system was 200,000 metric tons per day (t/d). After two weeks of air operations, this capacity was halved to about 110,000 t/d. However, this sharp drop was arrested throughout February

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[140] Depending upon what is targeted: substations or power plants.
[141] DoD, *GWAPS Vol 2*, 301-2.
[142] *Ibid.*, 302.
[143] *Ibid.*, 303-5. For more information on effects produced by targeting electrical power see Stephen T. Hosmer, *Psychological Effects of U.S. Air Operations in Four Wars 1941-1991* (Santa Monica, Calif: RAND, 1996), 43-60.
[144] DoD, *GWAPS Vol 2*, 307-8.

primarily due to the use of alternate routes, temporary bridges, and causeways.[145] Renewed attention to these routes ultimately reduced the road capacity to 20,000 t/d at the war's end on 1 Mar 91; however, capacity had recovered to 75,000 t/d only two weeks after the cease fire.[146] For the GWAPS, these statistics highlight the need for persistence. For EBO, they highlight the potentially transient nature of effects that further complicate the EBO puzzle.

These examples highlight the complexity that planning for and measuring effects presents. Moreover, they underscore the importance of maintaining a broader operational to strategic-level view of an effects-based operation. This is difficult to accomplish in the traditional JTF staff structure since the rapid pace of tactical actions allows for a narrowly focused operational level view of the operation at best. Therefore, as has already been suggested, a dedicated Higher-Order Effects Cell is needed, which can serve as the strategic level effects-based conscience for the JTF commander.

A Deeper Solution: Establish A Higher Order Effects Cell in the SJTF Headquarters

Joint Pub 3-08 states, "The JTF HQ [Joint Task Force Headquarters] is the operational focal point for interagency coordination, whereas the Joint Staff serves as the military's national-level focal point. Accordingly, the CJTF [Commander, Joint Task Force] may find it necessary to expand the JTF staff to accommodate the additional requirements. The flexibility associated with JTF organization makes it possible to put some kind of military and/or political structure or staff into the JTF."[147] Examples of such structures include executive steering groups, civil-military operations centers, and other JTF interagency coordination mechanisms for intelligence support and control, logistic support, legal support, media affairs, and space support.[148] A Higher-Order Effects Cell (HOEC) builds on this concept, but its purview would extend far beyond simply coordinating interagency issues.

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[145] DoD, *GWAPS Vol 2*, 187-9.
[146] *Ibid*., 188.
[147] Department of Defense, *Joint Pub 3-03, Volume I: Interagency Coordination During Joint Operations* (Washington, D.C.: Chairman of the Joint Chiefs of Staff, 1996), II-5-6.
[148] Department of Defense, *Joint Doctrine Capstone and Keystone Primer* (Washington, D.C.: Chairman of the Joint Chiefs of Staff, 2001), 50.

Functions and Responsibilities of the Higher-Order Effects Cell

During planning, the HOEC would serve as the strategic "conscience" of the JTF commander by 1) helping identify and fill gaps in knowledge about the enemy; 2) providing expertise on the culture and society of the enemy; 3) helping to identify the instruments of national power most likely to achieve the desired effect; 4) serving as a conduit for interagency coordination with the Joint Staff and other elements of the government and private sector; 5) helping to develop Measure of Effectiveness[149]; and 6) serving as both a "think tank" and "devil's advocate" to enable the SJTF Commander to fully understand the presumptions underlying effects planning.

During execution, the cell would be responsible for evaluating the Measures of Effectiveness established during the planning phase and for recommending adjustments to the plan's course of action based on this assessment. Specifically, the cell's charter would be to evaluate higher-order effects, leaving evaluation of direct effects to the Intelligence (J2) and Operations (J3) staffs. Further, the cell would serve as the interagency point of contact for all non-military activates related to the operation.

To accomplish these functions, organization of the cell would center on the DIME elements of national power.

A Cell Organized Around The DIME Instruments Of Power

Organizationally, the HOEC would operate independently of the numbered functions (i.e. J2, J3, etc) of the SJTF, reporting instead to the SJTF Commander directly. This arrangement is necessary for two reasons. First, since the responsibilities of the HOEC cut across a range of SJTF functions, it necessarily requires placement at a higher echelon. Second, since the vantage point of the HOEC lies above the tactical level at the operational and strategic levels, it makes good organizational sense to separate it from organizations charged with overseeing and tracking tactical actions. Placing the cell high in the SJTF structure will help members of the cell keep their point of view "out of the weeds" and focused on evaluating higher order effects.

Functionally, the cell should be structured around the DIME instruments of national power, with sections devoted to evaluating and coordinating the diplomatic, informational, military, and economic instruments of national power. The members of the cell would not necessarily deploy forward nor would they necessarily be military members. For example, military members of the cell advising the JTF commander in theater may augment the theatre political advisor and receive analytical support from a staff of civilian experts participating via reachback. They may coordinate with the U.S. ambassadors in the region as well as the DoD country teams already in place. Depending on the nature of the conflict, the military members deployed forward may be "dual hatted" in more than one instrument of power.

However, implementing the HOEC concept is not as easy as picking 10 or 11 hard charging officers and throwing them together in a room. Developing an officer who can function at this level will prove to be a challenge not only for the idea of a HOEC, but for the EBO concept as a whole.

Officers Who Are Generalists In The Instruments of National Power Are Key To EBO Success

Identifying and preparing military officers to serve effectively on the HOEC may prove the most challenging aspect of implementing this concept. To serve effectively, officers require at least some familiarity with their area of responsibility. Additionally, they require a greater understanding of the other instruments of national power than current professional military education (PME) provides.

Several solutions to this challenge exist.

1) Use graduates of Advanced Study Groups. One solution might be to use graduates of the service's advanced strategy programs such as the Army's School of Advanced Military Studies (SAMS), the Air Force's School of Advanced Airpower Studies (SAAS), or the Marine Corps' School of Advanced Warfighting (SAW), to man the HOEC. The curricula of these programs focus in varying degrees on strategy and offer some exposure to the other instruments of national power.

2) Re-role the mission of the Joint Forces Staff College to produce effects planners. A second solution might re-role the mission of the Joint Forces Staff College (JFSC) to provide courses tailored to

[149] Subjective measures used to gauge higher order effects. For more information on Measures of Effectiveness, see

Notes continued on next page

the needs of effects-based planning. Currently, the JFSC provides JPME Phase II training to joint officers. However, all four of the service's intermediate professional military education (PME) schools are on track to provide both Phase I and Phase II JPME training in the near future. Once these schools are accredited, the JFSC faculty and facility would be free to develop and conduct a curriculum supporting effects-based planning.

3) Require officers receiving tuition assistance to pursue courses relevant to EBO. A third solution might require officers receiving tuition assistance for an advanced degree to pursue a specific course of study relevant to the instruments of national power. This would leverage education moneys the services are already spending to better qualify officers to serve as EBO planners.

4) Send officers slated for HOEC duty to a one year in residence masters program. A fourth solution might adopt portions of the U.S. Army's program to train Foreign Area Officers (FAO) or the Defense Leadership and Management Program (DLAMP) available to DoD civilians. FAO students and DLAMP students receive one year of graduate education in government or diplomacy in residence at major universities around the United States. Sending officers bound for HOEC duty to an in-residence graduate degree program offers three advantages to the SJTF commander. First, it provides officers with a much wider exposure to the instruments of national power than military PME in an intense, focused environment. Second, many non-governmental agency (NGO) and private volunteer agency (PVO) members attend these schools. This allows officers to develop contacts in these communities and to gain appreciation for their perspectives. Third, in-residence attendance at major universities also allows officers to form relationships with leading experts in various fields. These relationships can be leveraged to bring more intellectual horsepower and expertise to bear on a problem.

5) Send officers slated for HOEC duty to a three year PhD program. A final solution might go beyond producing Masters graduates to instead produce PhDs in a discipline relevant to effects-based operations. Ideally, officers selected for this advanced education would come from operational

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chapter 2.

backgrounds. Currently, only a small number of non-technical military PhDs are produced each year—few of these possess an operational background. Most PhD program graduates go on to teach either at a service academy or in the PME system.[150] The downside of a PhD program is the large investment in time and money required to produce a PhD graduate. However, the advantages mirror those of an in residence graduate program—the key difference being that a PhD program magnifies these advantages. Not only are graduates unquestioned experts in their fields, their professional and social ties to other experts in their disciplines offer a direct link to access and leverage expert knowledge quickly.

This chapter evaluated the organizational readiness at the operational level to conduct effects-based operations. The SJTF is a first large step toward putting into place the institutional machinery needed to conduct EBO. However, a second deeper measure needs to be incorporated into the concept—the idea of a Higher-Order Effects Cell. If such a concept is adopted, still more attention must be devoted to staffing and training the officers needed to man such a cell.

[150] Dr. Wray Johnson, Professor of Military Studies, Marine Corps Command and Staff College, interview by author, 05 February 2001.

CHAPTER 5

SUMMARY AND CONCLUSIONS

The Effects-based Operations concept, as it currently stands, is many things to many people: a method of economy of force targeting, a philosophy of force application, the basis for an organization structure, and, perhaps cynically, the foundation for another information systems acquisition program. However, at its core, the EBO concept hopes to leverage technology and information to develop "deeper understanding of the enemy." This information can then be used in concert with the DIME instruments of national power to create specific effects within the enemy's national "system" which causes strategic collapse or a modification in behavior.

When contemplating a book on the American Civil War, Shelby Foote, author of the definitive three-volume narrative on the war, said the only way to approach taking on a project of such a large scale was "to go spread-eagle, whole hog wild on the thing."[151] A similar dynamic must occur within military and government circles if the EBO concept is to realize its full potential. While almost everyone in the national defense business acknowledges that technology has led to a "revolution in military affairs," the question on everyone's mind is, "Yes, but what has it accomplished?" Effects-based Operations and its big brother, Rapid Decisive Operations, are two concepts that attempt to answer this question.

The major findings of this study (underlined below) are presented in chapter order.

Strategic Level Findings

The study began at the strategic level where the EBO concept intersects with two larger issues of national level reform in the intelligence community and in the NSC interagency process.

[151] Goeffrey Ward with Ric Burns and Ken Burns, *The Civil War: A Illustrated History* (New York :Alfred Knopf, 1991), 264.

A "Deep Understanding of the Enemy" Requires Organizational Reform In the Intelligence Community

In the field of intelligence, the consensus opinion of experts is that the Cold War structure is not necessarily the best model for today's world. Further, many recognize the impact that information technology is having on collection and dissemination. However, computer networks cannot overcome parallel organizational structures or resolve choices regarding the allocation of resources for analysis versus collection. The organizational structure of the current system must be streamlined into a consolidated collection and analysis activity if the "deeper understanding of the enemy" the EBO concept envisions is to become reality. Until then, the current process will continue to produce mounds of data (as opposed to processed and fused information) from parallel, stove-piped systems at the national level. Two consolidation approaches were presented in the paper: one advocated keeping the collection activities in the Department of Defense and another suggested that these activities should go to the CIA. For EBO, either approach would provide the needed streamlining to allow for a single system that fuses data from all sources and offers a robust analysis capability.

The NSC Process Is Likely To Complicate The Conduct of EBO

Likely reforms of the NSC interagency process will center on matching resources with requirements. While this may help with peacekeeping missions, it is not much help for EBO. While many in the Department of Defense might like to see the current ambassadorial system replaced with a system similar to the geographic CINCs, such radical change is unlikely to occur. For EBO, the issue of coordinating the DIME instruments of national power is a complicated one. On the one hand, on a purely theoretical basis, it makes sense that the CINC should have a major hand in the formulation of such policy. However, in reality, large scale CINC involvement in policy development approaches the limit of their statutory authority under Title 10. Further, the influence of the CINC on the policy debate varies by personality and by administration. This fact makes deliberately planning the coordination of these elements difficult at the CINC's level, with the exception of parts of the information element. Perhaps the best a CINC can hope for in this vein is that any operation he is charged to plan and conduct enjoys a

clear unity of purpose. He can then follow the advice of President Kennedy's NASM 55 to "fit military requirements into the over-all context of any situation."[152] By building his military campaign around what the other instruments of national power are doing, the CINC's chances for improved interagency coordination with these elements are improved.

Operational Level Findings

At the operational level, the study cited the advantages for EBO of the QDR's newly proposed Standing Joint Task Force (SJTF) headquarters. Further, it recommended development of a Higher-Order Effects Cell (HOEC) within the SJTF to assist the commander in planning for and measuring effects. It also recommended that officers manning this cell receive more in-depth education on the DIME instruments of national power either through specialized schools or at major universities. Each of these recommendations is discussed in greater detail below.

The Standing Joint Task Force Headquarters Benefits The EBO Concept

The SJTF headquarters is beneficial for the EBO concept in a number of ways. First, it provides for a common C4ISR systems architecture and a set of common procedures. The headquarters of the future will require specific competence to operate increasingly complex information systems. A SJTF headquarters allows planners to develop the expertise on these systems to make more informed decisions sooner. Second, the SJTF headquarters allows for better planning and execution than the present day ad hoc JTF headquarters. In the SJTF, it would be possible for the planner who wrote an ops plan to actually execute it, dramatically reducing the spin up time and learning curve that current JTF planners—who are thrown in at the last minute—must undergo. Third, the SJTF provides an environment to practice and internalize the effects-based mindset. Wargame testing to date has shown this is easier said than done. Finally, a SJTF headquarters promotes and enables a "reachback" environment where widely dispersed units support the SJTF deployed forward. Such a system enables the use of "centers of excellence" to support planning without physically locating with the SJTF headquarters.

[152] U.S. President, NASM 55.

Conducting EBO Requires The Formation Of A Specialized Effects Cell In The SJTF Headquarters

During planning, the Higher Order Effects Cell would serve as the strategic "conscience" of the JTF commander by 1) helping to identify and fill gaps in knowledge about the enemy; 2) providing expertise of the culture and society of the enemy; 3) helping to identify the instruments of national power most likely to achieve the desired effect; 4) serving as a conduit for interagency coordination with the Joint Staff and other elements of the government and private sector; 5) helping to develop Measure of Effectiveness; and 6) serving as both a "think tank" and "devil's advocate" to enable the SJTF Commander to fully understand the presumptions underlying the effects planning.

During execution, this cell would assess subjective measures dealing with higher order effects and make recommendations for changes to future courses of action.

Organizationally, the cell would be built around each of the DIME instruments. The members of the cell would not necessarily deploy forward nor would they necessarily be military members. One approach might pair a military member deployed forward, with a team of civilian experts in the United States supporting via reachback.

Conducting EBO Requires Staff Officers With A Broader Education Than Military PME Provides

Members of the HOEC will require specialized education regarding the DIME instruments of national power. Currently, five alternatives exist to provide this training. One solution might use graduates of the Service's advanced strategy programs (SAMS, SAAS, SAW) to man the HOEC. The curricula of these programs focus in varying degrees on strategy and offer some exposure to the other functions of national military power. A second alternative would re-role the mission of the JFSC to produce effects planners. This offers the advantage of producing a larger number of planners using existing infrastructure. A third alternative might require officers receiving tuition assistance for advanced degrees to pursue specific courses of study relevant of the instruments of national power. This would leverage moneys already being spent for advanced education. A fourth solution might require officers assigned to HOEC duty to attend an in-residence graduate program in government or diplomacy at a major U.S. university. This offers several advantages including a more rigorous program than PME or

part time graduate courses and personal connection to PVOs, NGOs and academia. A final solution would take the in residence Masters program to the next level by sending officers identified for HOEC duty through a three year PhD program. While time consuming and expensive, it provides graduates with greater insight and access to experts in the instruments of national power.

Final Thoughts

In summary, EBO is one of the first strategic level concepts that attempts to leverage the current "revolution in military affairs" at the strategic and operational levels. Perhaps the biggest hurdle for EBO organizationally is gaining the intellectual buy-in of all the services.

To prepare officers to plan and conduct future operations, the concept should be introduced into PME and incorporated fully into joint doctrine. Furthermore, graduate programs should be instituted within the Services to better educate officers in the diplomatic, informational, and economic instruments of national power. For the Services, visionary leadership is needed to see past the cost of this proposal, and to instead recognize the increased capability that this knowledge provides.

Similarly, strategists within the Services must be visionary as well. They must recognize that the unequalled diplomatic, informational, and economic power of the United States, combined with the widespread introduction of precision all-weather weapons and information technologies, *has* changed the nature of warfare. Clausewitz's arguments are still valid, but Deptula's are as well—speed and precision *can* produce effects and, to some degree, these effects can be predicted and measured. On the other hand, EBO advocates must avoid overemphasizing the science of EBO at the expense of appreciating its artistic dimension. There are sharp limits to predictive tools. Understanding these limits—which defines where science ends and art begins—is critical to the future success of the EBO concept.

BIBLIOGRAPHY

Alford, Stephan. "AOC Declared Official Weapons System." *Air Force News*, 12 September 2000. URL: <http://www.af.mil/news/Sep2000/n20000911_001380.html>. Accessed 18 November 2001.

Beagle, T.W. *Effects-Based Targeting: Another Empty Promise?* SAAS Thesis. Maxwell AFB, AL: School of Advanced Airpower Studies, 2000.

Carter, Ashton B. Ford Foundation Professor of International Security Policy at Harvard's Kennedy School of Government. Cambridge, MA. E-mail interview by author, 03 November 2001.

Christian, Mark and James Dillard. *Why We Need A National Joint Targeting Center*, 6 January 2000. URL: <http://www.airpower.maxwell.af.mil/airchronicles/cc /Dillard.html>. Accessed 19 November 2001.

Daalder, Ivo and Micheal O'Hanlon. *Winning Ugly —NATO's War to Save Kosovo*. Washington, D.C.: Brookings, 2000.

Department of the Air Force. *Air Force Pamphlet 14-210: USAF Intelligence Targeting Guide.* Washington, D.C.: HQ USAF/XOI, 1999.

_____. *Operations and Effects and Effectiveness* .Vol. 2 of *Gulf War Airpower Survey*. Washington, D.C.:USGPO, 1993.

Department of the Army. *Field Manual 3-0: Operations.* Washington, D.C.:USGPO, 2001.

Department of Defense. *Joint Doctrine Capstone and Keystone Primer*. Washington, D.C.: Chairman of the Joint Chiefs of Staff, 2001.

_____. *Joint Experimentation Concept Executive Report 01-01:Rapid Decisive Operations: Analytical Wargame Findings*, Norfolk, VA: United States Joint Forces Command, 2001.

_____. *Joint Staff Officer's Guide*. Norfolk. VA : Joint Forces Staff College, 2000.

_____. *Joint Pub 1: Joint Warfare of the Armed Forces of the United States.* Washington, DC: Chairman of the Joint Chiefs of Staff, 2001.

_____. *Joint Pub 1-02: Department of Defense Dictionary of Military and Associated Terms.* Washington, D.C.: Chairman of the Joint Chiefs of Staff, 2001.

_____. *Joint Pub 2-0: Doctrine for Intelligence Support to Joint Operations.* Washington, D.C.: Chairman of the Joint Chiefs of Staff, 2001.

_____. *Joint Pub 3-03, Volume I: Interagency Coordination During Joint Operations.* Washington, D.C.: Chairman of the Joint Chiefs of Staff, 1996.

_____. *Joint Pub 3-60: Joint Doctrine for Targeting. Second Final Coordination Draft*, 23 August 2001. URL: < http://www.dtic.mil/doctrine/jel/ddrraafftt_pubs/3_60sfc.pdf> Accessed 15 November 2001.

_____. *Joint Vision 2020*. Washington, D.C.: Chairman of the Joint Chiefs of Staff, 2000.

_____. *Kosovo/Operation ALLIED FORCE After-Action Report: Report to Congress.* Washington, D.C.: Department of Defense, 2000.

_____. *Report of the Quadrennial Defense Review.* Washington, D.C: Department of Defense, 2001.

Department of War. *United States Strategic Bombing Survey (USSBS) Summary Report (European War).* Washington. D.C.:USGPO, 1945.

Darilek, Richard, Walter Perry, Jerome Bracken, John Gordon, and Brian Nichiporuk. *Measures of Effectiveness for the Information-Age Army*. Washington. D.C.: Rand Corporation, 2001.

Deptula, David. *Effects-Based Operations: Change in the Nature of Warfare.* Washington. D.C.: Aerospace Education Foundation, undated.

Garamone, Jim. "Myers Speaks Out About the Importance of Focused National Power." *Air Force News,* 16 November 2001. URL: <http://www.af.mil/news /n20011116)1644.shtml>. Accessed 16 November 2001.

Graham, Bradley. "Up in Arms: Department of Defense War Review Extended a Month." *Washington Post*, 15 September 1999, A23.

Hamblet, William and Jerry Kline. "Interagency Cooperation: PDD 56 and Complex Contingency Operations." *Joint Forces Quarterly*, Spring 2000, 92-97.

Helland, Sam. *Leading Change: Precision Engagement Brief,* undated. URL:<http//:www.ditc.mil/ndia/recovery.helland.prdf>. Accessed 19 November 2001.

Hosmer, Stephen. *Psycological Effects of U.S. Air Operations in Four Wars 1941-1991.* Santa Monica, CA: RAND, 1996.

Huss, Jon. "Exploiting the Psychological Effects of Airpower: A Guide for the Operational Commander." *Aerospace Power Journal* 13, no. 4 (1999):23-32.

Fischer, Michael. *Mission-Type Orders In Joint Air Operations: The Empowerment of Air Leadership.* Maxwell AFB, Al: School of Advanced Airpower Studies, 1995.

Fogleman, Ronald R., General, USAF. "Strategic Vision and Core Competencies", speech presented to the Air Force Symposium, 18 October 96. Available online at URL: < www.au.af.mil/au/awc/readings/csafafa.htm >. Accessed 15 November 2001.

Gerogetown School of Foreign Service. *The United States in a 21st Century World: The High Cost of Low Investment,* undated. URL:<http://www.georgetown.edu/sfs/programs /isd/us/environment.html> . Accessed 18 November 2001.

Johnson, Wray Dr. Professor of Military Studies, Marine Corps Command and Staff College. Interview by author, 05 February 2001.

Keeping the Edge: Managing Defense for the Future. Ed. Ashton Carter and John White. Cambridge. MA: Preventive Defense Project, 2000.

Mann, Edward, Gary Endersby, and Tom Searle. "Dominant Effects: Effects-Based Joint Operations." *Aerospace Power Journal* 15, no. 3 (2001): 92-101

Meilinger, Philip. "Air Strategy: Targeting for Effect." *Aerospace Power Journal* 13, no. 4 (1999): 48-61.

Nascimento, Leonel. "Army Lessons Learned and Successful TTPs for Hurricane Mitch Humanitarian Assistance: JTF Commander's Initial Impressions." In *News From The Front*, online edition. Fort Leavenworth, KS : Center for Army Lessons Learned, January/February 1999. URL: http://call.army.mil/products/nftf/janfeb99/nascimento.htm, accessed 02 February 2002.

Neustadt, Richard and Earnest May. *Thinking in Time: Uses of History in Decision Making.* New York:, The Free Press, 1986.

Pape, Robert A. *Bombing to Win: Air Power and Coercion in Warfare.* Iithaca. NY: Cornell University Press, 1996.

Pincus, Walter. "Senate Clears Bill Raising Intelligence Spending 7 Pct." *Washington Post*, 9 November 2001, A13.

_____. "Intelligence Shakeup Would Boost CIA: Panel Urges Transfer of NSA. Satellites. Imagery From Pentagon. " *Washington Post*, 8 November 2001, A01.

Priest, Dana. "A Four Star Foreign Policy? U.S. Commanders Wield Rising Clout. Autonomy." *Washington Post*, 28 September 2000, sec. A1.

Shelby, Richard. Interviewed by Tim Russert. On *Meet the Press*. National Broadcasting System, 25 November 2001.

Sopko, Mark. *Combat Assessment: Analyzing the Results of an Air Campaign*, 15 November 1999. URL:<http://www.airpower.maxwell.af.mil/airchronicles/cc /sopko.html>. Accessed 9 October 2001.

Schwarzkopf, Norman. *It Doesn't Take a Hero.* Edited by Peter Petre. New York: Bantam Books, 1992.

Smith, Jeffery H., former General Counsel, CIA. "The American Intelligence Community: Case Studies in Reform." Summary of remarks delivered to the Culture of National Security Lunch Forum Series, Washington, D.C., 26 September 2000. URL:<http://www.tcf.org/Events/Cosmos/smith.html>, accessed 31 January 2002.

Thurman, James. “Are U.S. Military Mapmakers Missing the Mark?” *Christian Science Monitor*, 27 May 1999, sec. A1.

Trainor, Norman and Michael Gordon. *The General’s War: The Inside Story of the Conflict in the Gulf*. New York: Little Brown and Co., 1995.

United States Joint Forces Command. *A Concept Framework for Effects-based Operations (Draft),* 01 August 2001. URL:<https://home.je.jfcom.mil>. Accessed 15 October 2001.

U.S. President. National Security Action Memorandum # 55. “Relations of the Joint Chiefs of Staff to the President in Cold War Operations.” 28 June 1961.

Ward, Geoffrey with Ric Burns and Ken Burns. *The Civil War: A Illustrated History.* New York :Alfred Knopf, 1991.

Warden, John. *The Enemy as a System,* undated. URL:<www.airpower.au.af.mil/airchornicles /apj/warden.html>. Accessed 7 October 2001.

Yakeley, Jay B. III and Harold E. Bullock. “Training the Pacific Warriors.” *Joint Forces Quarterly* 12, (Summer 1996): 16-19.