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TITLE: COMBAT ASSESSMENT IN MEF BATTLESPACE SHAPING

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Abstract The Author examines the concept of Combat Assessment (CA) in general and the process at the MEF level. Using I MEF's CA shortcomings during Desert Storm as a baseline, the study identifies subsequent advances in terms of applicable equipment, organizational infrastructure and procedures within the MEF Headquarters and their potential contributions to CA process improvement. The Author concludes that potentially serious deficiencies still exist in MEF CA capability despite advances since Desert Storm.		
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EXECUTIVE SUMMARY

Title: Combat Assessment in MEF Battlespace Shaping

Author: Major Rudolph M. Janiczek, United States Marine Corps

Thesis: That, despite added capabilities since Desert Storm, today's MEF may find it equally difficult to execute combat assessment.

Discussion: The combat assessment (CA) process is a tool that commanders use to evaluate the effectiveness of operational fires executed through the targeting cycle. Once combat is joined against an opposing ground force, the MEF utilizes the six-step targeting cycle as its means to implement fires and shape the battlespace. While the CA process is outlined in doctrine clearly and simply, it is an abstract process performed under the realities of combat by organizations with imperfect capability. Shortcomings in CA capability, if unrecognized by commanders, may lead to unreasonable expectations of the process and, ultimately, CA process failure. Both I MEF and US Central Command suffered degrees of failure in their respective CA processes during Operation Desert Storm due to limitations in equipment and organizational infrastructure, as well as a process methodology based upon quantitative battle damage assessment (BDA). Since the Gulf War, there have been numerous changes in MEF organization, equipment and doctrine. Many of these changes can be associated with the CA process and might represent potential improvements in MEF CA. Such improvements, however, are equipment and organizationally centric. In the intervening years since Desert Storm, few changes have been realized in terms of CA methodology, arguably allowing serious process flaws identified during the Gulf War to remain. Most notable among these flaws is a propensity to conduct quantitative BDA.

Conclusion and Recommendations: If CA is to be a useful tool for MEF commanders, changes to process methodology must be institutionalized that are based upon BDA derived from qualitative reasoning.

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INTRODUCTION

“What’s the BDA?”

Few questions from general officers cause more consternation amongst intelligence professionals than, “What’s the BDA?”¹ Effectively judging the condition of an enemy’s forces or infrastructure is not a simple prospect and is generally accepted to be an inexact science at best. Yet, it seems that this perception often evaporates and precise information is demanded when it comes to assessing the effects of fires. Such was certainly the case within the components of US Central Command arrayed against Iraq in 1991. The triumphs and difficulties the coalition against Saddam Hussein encountered, including problems in assessing the results of the campaign, still serve as a benchmark for warfighting improvement.

Of particular significance to Marines, the Persian Gulf War marked the ascendancy of the Marine Expeditionary Force (MEF) from its role as a facilitator and provider to that of the Marine Corps’ premier warfighting headquarters. Then, as now, the MEF concerned itself with shaping—setting the conditions for decisive action—in its battlespace. Shaping is accomplished across all of the warfighting functions, but becomes most prolific within the realm of fires once combat with an opposing ground force is joined. Against such forces, the MEF implements its fires shaping effort through the iterative process of targeting. Among the requirements to successfully prosecute the targeting effort, is the need for battle damage assessment and, ultimately, combat assessment.

Consistently, in the multitude of studies that emerged after the Gulf War, combat assessment was singled out as a dismal failure in I MEF as well as in the other components. Ten years after the last bomb fell on Iraqi forces in Kuwait the question still arises, “*How capable is the MEF of executing combat assessment now as compared to then?*” That question is central to this study.

An underlying principle of this study is that the combat assessment process is a tool for the commander. Processes, like devices, are useful when employed within their capabilities. When limitations are not respected, however, unrealistic expectations lead to frustration and ultimately, failure. While the MEF’s evolution as an organization has been profound over the past decade, it is still an organization with limitations. Maximizing efficiency and capability within the limitations of a warfighting organization is truly the challenge for commanders and their staffs. Such is the case in the MEF and the pages that follow will show that **despite added capabilities since Desert Storm, today’s MEF may find it equally difficult to execute combat assessment.** This answer to the study’s research question was derived by examining the process of combat assessment, the problems encountered in executing it during Desert Storm and the capabilities added to the MEF organization since. Previous studies on similar subjects were available from the Marine Corps Research Center at Quantico and the Air University Press at Maxwell AFB, Alabama and were used throughout the inquiry, particularly to establish a historical baseline. Current and emerging doctrine from joint and service publications as well as articles in professional journals were also useful sources.

¹ BDA is the abbreviation for “Battle Damage Assessment” and is discussed thoroughly in the chapter following.

Although the study's focus is the MEF, the difficulties encountered by other organizations, both during and since the Gulf war, are examined as well. Such inquest is necessary to establish trends and gauge the progress of combat assessment in general. The experiences of the joint world provide lessons for the MEF to examine and learn from. Furthermore, because the MEF presumably will not fight autonomously, these lessons also form the basis for future joint methods and structure with which the MEF will have to contend.

COMBAT ASSESSMENT IN ABSTRACT

”The objective of combat assessment is to identify recommendations for the course of military operations.”

--Joint Pub 1-02

The effective study of any concept’s implementation must begin by examining the definition of the concept itself. The succinct term *combat assessment* (CA) appears to describe a relatively simple notion or process. To be effective, however, CA depends upon its successful interrelationship with numerous other processes. These processes must also be identified, defined and their implications acknowledged if CA is to be understood. The purpose of this chapter is to introduce the reader to the definition of CA and its sub-elements; discuss its importance, relevance and relationship with other processes; and identify the characteristics that an organization requires to execute effective CA.

What CA is and why it is Relevant

The six step targeting² cycle has become the model process by which combatant commanders (i.e.: CINCs) employ joint fires.³ The targeting cycle provides a method by which commander’s guidance is translated into a prioritized list of forces and activities to be attacked; friendly assets are identified to execute these attacks; the attacks are made

² Targeting: “The process of selecting targets and matching the appropriate response to them, taking account of operational requirements and capabilities”; Target: “A geographical area, complex or installation planned for capture or destruction by military forces,” Joint Pub 1-02. “Targets also include the wide array of mobile and stationary forces, equipment, capabilities, and functions that an enemy commander can use to conduct operations,” FM 6-20-10 / MCRP 3-1.6.14, *Tactics, Techniques and Procedures for the Targeting Process* (Quantico: MCCDC, 1996) p. 1-1.

³ Fires: “The effects of lethal and non-lethal weapons,” Joint Fires: “Fires produced during the employment of forces from two or more components in coordinated action toward a common objective.” Joint Pub 3-09 p. V.

and their results evaluated. The targeting process is dynamic, progressive and continuous through the course of a military operation. CA represents the sixth step in this process and is defined as, “The determination of the overall effectiveness of force employment during military operations.”⁴ In essence, the objective of CA is to evaluate the results of one evolution of the targeting cycle, in order to optimize the effects of subsequent iterations. CA, therefore, is a process that depends upon the outputs of the other steps in the targeting cycle in order to produce meaningful results. CA is an operational responsibility that requires close coordination and interaction with intelligence.

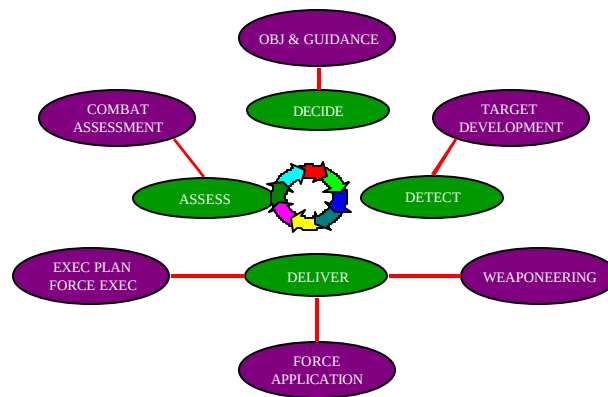


Figure 1: The Six Step Targeting Cycle and D3A

CA is comprised of three elements: Battle Damage Assessment (BDA), Munitions Effects Assessment (MEA) and Re-attack Recommendation (RR). Each of these subordinate elements has implications and requirements.

BDA is certainly the most conspicuous element of CA and probably the most important. Its doctrinal definition is, “The timely and accurate estimate of damage

⁴ Joint Pub 1-02, p. 86

resulting from the application of force, either lethal or non-lethal, against a predetermined objective.”⁵ That BDA strives to estimate damage relative to an objective is significant because it shows the direct correlation that exists between the processes that create targeting objectives to those that evaluate their achievement. The BDA process is further divided into three phases:⁶

- Phase I BDA, also called a **physical damage assessment**, is an estimate of the physical damage to a target based upon observed or interpreted damage. The assessment is made on any and all sources of information but may be nothing more than a “hit” or “no-hit” call.
- Phase II BDA, also called a **functional damage assessment**, estimates the remaining operational or functional capability of a target. This assessment is also based upon multiple sources of information and includes an estimate of the recuperation or replacement time required for the target to resume normal operations.
- Phase III BDA, also called **target system assessment**, estimates the overall impact of force employment against a particular system of targets. The assessment is made by fusing all physical and functional damage assessments in a target system. Because of its scope, Phase III BDA is normally conducted solely by the combatant command while functional components conduct Phase I-II BDA.⁷

The BDA process is an intelligence function, though it relies upon substantial input from operations.

MEA, the second element of CA, is conducted concurrently and interactively with BDA. The MEA process seeks to evaluate the effectiveness of ordinance, weapons systems, and tactics employed against targets in order to identify possible deficiencies

⁵ Joint Pub 1-02, p. 56

⁶ Only rudimentary definitions of these phases of BDA are presented here. For more detailed discussion see the Joint Targeting School’s *Student Guide: Combat Assessment*, (Dam Neck: US Joint Forces Command, 1998) or Air Force Pamphlet 14-210, *US Air Force Intelligence Targeting Guide*, (Falls Church: Air Intelligence Agency, 1998) Chapter 9. The definitions presented here are based upon these sources.

⁷ USCENTCOM is a noteworthy exception to this general rule. See JICCENT, *Battle Damage Assessment SOP* (Tampa: USCINCCENT, 1998) p. 4-1.

that might suggest procedural or tactical changes.⁸ MEA is an operations responsibility requiring inputs from intelligence. Because MEA evaluates the effectiveness of weapons, tactics and platforms, it clearly draws information from the Weaponneering, Execution Planning and Force Execution processes within the targeting cycle.

RR is the final element of CA and is a combined function of operations and intelligence. It provides the commander with advice on the re-attack of specific targets or the attack of new targets to achieve existing objectives. Additionally, RR provides input to the development of new commander's guidance and targeting objectives. RR essentially represents the output of CA in that it directly influences the subsequent targeting cycle.

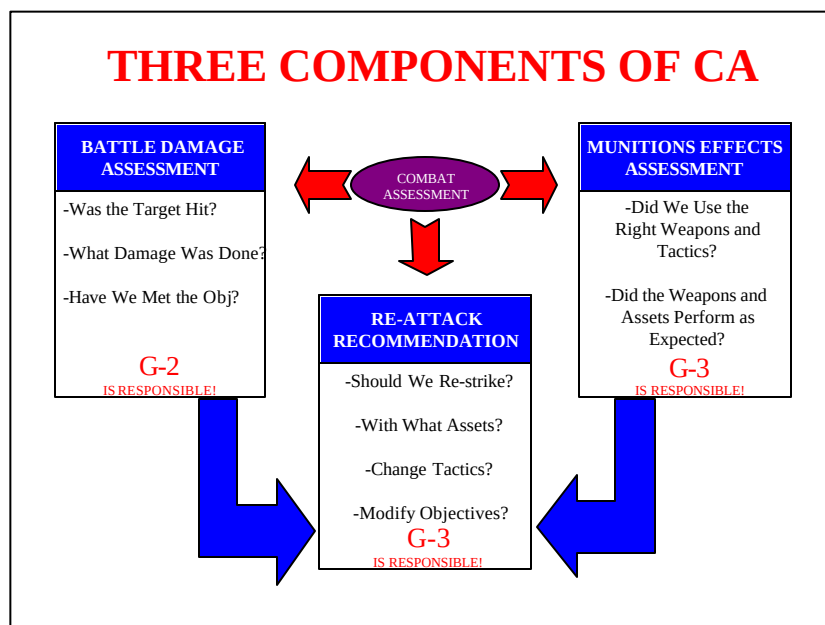


Figure 2: The CA Process

Ideally, CA will give the commander adequate insight so as to ascertain the progress of the operation with respect to targeting and fires. The commander can then effectively

⁸ This information comes from the Joint Targeting School (JTS). At present, there is no published doctrinal definition for MEA pending the approval of Joint Pub 2-01.1 (Intelligence Support to Targeting) currently in final draft. The definition in the JTS Student Guide is consistent with the draft publication.

manage his assets to ensure that targets not sufficiently damaged are re-engaged while assets are not wasted in attacking targets that have already been functionally nullified.

CA and the MEF

One might debate as to whether the six-step targeting process and the concept of CA is applicable to warfighting at the MEF level. Under current doctrine, MAGTFs⁹ utilize the four-step targeting process (Decide-Detect-Deliver-Assess, or “D3A”) found in FM 6-20-10 / MCRP 3-1.6.14. Although the targeting process is defined differently in this doctrine than is the joint standard, the process serves an identical purpose and is merely quantified into different steps.¹⁰ More significant perhaps, is that the MEFs have chosen to define their targeting methodology according to the six-step joint targeting process, rather than the traditional four-step cycle.¹¹ It stands to reason, therefore, that the concept of CA is doctrinally relevant to the MEF and the Single Battle Concept.

CA in the Ideal World

Having defined CA and its relevance to the Joint Force or MEF Commander, it is important to understand how the concept might be employed. As with the laws of physics, this is best done by first examining how the process would be executed under ideal circumstances, then to examine the realities that hinder its efficiency.

CA actually begins as objectives and guidance are produced in the first step of the targeting cycle. Ideal targeting objectives are *observable*, *measurable* and *achievable* and are developed in a collaborative effort between intelligence and operations for the

⁹ MAGTF is the abbreviation for, “Marine Air-Ground Task Force.”

¹⁰ See MCRP 3-1.6.14 p. 3-12

¹¹ Appendix 14 to Annex C to the MEF TACSOPs.

commander's approval. As part of this collaborative effort, measures of effectiveness would be developed to serve as a benchmark against which progress toward achieving the individual objectives can be measured. As nodes and specific targets were identified for engagement in the target development step of the targeting cycle, these measures of effectiveness would be refined.

Measures of effectiveness can be translated into intelligence requirements (IR) or priority intelligence requirements (PIR) so that a force's collection plan supports its targeting effort.¹² As the targeting cycle progressed, the weapons, timing of attacks and specific aim points against specific targets would be assigned. Armed with this information, intelligence collectors would finalize the collection plan and analysts could prepare themselves to support the BDA and MEA efforts.

As operations were executed, combat information from operational reports and collection platforms would reach intelligence analysts trained in BDA methods. These analysts would match this information to targets and apply the sum to the last known condition of the target, producing a Phase I BDA report. As more information on the targets was obtained from various intelligence sources, greater insight regarding their damage would be gained thereby allowing the intelligence analysts to conduct Phase II and Phase III BDA analysis.

The combat information received by the intelligence analysts would be shared concurrently for MEA with their counterparts in operations. There, a comparison between the assessed results of strikes and their expected outcome would be drawn. Any disparities would be analyzed in terms of the delivery platforms and weapons used, as

¹² IR has replaced the term EEI (elements of essential information). See MCDP 2 p. 53 and MCWP 2-1 p. 3-3.

well as the tactics used to employ them. Once identified, causal factors for substandard performance (such as unnecessary aircraft altitude restrictions or faulty ammunition lots) would be eliminated or minimized.

The collective result of this analysis would be a determination as to whether targeting objectives had been satisfied. If they had not, the analysis would also show why this was, and what actions might be taken to bring about success. The assessments would be considered as objectives and guidance were produced and the targeting cycle would begin anew.

By examining the CA process, one might conclude that a commander who wants to ensure he benefits by it will:

- Manage the targeting process so that CA feedback can be input within a reasonable timeframe.
- Maintain an infrastructure, in terms of trained personnel and equipment, to support intelligence and operational analysis for BDA, MEA and RR.
- Arm his intelligence section with the requisite assets to support the collection plan, or the means to coordinate supporting assets.
- Clearly articulate targeting objectives and endorse measures of effectiveness that represent observable benchmarks toward objective achievement.

The foundational principles, purpose, process and requirements for CA seem straightforward and reasonable. That the MEF will execute effective CA in the future depends not only in its ability to employ these abstract principles, but also in its willingness to incorporate the lessons learned from their practical application.

DESERT STORM: CA MEETS REALITY

“The lack of reliable BDA was the greatest deficiency reported in the fire support arena.”

--MCLLS no 62849-12305, 24 June 1991¹³

Among other noteworthy events, the Persian Gulf War contained the most contemporary example of a battlespace shaping effort in history. The conflict had presented the United States an opportunity to employ the warfighting concepts and doctrine it had instituted during the cold war. Most American political and military leaders pointed to the Gulf War as a validation of these concepts. Indeed, the war was a tremendous operational success and did serve to underscore the strengths in American tactics and equipment. It also revealed capability shortfalls to thoughtful military planners, giving them a baseline from which to shape the force for future conflict. The war was a watershed event in terms of targeting and CA and had substantial impact upon contemporary doctrine and methods. The purpose of this chapter is to use the characteristics essential for conducting CA as a gauge to identify the problems encountered by I MEF and US Central Command (CENTCOM) in assessing the progress of their efforts to shape Iraqi ground forces. From this examination, a determination might be made as to if, and to what degree these problems still exist today.

Management of the Targeting Process

During Desert Storm, I MEF utilized the precursor to the current D3A methodology, mentioned in the previous chapter, to define its targeting process. Called

¹³ Battle Assessment Team, “Fire Support Lessons Learned”, MCLLS no 62849-12305, 24 June 1991. MCLLS is the abbreviation for “Marine Corps Lessons Learned System.”

simply the “D3 methodology”, the process had been developed by the US Army and was not officially recognized as Marine Corps doctrine at the time. D3 did not recognize assessment as a separate step within the targeting cycle.¹⁴ More significant perhaps, was the fact that a deliberate targeting process, so critical to the battlespace shaping effort, was a new concept to the Marine Corps and was instituted in a hurried manner during Desert Storm.¹⁵ The commander’s executive agency for managing the targeting process, the Fire Support Coordination Center, was not formed until the eve of the air war in January 1991.¹⁶ Not surprisingly, the abrupt formation of this critical agency did not give its members time to adequately establish working relationships or hash out billet responsibilities before combat operations had commenced. These complications adversely affected I MEF targeting in general and, with other difficulties to be discussed presently, led to CA that, “...was neither timely nor accurate...and resulted in a less than efficient use of aviation assets in the conduct of the MEF deep battle.”¹⁷

Infrastructure

If the newly formed I MEF FSCC mentioned above experienced difficulty in executing its mission during Desert Storm, it was not alone. I MEF’s intelligence organization at the time, the 1st SRIG (Surveillance, Reconnaissance, Intelligence Group) had been formed in October 1989 and was making its operational debut.¹⁸ The organizational element within the SRIG’s Intelligence Company responsible for the

¹⁴ Maj. Steven D. Hogg, “Combat Assessment and MEF Targeting.” Thesis. MCU, 1995. p. 14. For more information regarding the D3 targeting process see the 29 March 1990 edition of FM 6-20-10.

¹⁵ Hogg p. 14

¹⁶ Battle Assessment Team, quoted by Hogg p. 15. The FSCC at the MEF was the precursor to the current Force Fires Coordination Center (FFCC). See the MEF TACSOPs p. C-14-1.

¹⁷ Hogg p. 13

¹⁸ Maj. Raymond E. Coia “A Critical Analysis of the I MEF Intelligence Performance in the 1991 Persian Gulf War.” Thesis. MCU, 1995. p. 2.

analysis of raw information and dissemination of intelligence was the MAFC (MAGTF All-Source Fusion Center). Conceptually, raw data would flow into the MAFC from national, theater and organic sources reflecting all of the intelligence disciplines. MAFC analysts would compile and process the data and disseminate the resulting intelligence to the MAGTF. Manning the MAFC during Desert Storm was problematic, however. Although the wartime strength of the organization was 117 officers and Marines, it was manned at less than 50 percent strength on the first day of the ground war.¹⁹ As the air phase of Desert Storm began, the A&P (Analysis and Production) Section of the MAFC began to receive upwards of 3000 individual reports per day from the national, theater and MEF agencies.²⁰ It would be all the section could do to archive the data it was receiving. Analyzing the data to produce useful intelligence was beyond its human capacity.

The Target Intelligence Section, the intelligence element that would directly interface with the FSCC, struggled as well. Aside from having to contend with a new targeting methodology and establishing a working relationship with the staff in the FSCC, the Target Intelligence Officer (TgtIntelO) also had to construct a BDA cell in an ad hoc manner. Because other agencies within the MEF G-2 and MAFC did not have a monopoly on manpower shortages, the cell was manned alternately (day / night) by a Marine Captain and Staff Sergeant.²¹

Manpower, or lack thereof, was not the only inhibitive infrastructure element to the I MEF assessment effort. Sharing information and intelligence with other theater

¹⁹ Coia p. 2

²⁰ Coia p. 5

²¹ Hogg p. 16

agencies was also difficult. The intelligence database systems that the MEF brought into theater were problematic in either function or compatibility with other systems in theater. The Intelligence Analysis Center (IAC) was an outdated system brought into theater that did not work. Likewise, the Intelligence Analysis System (IAS) never functioned properly and, as a developmental system, few within the MAFC knew how to use it. The one intelligence database system that did function, the Intelligence Database Management System, was obsolete and incompatible with theater systems.²²

Paltry as I MEFs capability may have seemed, the BDA infrastructure seemed to be overwhelmed in other theater organizations attempting to shape Iraqi ground forces as well. The massive scope of the shaping effort ensured that,

“When imagery began to flow, the intelligence system was overwhelmed by the target array, number of attack missions, and decentralized targeting. The massive size of the target array within the KTO (Iraqi positions covered more than 3000 square miles) and the number of potential aim points (tens of thousands) were well beyond CENTAF intelligence ability to observe, analyze, and synthesize.”²³

Attempting to keep pace with the high tempo of pre-ground war air operations was problematic, if only from the standpoint of the daily number of aircraft missions flown in a large geographical area. To further complicate matters, there were difficulties in analyzing the data that was available. Because the scope of the conflict was the largest since Vietnam, capability had degraded through disuse. The Department of Defense (DOD), from the national to the tactical level, lacked established doctrine, training standards and, consequently, trained damage analysts.²⁴ BDA analysis throughout the theater relied heavily upon imagery that was severely hampered by bad weather during a

²² Coia p. 8

²³ LtCol. William F. Andrews (USAF). “Airpower Against an Army.” Diss. SAAS, Air Univ., 1998 p. 37. CENTAF is the abbreviation for US Air Force, Central Command.

significant portion of the air war. Even the well-trained analysts had difficulty overcoming this obstacle.²⁵

The Assets to Support The Collection Plan, or the Means to Coordinate Support

The organization within the SRIG's Intelligence Company that was responsible for formulating the collection plan and subsequently overseeing its execution was the MEF Surveillance and Reconnaissance Center (SARC). At the 1st SRIG's disposal for conducting collection operations were a radio battalion, a force reconnaissance company and a remotely piloted vehicle (RPV) company.²⁶ The SARC would have to coordinate with the theater J-2 for collection requirements beyond the capabilities of these organizations and assets.

Probably the most ironic of I MEF's impediments to collection during the Gulf War centered on the RF-4B reconnaissance aircraft. The platform had served the Marine Corps since 1963. Because of service limitations to the airframe, however, the Corps deactivated its only squadron, VMFP-3 in August 1990-- two weeks before Operation Desert Shield. This loss in capability created a huge void in I MEF's ability to obtain hard copy imagery of its operational area and, therefore, caused an almost complete reliance upon the theater to that end. Theater and national assets, however, were finite in number and capability and were focused upon the CINC's priorities. Although information did flow into the MAFC from theater and national sources, nearly all of it

²⁴ See the Department of Defense (DOD) *Final Report to Congress on the Conduct of the Persian Gulf War*. Online. Available: http://es.rice.edu/projects/Poli378/Gulf/gwtxt_ch6.html. n. pag.

²⁵ DOD.

²⁶ Coia p. 1. Additionally, II MEF had reinforced the I MEF organizations in terms of assets and personnel and this had substantially increased their capability.

focused on Iraq as opposed to I MEF's sector of the theater.²⁷ Imagery that was obtained was typically outdated, or at least not timely enough to support targeting or BDA.²⁸

To close the collection requirement gap in support of the pre G-Day shaping effort, I MEF would come to rely heavily upon its organic unmanned aerial vehicle (UAV), the Pioneer. I MEF employed these RPVs "very effectively" or "magnificently," by some accounts, for reconnaissance, surveillance, target acquisition (RSTA) and to collect information for BDA.²⁹ There were limiting factors, however. The RPV could only image in a narrow field of view and its video transmissions were recorded on tape. This made analysis more challenging and time consuming. Furthermore, the limited number of platforms could not satisfy the collection needs of the MEF as a whole. So critical was their role in shaping that, "RPV's never flew in support of the 1st or 2nd Marine Division until seven days before starting ground operations (G-Day minus 7)."³⁰

I MEF difficulties were symptomatic. Other components within CENTCOM met similar frustration in their collection efforts to support BDA. As with the analytical infrastructure, the sheer scope of the shaping effort was too much for a system that,

"...was designed to operate from the top-down, with imagery providing hard evidence of target conditions. This architecture was dependent on a very few collection platforms; it was physically impossible for those few systems to supply the volume of information required by the process...In short, BDA was mired in bureaucracy and fundamentally flawed in its peacetime top-down centralized framework."³¹

Innovations were eventually undertaken by CENTAF to "flatten out" the organizational hierarchy in the BDA process through the use of aircraft cockpit video

²⁷ Coia p. 6

²⁸ Coia p. 6-7

²⁹ Hogg p. 20 and Coia p. 7.

³⁰ Coia p. 5

³¹ Andrews p. 58

(ACV) recordings that were fed from Air Force F-111, F-16 and F-15E aircraft, as well as Navy A-6s attacking Iraqi Republican Guard forces from medium altitude using a LANTIRN targeting pod.³² The use of this video to assess battle damage was inventive and may have eased the overwhelming reliance upon burdened theater and national collection assets. However, tribulations caused by differing assessment methodologies (which will be discussed later) between the air and ground components did much to diminish the significance of this contribution.

Clear Targeting Objectives and Observable Benchmarks Toward Achievement

A study of the difficulties encountered by I MEF and the other theater components with regard to targeting processes, infrastructure and intelligence collection capability, may lead one to suspect that the underlying difficulty in executing CA during Desert Storm lay firmly within one of these elements or was shared in part by all of them. Before making an ultimate attribution, however, it is important to again examine these elements as components of a larger system, consider what that system's realistic capabilities were and to compare this with what the system was tasked to do.

The objectives for shaping the Iraqi Army were clear because they were based upon attrition. The benchmark set by CENTCOM was reduction of the Iraqi Army by 50 percent prior to the commencement of ground operations.³³ This seems, at first, to make sense. A purely quantifiable measure of effectiveness, one might argue, would be

³² For a detailed discussion of the tactics involved and their perceived contribution to the CA process see: Maj. Michael J. Bodner and Maj. William W. Bruner III, "Tank Plinking," *Air Force Magazine*, October 1993 p. 29. LANTIRN is the abbreviation for, "Low-Altitude Navigation and Targeting Infrared for Night."

³³ Many sources discuss this figure. For a detailed discussion on how this benchmark was decided upon see: Michael R. Gordon and General Bernard E. Trainor, *The General's War*. (Boston: Little, Brown and Company, 1995) p. 189-190.

desirable because the objective remains observable, measurable and achievable. In reality, however, this is not the case.

Targeting objectives oriented upon quantifiable results are not, by definition, observable. This was certainly the case with the Iraqi Army: a mobile force spread over thousands of square miles and often obscured by weather. The aforementioned impediments experienced by I MEF and the various CENTCOM components in obtaining material from theater and national assets were further compounded when analysts did receive imagery:

“...the satellite cameras on which the Americans initially relied could take wide-angle shots that were too blurry for accurate BDA, or high-resolution photos of individual targets—a tank here, an artillery tube there—that precluded a comprehensive understanding of how the enemy tank or artillery battalion had fared as a whole...the task was like trying to make sense of a televised football game in which the cameras focused only from afar on the entire stadium and surrounding city, or up close on only one linebacker.”³⁴

Or, as LtGen Horner, the JFACC, would lament,

“It’s obvious that the national systems can’t support the way we need to be supported. They’re superb against fixed infrastructure type facilities but they’re not very accurate against forces in the field.”³⁵

In essence, the collection assets were limited not only in availability, but in capability. In retrospect it is clear that applying highly quantitative measures of effectiveness to shaping objectives did not make them more observable, it made observation more complex.

In a similar respect, basing the desired effect of the shaping effort on attrition did not seem to make its attainment any easier to measure. In the absence of quality imagery,

³⁴ Rick Atkinson, *Crusade: The Untold Story of the Persian Gulf War*. (New York: Houghton Mifflin, 1993) p. 235.

³⁵ Andrews endnote number 140, p. 89. JFACC is the abbreviation for “Joint Force Air Component Commander.”

the I MEF BDA cell's primary source of information was aircraft mission reports (MISREPS) and they were required to manually track the results.³⁶ CENTAF fell into the same predicament at times and found it equally difficult to quantify the results; especially those results observed from a high altitude.³⁷

Another complicating factor in measuring the attrition of the Iraqi Army stemmed from the lack of a uniform assessment methodology. This caused disparities between the attrition estimates of various agencies and resulted in tremendous friction among the components within CENTCOM and even among national agencies. ARCENT (US Army, Central Command), the CINC's executive agent for estimating the strength of the Iraqi ground order of battle, would accept only certain percentages of CENTAF's battle damage claims as fact.³⁸ This caused great strain between the two components since attrition figures could be taken as a measure, not only of progress towards objective achievement, but of the air component's warfighting performance. Similar disparities had great ramifications at the national level as well. In a briefing to President Bush on the eve of the ground war, the estimates of Iraqi losses between CENTCOM, the Central Intelligence Agency (CIA) and the Defense Intelligence Agency (DIA) differed by as much as 27 percent for tanks, 23 percent for armored vehicles and 39 percent for artillery pieces!³⁹ Clearly, this divergence shows that having objectives based upon quantifiable outcome did not produce a more efficient yardstick. Even after the war, there is no

³⁶ Hogg p. 16

³⁷ Andrews 37

³⁸ For a discussion on the rationale behind this decision and its ramifications see: Andrews p. 56-58 or Gordon and Trainor p. 329.

³⁹ Data from the "Gulf War Air Power Survey (GWAPS)" qtd by Gordon and Trainor p. 335.

consensus on how many tanks, vehicles or artillery pieces Iraq lost at the hands of the coalition.⁴⁰

The desire to base a shaping objective on a tangible figure during Desert Storm is understandable, if not forgivable. If the Iraqi Army lacked the hardware to resist an attack by ground elements of the coalition, there would be less potential for friendly casualties—a mindset that is consistent with the American way of war. The 50 percent attrition figure was, however, beyond the capability of intelligence to measure and this quickly diminished the CA process into a meaningless concept. Simply stated,

“The desire not to overstate operational accomplishments led to assessing damage based only on what could be proven using imagery. In some cases, this seems to have precluded making rapid judgments about what probably had been accomplished. This practice did not serve well the needs of commanders operating under combat time pressures. They could not wait for in-depth analysis; decisions had to be made based on judgment.”⁴¹

Essentially, the purely quantitative approach slowed the CA process down to the point that it was ineffectual. With the CA process unable to support targeting, not only were objectives imperceptible and indeterminate, they simply weren’t achievable. When it became obvious that the 50 percent attrition goal was beyond the theater’s capability to quantitatively assess, General Schwarzkopf’s main measure of effectiveness in the shaping operation became the weight of the air component’s effort in terms of numbers of sorties flown.⁴²

If the bad news from the Gulf War is that the quantitative CA process didn’t work, the good news is that this malady did not prevent I MEF or the rest of the coalition from success in the ground war. The shaping effort undertaken during the air war was

⁴⁰ Estimates range between two-thirds and three-quarters of Iraq’s tanks and between two-thirds and nine-tenths of Iraq’s artillery was destroyed during the war. See Andrews p. 67.

⁴¹ DOD.

grounded in simultaneity and depth. Throughout Kuwaiti Theater of Operations (KTO) the entire spectrum of Iraqi capability was attacked. Direct and indirect attacks on Iraqi command, control and communications (C3), logistics, combat power and, consequently, morale were devastating. In the midst of combat operations the effect of such attacks is difficult to quantify, but an attempt to do so through a consistent, qualitative process may have enabled the CA process to work more efficiently. Collection agencies and assets, strained in their efforts to produce evidence of catastrophic equipment kills, may have better supported other theater intelligence requirements while still providing MEA analysts with a general overview of the effects of platforms, weapons and tactics.

Ultimately, the success of the Desert Storm shaping effort was derived through qualitative deduction--specifically, that of the CINC, his commanders and the decision makers in Washington. The number of desertions as the air war progressed made it clear that Iraq's army was collapsing. On 23 February, the night before the ground war began, CENTCOM's BDA estimates rated the Iraqi operational reserve at 55 percent strength, the fearsome Republican Guard was at 66 percent strength, and the Iraqi III Corps facing I MEF was at 78 percent strength.⁴³ By these assessments, none of these forces had been reduced to the desired threshold. The decision to attack was made nonetheless. As the Commanding General of I MEF put it before the air war began,

"I believe that we have a rather hollow army facing us, despite the amount of equipment they possess. I never underestimate my enemy...but these guys are not in our league except in total amount of equipment. My gut feeling is that they are very shaky."⁴⁴

⁴² Andrews p. 76 and endnote number 262 and AF Pamphlet 14-210 section 9.6.7.3.

⁴³ ARCENT BDA estimates 23 Feb 1991 as quoted in Andrews p. 64 and Gordon and Trainor p. 350.

⁴⁴ A letter from General Boomer to a Vietnam friend as quoted by Gordon and Trainor p. 165.

General Boomer was correct. The amount of equipment was never the relevant factor.

The objectives of the shaping effort, however, do not seem to have reflected this notion.

Takeaways

After examining the elements of CA as they existed within I MEF and CENTCOM during Desert Storm, one can conclude that the major points of failure centered on the following:

- A new targeting process (within I MEF) implemented by a hastily assembled staff who were generally unfamiliar with the methodology and, thus, could not optimize its implementation.
- Infrastructure deficiencies. Specifically, an untried and undermanned intelligence agency with inadequate systems architecture at I MEF and a lack of trained BDA analysts throughout the theater.
- Insufficient collection assets at the tactical, theater and national level to support the scope and tempo of the shaping effort. This was complicated by an overburdened, bureaucratic structure for BDA collection requirements.
- Targeting objectives for shaping based upon attrition. These objectives were neither observable nor measurable and, therefore, not achievable within the context of a CA methodology.

That the US enjoyed a high degree of success during Desert Storm despite a dysfunctional CA process is fortunate, but it must make note of the processes' shortcomings and remember them. Her enemies have most certainly done so.

A SNAPSHOT OF THE PRESENT

“The art of war deals with living and with moral forces. Consequently, it cannot attain the absolute, or certainty; it must always leave a margin for uncertainty, in the greatest things as much as in the smallest.”

--Clausewitz

Adverse issues notwithstanding, Desert Storm proved to be the MEF's coming of age as the Marine Corps' premier warfighting organization. In the decade since the Gulf War, numerous steps have been taken to improve the capability and efficiency of the MEF, should the requirement to respond to another major regional contingency (MRC) ever arise. Advances in both the MEF and joint targeting processes have taken effect as well and this has had some impact upon CA. The purpose of this chapter is to contrast the capabilities and processes of the contemporary MEF, as well as the joint community in which it would operate, with the shortfalls identified in the preceding chapter. This examination will serve as an indication of progress made towards optimal CA capability and identify lingering obstacles for resolution.

The Targeting Process and the MEF Staff

The MEF Force Fires Coordination Center (FFCC) is the direct descendant of the hastily assembled FSCC that shaped the Iraqi III Corps during Desert Storm. A permanent section within the MEF Command Element, the agency is divided into three elements: a Plans / Target Information Section, a Current Fires Section and a Liaison Section. The Plans / Target Information Section is the element responsible to the Force Fires Coordinator (FFC) for the deliberate targeting effort.⁴⁵

⁴⁵ MEF TACSOPs p. C-14-1.

As previously stated, the MEFs have adopted the six-step targeting cycle to define their deliberate targeting process. In contrast to the unfamiliar and hurriedly adopted D3 methodology of 1991, the six-step process is institutionalized in standing operating procedure (SOP). Furthermore, billet holders train in their wartime responsibilities at least once annually in conjunction with MAGTF Staff Training Program (MSTP) driven exercises. The result for the MEF is the ability to implement the targeting process with increased acumen and skill, thereby diminishing a major obstacle to CA encountered in Desert Storm.

Having a permanent, proficient staff and a more institutionalized targeting process in general has not solved all of the MEF's issues with respect to CA, however. Within the MEF Tactical SOPs (TACSOPs), responsibilities for the implementation of CA are addressed as follows:

“The combat assessment process, under the cognizance of the MAGTF All Source Fusion Center (MAFC)⁴⁶, compares targeting results with the MEF Commander's original objectives and guidance to determine if the desired effect on the enemy is being achieved, and whether re-attack is required. Combat assessment and BDA are used to modify guidance and objectives as the targeting cycle continues.”⁴⁷

BDA clearly falls within the purview of the MEFs intelligence organization. The delegation of oversight of the CA process in total to a section within the intelligence, though, is not consistent with the doctrinal premise that it is an operational, rather than an intelligence function.

Beyond the principle of doctrinal integrity and semantics, however, there are practical issues that the MEF may have to overcome if CA is left solely under the

⁴⁶ The MAFC, mentioned here and in the preceding chapter, has very recently been replaced within the MAGTF intelligence organizational structure by fusion elements within the Intelligence Operations Center (IOC).

⁴⁷ MEF TACSOPs p. C-14-7.

auspices of intelligence. The first of these has to do with the purpose of CA's sub-elements. BDA seeks to answer the question, "What is the damage and has the objective been met?" This is clearly a question focused upon the physical or behavioral disposition of the enemy and thus one for intelligence analysts. The purpose of MEA, on the other hand, is to answer, "If we have not met the objective, what changes in tactics, munitions or delivery platforms need to be made?" Evaluations of the employment of friendly assets or weapons clearly fall within the purview of operators--intelligence analysts have neither the time, nor the training to make and disseminate such evaluations. RR, within the context of deliberate targeting or shaping, represents more than a simple proposal to attack a specific target or target set for greater effect. At the MEF level, it is a more formal recommendation to the commander that may change the priority or substance of targeting objectives, impact upon apportionment⁴⁸ decisions, or alter the course of an operation. Such formal recommendations are operational in nature and should derive from an operations source.

Analysis Infrastructure

The Marine Corps intelligence community of today has some substantial advantages over the Marines that supported the Persian Gulf War. The concept of a consolidated pool of MEF intelligence elements to conduct synergetic intelligence has remained essentially intact in the years since Desert Storm, though its implementation has changed. During most of the intervening years since the Gulf War, the MEF G-2

⁴⁸ Apportionment: "In the general sense, distribution for planning of limited resources among competing requirements." (Joint Pub 1-02) In the context of MEF battlespace shaping, apportionment generally refers to the distribution of the air effort between close air support (CAS) to the ground combat element (GCE) or air interdiction missions flown autonomously by the air combat element (ACE).

managed the MAFC, the analytical element of MAGTF intelligence, directly. The remainder of the MEF's intelligence assets fell under the purview of the Commanding Officer, MEF Headquarters Group (MHG). With the recent activation of the intelligence battalions, however, the contemporary structure of MEF intelligence bears some resemblance to its 1991 predecessor. Like that of the Gulf War SRIG, the intelligence battalion's tactical configuration calls for a unified collection organization to provide all-source information to an analytical organization for fusion and production. The intelligence battalion commander, in his tactical role as the Intelligence Support Coordinator (ISC), is detailed to ensure a cohesive effort and to synchronize and weight intelligence support across the MAGTF. The role of the ISC is modeled after that of the Fire Support Coordinator (FSC) within the Marine Division: an individual who serves as both a capability facilitator for the force as well as the commander of a contributory element.

The similarities between the contemporary intelligence battalion and the SRIG of Desert Storm are largely superficial, however. The SRIG concept of the late 1980s was largely a directive effort on the part of then-commandant General Gray, whereas the concepts that created the intelligence battalion are the result of initiatives from within the Marine Corps Intelligence community itself. The basis for the concept notwithstanding, the Gulf War's SRIG deployed as an untested organization. The intelligence battalions have a decided advantage in that they are exercised at least once per year during MSTP training. While exercising the organization will not guarantee flawless execution during a contingency, it arguably does help to institutionalize the manner by which it is employed—something that I MEF struggled with in 1991.

Given that the functional design of the intelligence battalion is based upon the lessons learned from Desert Storm, one can only speculate as to whether the next conflict that warrants the commitment of a MEF will also witness the manpower shortages that hampered I MEF's analytical infrastructure during the Gulf War. While there will never be enough infrastructure to satisfy every requirement, the contemporary MEF holds an advantage over its predecessor. The emergence of technology that facilitates "reachback" has enabled MEF intelligence to organize such that not all personnel need be in theater in order to conduct analysis. The genesis for this technique comes from a more robust connectivity capability in the MEF than existed ten years ago. The concept may be considered valid because it has been successfully practiced.⁴⁹

If the analytical organization of the MEF has a lingering shortcoming, it likely rests with the lack of a permanent TgtIntelO within the G-2. The billet, which was considered a peacetime collateral duty at the onset of Desert Storm, was permanently staffed (at least in I MEF) by an artillery officer throughout much of the 1990s. In 1999 the billet was removed from the MEF Table of Organization (T/O). The responsibilities for target development, BDA and the exchange of target intelligence with the MEF Force Fires Section are again considered the collateral duty of an intelligence officer. While this relegation might be understandable during peacetime, it may portend of the same type of difficulties I MEF faced during 1991 if the billet and section have to again be established in an ad hoc manner.

As the organizational framework that supports the MEF's analytical infrastructure has grown more sophisticated since Desert Storm, so too has the repository of systems

⁴⁹ The author personally observed six MEF exercises that successfully exercised intelligence reachback with favorable results.

that support it. Unlike the situation in 1991 that found I MEF with systems that did not work, lacked trained operators or were of limited value because they were unique to the MEF Command Element, the IAS has been thoroughly institutionalized. The IAS allows the MEF to share an order of battle (OB) database with its service higher headquarters and MSCs. This certainly represents a step forward; however, the IAS still does not interface with its counterparts in theater.⁵⁰ The ability to share OB information in a common database for targeting and BDA throughout the joint community has remained a challenge since the end of the Gulf War. To remedy this, the services have invested in joint targeting systems such as Rapid Application of Airpower (RAAP), Theater Battle Management Core System (TBMCS) and the Joint Targeting Tool (JTT). Each of these are, or have embedded within them, applications that would allow for sharing of common OB data across the theater for target development and BDA. Progress in developing and implementing these systems has been slow. Once developed, such systems require a concept of operations or standing procedure to ensure that components within a theater preserve the integrity of the database. These procedures are also slow to come into being. In essence, the MEF has improved the systemic capabilities of its infrastructure, but there are still hurdles to jump.

In addition to development of automated systems, the joint community has undertaken measures to correct the problems that caused the theater BDA structure to be overwhelmed during Desert Storm. Perhaps most notable of these has been the institution of the federated BDA process. Under this system, a theater CINC may receive

⁵⁰ As of this writing, some work has been done to alleviate this. I MEF and ARCENT conducted some joint training in conjunction with a MEB exercise in December 1999 to determine if, and to what extent, IAS and its Army counterpart system (the All-Source Analysis System (ASAS)) could share information.

support from US Strategic Command, Joint Forces Command and Space Command for phase I and II BDA analysis during a contingency.⁵¹ The overarching concept behind this process is that by federating the effort, BDA will be more timely and less demanding on analysts within the theater. Implemented during Operation Desert Fox in 1998, the process' results were viewed favorably by then-CINCENT General Zinni.⁵²

Opportunities to train BDA analysts have increased in the aftermath of Desert Storm, if only in support of the numerous contingencies involving airpower that have since occurred. Additionally, Joint Forces Command's Joint Targeting School in Dam Neck, VA offers a weeklong resident course in BDA as well as a mobile training team. Simulating the enormous demand that a massive ground shaping effort would place upon the system is difficult, however. The exercises in which the MEFs participate annually are aimed at specific staff functions and do not necessarily emphasize BDA as a training objective. While the analysts do have the opportunity to practice information flow and message dissemination, the battle simulation systems on which the MEF exercises are run provide either too much, or too little information to support the practice of an assessment methodology.

Tactical, Theater and National Collection Assets and the Collection of BDA

Although the complexion of the MEF intelligence organization has changed somewhat, the SARC is still a functional tactical entity and its missions of collection

The systems were able to share some order of battle information, but only after a substantial number of manual workarounds.

⁵¹ A succinct explanation can be found in ROK-US Combined Forces Command (CFC) Pub 3-4.4: *Battle Damage Assessment Operations-Korea*. 1 June 2000. p. 24.

⁵² Lt Gen Charles Cunningham, USAF (Ret), Deputy Assistant Secretary of Defense for Intelligence, OASD (C3I), remarks to the Defense Colloquium on Information Operations, 25 March 1999.

operations management (COM) and collection requirements management (CRM) has remained its *raison d'être* in the years following the Gulf War. With two noteworthy exceptions, the organic collection capability of the MEF remains essentially unchanged in numbers, types and names of assets since the Gulf War. The two exceptions here are the Joint Surveillance Target Attack Radar System (Joint STARS) Common Ground Station (CGS) and the Advanced Tactical Aerial Reconnaissance System (ATARS). Joint STARS is a joint asset so the MEF will not be able to task it directly, but the CGS will allow the SARC near-real time (NRT) access to

“...data from multiple real-time sensors including Moving Target Indicator (MTI)/Synthetic Aperture radars; Unmanned Aerial Vehicles (UAV); Imagery Intelligence (IMINT) platforms; Signal Intelligence (SIGINT); Electronic Intelligence (ELINT); and other sources.”⁵³

With the addition of such an asset, there is no doubt that the MEF's generic capability to satisfy collection requirements has grown considerably since Desert Storm. The ATARS, eventually destined to be a NRT system as well, is a substantial organic expansion to the MEF, and finally fills the void that the RF-4 left just prior to the Gulf War.

While the addition of these assets might mitigate a future circumstance such as the overwhelming reliance I MEF had upon its beleaguered fleet of Pioneer UAVs in 1991, it is important to take the situation in context. The Gulf War was a conflict marked by a prolonged air campaign with static ground forces. Even at that, I MEF was unable to provide UAV collection support to the 1st and 2nd Marine Divisions until the very last moment due to the overwhelming target acquisition and assessment effort in the MEF shaping fight. The addition of ATARS and the GCS might make a substantial difference in a similar situation. But in a MEF engagement with deep battlespace, a moving ground

⁵³ MCWP 2-11, *MAGTF Intelligence Collections* (Coordinating Draft 22 May 00) p. P-9.

element and a need to conduct reconnaissance on objective areas and the flanks of an ever growing rear area, the contribution of these assets may seem inadequate in an effort to provide consistently unambiguous BDA.

The innovation made by the JFACC during Desert Storm in evaluating ACV to flatten the BDA hierarchy was recognized to, "...potentially play a crucial role in BDA."⁵⁴ The method has been institutionalized to varying degrees by the unified commands, which also recognize its disadvantages. The architecture required to implement this type of analysis on a large scale would be cumbersome and fragile. Nonetheless, since obtaining it requires no collection platforms, it might be considered an invaluable source of information for intelligence officers and pilots to make some assessments at the unit level, provided their aircraft are equipped with a recorder.

Targeting Objectives for Shaping

As was previously discussed, the attrition based targeting objectives and measures of effectiveness used during Desert Storm were beyond the CA capabilities of both I MEF and the theater. A contemporary MEF commander pondering the establishment of this type of shaping objective must first ask himself two essential questions: first, "Have technology and methods sufficiently advanced since the Gulf War to enable such objectives to be attainable?" and secondly, "What type of measure is the MEF designed to evaluate?"

The recent 78-day air campaign in Kosovo can provide some insight as to whether contemporary assets and methods could support CA based upon quantitative objectives. Although the campaign was not a shaping effort per se, a substantial number of sorties

were focused upon Yugoslav military forces. The targeting objectives against the Yugoslav Army were not attrition based. Following hostilities, however, mission-by-mission assessments were made as to the number of target hits NATO forces attained against mobile targets. The assessments, "...were made using cockpit video from actual strikes, image intelligence, measurements and signatures intelligence, signals intelligence, human intelligence, interviews with forward air controllers and on-scene witnesses..."⁵⁵ Subsequently, the assessment team, comprised of analysts from various intelligence and operational disciplines, made on-site visits to the strike locations in Kosovo and the Presevo Valley. The on-site visits could substantiate only 60 percent of the hits assessed.⁵⁶ Because the assessment team visited the strike locations over a month after the cessation of hostilities, it is possible that the Serbs had time to remove damaged vehicles from the area. That this actually occurred is contentious because telltale evidence of this removal (i.e. skid marks and ground scarring) was often absent at these sites. In any case, the results of the assessment team's study may not show that a 40 percent disparity existed between a quantitative assessment and reality. But the team's results certainly show that significant uncertainty still exists in the realm of quantitative assessment.

The strike assessment team's efforts in Kosovo were made when the conclusion of hostilities allowed for a methodical and thorough approach to quantitatively assessing target hits. One can only speculate as to what degree of uncertainty would be encountered by analysts faced with having to make timely assessments in the midst of a

⁵⁴ JICCENT p. 3-4.

⁵⁵ Department of Defense, Report to Congress: *Kosovo / Operation Allied Force After-Action Report*, 31 January 2000. p. 84.

⁵⁶ DOD (Kosovo), p. 85.

fast-paced, integrated battle. Such travails would be exacerbated by an enemy like the Serbs who,

“...employed a wide variety of tactics to deceive NATO forces. For example, most barracks were emptied prior to hostilities and troops and equipment were dispersed and hidden throughout the countryside. The Serbs also used natural cover such as woods, tunnels and caves, civilian homes and barns, and schools, factories, monasteries, and other large buildings to hide their personnel and weapons. Most movement of Serbian combat forces occurred during the night, or under the cover of bad weather. In addition, the Serbs used small convoys and decoys and dispersed their forces among civilian traffic. The Serbs used camouflage extensively to hide both tactical targets, such as military vehicles, and fixed facilities, such as bridges. In addition, the Serbs used decoys...to create a variety of false targets.”⁵⁷

Such measures would certainly confound and frustrate analysts attempting to measure success based upon attrition. But the fact that Serb forces took such measures is a significant factor in its own right. If an enemy is forced to hide and disperse its ground forces and assets, it cannot optimally deploy them and their effectiveness is substantially limited. If Kosovo is considered a valid example, quantitative targeting objectives are still not achievable with reasonable certainty--nor are they relevant.

The propensity a MEF commander might have for endorsing quantitative measures of effectiveness for his targeting objectives will likely be based upon how the MEF executes its targeting process in general. Because the CA process is interactive with other processes in the targeting cycle, the effectiveness of CA depends greatly upon the foresight of individuals working on these other processes. By far, the most influential elements of the targeting cycle on CA are objectives and guidance, where the commander's objectives are written; and target development, where measures of effectiveness are refined. At the MEF level, the products of these elements come in the

⁵⁷ DOD (Kosovo) p. 62.

form of matrices that specify desired effects for various target sets and attempt to establish measures of effectiveness for those effects.⁵⁸ In a MEF sized engagement, where hundreds of sorties of aircraft and individuals may be involved in the shaping battle on a daily basis, succinct guidance in the form of matrices is invaluable. Planners attempting to match assets against targets also require succinct guidance that readily relates to physical damage specified in the Joint Munitions Effects Manual (JMEM). But such succinct guidance does not translate well into the IRs and PIRs that start BDA and CA except quantitatively. With such a factor intrinsic to its targeting process, one might argue that the MEF would again likely seek to assess its shaping effort in terms of attrition. If the MEF is to avoid the CA quandaries of its forbearers, this is a factor that must be considered carefully.

⁵⁸ See page C-14-A-4-1, “Battlespace Shaping Matrix (BSM)” and page C-14-A-5-1, “Damage Criteria Matrix (DCM)” in the I MEF TACSOP for a thorough explanation of these matrices. The DCM does attempt to specify measures of effectiveness that are not purely quantitative. Nonetheless, the terms “destroy” and “neutralize” are used to specify desired effects.

REMEDIES AND REALITIES

*“Some think of the glass as half full. Some think of the glass as half empty.
I think of the glass as too big.”*

--George Carlin

The purpose of any study is to critically evaluate a topic, derive relevant lessons from it and offer advice to avoid problematic issues from reoccurring. Typically; however, such lessons and recommendations are extracted and fabricated through an admixture of past events and present context. The position of this study, that despite added capabilities since Desert Storm, today's MEF may find it equally difficult to execute CA, is no different. How, and more specifically who, the MEF will have to fight in the future are open-ended questions. The only legitimate recommendations, therefore, are the ones predicated upon the assumption that assets, manpower and money will always be in short supply and the enemy will always be uncooperative. That the MEF will be capable of executing CA should not depend upon what reconnaissance asset to buy or what change in the T/O will bring about instant success. Such changes may eventually help, but radical changes of this nature incur costs elsewhere. Making CA an effective process in the MEF, then, begins by adapting the process to the organization and its capabilities.

The current MEF practice of CA has two fundamental flaws: it places the onus for the process incorrectly on the G-2 and it lends itself toward a quantitative BDA approach. Correcting the former appears to be a relatively simple task at first. Simply re-writing the MEF TACSOPs and assigning the process to the G-3 would correct the doctrinal error.

This solution is problematic, however, because there seems to be no standing element within the MEF G-3 capable of taking on this additional task. Unified commands and some theater components have skirted this issue by standing up independent CA organizations within their command structure or battle rhythm.⁵⁹ Manpower constraints coupled with available time in the battle rhythm may make this option difficult for the MEF to incorporate. The MEF Targeting Board, which falls under the purview of the Force Fires Coordinator, may be the only standing organization capable of assessing “the overall employment of force” within the MEF’s operations. Because the board is responsible for overseeing the development of daily targeting objectives for the MEF Commander, it also seems a logical choice.

Whether the already engaged MEF Targeting Board assumes the additional task of formally assessing the progress of the shaping effort or this task is assigned to a new organization within the MEF G-3, the process and supporting methodology used will have to be innovative as well. Realistically, MEF CA will have to draw from BDA that is based upon enemy *behavior* and reactions to MEF fires, rather than on target-by-target physical assessments. Operating under such a methodology, intelligence analysts within the MEF would have to consider the enemy’s mission, observe the changes to his disposition or activities resulting from MEF delivered fires, and assess the effects of such changes on his intentions and ability to accomplish that mission. The analysis would take into account the enemy’s culture, training, decision-making and will. History is rife with examples of an apparently weaker combatant defeating a seemingly more capable foe--

⁵⁹ Examples of such organizations occur in CENTCOM, CFC and ARCENT among others. See JICCEN p. 5-2, CFC Pub 3-4.4 p. 11 and Third US Army / ARCENT Deep Operations SOP p. 6-2.

such as the German victory over France in World War II. Likewise, technological advantages in equipment do not always guarantee victory, as was the case with the United States in Vietnam. Certainly, these factors are relevant and must be considered when assessing the effects of fires. In essence, a behavioral approach to BDA would seek to reveal an enemy's overall *ability* to fight, using both quantitative and qualitative indicators, as opposed to tracking the status of *capabilities* within his table of equipment. Basing combat decisions on the assessed nature of enemy behavior requires a focused, thoughtful approach on behalf of intelligence professionals and, more importantly, the conscious acceptance of uncertainty by the commander. Adopting such a methodology, however, would ensure that the commander received a reasoned assessment without asking the unanswerable of his intelligence organization and its assets.

A behavioral approach to BDA is not a revolutionary notion. In fact, such an approach is becoming an acknowledged practice in organizations within the joint community.⁶⁰ Critics of a behavioral BDA methodology contend that it involves unacceptable risk due to its subjective nature. Such arguments, however, overlook the fact that quantitative BDA processes are based upon the personal interpretations of raw data by intelligence analysts, making these assessments subjective as well. Furthermore, Operation Allied Force has shown that, despite a decade of advances in the realm of intelligence collection, the means to support a quantitative BDA process still does not exist; nor is there evidence to suggest that it ever will.

Even if a behavioral approach to BDA is adopted, the MEF will be required to provide some reckoning of physical damage (Phase I BDA) to a functional component or

⁶⁰ Most significantly, US Central Command. See JICCENT Chapter 7.

theater.⁶¹ The key to an efficient CA process is the ability to incorporate this data into an overall assessment. Attempting to make estimates of physical damage the sole basis for CA against enemy ground forces proved utterly ineffective in Desert Storm and most certainly would again. Avoiding this phenomenon will require the MEF to create targeting objectives with measures of effectiveness that are less associated with physical effects. Adopting such an approach, in concert with a behavioral BDA methodology, would also mean that MEA could not be conducted on a target-by-target basis, but would have to be derived in general terms with the appropriate lessons disseminated to the force.

Eventually, any change that a MEF makes to its CA process will be up to its commander. Although the CA process is relevant to MEF battlespace shaping, its utility lies not in trying to rigidly apply the abstract standards first discussed in this study, but in the commander's ability to tailor it to his organization. For the foreseeable future, MEF commanders will make combat decisions based largely upon intuition and judgment. A demand for the precise effects of friendly fires upon the enemy's physical disposition is simply unreasonable. CA, along with other staff processes, will only be useful to the commander if its expected output is consistent with the capability of his organization. The only means to gauge and refine this capability is through training. If the commander does not emphasize CA during training, then it is incumbent upon the members of his staff to remind him and themselves of its relevance and ramifications. Failure to do so

⁶¹ Within CENTCOM and CFC warplans, I MEF is required to provide phase I BDA to the ground component or to the theater JIC. The two organizations diverge radically, however on BDA methodology and additional component reporting responsibilities. For this contrast, see the JICCENT BDA SOP or CFC Pub 3-4.4.

will ultimately lead to unrealistic expectations and frustration from what might otherwise be a very useful tool.

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