

# **Integration of Lethal and Nonlethal Fires: The Future of the Joint Fires Cell**

**A Monograph  
by  
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## Abstract

INTEGRATION OF LETHAL AND NONLETHAL FIRES: THE FUTURE OF THE JOINT FIRES CELL, by Colonel Dewey A. Granger, United States Army, 52 pages.

The term “fires” is not new within the US Army. But after years of confining fires to solely its lethal component, the Army broke with tradition. Subsequently, the Army released its new Operations manual, FM 3-0 (2008), articulating the newest operational concept, full spectrum operations. Full spectrum operations expanded previous concepts, such as Airland Battle doctrine, and sought to represent the current operating environment. FM 3-0 represented a fundamental change in the Army’s approach to warfighting. Leaders must seek to employ elements of fires, lethal and nonlethal, proportional to mission and informed through the variables contained within the operating environment. FM 3-0 went even further tasking the Fires Cell with integrating and synchronizing the effects of lethal and nonlethal fires with the effects of other warfighting functions.

By screening the current operating environment, this monograph examines how traditional fires cell organizations involved in current operations have adapted to achieve integration and synchronization of fires. From that examination, best practices are identified in order to anticipate future fires cell requirements necessary to achieve FM 3-0’s imperatives. Commensurate with those imperatives, this paper explores what the US Army can learn from the current operating environment that can be applied to future operational level fires cells functionality?

FM 3-0 makes mention of the term nonlethal fires and tasks the fires cell with its integration using the targeting process, but does not define the term. A clear definition of nonlethal fires is necessary to proceed. This monograph extrapolates a definition of nonlethal fires and uses the essentials from FM 3-0, integration and synchronization of nonlethal fires, as screening criteria to make recommendations as to the way ahead for future Army operational fires cells. The document argues that the accepted definition of nonlethal is too simplistic and should be expanded to include the fact that nonlethal fires also change perceptions and modify behavior in order to shape the operational environment.

In order to distill best practices from the current operating environment, fires cell functional organizations from OIF and OEF are examined. Focusing on the Iraqi Theater and Headquarters, Multinational Corps – Iraq, a functional examination of OIF II’s Joint Fires and Effects Cell provides lessons learned. OIF II represented the very first break with traditional models and an attempt in the Iraqi Theater at functionally organizing a lethal and nonlethal fires cell. Rotations later, OIF V represented the most recent attempt at fires cell functionality and introduced the Joint Fires Cell led by the Deputy Commanding General (DCG) – Fires. In Afghanistan, CJTF – 76’s most recent employment of a Joint Effects Cell led by the DCG – Effects showed how a division headquarters in a Joint Task Force role employed capabilities aimed at lethal and nonlethal fires. Finally, an examination of future concepts reveals that not only will the current operating environment reflect the future, but it will also become more complex.

The Army must be unafraid to challenge old ways of thinking and shed stovepiped ideas. It Army urgently requires a full dialogue and must come to full agreement on the term nonlethal fires as articulated conceptually in FM 3-0. The time has come for a serious dialogue regarding FM 3-0’s imperatives and our fires cell activities related to lethal and nonlethal fires.

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## INTRODUCTION AND OVERVIEW

If the recent past provides any clue to the future of warfare, it seems likely that two themes will recur with unsettling regularity. First, wars in the Third World will flourish as poor but often well-armed states seek to dominate their neighbors or crush internal unrest by force of arms. Second, Western armies increasingly will find themselves involved in such conflicts, often unprepared and often with little real concept of the unseen pitfalls and practical difficulties of fighting limited wars in distant places.

*Firepower in Limited War, 1995*<sup>1</sup>

Throughout our Army and within the confines of the joint arena, the concept of fires was not a new one. Integration and synchronization of lethal and non-lethal enablers was practiced in conjunction with training exercises. While these exercises sought to integrate the “hunters”, lethal providers, and “leaf eaters”, non-lethal providers, the US Army’s traditional focus was on maximizing combat power to achieve attrition and destruction. Non-lethal concepts related to the human dimension, nation building and reconstruction were often an afterthought.

Following the events of September 11, 2001, the nation embarked on a War on Terror that quickly changed the way the US Army views operations across the full spectrum of conflict. As recently as 2008, the newest version of *FM 3-0, Operations*, communicated the idea of integrating and synchronizing lethal and non-lethal fires as part of the traditional fires targeting process.<sup>2</sup> But as a colleague recently inquired, “What exactly is a non-lethal fire?” If *FM 3-0* directs the integration and synchronization of lethal and non-lethal fires as part of this more comprehensive view of the battlefield, then what are the fundamental means to get it done? If the Fires cell is tasked with lethal and nonlethal integration and synchronization, then what capabilities does it require? Given the pace of the changes over the past eight years, the US Army continues to struggle with the concept of lethal and nonlethal integration.

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<sup>1</sup> Robert H. Scales, *Firepower in Limited War* (Georgia: Presidio Press, 1995), 287.

<sup>2</sup> Note: *FM 3-0, Operations*, establishes the Army’s fundamental keystone doctrine on how it fights, articulating the concept of full spectrum operations.

Shortly after the Cold War ended, the Army's 1993 version of its *Operations* manual, *FM 100-5*, began to recognize the changing defense strategy of the United States. This new doctrinal foundation retained the best of all the doctrine that had gone before and expanded upon a few new ideas. The overall battlefield framework was revised to allow practitioners of Army operations a wider range of options in which to organize their forces. While the manual mentioned operations other than full or limited war, it continued to view the battlefield as a platform-based, attrition battlefield that demanded the destruction of the fielded forces of one nation state over the other. The 1993 version was the first attempt to recognize the battlefield as a more complex and changing environment.<sup>3</sup>

Although many direct engagements during the Cold War demonstrated the fundamental characteristics of limited wars, these were not given a great deal of recognition in the 1993 version of *FM 100-5*. It did, however, provide a new doctrinal definition for full-dimensional operations.<sup>4</sup> The manual declared full-dimensional operations as “the application of all capabilities available to an Army commander to accomplish his mission decisively and at the least cost across the full range of possible operations.”<sup>5</sup> Likewise, it offered the concept of Operations Other Than War (OOTW). OOTW was identified as military activities during peacetime and conflicts that do not necessarily involve armed clashes between two organized forces. Broadly, it recognized that the Army's frequent role in OOTW was critical as was “the synchronization of effects.”<sup>6</sup> OOTW was viewed as something other than what our nation

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<sup>3</sup> *FM 100-5, Operations*, Headquarters, Department of the Army, 14 June 1993, ii.

<sup>4</sup> *Ibid*, ii.

<sup>5</sup> *Ibid*, Glossary 6

<sup>6</sup> *Ibid*, ii

wanted its Army to do. Consequently, the Army's educational and training systems gave little attention to the concept.<sup>7</sup>

Even more telling, doctrinal terms such as synchronization were still focused on primarily achieving lethal effects. For example, synchronization was defined as arranging activities in time and space to mass fires at the decisive point. Synchronization included, but was not limited to, "massed effects of combat power at the point of decision."<sup>8</sup> In its final release, the theme of the Army's operations manual was clear in that the prime focus of the Army was lethal warfighting. It focused on integrating and synchronizing the destructive ability of our platforms doctrinally against a mirror imaged nation state enemy like our own.<sup>9</sup>

In the same 1993 version of *FM 100-5*, however, the concept of Fires was recognized as one of the essential Battlefield Operating Systems, but again focused on the lethal aspects of attrition and destruction. Fires at the operational and tactical levels were focused on "massing and synchronizing the full range of lethal fires provided by all friendly forces. These included the integration of: artillery non-line of sight fires, armed aircraft, close air support, interdiction and required the understanding and rigid adherence to a common set of fire control measures."<sup>10</sup> In the same way, fire support was identified as "the collective and coordinated employment of the fires of armed aircraft, land and seabased indirect fire systems, and electronic warfare systems

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<sup>7</sup> Note: Weinberger and Powell doctrine at the time were instrumental and very restrictive in terms of limiting Army involvement in Operations less than full war. Much of this was borne out of the ghosts of Vietnam and the desire of the US government to avoid future open-ended quagmires. For example, the Weinberger doctrine consisted of six specific tests ranging from involvement only when key allies are threatened to utilizing US troops only as a last resort. This limiting range of this doctrine clearly influenced US Army operational thought at the time.

<sup>8</sup> Ibid, 2-8

<sup>9</sup> Ibid, 2-2

<sup>10</sup> Ibid, 5-4



against ground targets to support land combat operations at both the operational and tactical levels.”<sup>11</sup>

The 1993 version of FM 100-5 was not focused enough on the overall changes brought about by the Post-Cold War security environment. Perhaps the reason was because the document reflected the overall sense of uncertainty within the military establishment at the time. For example, in communicating his view of future US armed forces, GEN John M. Shalikashvili produced *Joint Vision 2010* which argued for a modernized, technologically advanced, platform based force. The argument centered on Dynamic Changes in the environment whereby “accelerating adjustments will make the future environment more unpredictable and less stable, presenting our Armed Forces with a wide range of plausible futures...The US must prepare to face a wider range of threats, emerging unpredictably, employing varying combinations of technology, and challenging us at varying levels of intensity.”<sup>12</sup> FM 100-5 was merely a sign of the uncertainty in changing times.

In 2001, the Army released *FM 3-0, Operations*, and introduced the concept of Full Spectrum Operations.<sup>13</sup> Influenced by Operations in the Former Republic of Yugoslavia, Full spectrum operations shifted sharply from the earlier version of an “either-or” view of combat operations exemplified by Operation Desert Storm. It was a more inclusive doctrine that emphasized the essentiality of nonlethal actions conducted in concert with traditional combat tasks. In FM 3-0 (2001), stability operations were “other” joint missions stated in an Army context. This first version of FM 3-0 represented a significant shift in the culture of the Army following operations over the decade including: Haiti, Somalia, Bosnia, and Kosovo. Although

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<sup>11</sup> Ibid, 2-13

<sup>12</sup> Ibid, 11

<sup>13</sup> Note: This initial version of *FM 3-0* was written prior to the events of 9-11 and eventually recalled prior to full release.

this was a very new concept, it was not yet fully informed by the current contemporary operating environment following 9-11.<sup>14</sup>

The events of 9-11 and subsequent operations in Afghanistan and Iraq sparked significant changes in the US Army. Consequently, Army doctrine began to reflect the current operating environment as evidenced in the Army's newest *Operations* manual, FM 3-0, released in February 2008. The document contained a combination of "evolutionary" and "revolutionary" concepts. Significant revolutionary aspects were: stability operations co-equal with offense and defense, emphasis on information engagement, requirements for leaders to be competent with both lethal and non-lethal elements of combat power. With regard to the revolutionary aspect, this was a significant shift in thinking from the aforementioned previous versions of the Army's *Operations* manual with the mention of the human dimension. The human dimension was now at the heart of the Army's doctrinal foundation. The effect of collateral damage during combat operations on an area's populace was now part of the Army's capstone doctrine.<sup>15</sup>

In the new FM 3-0, the Army's newest operational concept, full spectrum operations, was expanded based on the contemporary operating environment and represented a change in the approach to warfighting. It recognized that Army forces combine offensive, defensive, and stability or civil support operations simultaneously as part of an interdependent joint force to seize, retain, and exploit the initiative, accepting prudent risk to create opportunities and achieve decisive results. Furthermore, leaders employ synchronized action—*lethal and nonlethal*—proportional to the mission and informed by a thorough understanding of all variables of the operational environment.<sup>16</sup>

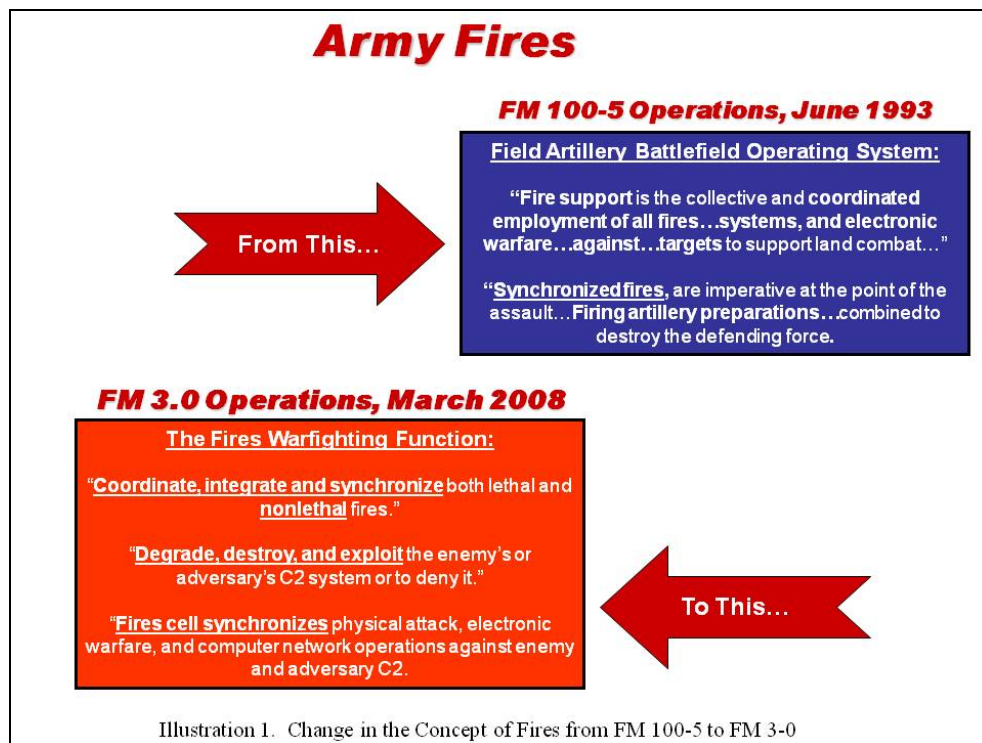
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<sup>14</sup> *FM 3-0, Operations*, Headquarters, Department of the Army, 27 February 2008, viii

<sup>15</sup> LTG William B. Caldwell, IV, "Evolution vs. Revolution: FM 3-0", [smallwarsjournal.com](http://smallwarsjournal.com), <http://smallwarsjournal.com/blog/2008/02/evolution-vs-revolution-fm-30/>

<sup>16</sup> *FM 3-0, Operations*, Headquarters, Department of the Army, 27 February 2008, Glossary-7

After the release of *FM 3-0*, other manuals such as *FM 3-07, Stability Operations*, went even further in explaining the need for a thorough understanding of lethal and nonlethal. “Determining the appropriate combination of lethal and nonlethal actions necessary to accomplish the mission is an important consideration for every commander. Every situation is unique and requires a careful balance between lethal and nonlethal actions to achieve success.”<sup>17</sup> Fundamentally, Army commanders are challenged with balancing aspects of lethal and non-lethal actions across the spectrum of conflict while operating in a non-contiguous and often complex environment. The momentum change in mindset from one of attrition and destruction to the recognition of both lethal and nonlethal had taken hold. (See Illustration 1)<sup>18</sup>



<sup>17</sup> *FM 3-07, Stability Operations*, Headquarters, Department of the Army, 6 October 2008, 2-3

<sup>18</sup> Note: Author’s summary depiction of the evolutionary change in the concept of fires.

With this change in the overall thought process taking hold throughout the Army, the 2008 version of *FM 3-0* went further and introduced Fires as one of the key warfighting functions. It defined the Fires warfighting function as the related tasks and systems that provide collective and coordinated use of Army indirect fires, joint fires, and command and control warfare - *including nonlethal fires* - through the targeting process. It further tasked the Fires Cell with *integrating and synchronizing* the effects of lethal and nonlethal fires with the effects of the other warfighting functions. Overall, this fundamental change in thought had taken hold and the Fires community was tasked with addressing the subject.<sup>20</sup>

In essence, the Fires Cell was tasked with doing what it had done in the past, integrate and synchronize fires for the commander.<sup>21</sup> Unfortunately, the change in direction driven by the new FM 3-0 has not been fully understood. More importantly, if the Army believes that wars in the future will look much like those being prosecuted today, then it must prepare for this type of full spectrum conflict.<sup>22</sup> Based on the continuous flow of articles in publications and presentations that inform the debate, it is clear that the Army is struggling with how to achieve this task in the future.<sup>23</sup> The Army must come to grips with the integration and synchronization of the nonlethal aspect of warfare as espoused by FM 3-0. What lessons from current operations can be applied to future organizational and doctrinal constructs relating to the integration and synchronization of lethal and nonlethal fires?

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<sup>19</sup> Note: Author prepared the comparison chart as part of a presentation to the Worldwide Fires Conference, London, April 2008

<sup>20</sup> *FM 3-0, Operations*, 4-4

<sup>21</sup> *FM 100-5, Operations*, Headquarters, Department of the Army, 14 June 1993, 2-3

<sup>22</sup> *Army Posture Statement*, Headquarters, Department of the Army, 26 February 2008, 2

<sup>23</sup> Note: The Field Artillery Branch proponent is responsible for the Fires warfighting function. Author attended the 2008 Fires Conference, Fort Sill OK where more than 75 percent of the conference presentations and discussions centered on integration and synchronization of lethal and nonlethal fires. When compared, previous conferences did not address the nonlethal aspects.

## METHODOLOGY

This monograph compares Fires Cell organizations contained in doctrine and those operating in the current environment to recommend best practices for balancing lethal and nonlethal fires at the operational level. Further, this research study looks at the proposed concept documents for the Future Combat System (FCS) organization with emphasis on Fires to determine what lessons the Army can apply from the current operating environment to address future doctrine and concepts.

Prior to analysis, however, it is essential that key referenced terms are identified and defined to provide a baseline of understanding. An understanding of the term *fires*, with emphasis on *nonlethal fires*, is absolutely necessary to proceed. In addition to fires, a clear understanding of the screening criteria terms, *integration and synchronization*, is necessary to preclude misinterpretation. The nuances between the two must be understood in order to fully comprehend observations and conclusions.

The monograph's screening criteria focuses on determining how Fires Cells are organized to best integrate and synchronize lethal and nonlethal fires as directed by FM 3-0.<sup>24</sup> A simple comparison of modified organizations operating in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) provides insights into the future. To do this, an observational frame of reference comparison using OEF and OIF identifies best practices and key functions that should be retained and implemented into future Fires Cell organizations. Simply put, if the current operating environment represents a vision of the future as espoused by FM 3-0 and the Army Posture Statement, then the Army must examine the operating environment as a reference from which to organize its Fires Cells for the future.

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<sup>24</sup> *FM 3-0, Operations*, Headquarters, Department of the Army, 27 February 2008, 4-4

Using a model of comparison and analysis, this monograph addresses recommendations on how the Army organizes future Fires Cells to achieve *integration and synchronization of lethal and non-lethal fires* at the operational level. Empirical data from Initial Impression Reports and post-deployment key leader articles/interviews from OEF and OIF are used for comparison and contrast. OEF serves as the divisional headquarters example of an organization performing its traditional tactical role in the current operating environment. Additionally, the division headquarters in OEF served as a Joint Task Force operating in a multinational environment at the operational level. OIF data from the Multi-National Corps–Iraq (MNC-I) Headquarters demonstrated execution of lethal and nonlethal fires at operational level. In both OIF and OEF, headquarters adapted and reorganized from their doctrinal fires construct to one that addressed the current lethal and nonlethal operating environment. Therefore, significant changes employed in the course mission execution should emerge as the way ahead for the future fires cells.

## **DEFINING KEY TERMS: NECESSARY CLARIFICATION**

Use of the terms *integration and synchronization* as a means by which to evaluate Fires Cell organizational constructs are at the foundation of this paper. Because *FM 3-0*, 2008, directs the implementation of lethal and nonlethal fires using these terms, it is important to fully understand them. Two significant documents, one civilian and one military, seek to define the term integration. Webster's dictionary defines integration as the act or instance of combining parts together to produce a whole or larger unit.<sup>25</sup> With a bit of a nuance, *Joint Publication 1-02* identifies integration as the arrangement of military forces and their actions to create a force that

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<sup>25</sup> Webster's Dictionary, found at: <http://www.webster-dictionary.net/d.aspx?w=Integration>

operates by engaging as a whole. Despite the differences, both texts agree on one common theme—the whole is greater than the sum of its parts.<sup>26</sup>

Unlike integration, synchronization is concerned with maximizing the overall effect of more than one entity through the use of timing. *Joint Pub 1-02* identifies synchronization as the arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time.<sup>27</sup> *FM 3-0* goes further in clarifying synchronization as the ability to execute multiple related and mutually supporting tasks in different locations at the same time, producing greater effects than executing each in isolation.<sup>28</sup> Therefore, drawing a clear distinction between integration and synchronization is relatively simple. The former is concerned with bringing parts together to create a greater whole, while the latter is concerned with timing. Both, however, are necessary to achieve effective lethal and nonlethal fires.

While the February 2008 version of *FM 3-0* introduces the concept of nonlethal fires, it does not offer a definition to frame the discourse and distinguish it from other related terms. To provide clarity to the discussion on non-lethal fires it is important that the term be appropriately defined. *Joint Pub 1-02* defines “fires” as the use of a weapon to create a specific lethal or nonlethal effect on a target.<sup>29</sup> According to Webster, the term lethal is defined as “cause or able to cause death.” Therefore, nonlethal is its antithesis meaning “incapable of causing death.” While simplistic, this definition of nonlethal provides a context to the doctrinal confusion that exists between the application of lethal and nonlethal fires. To extract a more specific definition

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<sup>26</sup> *Joint Publication 1-02, DOD Dictionary of Military and Associated Terms*, Joint Staff, Washington DC, revised through October 2008, 269

<sup>27</sup> *Ibid*, 534

<sup>28</sup> *FM 3-0, Operations*, Headquarters, Department of the Army, 27 February 2008, 3-4

<sup>29</sup> *Joint Publication 1-02, DOD Dictionary of Military and Associated Terms*, Joint Staff, Washington DC, revised through October 2008, 204

that will allow for further understanding into the nuances of lethal and nonlethal fires, one should look at both practice and theory.<sup>30</sup>

In a 2008 interview following redeployment from Iraq, LTG Ray Odierno, III Corps Commander was asked about the balance between lethal and nonlethal fires. LTG Odierno stated:

“A commander had to be prepared to employ the full spectrum of joint nonlethal and lethal fires in his area. Some commanders conducted 20 percent nonlethal and 80 percent lethal operations, while others did just the opposite. One tenet of Army doctrine has always been to mass effects, referring to lethal effects. In our Surge operations, we massed effects, but they were a combination of different kinds of lethal and nonlethal effects. For example, we simultaneously massed effects by reconciling with Iraqi groups, spending money, providing relevant and timely information to influence people and leaders, and finally we used lethal strikes when necessary.”<sup>31</sup>

LTG Odierno went on to point out that the synchronization of all lethal and nonlethal fires and effects was paramount in his operations. All aspects of fires whether close air support, artillery, reconciliation of groups, funding of infrastructure projects, needed to be synchronized so as to prove that messages were synchronized with actions, and vice versa. In essence, Gen Odierno believed that leaders must strike a balance between lethal and nonlethal, understanding the capabilities, limitations, and unanticipated consequences that follow each one.<sup>32</sup>

To further understand lethal and nonlethal fires, the production of a theoretical reference is often useful. Illustration 2 attempts to convey a graphic depiction of the lethal and nonlethal domains conceptually. It shows two boxes of influence that are working towards the same overall goal but using different tools. The right box represents the area of traditional lethal fires

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<sup>30</sup> FM 3-0 states that both lethal and non-lethal enabler integration is essential to full spectrum operations but does not offer a definition. A clear understanding of the distinction between lethal and nonlethal fires must be understood. One must answer the question: What is a nonlethal fire? Author will provide a number of views on the subject and will offer a definition to frame the discussion.

<sup>31</sup> Ibid, 7

<sup>32</sup> Ibid, 8



methodology while the left box shows the prospect of the nonlethal aspect. External pressure is being applied by the current operating environment in attempting to bring the two closer together.

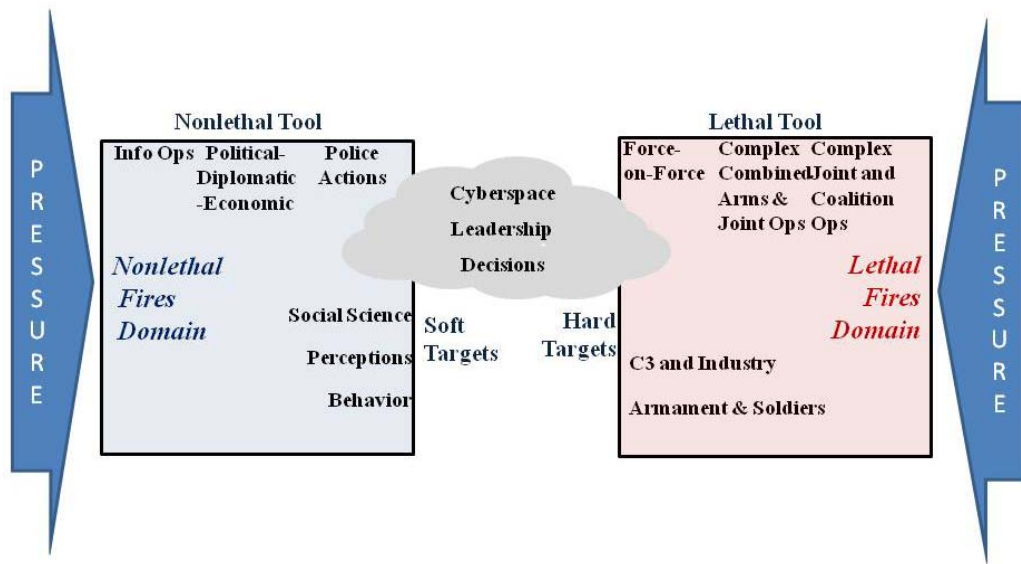


Illustration 2. Lethal vs. Nonlethal Fires

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Traditional lethal fires (right box) seek to identify the physical aspects of warfare and apply lethal military tools in a relatively simple and confined structure. Physical targets in this arena consist mainly of armament, Soldiers, command and control, industry, etc. This was the dominant paradigm that existed during the cold war and prior to 9-11. This baseline consisted of physical targets that focused on head-on confrontations, maneuver of forces, and attack of military forces. In this box, the application of lethal fires is the dominant concern. It is an enabling feature to achieve dominant maneuver. It is mainly concerned with the destruction

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<sup>33</sup> Note: Author's own work. Illustration adapted from Paul Davis, *Effects Based Operations: A Grand Challenge for the Analytical Community*, 2001, RAND, pg 9. Used to show the tension that exists between the effort to balance lethal and nonlethal means. Also depicts the Army's pressure to bring the two closer together in a more integrated and synchronized approach.

and/or attrition of enemy forces, occupation of territory and other classical considerations. Prior to 9-11, this was the dominant view of fires.

As pointed out earlier however, the Army has changed in its way of thinking to consider the full range of options that can be employed as a crisis solution. Therefore, the left box depicts nonlethal fires conceptually. The area within this box is mainly concerned with coercion and influence. It uses the social sciences and other related tools to influence human behavior that is often difficult to predict and intricate to execute. Instruments such as diplomacy, information, and economics are the dominant tools in this arena.

In the center, a grey cloud recognizes that some targets can be influenced using both means. This grey area requires close coordination between lethal and nonlethal means so as not to prevent fratricide. For example, a cyber network can be disrupted utilizing nonlethal means by attacking various nodes within the system or even the introduction of a virus. Conversely, the same network can be taken down by destroying a power source or a key node within the system using kinetic means. As another example, Leadership as a system can be influenced not only through diplomatic or economic means using lethal means. Whether through influencing or by decapitating a leadership system, an effect is achieved. In either case, the Army conceptually understands the tension that exists between lethal and nonlethal and as such must continue efforts that aid in close coordination.

As an example of the complexity and the effort to describe the events contained within the boxes, BG Mark McDonald, III Corps DCG-Fires for OIF 06-08, described the conceptual tension in understanding lethal and nonlethal fires in this way:

“For the past 10 or so years, our leaders in the Department of Defense have been struggling with the concept of effects-based operations (EBO). But it’s really difficult to understand effects. The Army has attempted to define it. And if you think about it, everything the Army does has an effect. An infantry company moving thru a town has an effect. The effects coordinator does not integrate or synchronize the effect of a company

moving through the town. He really integrates and synchronizes what we call “lethal and nonlethal fires in the past to achieve an effect.”<sup>34</sup>

BG McDonald acknowledges that it is difficult to draw a distinction between lethal/nonlethal fires and operations. If the Army is able to understand and point to the distinction between the two, then it can better execute effective full spectrum operations.

The necessity to view lethal and nonlethal as two complimentary opposites, yin and yang, within a greater whole, constantly interacting, and never in absolute stasis or harmony is at the heart of this paper. LTG Odierno referred to this as the commander’s understanding of the situation and the necessity to balance lethal and nonlethal aspects. Illustration 3 depicts the overall objective in terms of balancing lethal and nonlethal fires.<sup>35</sup> Conceptually, the direct physical aspect (lethal) and the indirect aspect (nonlethal) are in constant tension and change. While both accumulate and gain prominence based on the situational environment, they also serve to reinforce each other. The grey areas show two things. First, a residual area of grey will always exist within either environment. And second, the grey area at the middle sometimes encompasses aspects of both lethal and nonlethal but again, always evolving. As the environment changes, the fires cell integrates and synchronizes lethal and nonlethal fires in the proper amount in order to achieve the commander’s overall objectives.<sup>36</sup>

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<sup>34</sup> Pat Hollis, “Fires for the Surge in Iraq: Lethal and Nonlethal”, *Fires Bulletin*, May-June 2008, 8

<sup>35</sup> Note: Conceptual diagram developed by the author.

<sup>36</sup> Pat Hollis, “2007 Surge of Ground Forces in Iraq-Risks, Challenge and Successes”, *Fires Bulletin*, March-April 2008, 6



For the purpose of this monograph, lethal fires are primarily concerned with the destruction and attrition of an enemy’s capability in the traditional and classical sense. Nonlethal fires are concerned with those instruments aimed at modifying or disrupting an adversary’s ability to operate effectively while also changing his behavior using nonlethal means. Nonlethal fires change perceptions while shaping conditions that are favorable to our own goals and objectives. Both are necessary in the realm of full spectrum operations. As LTG Odierno pointed out in earlier discussion, sometimes one is dominant and the other subservient. As an example, during the 2007 surge LTG Odierno states:

“We conducted precision strikes, whether it be with attack helicopters, multiple launch rockets, 155 millimeter howitzers, or close air support. The increased precision of our weapons enabled us to strike precisely at those responsible for the violence while

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<sup>37</sup> Note: Author’s own work using a traditional yin/yang symbol to depict a synchronized view of lethal and nonlethal fires. Created in January 2009.

minimizing collateral damage and injury or death to innocent people. In our surge operations, we massed lethal and nonlethal effects. For example, we massed effects by simultaneously reconciling with Iraqi groups, spending money in specific areas to meet the people's needs, and conducting operations to influence the people and their leaders—plus lethal strikes, as necessary.”<sup>38</sup>

Therefore, all fires, whether lethal or nonlethal, must be applied in an appropriate and coordinated manner. FM 3-0 tasks the Fires Cell in doing what it has always done by assisting the commander in massing his limited lethal and nonlethal fires where most needed.

## **FIRES CELL ORGANIZATIONAL AND FUNCTIONAL ANALYSIS**

I want simultaneous, multidirectional, continuous effects: combined arms maneuver, operational fires, information operations—synchronize conventional, special operational forces (SOF) & other government agencies (OGAs).

Lieutenant General David D. McKiernan  
Commander, Coalition Land Component, OIF I<sup>39</sup>

### **Operation Iraqi Freedom**

OIF II: The First Joint Fires and Effects Coordination Cell (JFECC) for Iraq, 2004-2005

Operation Iraqi Freedom II was the first attempt in the Iraqi Theater of Operations (ITO) to take a Corps Headquarters and have it operate as the Multinational Corps for Iraq (MNC-I). In January of 2004, the headquarters and staff of the Third Corps, based out of Fort Hood, Texas filled the joint manning requirements of the already established Combined Joint Task Force-

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<sup>38</sup> Ibid, 7

<sup>39</sup> Black and Smith, “Operational Effects in OIF,” *FA Journal*, January 2005, 1

Seven (CJTF-7) Headquarters. During that timeframe, the Effects Coordinator, BG Richard Formica, was responsible to the Chief of Operations of CJTF-7 for all fires' related activities.<sup>40</sup>

The traditional Corps Fire Support Element (FSE) was made into a Joint Fires and Effects Coordination Cell (JFECC) augmented by the Corps Artillery Staff and tasked with bringing the lethal and nonlethal fires and effects providers under a single, clear chain of command.

Augmentation by the Corps Artillery Staff was necessary because the Fire Support Element was a mission specific organization and not manned for the full spectrum environment.<sup>41</sup>

The JFECC was an ad hoc organization designed to meet the requirements of the emerging environment because doctrinal fires cell manning did not support the current full spectrum environment. Many functions being performed did not exist as part of the FSE. Shortfall areas included: counterfire, intelligence analysis, lethal and nonlethal effects integration, and management of additional unanticipated fires requirements such as additional radar and preparation/submission of operational needs statements to support the theater. Therefore, the traditional Fire Support Element (FSE) manning as provided by the Modified Table of Organization and Equipment (MTOE) did not fulfill the needs of the command. The FSE's authorized personnel total amounted to approximately twenty-one. Yet, the estimated requirement for the JFECC was more than 75 personnel.<sup>42</sup>

Driven by the threat and environment at the time and recognizing that the theater exhibited all the elements of a classic insurgency, the JFECC's main task was to integrate joint lethal fires and nonlethal effects into overall Corps operations across Iraq. The JFECC used the doctrinal Military Decision Making Process (MDMP) and targeting process to ensure integration of all providers. The organization conducted a full operational assessment followed up by the

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<sup>40</sup> Pat Hollis, "Part 1: Joint Effects for the MNC-I in OIF II", *FA Magazine*, May-June 2005, 5

<sup>41</sup> *Ibid*, 5

<sup>42</sup> *Ibid*, 5

MDMP to produce policy, orders, and instructions. Initially, lethal and nonlethal fires were integrated and synchronized separately. Joint lethal fires were integrated using traditional means while the Information Operations (IO) cell executed nonlethal fires. Over time, an Effects Coordination and Assessment Board prepared by both the lethal and nonlethal teams provided the commander with a more complete view of the effects environment. This was followed up closely by a forward thinking list of lethal and nonlethal fires recommendations.<sup>43</sup>

The JFECC's organizational structure consisted of five subordinate cells (see Illustration 2). These included: Information Operations (IO), Force Field Artillery Headquarters (FA HQs), Effects Coordination Cell (ECC), Air Support Operations Center (ASOC), and a leftover from Coalition Joint Task Force – 7 (CJTF-7), Iraqi Security Forces (ISF) Development. Over time, the ISF cell migrated to MNC-I Operations and was eventually replaced by the Multi-National Security Transition Command-Iraq (MNSTC-I). This served as a good example of the JFECC's ability to adapt to the changing situation. Finally, the Corps Psychological Operations (PSYOPS) Team also fell under the close supervision of the JFECC thru the IO Working Group. However, its traditional role as a theater asset was retained.<sup>44</sup>

The JFECC performed several key functions as part of MNC-I. Traditional lethal fires processes were already in place with a few shortfalls in counterfire, intelligence analysis, targeting, and lethal/nonlethal integration. At the same time, nontraditional counterfire was essential in this environment. Therefore, the JFECC managed counterfire assets for force protection across the breadth and depth of the Iraqi battlespace. It conducted necessary intelligence analysis of the situation to ensure that assets were being allocated where most

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<sup>43</sup>Pat Hollis, "Part 1: Joint Effects for the MNC-I in OIF II", *Field Artillery*, May-June 2005, 5

<sup>44</sup> *Ibid*, 6

needed. It also assisted airpower in understanding and adapting its procedures to support the environment.<sup>45</sup>

The targeting cell performed both traditional and nontraditional targeting. In the traditional sense, targets consisted of known enemy locations in support of lethal ground operations. Nontraditional targeting consisted of personality focused operations to assess enemy leaders, influencers, and/or groups. Full nonlethal targeting to influence or coerce members of the insurgency using nonlethal means was considered but never fully implemented. As a newly formed organization operating in a raging insurgency, nonlethal targeting was not fully pursued due to resource constraints.<sup>46</sup>

Of all these functions, the integration of the nonlethal providers was first and foremost in the mind of the Effects Coordinator (ECOORD), BG Formica. In the course of combat operations, the command felt it important to ensure that the intentions of coalition forces were made clear throughout Iraq. No combat operations were planned without the consideration of after operations consequence management.<sup>47</sup> This included the necessity to provide civil relief to areas following lethal counterinsurgency or counterterrorist operations. One shortfall of this particular model was the difficulty in cross coordination between the JFECC and other members of the staff. This was particularly true when coordinating with civil-military operations and other nonlethal agencies. Competing demands on the overall staff and the fact that the ECOORD was merely a staff officer without command authority contributed to this effect.

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<sup>45</sup> COL Howard Belote, "Counterinsurgency Airpower", *Air and Space Power Journal*, Fall 2006

<sup>46</sup> Pat Hollis, "Part 1: Joint Effects for the MNC-I in OIF II", *FA Magazine*, May-June 2005, 5

<sup>47</sup> Note: Consequence Management was a term used to describe consideration of the second and third order effects of combat operations such as: displacement of civilians, collateral damage, reparations, humanitarian assistance, reconstruction, etc.



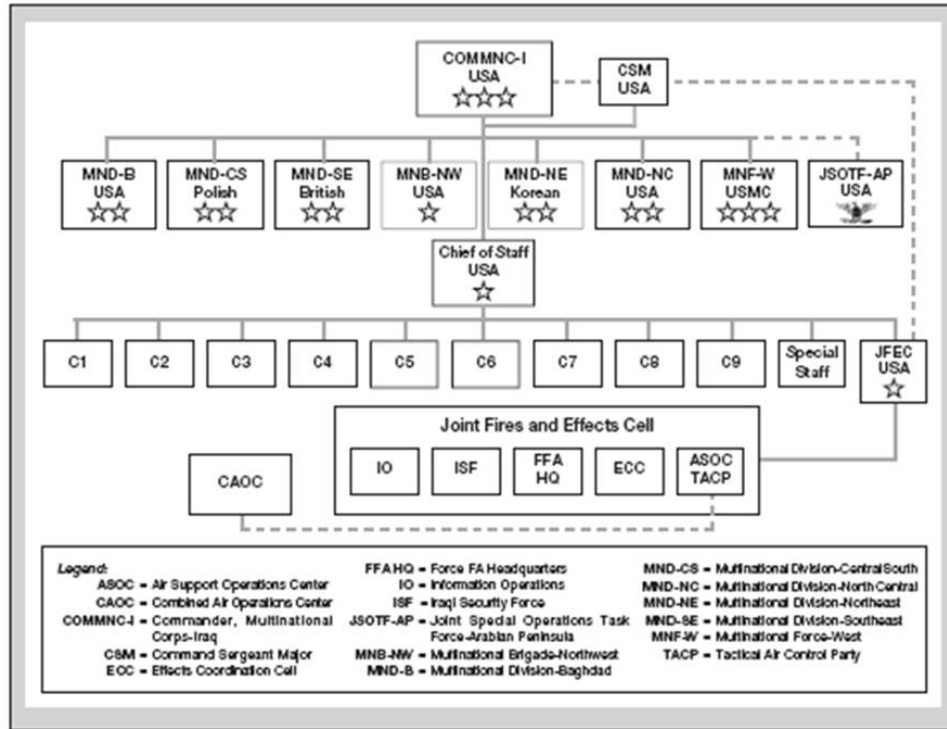


Illustration 4. MNC-I, Joint Fires and Effects Coordination Cell, OIF II. 48

There were notable shortfalls to MNC-I JFECC's organizational construct in terms of personnel and staff integration. Despite the fact that the cell integrated and synchronized lethal and nonlethal fires across the entire Corps staff and consisted of five sections, the JFECC did not have a Chief of Staff or coordinating staff to assist in cross coordination. Coordination was done in an ad hoc manner by the Deputy Fire Support Coordinator as an additional duty. As a functional tool, the cell used an Effects Assessment Working Group to determine trends and recommend priorities to the Corps Commander. Most interesting, despite the fact that the JFECC assumed responsibility for coordinating consequence management, it did not have a Civil Affairs (C9) element as part of the organization. This also required an extraordinary amount of cross staff coordination and sometimes caused confusion in the establishment of priorities.<sup>49</sup>

<sup>48</sup> Pat Hollis, "Part 1: Joint Effects for the MNC-I in OIF II", *FA Magazine*, May-June 2005, 7

<sup>49</sup> Ibid, 7-9

As OIF II's attempt at creating a JFECC at the Corps level, this organization was hampered by changes within the operating environment. The shift in headquarters configuration from Coalition Joint Task Force-Seven (CJTF-7) to Multinational National Force – Iraq (MNF-I) and MNC-I created turbulence internally. These changes hampered the overall effort to bring lethal and nonlethal fires closer together. In the external environment, the insurgency grew at an increasing rate at the same time as the development of the Interim Iraqi Government. These external changes led to more emphasis on lethal fires in support of counterinsurgency operations vice an emphasis on nonlethal operations.<sup>50</sup>

OIF II's JFECC encountered many challenges as it transitioned from a warfighting Corps headquarters into a full spectrum headquarters. In making this transition, personnel shortfalls were exacerbated by changes in the operating environment as the insurgency grew at an alarming rate. Traditional organizational and manning documents did not fulfill the functional requirements necessary to support the full spectrum environment. Moreover, there were no additional personnel to throw at emerging requirements such as Iraqi Security Assistance and Electronic Warfare. These areas would need to be addressed in future rotations and implemented as lessons learned for future deployments.

#### OIF V: The Most Recent Joint Fires Cell (JFC) for Iraq, 2006-2008

From December 2006 through February 2008, the III Corps Headquarters commanded by then LTG Raymond Odierno transitioned to the MNC-I Headquarters and operated effectively in an exceptionally demanding environment. These environmental conditions required that the MNC-I staff continually assess the overall atmosphere and maintain situational understanding of

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<sup>50</sup> Note: Chronologically, the headquarters went through several changes in structure that provided turbulence within a period of five months. Initially, the organization was trained, organized and certified as a Corps headquarters. After deployment, III Corps fulfilled the manning requirements for the joint manning document of CJTF-7. In May of 2004, members of the Corps staff comprised the MNC-I and

many factors, lethal and nonlethal, that profoundly influenced operations. It required the proactive use of information to target the environment, harmonize efforts of named operations, and make them understandable to diverse audiences. Since the original implementation of the JFECC in 2004, III Corps improved the fires cell concept by implementing organizational adaptations such as the Joint Fires Cell commanded by the Deputy Commanding General - Fires.<sup>51</sup>

As the head of the MNC-I Joint Fires Cell (JFC) and DCG-Fires, BG Mark McDonald worked closely with LTG Odierno to plan and implement the Corps' objectives which included the surge of US forces, expansion of Iraqi Security Forces, reconciliation among factions, and the standup of groups of concerned Iraqi citizens. The process for integrating and synchronizing joint fires was based on how the Commander decided to execute his battle rhythm and decision making process. The staff was organized functionally to support the commander. The result was two separate and distinct staff areas to suit the Commander's ability to execute operations and effect change which included intelligence and operations, and lethal and nonlethal fires.<sup>52</sup>

The MNC-I Headquarters also reorganized to ensure full implementation of fires within the Corps area of operations. The JFC also served as the Force Field Artillery (FFA) Headquarters. The establishment of BG McDonald as the DCG-Fires and leader of the cell provided direct relationships to boards, cells and centers supporting MNC-I's ability to shape the operational environment. The DCG-Fires was a new position created by the command out of recognition for the importance of the mission. Not only did the position provide oversight of

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MNF-I headquarters with members of the organization subdivided among the two organizations. These changes hindered staff cohesion and execution of an effective battle rhythm.

<sup>51</sup> CALL IIR, *III Corps as Multi-National Corps – Iraq*, December 2006-February 2008, 3.

<sup>52</sup> Pat Hollis, "Fires for the Surge in Iraq: Lethal and Nonlethal", *Fires Bulletin*, May-Jun 2008, 7

lethal fires and nonlethal providers, but it provided command authority over subordinates commensurate with that of a Deputy Commanding General.<sup>53</sup>

The JFC mission statement clearly articulated the organization's role and drove the overall organizational construct of the JFC.

“MNC-I JFC integrates lethal and nonlethal fires and effects, and serves as the FFA Headquarters while assessing full spectrum operations of the MNC-I Campaign Plan”

Further, the Joint Fires Cell allowed the MNC-I Commander to shape the operational environment from a targeting aspect while not executing conventional lethal operations. Commanders at the tactical level were given latitude to conduct independent operations weighing the effects of their actions. The JFC mission was simply to set the conditions for future tactical successes.<sup>54</sup>

Under the JFC construct, eight cells were under the direct supervision of the DCG-Fires: Force Field Artillery (FFA), Targeting, Joint Operations Center (JOC) Fires, Engagements and Reconciliation, Assessments, Electronic Warfare Coordination Cell (EWCC), Counter Rocket, Artillery, Mortar (CRAM) Cell, and the Information Operations (IO) Cell.<sup>55</sup> One important improvement was the implementation of a coordinating relationship between the JFC, C5 Plans, C7, and C9 to facilitate information flow as part of reconstruction.<sup>56</sup> A lesson from previous attempts at nonlethal integration and synchronization was that the close relationship between these entities was crucial in ensuring synchronization of nonlethal means aimed at behavioral change. Funding and reconstruction projects were tied directly to overall operations. As pointed

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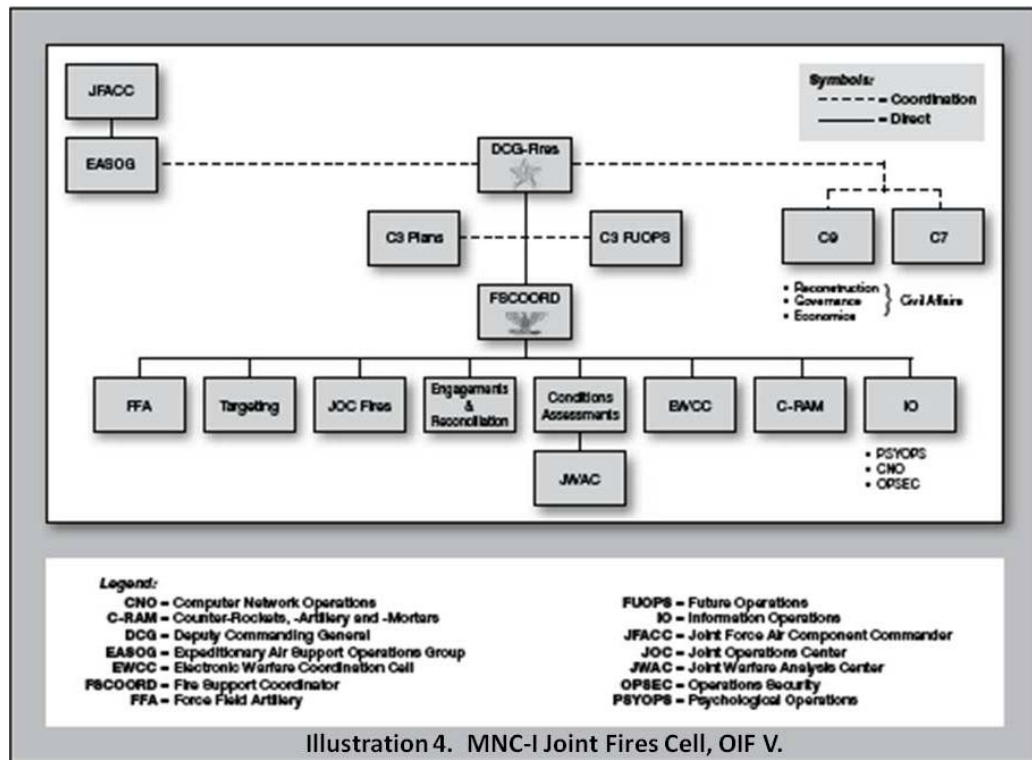
<sup>53</sup> CALL IIR, *III Corps as Multi-National Corps – Iraq*, December 2006-February 2008, 146

<sup>54</sup> CALL IIR, *III Corps as Multi-National Corps – Iraq*, December 2006-February 2008, 146

<sup>55</sup> *Ibid*, 146-147

<sup>56</sup> *Ibid*, 147

out by LTG Odierno, the massing of nonlethal means: money, construction, job creation, rule of law, etc. was crucial to the overall success of surge operations.<sup>57</sup>



The Force Field Artillery Cell was formed to oversee the following functional processes:

Asset Sourcing, Battle Watch, Sensor Management, and Counter-fire analysis and intelligence. Its role was to plan, coordinate, and execute precision lethal and nonlethal fires.<sup>59</sup> The battle watch team managed current fires operations and recommended sensor management in conjunction with the analysis and intelligence element. The sensor management and counterfire element provided subordinates with intelligence on enemy indirect fire TTPs, coordinated force

<sup>57</sup> Pat Hollis, “2007 Surge of Ground Forces in Iraq-Risks, Challenge and Successes”, *Fires Bulletin*, March-April 2008, 6.  
<sup>58</sup> Pat Hollis, “Fires for the Surge in Iraq: Lethal and Nonlethal”, *Fires Bulletin*, May-Jun 2008, 7  
<sup>59</sup> *Ibid*, 151

modernization efforts, managed theater level counterfire assets, and worked force generation issues.<sup>60</sup>

The Targeting Cell's function was to prioritize efforts on shaping the operational environment at the Corps level in support of subordinate tactical operations. The cell focused on understanding and shaping the operational environment. It focused operational targets aimed at the disruption of extremist networks in support of subordinate tactical operations. Key was the disruption of network recruiting, logistics, and command and control.<sup>61</sup>

A clear example of the JFC's ability to adapt to the emerging environment was the Engagement and Reconciliation Cell created to address issues related to the "Sunni Awakening." Of the nonlethal aspects coordinated by the JFC, this was the most innovative. Seizing on the opportunity for engagement, the cell consisted of several people and "touched" other organizations beyond MNC-I and was integrated into the overall organizational construct utilizing the overall battle rhythm and board process. Representatives from staff agencies residing within the JFC lived in operations, but had reach-back to the overall intelligence architecture with dedicated support.

The Reconciliation Cell was also responsible to assess the magnitude of the environmental change and eventually proceeded with the task of communicating this change across the tactical, operational, and strategic levels. The cell was the headquarters answer and a superb example of the JFC's flexibility and adaptiveness. The creation and implementation of innovative structures such as these within the JFC construct gave the command much flexibility in influencing overall operations.<sup>62</sup>

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<sup>60</sup> CALL IIR, *III Corps as Multi-National Corps – Iraq*, December 2006-February 2008, 152

<sup>61</sup> Ibid, 156

<sup>62</sup> Ibid, 227

The Conditions Assessment Cell focused primarily on mid-term campaign objectives and achievement of desired conditions. While the cell was located in the JFC, it assessed the entire current operational environment, analyzing changes and forecasting trends related to the desired strategic and operational conditions. This cell provided a complete campaign assessment of conditions across the logical lines of operations in terms of established standards and criteria, and analyzed the causes for success or failure in its reports. Finally, it identified geographical areas for focus.<sup>63</sup>

Doctrinally, the Electronic Warfare Coordination Cell (EWCC) would reside as part of the IO organizational construct. However, the DCG-Fires made the EWCC cell a separate entity from the IO cell based on the size and scope of the EWCC mission. The EWCC had an increased role within the JFC. The volume of information and the responsibilities of the section dictated this shift from the normal assignment under the IO cell. This was a very effective way to resolve any conflicts when addressing lethal vs. nonlethal. All parties involved in the conflict were also involved in its resolution as much as possible.<sup>64</sup> Implications for the future are evident. Increasing demand within the electronic spectrum begs the implementation of a fully functional cell able to resolve operational issues brought on by technology.

The IO Cell performed its functions in accordance with established doctrine and operating procedure. However, since the Cell was organized under the JFC, the DCG-Fires became the commander's executive agent responsible for the integration and synchronization of Information Operations across the breadth and depth of the staff. As such, the Chief of IO sought decisions from and responded to the DCG-Fires. This further allowed the DCG-Fires to check the pulse of operations against nonlethal actions and further refine the overall operational assessment.

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<sup>63</sup> Ibid, 30

<sup>64</sup> Ibid, 193

OIF V represented a significant change in the manner that lethal and nonlethal fires were integrated, coordinated, and synchronized into Corps Operations. The integration of lethal and nonlethal fires during this rotation added credence to *FM 3-0's* establishment of the aforementioned new fires construct. Staff alignment along functional lines vice traditional methods was highly successful and provided validity to an innovative concept.

Many valuable lessons learned can be mined from OIF V's JFC construct. These include the creation of a Joint Fires Cell led by the DCG-Fires, functional alignment of staff members using the lethal and nonlethal fires definition to drive the organization's purpose, assignment of key personnel to critical positions in the emerging environment, creating new cells and centers to address changes to the operational environment, and finally the necessity to relook the Corps Headquarters design in support of future operations.

An extensive look at OIF was necessary to get an understanding of how deployed Corps level headquarters are integrating and synchronizing fires into overall full spectrum operations. Yet this is only one combat theater of operations. In order to draw conclusions, one must also examine Operation Enduring Freedom's (OEF) method of executing fires. OEF is a similar headquarters operating at a different level headquarters operating in a dissimilar environment.

## **Operation Enduring Freedom**

### **OEF VII: Combined Joint Task Force (CJTF) 76**

From February 2006 to February 2007, the 10th Mountain Division (10th MTN) Headquarters deployed and assumed responsibilities as the United States Central Command designated Combined Joint Task Force (CJTF) 76 headquarters in support of Operation Enduring Freedom (OEF) VII. The headquarters was the first division under the "modular" design to be



employed as a Joint headquarters.<sup>65</sup> Conversion to a joint command and control organization was facilitated with augmentation from Army and Joint forces in accordance with a joint manning document (JMD). As with other members of the staff, the fires cell organizational structure also had not changed despite having to perform new functions associated with the integration of lethal and nonlethal means. Therefore, lethal and nonlethal were separated into different cells and not within one functional organizational construct. Given resource constraints, the 10th MTN Division developed and implemented processes, training, and procedures that would support operations in Afghanistan.<sup>66</sup>

CJTF-76's campaign plan attempted to take lethal and nonlethal aspects and their effects into consideration. The consideration of second and third order effects provided an overarching framework for developing supporting operations orders (OPORDs) and fragmentary orders (FRAGOs) throughout the conduct of operations in Afghanistan. Identifying and stating desired effects with linkage to operational objectives assisted the commander and staff in synchronizing lethal operations with resources, policies, and tasks to subordinates in time, space, and purpose.<sup>67</sup>

In adopting an effects-based approach, the organization formed a Joint Effects Cell (JEC) to focus on the integration of nonlethal activities/functions in support of the commander's intent and overall concept of the operations. The JEC's mission was to better integrate related nonlethal activities such as: information operations (IO), psychological operations (PSYOP), public affairs, and civil-military operations (CMO) into conventional and day-to-day operations. The Chief of the JEC was an Army colonel who led the day-to-day operations of the section. In addition, he supervised the CJTF's assessment section because the command believed that lethal and

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<sup>65</sup> Note: In terms of fires, modular design affected the traditional fire support structure of the division. As part of modularization, the Division artillery headquarters were inactivated along with its functions such as: targeting, counterfire, and management of the assets associated with these.

<sup>66</sup> CALL IIR, *10<sup>th</sup> Mountain Division as a CJTF 2006-2007*, 5

<sup>67</sup> *Ibid*, 5

nonlethal actions were inextricably linked. To provide oversight of all nonlethal effects integration and synchronization, a new position was created, Deputy Commanding General-Effects (DCG-E), and led by a Canadian Brigadier General. With a DCG in charge of this area, the importance of lethal and nonlethal integration and synchronization was emphasized.<sup>68</sup>

As part of its assessment process, the JEC consolidated information and assessments from a myriad of sources – the G-7/IO cell covered recent key leader engagements (KLEs), military deception operations, and radio broadcasts; public affairs (PAO) covered current talking points and “combat camera”; the psychological operations (PSYOP) cell covered tactical PSYOP teams (TPT) / military information support team (MIST) employment and product distribution; and the CJ9-civil-military operations (CMO) cell covered ongoing missions. As part of the overall assessment briefing, input was given by all staff elements that fed into the JEC. These assessments then were considered in the Effects Integration Brief to the Commander from which further guidance was issued. All results and ensuing staff recommendations fed into the monthly Campaign Objectives Assessment Brief (COAB), which measured the effectiveness of operations in relation to the achievement of CJTF-76 objectives and supporting effects.<sup>69</sup>

In terms of overall operations planning and execution, CJTF-76 employed a clear-hold-build-engage counterinsurgency model. The Division would quickly focus a tremendous amount of lethal firepower as well as a healthy dose of nonlethal capabilities in pursuit of overall reconstruction goals. Because of its relatively small area of operations, the Division was able to focus its efforts sequentially and in a relatively small area.<sup>70</sup>

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<sup>68</sup> Ibid, 19

<sup>69</sup> Ibid, 20

<sup>70</sup> Note: Michael Coss’, “Operation Mountain Lion: CJTF-76 in Afghanistan, Spring 2006.” Clear used to separate the insurgents from the population they depended on for support. Hold used to secure gains and create conditions that allow the development of indigenous security force capacity. Build transforms the physical and human terrain to establish permanent security and assist the government with construction projects to improve physical conditions. Engage meetings with civil and military leaders as

As an example of lethal and nonlethal integration and synchronization, Operation Mountain Lion demonstrated that the clear-hold-build-engage strategy was a viable option when lethal and nonlethal activities were employed in concert. Pre-combat shaping operations for the clear phase consisted of both lethal and nonlethal actions. High value targets consisting of key leaders, Improvised Explosive Device (IED) cells, and weapons caches were eliminated using lethal means.<sup>71</sup> Shortly after lethal operations and often times simultaneously, nonlethal means were employed focused on humanitarian assistance, medical assistance, reconstruction and development, and work programs to ensure that the population understood the actions being take. Construction engineers and substantial investments in money and effort were implemented and coordinated as part of the JEC's overall tasks.<sup>72</sup>

During Operation Mountain Lion, coalition forces cleared over 2500 enemy combatants from the battlefield and established 12 new outposts taking up a permanent presence to facilitate engagement. Effective governance was extended into new areas via construction of approximately 1300 kilometers of new roads, 53 district centers, 18 schools, and over \$500 million in projects. All actions were integrated and synchronized in concert with the JEC's battle rhythm.<sup>73</sup>

As part of the CJTF-76 fires construct, lethal and nonlethal means were integrated and synchronized using a relatively new construct and a more comprehensive approach than that prescribed by doctrine at the time. Executed prior to the onset of *FM 3-0*, February 2008, Mountain Lion's lethal and nonlethal fires were split between the operations section and the JEC. They were not organized under a single entity or organization. A coordinating function was

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well as citizens to help them develop the sense of responsibility to eliminate insurgent activity among the population or in transit through the border region.

<sup>71</sup> COL Michael Coss, "Operation Mountain Lion: CJTF-76 in Afghanistan, Spring 2006," *Military Review*, Jan-Feb 2008, 25

<sup>72</sup> *Ibid*, 26

developed utilizing the COAB whereby staff members were forced to integrate thru the staff process.<sup>74</sup>

Full integration of some key staff members served to unify the lethal and nonlethal process. First, the traditional Deputy Fire Support Coordinator performed his role as part of the G3 in using destructive means to decrease the enemy's fighting capability. Second, the creation of a JEC Chief, Army Colonel, kept the nonlethal providers integrated and organized with the day-to-day combat actions. Finally and most importantly, the implementation of the DCG-Effects lent importance to the mission of nonlethal effects. Furthermore, while the potential for lack of integration and synchronization among staff members was possible, it was held in check by the DCG-Effects acting as the Commander's representative. The most important point throughout this vignette though is that the commander and staff were comfortable in operating within this model.<sup>75</sup>

As one considers the information, there are some clear distinctions between MNC-I and the CJTF's weigh into the analysis. First, because this was a divisional fight with more tactical than operational focus, the validity of the CJTF's construct can be challenged. Forces are performing operations on a smaller scale. Therefore, the ability of the Division to focus its' combat power into a small area vice performing multiple and simultaneous lethal and nonlethal fires over a noncontiguous battlespace may have assisted in the unit's overall success.

Second, because this organization was one of the first to implement the new modular divisional design, shortfalls were noted that may have impacted the organization as it transitioned. Because of the loss of the Division Artillery Headquarters, functions such as: counterfire, targeting, overall fires planning, and management of fires assets were lacking. These

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<sup>73</sup> Ibid, 29

<sup>74</sup> CALL IIR, *10<sup>th</sup> Mountain Division as a CJTF 2006-2007*, 40

<sup>75</sup> Ibid, 20

functions had to be built using other organizations as the billpayer.<sup>76</sup> In his book the *Field Artillery in Vietnam*, MG David Ott proclaims that while division artillery commanders were not performing traditional conventional missions, their influential presence was still important. He (DIVARTY Commander) was still the Commander's advisor on fires matters whether organic, joint, or planning considerations. As with today, in Vietnam fire supporters did what they did best by integrating and synchronizing all fires with maneuver forces.<sup>77</sup>

In order to fill its modularity gaps, the 10<sup>th</sup> Mountain Division requested the support of a multi-functional Fires Brigade Headquarters to augment the division.<sup>78</sup> However, because of a high demand for fires brigades in Iraq, supply of these headquarters could not be supported. The Army has ten active divisions and six fires brigades. Fires brigades are currently performing a number of multi-functional missions in support of the GWOT including the Force Field Artillery Headquarters, Regional Headquarters, Maneuver Brigade Headquarters, and Logistics. In his 2008 interview, LTG Ray Odierno stated that fires brigades in MNC-I belonged to the divisions.

“Its critical enablers—the leadership and analysis, planning and execution capabilities—gave the division commanders tremendous flexibility. Every division commander wants his own fires brigade. If divisions will continue deploying at the current rate and commanders need them for the current fight, then the Army must look at filling this capability gap.”<sup>79</sup>

When comparing MNC-I and CJTF 76 fires execution, two threads are common among the organizations—the creation of a DCG and functional organization of the staff. In both cases, a deputy commanding general was designated by the command and given responsibility for the integration of nonlethal fires into the overall plan. In the MNC-I model, its DCG was given oversight of both lethal and nonlethal fires along with a staff to enable that concept. In the CJTF

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<sup>76</sup> Ibid, 5

<sup>77</sup> David Ott, *Field Artillery Vietnam Studies, 1954-1973*, Department of the Army, 49

<sup>78</sup> CALL IIR, *10<sup>th</sup> Mountain Division as a CJTF 2006-2007*, 5

<sup>79</sup> Pat Hollis, “2007 Surge of Ground Forces in Iraq-Risks, Challenge and Successes”, *Fires Bulletin*, March-April 2008, 9

76 model, the DCG was designated to integrate nonlethal fires into overall combat operations along with a staff of nonlethal personnel.

Interestingly, both staffs were organized along functional lines. In the MNC-I model, the Corps staff was reorganized into two areas: operations and fires. This made for a very clean delineation of responsibilities. In the CJTF 76 model, the staff was reorganized but fires were split. Lethal fires were subordinate to the Chief of Operations while nonlethal fires were under the purview of the DCG-effects. Despite this nuance, both were effective based their overall operating environment.

While it was important to look at current operations, future concepts also provide insights into the Army's view of lethal and nonlethal fires. Looking at future concepts gives us a glimpse of the functional capabilities required to equip the next Army force. The Army uses future concepts to project what the security environment requires of lethal and nonlethal fires. The Future Combat System BCT's organizational and operational document provides a number of useful insights to consider

## **The Future**

The Army brigade of the future will operate with much more precision, networked communications, and scalable smart weapons than present organizations. The future of lethal and nonlethal fires consists of organizations equipped and capable of full spectrum, networked operations. Prior to movement shaping occurs in terms of culture, people, political situation, and the infrastructure including roads, bridges, dams, power stations, radio and television along with newsprint facilities, and port facilities.<sup>80</sup>

This future organization exploits its tactical advantage through the use of lethal fires and nonlethal fires to shape the battlefield while protecting its Soldiers. As the organization executes

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<sup>80</sup> FM 3-90.9 (Initial Draft), FCS BCT, Combat Team Operations, 15 May 2008, 1

movement toward its major objectives, it encounters an environment requiring stability operations to be performed. The organization and its leaders are suited and well prepared for this type of mission. Following the seizure of its first combat objective, the organization tasks one of the combined arms battalions (CABs) to perform an additional stability mission while the rest of the brigade continues with the lethal focus. Future organizations are asked to simultaneously perform missions along the entire spectrum of conflict regardless of echelon.<sup>81</sup>

In this environment, lethal and nonlethal fires will be enabled by technological advances across the spectrum of capabilities. In terms of lethal, new fires systems will deliver precision munitions with scalable yields in order to minimize collateral damage and civilian casualties. These systems operate within a wireless network capable of transmitting data in real time. Scalable munitions provide the commander with a range of precision munitions in order to deal with an enemy challenge short of putting ground troops at risk. Minimal lethal force can be applied to an area in order to achieve objectives. Calculation of the proportional use of force will require special skills. Applying enhanced proportionality will reduce unintended consequences of collateral damage and facilitate rebuilding of essential infrastructure during post-combat operations.<sup>82</sup>

In some instances, lethal and destructive firepower, or the threat of its use, may not be possible or may be counterproductive to mission accomplishment. In those cases, nonlethal munitions will include a range of technologies such as malodorants, anti-material, electromagnetic, directed energy, thermal capabilities, marking, acoustic, directed energy, kinetic, optical, and other capabilities. These nonlethal capabilities are essential for improved situational awareness, force protection, limiting collateral damage and reducing non-combatant and friendly force casualties, especially during operations in urban and complex terrain. Nonlethal weapons

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<sup>81</sup> Ibid, 1-5

<sup>82</sup> Ibid, 5-1

will expose hidden enemy for sensors to identify and target, dislocate adversaries from rules of engagement protected locations, deny specific areas to the enemy, impede enemy repositioning, withdrawal or reinforcement, and enhance security for command and control (C2) and maneuver sustainment operations. The increased range of scalable munitions will add complexity to the commander's decision making process and demand special skills for integration and synchronization of these assets. <sup>83</sup>

Taking this environmental construct to the operational level provides insight into how future fires will be executed. As was the case with the current operating environment, the same complexity and full spectrum operations are anticipated in the future. However, given the very broad spectrum of lethal and nonlethal fires assets available to the commander, a Joint Fires Cell would incur even more responsibility. Management of lethal assets in support of a noncontiguous, complex fight would require more integration and synchronization across a battlefield network in real time. Future brigade concept documents anticipate that nonlethal actions, as described earlier, will require full and simultaneous synchronization on short notice. Future fires cell organizations must be capable of anticipating operational requirements and providing the commander with assets synchronized in real time. The complexity described here is a daunting challenge for future leaders and their supporting staffs.

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<sup>83</sup> Ibid, 5-7.



## CONCLUSIONS AND RECOMMENDATIONS

Increasingly, we need to give the commander a nonlethal tool kit. We need to broaden our thinking about nonlethal, perhaps eliminate some of our lethal and nonlethal stovepipes and bring them together.

LTG Michael Vane, Futures Director and Commander ARCIC<sup>84</sup>

The operating environment driven by the Global War on Terror (GWOT) has forced the Army to adapt rapidly while continuing with its transformation. The Army is a learning organization and recent trends in the execution of lethal and nonlethal fires should not go unnoticed and undocumented. The Army must further adapt its fires doctrine. It must be unafraid to challenge old ways of thinking even if those old ways are masked as new ideas from previous future design and development efforts related to our Army's modular force. The US Army has been at war for almost eight years. The time has come for a serious dialogue regarding the fires warfighting function and its role now and into the future.

When comparing the three environments (OIF, OEF, and the Future), there are a number of inherent trends that emerge in terms of effective integration and synchronization of lethal and nonlethal fires. Most importantly, if the era of persistent conflict presents those same challenges as those articulated in the Army's future concepts, it must adapt current capabilities, shed stovepiped constructs, and seize on new and innovative solutions emerging from combat theaters.

As an adaptive and innovative organization, the Army can achieve effective integration and synchronization of lethal and nonlethal fires but consider new and innovative ideas in order to move the goals articulated in *FM 3-0* forward. First, the term nonlethal fires as articulated by *FM 3-0* must be clearly defined in order to encompass the broader context of lethal and nonlethal fires. As pointed out earlier, *FM 3-0* does not define the term nonlethal fires within its contents and neither does joint doctrine. Nonlethal providers such as electronic warfare and information

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<sup>84</sup> LTG Michael Vane comments, Army Modernization Conference, Arlington, VA, July 2008 as reported by Army Public Affairs and Early Bird.

operations, as well as political, diplomatic, and economic staff integrators are spread out across an organizational staff and among military and interagency partners. This makes integration solely within the nonlethal realm challenging. When one adds the lethal aspect to this construct, even more tension is created as lethal and nonlethal fires compete for primacy. So what is a nonlethal fire? Before the discourse on effective integration and synchronization of fires can even begin, a viable definition of nonlethal fires must be identified and articulated across the formation. Moreover, the original intent as articulated in *FM 3-0* must be further clarified so that the development of doctrinal can occur.

Second, the Army must consider functional alignment of a fires staff, lethal and nonlethal, under the leadership of a DCG Fires vice the traditional staff organized solely under a Chief of Staff. In both cases, OIF and OEF, the staff was functionally organized to achieve full spectrum operations. In the case of OIF V, the III Corps staff was broken down into two functional areas: intelligence and operations, and lethal and nonlethal fires. Lethal and nonlethal fires integration and synchronization were under the direct supervision of the DCG Fires and greatly enhanced the commander's ability to execute full spectrum operations. His organizational construct also allowed for adaptations in the changing operational environment and absorbed many new and unanticipated operational requirements such as reconciliation, economic development, and strategic messaging. Essentially, the DCG Fires staff was a clearing house for integration and synchronization of nonlethal.

In OEF, the divisional joint task force created a DCG Effects while it attempted to implement effects based operations (EBO). The DCG-Effects was responsible for integration and synchronization of nonlethal means into the overall plan. These nonlethal means included information operations, engagements, psychological operations, and civil military operations. In the same way as the DCG Fires, the DCG Effects ensured that nonlethal fires were implemented effectively into the overall mission.

In both examples, the establishment of a Deputy Commanding General responsible for fires integration and synchronization was very effective in achieving its stated goal. Therefore, the Army must consider aligning staffs along functional rather than traditional lines. Delineation of staffs in terms of intelligence and operation, and lethal and nonlethal fires merits further discovery, investigation, and perhaps eventual implementation. Most importantly and commensurate with that effort though, the Army should begin the career development and selection of officers who are able to fulfill the requirements identified as those of the DCG-Fires. Both of these efforts will prepare Army organizations to tackle the challenges identified in both the current and future operating environments.

Third, the Army must reevaluate its doctrinal fires manuals to encompass and address both lethal and nonlethal fires with emphasis on the overall targeting process. The aforementioned new definitions and functional constructs must be followed up by complementing doctrinal manuals. Many doctrinal fire support manuals are not keeping up with the changes in the operational environment. For example, *FM 3-0* (2008) tasked the fires cell with “integrating and synchronizing the effects of lethal and nonlethal fires with the effects of other warfighting functions using the targeting process.”<sup>85</sup> Unfortunately, the Army’s fundamental targeting doctrine currently in publication, *FM 6-20-10, The Targeting Process*, was last updated in 1996. While the basic aspects of targeting remain sound, the manual identifies nonlethal fires as “the use of electronic warfare measures, specifically electronic attack.”<sup>86</sup> As mentioned throughout, the concept of nonlethal fires has changed and expanded with the operating environment. Therefore, a reconsideration and refinement of fires doctrine must be undertaken.

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<sup>85</sup> FM 3-0, 4-4

<sup>86</sup> FM 6-20-10 found at: <http://atiam.train.army.mil/portal/atia/adlsc/view/public/296978-1/fm/6-20-10/Appb.htm>

In his groundbreaking work, “Adapt or Die: The Imperative for Creating a Culture of Innovation in the Army,” MG David Fastabend points out that “change is constant and continuous adaptation is necessary to remain ahead of future threats.” More importantly, he argues that failure to change means not bankruptcy or shortened balance sheets, but death and destruction for all that we cherish.<sup>87</sup> Warfare’s future environment will be exceedingly more complex as will the lethal and nonlethal tools required to address that complexity. Therefore, the Army must consider and develop the requirements for integration and synchronization of complex lethal and nonlethal fires. Implementation of a clearly defined doctrinal premise behind the concept of lethal and nonlethal fires is a must. Creation of a functionally organized staff structure led by a single DCG breaks down stovepipes and integrates providers along the full spectrum of conflict. Momentum in these two areas will allow for the full development of doctrinal underpinnings that are flexible and delineate authority and responsibility for execution of lethal and nonlethal fires. The Army must shed traditional Cold War ideas that hamper integration and create stovepiped structures incapable of simultaneous execution along the full spectrum of conflict. Once this is embraced, achievement of simultaneous, distributed, noncontiguous lethal and nonlethal fires will be possible resulting in the achievement full spectrum operations.

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<sup>87</sup> MG David Fastabend and Robert A. Simpson, “Adapt or Die: The Imperative for Creating a Culture of Innovation in the Army”, 1

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