More Tooth, Less Skull: Force Structure Changes for an Uncertain Future

A Monograph
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This monograph analyzes the current challenges facing the U.S. Army and the potential for force structure changes to meet future threats. Allowing for widened spans of control through the addition of a line company to the maneuver battalions of the brigade teams creates force structure that can meet the operational requirements of an uncertain future. This monograph and supporting research will discuss span of control theory, modularity, OIF, OEF, and some historic force structure discussions to show the potential for this recommended change in force structure. Further examples will show that leadership, training, and technology support more maneuver formations. Widened spans of control and self-adaptive units allow for it. Uncertainty in future engagements demands it. Finally, organic units training together prior to deployment work more effectively upon deployment removing the necessity to task organize ad hoc forces across numerous formations.

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Abstract

MORE TOOTH LESS SKULL: FORCE STRUCTURE CHANGES FOR AN UNCERTAIN FUTURE by Mr. Sean W. Hoover, Civilian, 53 pages.

This monograph analyzes the current challenges facing the U.S. Army and the potential for force structure changes to meet future threats. Allowing for widened spans of control through the addition of a line company to the maneuver battalions of the brigade teams creates force structure that can meet the operational requirements of an uncertain future. This monograph and supporting research will discuss span of control theory, modularity, OIF, OEF, and some historic force structure discussions to show the potential for this recommended change in force structure. Further examples will show that leadership, training, and technology support more maneuver formations. Widened spans of control and self-adaptive units allow for it. Uncertainty in future engagements demands it. Finally, organic units training together prior to deployment work more effectively upon deployment removing the necessity to task organize ad hoc forces across numerous formations.

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Introduction

The United States Army has transformed its force structure in the past and continues to do so to meet contemporary and future threats. With the removal of combat forces from Iraq, a current drawdown in Afghanistan, and budgetary constraints, the competition for finite government funding only increases the challenge of the U.S. Army to meet operational requirements. In light of the inevitable drawdown and a fiscally constrained budgetary environment, how can the United States Army change force structure to meet operational demands? The operational environment drives the U.S. Army to meet threats of a hybrid nature by conducting decisive action through combined arms maneuver and wide area security.[1] In a resource constrained environment, changing force structure by providing an additional line company to the maneuver battalions of the brigade combat teams provides greater potential to meet the operational and doctrinal requirements of a complex environment providing more tooth and less skull within force structure.[2]

Previous changes in force structure through the Total Army Analysis process relied on span of control as a key factor in development. Span of control is the extent to which a leader can directly command and control his subordinate leaders. Though not at the forefront of current drawdown discussions, span of control is an integral piece to force structure development. Span of control allows for the employment of forces based on a number of characteristics from

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[1] U.S. Army, *Army Doctrine Publication 3.0: Unified Land Operations* (Washington, DC: Headquarters, Department of the Army, 2011), 5, 6, 13. "A hybrid threat is the diverse and dynamic combination of regular forces, irregular forces, terrorist forces, criminal elements, or a combination of these forces and elements all unified to achieve mutually benefitting effects." Hybrid threats may involve nation-state, nonstate actors, or proxy forces.

[2] The reference of tooth and skull comes from the tooth to tail ratio commonly referred to in military circles. For example, tail would refer to the overhead costs and logistical support of an organization and tooth is force structure or combat capability of an organization. Military organizations tend to push for more tooth through savings on the tail end. This monograph, however, replaces tail with skull. Skull refers to headquarters. Modularity, technology, and decentralization allow for less skull and more tooth. For an example of the "tooth-to-tail" discussion, see Robert M. Gates, "Defense Spending," (speech, Eisenhower Library, Abilene, KS, 8 May 2010). http:// www.defense.gov/speeches/speech.aspx?speechid=1467 (accessed 19 JAN 2012).

technology to mission requirements. Yet, the key characteristic for force employment and span of control determination depends upon the operational situation. Span of control narrows and broadens as the situation dictates. However, recent examples of force employment and task organization to meet operational requirements support a shift to a broadened span of control.

In every conflict, leaders task organize their forces to accomplish the mission. In Iraq and Afghanistan, as in past conflicts, this has been no different. These large geographic areas required decentralized operations that allocated all available combat power on the ground to handle such a wide operating area. There are examples in which the U.S. Army added additional maneuver companies to battalions to accomplish its missions utilizing self-adaptive subordinate units. These additions provided more capability within the battalion and effectively widened the span of control for the battalion commander. Unfortunately, no examination of the potential of these battle-tested, task-organized formations justified a change in the garrison table of organization and equipment for the U.S. Army. Rather the U.S. Army continues to rely on existing task organization; despite the opportunity costs of doing so, to meet mission requirements upon deployment instead of permanently providing for more maneuver units within the battalions organically.

Operational environments strain the capability of force structure. In response to the operational environment during the 1950s, the U.S. Army broadened span of control and added additional maneuver companies within the battle groups of the Pentomic Divisions. Under the Army of Excellence in the 1980s, Mechanized Infantry Battalions also added maneuver companies, yet in both historic examples, the overall structure and implementation of forces ultimately failed. The current operational environment also provided constraints on the modular force. Contemporary case studies on force employment in Operation Enduring Freedom and Operation Iraqi Freedom support broadened spans of control and additional maneuver companies within maneuver battalions.

Rather than wait for the next conflict, force structure changes can reflect the benefits and usefulness of recent force employment examples. Experimentation with a battalion of five vice four maneuver companies in training environments can further validate or disprove this thesis. Implementing and experimenting on this potential change offers an opportunity to weather the pending storm of operational requirements and budgetary constraints. This sets successful conditions for the U.S. Army to employ self-adaptive maneuver forces to conduct decisive action through wide area security and combined arms maneuver in a complex environment. This monograph will focus on process tracing as a methodology to frame the current situation, history, and arguments for and against widened span of control and additional maneuver capability within the brigade combat teams. The strategic context section discusses the current fiscal situation and how past periods of fiscal constraint have influenced the ability of the United States Army to meet expectations and operational demands. This section will also address the strategic context prior to and post September 11, 2001 as well as the contemporary strategic context following the removal of troops from Iraq and the ongoing drawdown of forces in Afghanistan.

The next section defines span of control and firmly establishes its importance to military formations. Further, it discusses the historic context of this theory to provide a foundation on arguments for and against wide and narrow spans of control. Finally, it looks at the evolution of span of control in order to explain its influence on force structure and force employment.

Following this, the section on modularity presents background discussions on the context behind transformation and the modular force. This contemporary vignette next discusses the development and employment of the modular force as well as arguments that address its capabilities and shortcomings. Furthermore, this section provides background contextual information for the case studies section that relies on oral histories of deployed personnel. These oral histories apply contemporary examples from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) on force employment. Discussions on OIF and OEF will further explore the challenges of modularity to include how units added maneuver units in the brigade

combat teams to meet operational requirements. Finally, the case studies section provides examples on how span of control widened to accommodate battle and a greater need for maneuver capability.

After the modularity vignette, and the case studies section, the monograph will provide a historic anecdote on force structure employment. Force structure examples in the Pentomic Divisions of the 1950s and the Army of Excellence in the 1980s will show how the Army employed larger maneuver formations than in the past and the challenges associated with this employment. Arguments on the challenges to these formations will show that past trials on the employment of additional maneuver forces should not cloud the judgment on future changes in force structure.

This monograph closes with a section that provides recommendations on the way forward through broadened span of control and the addition of line units to the maneuver battalions of brigade combat teams. This section will provide clear and valid reasons for a change in force structure based on doctrine and battlefield realities for this organizational change.[3] Finally, the section will present additional opportunities for exploration and research on this topic.

Strategic Context

The U.S. Army is approaching a critical transition point. All combat forces have left Iraq and the drawdown of forces in Afghanistan is ongoing. Why does this pose a problem for the U.S. Army? To begin with, each past drawdown saw an associated cut in funding for defense in the post-war period and a push for funding priorities elsewhere in the government. Figure 1 provides examples of past wars and the change in military spending as a percentage of gross national

[3] *Sixty Years of Reorganizing for Combat: A Historical Trend Analysis* (Fort Leavenworth, KS: Combat Studies Institute Press US Army Combined Arms Center, 1999), 65, http://usacac.leavenworth.army.mil/cac2/cgsc/carl/download/csipubs/sixty.pdf (accessed 9 OCT 2011). This work provides an excellent overview on the eleven reviews of Army force structure prior to planning for transformation by TRADOC in 1999. It discusses each case study on division formations, the historic context, themes, and trends that were relevant to transformation discussions at that time.

product.

Period	Current Military Spending	Period	Current Military Spending
War of 1812		**World War I**	
Prewar, 1807-1811	0.72	Prewar, 1914-1916	1.15
War, 1812-1814	2.78	War, 1917-1919	15.48
Transition, 1815-1816	2.12	Transition, 1920-1921	3.08
Postwar, 1812-1814	0.95	Postwar, 1922-1924	0.86
Mexican War		**World War II**	
Prewar, 1842-1846	0.93	Prewar, 1938-1940	2.16
War, 1847-1848	1.56	Transition, 1941	12.73
Transition, 1849	0.91	War, 1942-1946	30.04
Postwar, 1850-1854	0.67	Transition, 1947	5.54
		Postwar, 1948-1950	5.40
American Civil War		**Korean War**	
Prewar, 1856-1861	1.71	Prewar, 1948-1950	5.40
War, 1862-1865	10.21	War, 1951-1953	12.16
Transition, 1866	2.80	Postwar, 1954-1956	10.43
Postwar, 1867-1871	0.80		
Spanish-American War		**Vietnam War**	
Prewar, 1893-1897	0.47	Prewar and transition, 1963-1965	8.15
War and transition, 1898-1899	1.26	War, 1966-1970	8.67
Postwar, 1900-1904	0.83	Transition and Postwar, 1971-1973	6.44

Figure 1: The Impact of Wars on Federal Spending (Percentage of GNP) [4]

From the War of 1812 to the Vietnam War, almost every conflict showed an increase of military spending as a percentage of GNP and following these wars the transition and post-war periods held military spending at a lower rate than during the prewar period.[5] In many cases, following wars, doctrine and mission requirements based on the current threat environment took a second seat to fiscal limitations. However, there were some cases when the end of a war did not signal a cut in spending. One outlier is the Korean War. The post-war period with the onset of the Cold War had a significantly higher spending percentage (10.43) when compared to the prewar

[4] *Sixty Years of Reorganizing for Combat*, 47. Information pulled to build this figure originated from a much broader table taken from page 47 that listed data on current military spending as a percentage of gross national product, the cost of past wars, and all other civilian spending during the period of war listed.

[5] Hugh Rockoff, "The Peace Dividend in Historical Perspective," *American Economic Review* 80, no.2, 1998, 47.

period (5.40).[6] Further, as the Cold War gained steam, the U.S. government increased its military spending, supported NATO expansion, and amplified the commitment of forces around the world on humanitarian missions. This trend accelerated after September 11, 2001 and the nature of battle changed with the commitment of U.S. forces in two wars, a ramp up of counterterrorism operations throughout the world, and the establishment of new bases overseas.[7]

As the U.S. Army continues its drawdown in Afghanistan, the current strategic context influences the future willingness of the Federal Government to commit forces for sustained engagements. In addition, a strategic context shaped by constituents' influence upon policy makers affects discussions and decisions on the application of force. Fiscal limitations and their effect on the concepts of retrenchment or constrained internationalism will also put pressure on policy makers and limit the ability of the U.S. Army to accomplish all the missions outlined in the 2011 *National Military Strategy*.[8] The 2011 *National Military Strategy* seeks to deal with threats through partnerships, deterrence, and countering ideologies that breed terrorism.[9] Recent Department of Defense strategic guidance on sustaining U.S. global leadership provides added

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[6] Rockoff, "The Peace Dividend in Historical Perspective," 47.

[7] Joseph M. Parent and Paul K. McDonald, "The Wisdom of Retrenchment: America Must Cut Back to Move Forward," *Foreign Affairs*, 90, no.6, November/December 2011, http://www.ihavenet.com/World-United-States-The-Wisdom-of-Retrenchment-America-Must-Cut-Back-to-Move-Forward-Foreign-Affairs.html (accessed 19 December 2011).

[8] Ibid. Retrenchment is a policy in which a country scales back its goals in the face of diminishing means in order to better navigate the shoals of power politics better than those that cling to expensive and ambitious commitments. Catherine Hug, ed., "Constrained Internationalism: Adapting to New Realities. Results of a 2010 National Survey of American Public Opinion," (Chicago, IL: The Chicago Council on Global Affairs, 2010), 11. http://www.thechicagocouncil.org/UserFiles/File/POS_Topline%20Reports/POS%202010/Global%20Views%202010.pdf (accessed 10 AUG 2011). Constrained internationalism refers to a policy in which Americans are still internationalists and see engagement overseas as positive; however, this internationalism mindset is changing as it faces increasing monetary constraints at home and abroad.

[9] Nicholas R. Krueger, "The 2011 National Military Strategy: Resetting a Strong Foundation," *National Security Watch*, 11, no. 2, May 2011, http://www.ausa.org/publications/ilw/ilw_pubs/Documents/NSW%2011-2-web.pdf (accessed 19 DEC 2011).

constraints to military capability focusing on rebalancing toward the Asia-Pacific Region.[10] Unfortunately, fiscal constraints, policy, and civilian pressure will make it difficult to accomplish these lofty goals. This is no more apparent than what the untold impact upon the Department of Defense force structure will be in response to the mandatory spending cuts required because of sequester in the *Budget Control Act of 2011*.[11] Current projections show that the Army will lose at least eight brigade combat teams and there is the potential for supplementary cuts in force structure.[12]

Given this strategic context, what solutions are there to meet the current threats? Adding a line company to the maneuver battalions of a BCT can meet some of the strategic challenges presented in the previous paragraphs. A simple approach at a lower echelon in force structure can result in a large success for future force employment. Many times, expenditures are a measure of success rather than effective strategy and as one senior Army leader recently posited, "we must remain focused on strategy, not math; the cost of failure to prepare in warfare is sometimes measured in dollars, but more often — and more importantly in lives."[13] The current fiscal environment, though burdensome, provides "an opportunity to shape, change and transform the Army not just to come to terms with the constraints of today, but to meet the challenges of tomorrow. Now is the time for leaders to present creative, innovative solutions and for us to reconsider long-held assumption to see if they remain optimal for our Army's future."[14] Challenging the status quo was a key point in this senior leader's discussion. Though directed

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[10]U.S. Department of Defense, "Sustaining U.S. Global Leadership: Priorities For 21st Century Defense," http://www.defense.gov/news/Defense_Strategic_Guidance.pdf (accessed 02 FEB 2012).

[11] U.S. Congress, 2011, *Budget Control Act of 2011,* 112th Cong., 1st sess., S. 365 EAH, 43-48.

[12] Todd Harrison, "Strategy in a Year of Fiscal Uncertainty," http://www.csbaonline.org/wp-content/uploads/2012/02/trategy-in-a-Year-of-Fiscal-Uncertainty.pdf (accessed 9FEB 2012).

[13] Senior Army official, Discussion with Army leaders on his top priorities, Information collected at Fort Leavenworth, Kansas in late October 2011.

[14] Ibid.

more at the strategic level, his points have application at the tactical level, where engagements and their resulting military outcomes occur.

In a recent interview, the Secretary of the Army reinforced the need to address the current fiscal constraints, while still meeting operational requirements. Like many of his predecessors, the impact of creating a hollow force following wars wears heavily on his mind. Secretary McHugh "is evaluating how far Army personnel numbers will fall and devising a strategy to avoid the unwanted result of becoming a hollow force."[15] Unfortunately, if one looks at recent plans for cuts in force size, they affect the number of Brigade Combat Teams available in the operating force, which effectively hollows the force. This runs counter to Secretary McHugh's additional commitment in which he wants to ensure that the U.S. military "has as many boots on the ground as needed, even as it becomes technologically possible to fight some battles from a distance."[16]

The strategic context and recommendations espoused by senior Army leaders both set conditions for a change. Dollars tend to drive current changes. There is a boom and bust period in Defense spending that precedes and follows conflict periods, but most would agree that in order to meet future threats our force cannot be hollow. Additionally, long held assumptions that the U.S. Army prepares for major combat operations directed against a world power rather than meeting the hybrid threat espoused in *Army Doctrine Publication 3.0* should not solely hold sway. Creative solutions in force structure changes hold the potential for success against both a hybrid threat and a world power. Force structure changes, therefore, provide the potential to

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[15] Jamie Colby, "With Downsizing in Sight, Army Secretary Tries to Preserve Technology, Assistance to Service Members," *FoxNews.com*, 15 DEC 2011, http://www.foxnews.com/politics/2011/12/15/with-downsizing-in-sight-army-secretary-tries-to-preserve-technology-assistance/ (accessed 18 DEC 2011).

[16] Ibid.

increase boots on the ground capability for a self-adaptive force, preparing the U.S. Army for future conflicts, while limiting the impact of fiscal constraints and the current drawdown.

Span of Control

To meet the opportunity presented in a fiscally constrained, budgetary environment for a change in force structure, research will now address span of control as a key enabler to this change. What is the theory behind span of control of and why is it of any importance? How has span of control affected force structure and mission command in the past? To answer these questions, we shall trace some of the evolution of span of control beginning with *Field Manual 6.0 Mission Command*. Secondly, a historic look at span of control frames its development over time. Finally, this section discusses span of control in the present environment, which sets the stage for analysis of modularity, case studies, and a historic sketch in following sections.

Headquarters are crucial in generating and directing combat power, and synchronizing efforts of the subordinate units. As Major Pierce attempted to grapple with span of control twenty years ago, his point still holds true that the more soldiers assigned to a headquarters, the less are available to fight.[17] Fewer headquarters allows for a greater number of actual combat troops to conduct operations. Thus, commanders must understand the limits of span of control so they can reduce to the minimum possible headquarters positions while providing continuous command and control, effectively providing for more tooth and less skull.[18] A commander also must understand whether to narrow or broaden span of control as human perception faces limitations with the increase of subordinates and can negatively influence operational tempo.[19] In addition, adopting

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[17] William G. Pierce, "Span of Control and the Operational Commander: Is It More Than Just A Number?" MMAS Monograph, School of Advanced Military Studies, 1991, http://www.dtic.mil/dtic/tr/fulltext/u2/a240178.pdf (accessed 7 OCT 2011).

[18] Ibid, 3.

[19] John J. McGrath, *Crossing the Line of Departure: Battle Command on the Move A Historical Perspective* (Fort Leavenworth, KS: Combat Studies Institute Press US Army Combined Arms Center,

high or broad spans of control can bloat the size of staffs, which can in turn slow the operational tempo of missions.[20] Understanding span of control theory by examining application in the past and present provides further insight on the realm of the possible.

Span of control as defined in *Field Manual 6.0 Mission Command* is the number of subordinates or activities under a single commander. The span of control should never exceed a commander's ability to command effectively.[21] Span of control theory has existed since commanders employed troop formations on battlefields in ancient times. However, "explicit recognition of the concept, as it is thought of today, did not occur until the early 1800s."[22]

Historically, the number of subordinate units a commander could control depended on how far his voice could carry orders or on the distance across which the commander could see the battle unfold. [23] Carl Von Clausewitz addressed span of control in terms of terrain and the ability of a high command to control subordinates across the battlefield. Martin Van Crevald compared narrow and broad spans of control and their application in centralized and decentralized battles.[24] Present military theory on span of control indicates that decentralized battle with its difficult control favors narrow spans of control or the development of subordinate units that can act as

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2006), 238. McGrath posits that a high or broad span of control requires a large staff, which can slow operational tempo of missions.

[20] Ibid, 238.

[21] U.S. Army, *Field Manual 6.0, Mission Command: Command and Control* (Washington, DC: Headquarters, Department of the Army, 2003), 153.

[22] David D. Van Fleet and Arthur G. Bedeain, "A History of the Span of Management," *Academy of Management Preview*, July 1977, 357, http://www.bus.lsu.edu/bedeian/articles/ History SOM-AMR87.pdf (accessed 1 NOV 2011).

[23] McGrath, *Crossing the Line of Departure*, 238.

[24] Andrew S. Sandoy, "Span of Control and Initiative: Is More, Less?" MMAS Monograph, School of Advanced Military Studies, 1990, http://www.dtic.mil/cgi-bin/GetTRDoc?AD= ADA 233511& Location=U2&doc=GetTRDoc.pdf (accessed 7 OCT 2011), 9-11.

independent systems, while centralized battle with its easier control favors wide spans of control.[25]

The first contemporary theorist to provide detailed context behind span of control theory was V.A. Graicunas. Graicunas utilized mathematics in the 1930s to show that the interaction between groups is exceedingly complex and with each new addition to an organization, the challenge of managing subordinates increases. Effectively, the numbers of person-to-person relationships increase geometrically as the size of the group increases arithmetically. Based on his analysis, the greatest degree of intricacy for an individual occurs beyond the addition of five subordinates.[26] The mathematical models he developed to portray the number of decisions required by a superior "were tempered with considerations of the scope and scale of the work involved and for which the subordinate was responsible."[27]

Lyndall Urwick worked closely with Graicunas and furthered his work. He railed against the pressures in business sectors to increase span of control. Like Graicunas, Urwick countered existing arguments at the time by pointing out that the advantages of broadening control in an organization, driving authority and ingenuity downward required comparison to the costs of confusion and indecision that accompany a span of control that is too broad.[28] Graicunas and Urwick were, thus, proponents of limiting the span of control. This theory or "rule of five" has

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[25]Sandoy, "Span of Control and Initiative: Is More, Less," 10-11. Decentralized battle, combat units, limited control, poor communications, combined arms, tactical echelons, and close terrain favor narrow spans of control. Centralized control, genius in command, ease of control/communications, operational units, single arms units, open terrain, counterinsurgency war, trained subordinates, and highly drilled units favor wider spans of control.

[26] Vytautas A. Graicunas, "Relationship in Organization," *Bulletin of the International Management Institute*, 7, March 1933, 39-42.

[27] Fred Nickols, "The Span of Control and the Formulas of V.A. Graicunas," www.nickols.us/ graicunas.pdf, 2011 (accessed 24 SEP 2011), 3.

[28] Ibid, 2.

direct application to the business arena and is a part of Army guidelines for developing force structure.[29]

Doctrinal application of span of control theory to Army force structure incorporates and expands upon the historic application of span of control theory. *FM 6.0: Mission Command* addresses the same span of control arguments Graicunas, Clausewitz, and Van Crevald worked through.[30] From divisions to brigades and battalions, Army guidelines typically assign two to five maneuver units under a headquarters.[31] Leader to subordinate ratios in maneuver battalions consist of one commander overseeing between three and five maneuver companies in garrison tables of organization and equipment (TOEs). Interestingly, this ratio has not changed since the early 20th century when the U.S. Army arrayed larger forces for combat operations. Additionally, the only doctrinal increases in force structure over four maneuver companies occurred in the force structure of the Pentomic Divisions of the 1960, and the J series (TOEs) under the Army of Excellence in the mid-1980s.[32]

Major Sandoy's 1991 monograph tied span of control theory to modern battle and recommended a narrow span of control and less maneuver units for mobile battles. Traditionally, determining the proper ratio of leader to subordinates was situation dependent and varied upon the personal experience of leaders and academics. Once again, there is a challenge to provide one overarching ratio of leader to subordinate for all situations. A historic table in Van Fleet and

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[29] U.S. Army, *Field Manual 6.0: Mission Command*, 153. *FM 6.0* reaffirms the situational significance-impacting span of control yet follows the rule of five in that "commanders can effectively command two to five subordinates."

[30] Ibid, 153. *FM 6.0*: *Mission Command* reiterates in different terms, previous historic discussions. Though Clausewitz's *On War* looked at how terrain affected the movement of armies and span of command for a commander, his points are not far off from those discussed in *FM 6.0*. Van Crevald's writings in *Command in War*, though more detailed than Clausewitz, also fall within the doctrinal frame. Graicunas's concerns on exceeding beyond more than four or five subordinates is also touched upon in *FM 6.0* through the numeric recommendation of three to five subordinates per headquarters.

[31] Sandoy, "Span of Control and Initiative," 15-16.

[32] Gordon L. Rottman, *Inside the U.S. Army Today* (New York: Osprey Publishing, 1988), 20.

Bedeian's work provides a number of examples of the varying ratios that existed across history in both the military and business sectors. In one case, Napoleon echoed the rule of five in that, "No man can command more than five distinct bodies in the same theatre of war."[33] Clausewitz held concerns that one can only exercise direct control over a limited number of subordinates and "if there are more than ten parts, a difficulty arises in transmitting orders with the necessary rapidity and exactitude."[34] However, if one looks at an example from Haimann and Scott in the 1970s, they felt that "there is…no definite, fixed answer to the ideal number of subordinates a manager can effectively supervise."[35] Looking at other examples throughout history also shows the issues with determining the correct proportion of leader to subordinate. These examples portray the challenges and lack of consensus in defining an accurate ratio of leader to subordinate.

There are limitations to Graicunas's theory as well as other management related span of control theories. As represented in the previous paragraph there are diverse examples of the number of subordinates to leaders/managers throughout history, which is problematic. The Army Research Institute for Behavioral and Social Sciences (ARI) identified a problem with management theory in determining accurate leader to subordinate ratios, specifically, that Graicunas's "rule of five is based on outmoded concepts of information processing."[36] Further complicating matters, some scientists found that the ratio of leaders to subordinates is 1:7.[37] Yet, military theorists placed three to six maneuver units per commander in tactical formations for

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[33] Van Fleet and Bedeian, "A History of the Span of Management," 358. Table 1. This table highlights the varying opinions on span of control and the challenge on determining leader to subordinate ratios.

[34] Ibid, 358.

[35] Ibid, 358

[36] U.S. Army Research Institute for the Behavioral and Social Sciences, "Effective Span of Command and Control By Echelon in Training and Operational Environments," (Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 1998), 2, http://www.hqda.army.mil/ari/pdf/RP2003-04.pdf (accessed 7 OCT 2011).

[37] McGrath, *Crossing the Line of Departure*, 238. Scientists even afford that at a larger span of control said to be seven, human perception is unable to control the complication of too many subordinates, particularly in high tempo military operations.

span of control.[38] What is the appropriate ratio of subordinates to leaders and what are the differences between span of control in the military and business? As the previous examples show, it is hard to determine the correct ratio. Whether utilizing management or military theory on span of control which provides the best solution?

Due to these challenges, this monograph diverges from management theory, as management theory does not adequately frame the nature of the tasks or physical danger associated with a military specific span of control paradigm. Major Sandoy drew some valid correlations between management theory and military theory in that both are situational.[39] Nevertheless, there is no comparable parallel between the fog and friction of battle and uncertainty in the business world. In addition, organizational support frameworks to assist military leaders are different from those in the business or private sector. Specialized staffs in the military exist at each echelon to directly assist a commander, effectively allowing their command and control capabilities to expand.

Information processing workload is critical to determining the span of control for a commander. Austere and complex environments that limit communication with, and command and control over subordinates have the potential to exceed the capability of some commanders. This is no more prevalent than with the friction that comes from conducting unified land operations; seizing retaining, and exploiting the initiative to gain and maintain a position of relative advantage in sustained land operations through simultaneous offensive, defensive, and stability operations in order to prevent or deter conflict, prevail in war, and create conditions for favorable conflict resolution.[40] Broader spans of control offer benefits such as providing

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[38] Sandoy, "Span of Control and Initiative," 12.

[39] Ibid, 12. "Management theory, much like military theory holds that span of control is situational. In general, the harder the situation is to control, the narrower the viable spans of control. The easier the situation is to control, the wider the viable spans of control."

[40] U.S. Army, *Army Doctrine Publication 3.0*, 23.

additional sources of information, increased resources for mission execution, and direct communication with the commander.[41] Commanders should move towards embracing the potential benefits of broadened span of control while understanding the risks associated with it.

In a more recent opinion piece, John Brown posited that modern communication should set the conditions for greater flexibility and élan; however until recently, in much of the military's historical experience, the Army did not take advantage of these conditions.[42] As research will show in the next section, tactical employment and span of control during OIF and OEF has broadened in order to meet mission requirements effectively. Further, in OEF and OIF mission command enabled operational adaptability. Mission command manifested itself in leaders that understood the operational environment, built adaptive teams that anticipated transitions, and accepted risk to create opportunities. "Mission command also supports the requirement for greater decentralization both in organization design and in operational decision making."[43] Through mission command and improved communication capability across echelons, broadened spans of control and additional task organized maneuver units occurred as a response to some of the modularity limitations of the maneuver forces available within the brigade combat teams.

Determining the correct ratio for span of control is still quite speculative rather than factually reliant since cases for justifying an appropriate ratio are heavily dependent upon each unique situation for force employment. Nonetheless, there are a number of factors that influence span of control. An ARI report looked at a much wider range of characteristics that affect span of control than those found in *Field Manual 6.0: Mission Command.*[44] These characteristics consist

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[41] U.S. Army, *Army Doctrine Publication 3.0*, 2.

[42] John S. Brown, "Spans of Control," *ARMY*, August 2006, 78. Broad spans of control are associated with rigidity, drill and minimal maneuver, and narrow spans of control with flexibility, initiative, and responsiveness.

[43] Robert W. Cone, "Shaping the Army of 2020," *ARMY*, October 2011, 76.

[44] U.S. Army, *FM 6-0: Mission Command*, 153-156. This field manual discusses the impact of technology and communication on span of control considerations and the importance of span of control;

of an understanding of the required tasks to support the mission, organizational structure of the units, operational environment complexities, technology, characteristics of leaders and subordinates and their shared knowledge, as well as the influence of external organizations.[45] The most important factors from this study that thread throughout different arguments of this monograph are unit integrity, leadership, training, technology as an enabler, and the requirement for self-adaptive units of the proper size to meet the complexities of their operational environment. When applied correctly, these factors have the potential to create effective spans of control to meet mission requirements for decisive action in centralized or decentralized setting. These factors also provide ample support for testing on factor effectiveness. Unfortunately, there have been no detailed studies since these foundational ARI reports on application of proper spans of control. Future tests could incorporate these traits as part of a methodology for assessment on contemporary examples to determine the appropriate ratio of subordinate to commander. These traits might provide characteristics for comparison against historic data on OIF and OEF when the U.S. Army releases this information from controlled channels.

The situational dependency on span of control determination and examples on how span of control can broaden were themes covered numerous times throughout this section. Nevertheless, the task organization of two to five maneuver units per commander continues to manifest itself in current maneuver force structure at the lower levels of Army formations. Disputing the U.S. Army's failure to change without a preponderance of empirical evidence is difficult. Some of this is due to an added limitation in this monograph. Most span of control literature precedes Army modularity. Further research will confirm or deny recommendations

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however it does not go into the amount of detail on the factors influencing span of control that the ARI report discusses.

[45] U.S. Army Research Institute for the Behavioral and Social Sciences, "New Research on Span of Command and Control: Implications for Designing Army Organizations,"(Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 1998), 2, http:// www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA358571& Location=U2&doc= GetTR Doc.pdf (accessed 7 OCT 2011). Of note, METT-T now includes METT-TC with C accounting for civilian considerations.

made in this monograph. However, modern force structure examples will shed some light on what is likely. Past and current deployments in OIF and OEF are the archetypes for force employment and span of control, highlighting the limits of modularity and the creation of ad hoc organizations. These current examples rely more on the situational application of span of control, and provides an argument for a more permanent change in the force structure through a broadened span of control.

Modularity, OIF, OEF, and Historic Challenges

The last section discussed the theory, history, and application of span of control and argued for a more broadened span of control. The next section of the monograph addresses the background and effect of modularity and the ensuing change in force structure. With technological advances, and a professional self-adaptive force, changes in force structure have the potential to provide for more maneuver capability at the lower echelons to meet future unknown threats. Practical application provides a better test bed beyond theoretical discussions. Review of contemporary combat experiences in Afghanistan and Iraq as case studies via oral histories and analytical research provide a framework to contrast recent employment with historical numeric applications on span of control.

The contemporary modularity vignette will frame the current arguments on transformation and force structure. Contemporary examples in both Operation Iraqi Freedom and Operation Enduring Freedom further shed light on the argument for more broadened span of control within maneuver battalions through the addition of maneuver companies to their force structure. Finally as a contrasting example, an historic look at the Pentomic Divisions of the 1950s provides an example of the employment of maneuver formations that contained five maneuver companies that did not succeed from vision to implementation. This historic sketch will show how a new change in force structure avoids the pitfalls that befell the previous force structure change.

Modularity

Modularity is now an institutional component of Army force structure. As this contemporary vignette will show, the objectives behind modularity and the resulting effects are not a clean match. Though Army modularity provided a greater capability to meet existing demands, the transformation is not complete and further changes warrant discussion, testing, and application. Understanding the background arguments behind moving to a modular force further frames the importance of the OEF and OIF case studies. Unfortunately, the amount of available literature from unit after action reports is predominately for-official-use-only or still compartmented in classified channels. Therefore, this section relies heavily on limited available unclassified reports, oral histories, and practical examples of force structure employment in OIF and OEF.

The requirement to move to a modular force was not a recent phenomenon, but an extension of a process that began in 1990s focused on transforming the Army.[46] Douglas Macgregor's *Breaking the Phalanx* provided arguments for the creation of self-sustainable Army units at the brigade level.[47] Army Chief of Staff Gen. Eric Shinseki expanded upon Macgregor's ideas in November 2001 to transform the U.S. Army.[48] The intent behind transformation and the implementation of modularity was to create a force more deployable, agile, versatile, survivable, and sustainable than before.[49] A modular unit would need to sustain protracted operations in

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[46] Stuart E. Johnson, John E. Peters, Karin E. Kitchens, and Aaron Martin, "A Review of the Army's Modular Force Structure," (Santa Monica, CA: RAND Corporation, 2011), xi, http://www.rand.org/content/dam/rand/pubs/technical_reports/2011/RAND_TR927-1.pdf (accessed 31 OCT 2011). The assessment addressed the capability of the Army to execute its core missions; managing flexibility and versatility across the range of military operations; risk associated with the current modular force; and the required and planned end strength of the U.S. Army.

[47] Douglas A. Macgregor, *Breaking the Phalanx: A New Design for Landpower in the 21st Century* (Westport, CT: Praeger Publishers, 1997).

[48] David H. Ucko, *The New Counterinsurgency Era: Transforming the U.S. Military for Modern Wars* (Washington, D.C.: Georgetown University Press, 2009), 153.

[49] Johnson, Peters, Kitchens, and Martin, "A Review of the Army's Modular Force Structure," 9.

ongoing wars on widely differing terrain, under challenging circumstances and over a variety of adaptive adversaries. Finally, modularity would allow for increased efficiency, interchangeability through standardized brigades upon replacement of units, and increased numbers of combat formations available for deployment.[50] Studies on modularity and after action reports validated many of the expected improvements of the modular design. Nevertheless, as this section and the following case studies will address, there are still capability gaps that require further transformation to meet.

Implementing modularity was a response to transformation requirements in creating a more versatile, capable, deployable force. Unfortunately, modularity and the change in force structure transpired based off a belief that modular formations would mainly engage in major combat operations.[51] In reality, the requirements of stability operations and counterinsurgency work run counter to many of the major combat operations focused capabilities of the modular force. Wide geographic expanses and the requirement to own and hold land provided challenges to these formations. "Whereas transformation was geared towards achieving light footprints and swift victories, stability operations require the protracted deployment of a sufficiently sizeable ground force, one that is able to provide security and basic services pending transfer to local authorities."[52] Counterinsurgency operations further exacerbate the capability to apply the necessary boots on the ground required to carry out these types of missions. The OEF and OIF case studies further address this. In fairness to those involved in the modular discussion, stability

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[50] Johnson, Peters, Kitchens, and Martin, "A Review of the Army's Modular Force Structure, 9-11.

[51] Ucko, *The New Counterinsurgency Era*, 151.The U.S. military defines force structure as the numbers, size, and composition of the units that comprise U.S. defense forces. Along with how a force is financed, the manner in which it is structured—its size, its organization, and the distribution of skills—is central to its ability to conduct specific tasks and missions.

[52] Ibid, 56. Fundamentally, transformation and the modular force were predicated on striking targets, yet this is not the main function of a military force engaged in stability operations.

operations experiences in the 1990s framed a paradigm in which the operating environment was permissive. This tactical luxury did not reappear in OIF and OEF.[53]

Concerns from within and outside the U.S. Army on the capability of the modular force in OIF and OEF came soon after the first employment of these forces. The RAND Corporation recently completed a comparative study on the Army's modular force structure. The study took place in response to a Congressional request on a number of concerning factors on the modular force, specifically capability and risk associated with current Army forces.[54] RAND conducted numerous data calls and conducted interviews with maneuver commanders. Not surprisingly, after analyzing all the data available the study found that the modular force is superior to its predecessor. However, within the statistics collected there are some interesting data points that raise questions as to the capability of the current modular force.

	Heavy Brigade			Infantry Brigade		
Structure	Premodular (tank)	Premodular (mechanized)	Modular	Premodular (light infantry)	Premodular (airborne)	Modular
Total personnel	3,624	3,692	3,645	2,812	3,249	3,447
Combat personnel by skill (%)	43.1	48.8	37.8	63.9	62.3	50.4
Combat personnel by role (%)	31.6	41.9	32.6	45.6	56.3	36.4
Force-to-space ratio (50 km)	22.94	30.92	23.8	25.62	36.6	25.08
Population that a brigade can patrol, by force-to-population ratio						
3:1,000	382,333	515,333	396,667	427,000	610,000	418,000
7:1,000	163,857	220,857	170,000	183,000	261,429	179,143

Figure 2: Comparative Personnel Data and Force-to-Space and Force-to-Population Ratios[55]

[53] Ucko, *The New Counterinsurgency Era*, 151, 50.

[54] Johnson, Peters, Kitchens, and Martin, "A Review of the Army's Modular Force Structure," xi.

[55] Ibid," 40. Information presented in this figure was adapted from figure 3.7 in the RAND Study.

Figure 2, taken from the RAND study provides a number of percentages on pre and post-modular formation based on the structure. Of note, is the percentage of combat personnel by skill identifier (e.g. military occupational specialty (MOS)) and the role, representing the percentage in combat formations (e.g. rifle squads), who are available to conduct operations. The modular heavy BCT is superior to premodular tank units in terms of combat personnel by role (percentage), but significantly inferior to premodular mechanized units in terms of boots on the ground combat capability. The modular infantry BCT is inferior to both the premodular infantry types in terms of combat troops."[56] In many cases, the modular concept leverages larger staffs, weapons capability, additional vehicles, and technology as an offset to force ratios to meet the current and future challenges of offensive, defensive, and security operations.[57] However, as this force ratio shows and later case studies on OIF and OEF will elaborate on, there is a lack of combat forces available organically when compared to the premodular force. Effectively there is now more skull and less tooth. In addition, when one looks at the bottom of the chart at the force-to-population ratio that a brigade can patrol, the modular infantry brigade combat team has less capability than its pre-modular formations. This is due in part to the loss of a maneuver battalion that existed in pre-modular brigades. The heavy BCTs fair slightly better than pre-modular formations. However, heavy BCT companies do not contain dismounted forces such as those in Stryker brigade combat teams, posing challenges for any patrolling operations requiring dismounts. This limitation is extremely challenging for heavy units involved in the dismounted patrolling and land owning responsibilities for stability and counterinsurgency operations.

[56] Johnson, Peters, Kitchens, and Martin, "A Review of the Army's Modular Force Structure," 23.

[57] Ibid, 22-25. Tables 3.7, 3.8, and 3.9 in the RAND study provides examples in differences showing a significant increase in the number of staff personnel, individual, crew-served, mounted weapon systems, and vehicles available in the modular force compared to their premodular formations. Large staffs, improved technology, and greater weapon capability or supposed offsets to troop strength.

Addressing the gaps and combat power available within modular formations, many units have added additional maneuver companies to battalion formations to increase combat force levels. Interestingly, the RAND study did not address the striking changes in force ratios for combat personnel by skill and role between the modular formation and its predecessors. Rather the report discussed the loss of a maneuver battalion in both the heavy and light infantry BCTs and that BCT commanders interviewed in this study did not see the loss of the third maneuver battalion as a risk to their ability to meet their mission requirements.[58]

The study conducted by RAND was not the first to address concerns over the capability of the modular force. In a 2004 summer study on stability operations, the Defense Science Board warned that the modular force does not ensure an effective stabilization capability.[59] The Institute for Defense Analyses (IDA) looked at the modular force capability and raised concerns over its ability to conduct unified land operations. At the time of the study, the Army planned to have 161 maneuver battalions with 541 maneuver companies by the end of 2011. This was a 30% reduction in the number of battalions from the premodular force and a 22% reduction in the number of companies.[60] The decrease in ground force capability was of concern to some analysts in the IDA. Nevertheless, the Army was critical of this report, countering that more maneuver units exist when including the reconnaissance, surveillance, and target acquisition squadrons in the BCTs with a variety of technical capabilities and further enhancements. However, as other analysts argued, the trade-off between reconnaissance troops and improved situational awareness with less

[58] Johnson, Peters, Kitchens, and Martin, "A Review of the Army's Modular Force Structure," xii,40-41. "Former BCT commanders with whom we (*RAND)* spoke would surely prefer a third maneuver battalion, but none believed that the two-battalion organization has led to greater risk in current operations. There were no reports of a BCT being forced to cede ground to an enemy attack or being unable to assist a heavily engaged subordinate unit because of the lack of the third maneuver battalion."

[59] Ucko, *The New Counterinsurgency Era*, 154. The Defense Science Board also stated that modularity provides for the aggregation and deployment of current capabilities; but if the military services do not have, in total, enough capabilities, or the right capabilities, they will not be able to meet stability and reconstruction requirements.

[60] Congressional Research Service, "U.S. Army's Modular Redesign Issues for Congress," (MAY 2006), 3, http://www.au.af.mil/ au/awc/awcgate/crs/rl32476.pdf (accessed 29 NOV 2011).

armor and infantry companies does not ease the stress on the soldier.[61] Of note, the Army went with the two-maneuver battalion vice three-maneuver battalion concept to add combat power for rotations, the recognition of cost constraints, and a need for continued future combat system development.[62]

There are a number of additional arguments available on the topic of modularity, to include its impact on span of control. The intent of modularity was to provide more combat formations overseas, not fewer with a more streamlined C2 architecture. As this monograph addressed earlier, span of control is situational but the support for widening span of control depended upon many enablers from technology to firepower and the staff size of commands that RAND and Army studies trumpeted. In reality, modularity appears "to sacrifice foxhole strength in combat arms to build underused, redundant headquarters structures, which is the opposite of what the Army intended" when they started the process of modular transformation.[63] In addition, the modular force lacks the combat power to exploit the initiative and pursue operations in a major combat operation and the flexibility by limited combat power to handle the decentralized requirements of stability or counterinsurgency operations.

Modularity was a means to respond quickly to aggression, and fight and control forces on future battles with a major combat operation and support force structure focus. However, the uncertainty of the battlefield increased as "modern battle changed from being centralized with the Army general exercising initiative to a decentralized fight requiring initiative from all leaders."[64] The span of control also widened with the decentralized battle out of necessity, but this failed to reflect in any force structure discussions for future changes outside of the addition of a maneuver

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[61] Stephen L. Melton, "Why Small Brigade Combat Teams Undermine Modularity," in *Military Review* (JUL-AUG 2005), 58, 63.

[62] Congressional Research Service, "U.S. Army's Modular Redesign Issues for Congress," 4.

[63] Melton, "Why Small Brigade Combat Teams Undermine Modularity," 63.

[64] Sandoy, "Span of Control and Initiative," 16.

battalion. Many examples allow for more broadened spans of control within the modular force to include the advancement of technology and C4ISR structure.[65] "Despite the revolution in long range communication and situational awareness, the U.S. Army has chosen in its modular Army reconfiguration to decrease the span of control in maneuver brigade units."[66]

The following sections will counter U.S. Army modularity decisions that allowed for more narrow spans of control and focus on major combat operations, instead highlighting the decentralized employment of forces as an economy of force, task organization of additional maneuver units in the BCTs, and a widened span of control to meet operational demands of the battlefield. As another author posited, today's force structure changes are not necessarily wrong but merely not enough to meet the operational demands of the current environment.[67]

The RAND study, Congressional Research Service report, and the U.S. Army's own independent research provides a counter-argument to the thesis presented in this monograph. In addressing the amount of task organization that occurred in modularity to create additional maneuver battalions in the BCTs, RAND stressed that the "extent of task organization should not be viewed as a symptom of faulty organizational design" within the modular system and merely a response to METT-TC and a commander's attempt at creative problem solving.[68] Unfortunately, METT-TC considerations during transformation planning in the late 1990s reduced the maneuver capability within the BCTs. The BCTs would use less combat power more effectively through sensors that are more capable and improved networked mission command.

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[65] U.S. Army Research Institute for the Behavioral and Social Sciences, "Knowledge Networks For Future Force Training: Illustration of Searching, Retrieval, and Communication Concepts," (Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 2004), 4, http:// www.hqda.army.mil/ari/pdf/RR_1823.pdf (accessed 7 OCT 2011).

[66] McGrath, *Crossing the Line of Departure*, 238. The U.S. Army decreased the span of control in the modular formation, while at the same time simplifying the span by adopting the formerly temporary structure of combined arms forces at the brigade and battalion levels.

[67] Kenneth Burgess, "Transformation and the Irregular Gap," in *Military Review* (NOV-DEC 2009), 28.

[68] Johnson, Peters, Kitchens, and Martin, "A Review of the Army's Modular Force Structure," 52.

The requirement for combat power outweighs the planned gains of additional reconnaissance troops, improved situational awareness, larger staffs, and technology addressed in the RAND and CRS report on modularity. Furthermore, these two studies did not address the combat power requirements for stability and counterinsurgency operations as well as offensive operations directed against a hybrid threat. Thus, the need to adopt a broadened span of control and adding additional maneuver companies to BCT battalions still holds its validity. Expanding the number of maneuver companies could act as a catalyst to flatten the Army's organizational structure, enable subordinate leaders, encourage lateral communications, and provide more tooth and less skull.[69] Furthermore, the following case studies will show that the amount of task organization that occurred from METT-TC considerations was a response to a dire need for more combat formations at the lowest level possible. Army and subordinate units created compensating tactics, techniques, and procedures as a response to limits of organic maneuver force capability.[70]

OIF

The previous section discussed the background behind and implementation effects of modularity. The RAND study provided a valid argument on aspects of modularity, its implementation, and the capability of these formations. Other studies and articles on modularity disputed several of the capabilities of the modular force and provided counterpoints to some of the common problems facing the modular force. This section builds upon the previous vignette providing contemporary examples on the application of the modular force through the personal experiences and oral histories of Soldiers that deployed with these modular formations. Though only a limited representation of the hundreds of units that deployed to support Operation Iraqi Freedom (OIF), their experiences provide a unique and well-placed insight into the application of

[69] Burgess, "Transformation and the Irregular Gap," 33.

[70] Johnson, Peters, Kitchens, and Martin, "A Review of the Army's Modular Force Structure," xii.

the modular concept, span of control, and the broad task organization that occurred to meet the mission requirements for additional maneuver capability of this modular force.

Operation Iraqi Freedom offers an interesting case study on the widening of spans of control and the employment of forces to meet operational demands. In order to provide contrasting information to the RAND study this section and the next focuses on oral histories predominantly from company grade and field grade officers. Of note, are the challenges that these leaders faced to address their mission requirements within the existing force structure. In many cases, they were able to mitigate the risks alluded to in the RAND study, but severely struggled against many odds to accomplish their missions. Their experiences were antithetical to the apparent ease that BCT Commanders referred to in the risk that their units faced.[71]

One interesting example of force structure application and wider spans of control occurred during the surge of forces in Baghdad from 2007-2008 as part of OIF 7–9. Though doctrinally a modular division task organizes its forces based on METT-TC considerations, they usually do not command and control more than four maneuver BCTs in planning considerations.[72] Nevertheless, based on the influx of forces as part of the surge, Multi-National Division Baghdad, controlled by the 4th Infantry Division (Mechanized), led five maneuver BCTs. Quickly, it took on two additional maneuver BCTs, pushing total maneuver forces to seven BCTs as it gained two additional provinces within the greater Baghdad area.[73]

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[71] Johnson, Peters, Kitchens, and Martin, "A Review of the Army's Modular Force Structure," xii, 40-41. "Former BCT commanders with whom we (*RAND)* spoke would surely prefer a third maneuver battalion, but none believed that the two-battalion organization has led to greater risk in current operations. There were no reports of a BCT being forced to cede ground to an enemy attack or being unable to assist a heavily engaged subordinate unit because of the lack of the third maneuver battalion." However, this is a weak analogy for a small n problem comparing operations in OEF and OIF to the potential risks associated with major combat operations.

[72] U.S. Army, *Field Manual-Interim 3-91 Division Operations* (Washington, DC: Headquarters, Department of the Army, 2006), 79.

[73] U.S. Army officer, information collected on 9 Dec 2011 at Fort Leavenworth, KS. The Army officer served in the G3 section of the 4th Infantry Division Headquarters during OIF 07–09.

Additionally, Multi-National Corps Iraq controlled five divisions at the time.[74] All of these units were land owning and the divisions and corps effectively widened their span of control to execute operations.

Many can argue that command and control over more than four major maneuver formations was a perfect example of task organization to meet operational requirements rather than representing a functional need within the Army to have more maneuver forces. Yet, at the same time in Multi-National Division Central, a Fires Brigade became a land owning unit and conducted full spectrum operations beyond its warfighting function of fire support.[75] Though this is one example, there are other examples in which non-maneuver units conducted maneuver operations and carried out a land-owning role that modularity did not account for in its force structure design, because the supported units were out of maneuver companies to bring to bear against their missions.

At lower echelons, spans of control widened and the operational environment forced units to task organize to meet mission requirements. Understanding the operational environment ahead of deployment, a combined arms battalion deployed to Iraq in 2007 with its mechanized infantry and two armor companies. It also deployed with an engineer company as an additional maneuver company for its battalion. Once on the ground, this battalion went to a different BCT and two of its mechanized companies were further task organized out and replaced with one light infantry company and one mechanized infantry company.[76] Further, one of the companies detached out and with a light infantry company from another unit, fell under a land owning field

[74] U.S. Army officer, information collected on 9 Dec 2011 at Fort Leavenworth, KS. The Army officer served in the G3 section of the 4th Infantry Division Headquarters during OIF 07–09.

[75] Ibid.

[76] U.S. Army officer, information collected on 14 Dec 2011 at Fort Leavenworth, KS. The Army officer served as a mechanized infantry company commander in Rustamiyah from 2007-2008.

artillery unit in Rustamiyah.[77] This is typical upon most units moving into country. A commander assesses the situation and then task organizes as appropriate. However, this same situation occurred in many other units, highlighting the lack of maneuver capability in the BCTs.

The field artillery unit that these two infantry companies attached to had only two batteries to work with in its doctrinal task organization. Thus, the two attached infantry companies occupied patrol bases and combat outposts. Unfortunately, the wide expanse of land severely affected these maneuver companies' ability to conduct operations. One company was responsible for five patrol bases and the other company controlled four.[78] They also were responsible for their own logistical and fixed site security as well as quick reaction force and patrolling responsibilities. To conduct a company sized decisive engagement combat power came from these nine patrol bases. Building combat power for a sustainable period was a severe challenge and forced commanders to take large risks due to thinly manned patrol bases. Enemy forces at three different times conducted vehicle borne improvised explosive device attacks against these targets of opportunity, in one case successfully destroying a critical bridge in the area. Finally, this ad hoc force also received its tasking from a field artillery headquarters lacking sufficient staffing and management experience required to handle and support units conducting full spectrum missions.[79]

Another example of non-doctrinal unit employment occurred during the surge to support the Battle for Sadr City. Doctrinally, forward support companies provide the logistic and sustainment capabilities to the battalions of a BCT. However, in the case of the fight for Sadr City, which lasted six weeks, a forward support company assigned to an armored battalion had to

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[77] U.S. Army officer, information collected on 14 Dec 2011 at Fort Leavenworth, KS. The Army officer served as a mechanized infantry company commander in Rustamiyah from 2007-2008.

[78] Ibid.

[79] Ibid.

accomplish non-doctrinal missions that strained its organic capabilities.[80] Joint security stations and combat outpost requirements tied up a great deal of the maneuver companies for the supported BCT. [81] Since the forward support company had Bradley fighting vehicles and M1 Abrams tanks within its organic formation, in addition to its logistic role for the battalion, the forward support company became and offset to the battalion's lack of maneuver capability. To mitigate the manpower shortages of the battalion, the forward support company became a land owning unit over a combat outpost (fixed site security) and provided area security five kilometers from the combat outpost to include patrolling duties.[82] The forward support company accomplished its mission at considerable risk givens its limitation to provide both logistical capabilities and non-doctrinal requirements as a maneuver force simultaneously.

Operation Iraqi Freedom 6–8 provided an additional example of widened spans of control and force structure challenges for a unit. An armored reconnaissance squadron deployed with the 1st Cavalry Division.[83] These units like the reconnaissance, surveillance, and target acquisition squadrons within the BCTs were a key piece to the goals of modularity, providing additional situational awareness to the BCT commander. However, land owning and dismounted operations were not a tenet of these reconnaissance units. The squadron detached out from the 1st Cavalry Division and supported the 25th Infantry Division from Aug 2006 to Dec 2007.[84]

The squadron commander controlled three maneuver troops, a headquarters troop, and a forward support company as part of its doctrinal TOE. In addition, his span of control widened, as

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[80] David E. Johnson, M. Wade Markel, and Brian Shannon, "The 2008 Battle of Sadr City," (Santa Monica, CA: RAND Corporation, 2011),10-11, http://www.rand.org/content/dam/rand/pubs/occasional_papers/2011/RAND_OP335.pdf (accessed 10 FEB 2012).

[81] U.S. Army officer, information collected on 12 Jan 2012 at Fort Leavenworth, KS. The Army officer served in a Brigade Support Battalion company commander in MND-B, Iraq from 2007-2009.

[82] Ibid.

[83] U.S. Army officer, information collected on 30 Dec 2011 at Fort Leavenworth, KS. The Army officer served as a troop commander in MND-N from 2006-2007.

[84] Ibid.

he was also responsible for the training and direction of military transition teams and an Iraqi Army battalion.[85] One of the challenges facing his troops was the extent of the area of operations in Muqdadiyah, an area consisting of almost 4,500 square kilometers. Forces organized for mounted operations conducted fixed site security operations at a forward operating base, a combat outpost, and later at joint security stations.[86] Unfortunately, the maneuver troops of the squadron only held 82 personnel meant for mounted operations and did not have the additional dismounted forces such as those within a Stryker troop/company (almost 182 personnel) to conduct the full range of operations expected of them. Pressure did not abate until 225 private security contractors came in to handle fixed site security; releasing combat power for other operations.[87] The operational requirements strained the ability of a modular force and put unnecessary burdens on forces that were not fulfilling their doctrinal roles.

Of note, all of the officers that provided oral histories for this portion of the monograph agreed that an additional line company within the maneuver battalions of BCTs could provide combat power required for their mission requirements, while not overburdening the abilities of leaders to command and control their forces. Furthermore, there is a common theme among all of the examples above. Commanders accomplished more with less combat power.

These oral histories illustrate the opportunity cost that comes from wide use of ad hoc organizations across formations. These ad hoc task organizations, though successful in meeting mission requirements, were detrimental to unit continuity since many of the forces were not organic to the next echelon of command. Upon redeployment, units went back to their parent headquarters to fulfill doctrinal requirements that many had not practiced while task organized to other units. Finally, though this section only provided one example of the use of contractors, there

[85] U.S. Army officer, information collected on 30 Dec 2011 at Fort Leavenworth, KS. The Army officer served as a troop commander in MND-N from 2006-2007.

[86] Ibid.

[87] Ibid.

are other cases in which contractors conducted missions, such as fixed site security to free combat power for maneuver operations.[88]

Trumpeting the ability to widen spans of control, commanders successfully led more maneuver formations at the battalion, brigade, and division levels than force structure originally allowed for. The ability to widen spans of control and lead more than five maneuver formations was a success, which supports the thesis of this monograph while at the same time providing a counterpoint to some of the points raised in the RAND study.

OEF

The challenges presented in the OIF case study were also prevalent for forces deployed in support of Operation Enduring Freedom (OEF). Units faced economy of force missions over even greater distances with environmental challenges unique to Afghanistan with less available troops than the Iraqi theater for the majority of the operation. OEF further strained the abilities of the modular force to meet mission requirements. Once again, due to the limited nature of available unclassified reports, oral histories provide compelling examples of the challenges units faced with their force structure. The solutions they employed to include widened spans of control to meet mission requirements provide another contrast to the RAND findings in the modularity section.

Prior to modularity, Afghanistan's wide expanses limited the ability of maneuver forces to operate across it. Many units in early 2003 operated directly from Bagram Airbase and conducted missions throughout the country as required with the majority of their conventional efforts focused in and around Bagram and throughout Kapisa Province.[89] When land-owning

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[88] Congressional Research Service, "Private Security Contractors in Iraq: Background, Legal Status, and Other Issues," AUG 2008, http://www.fas.org/sgp/crs/natsec/RL32419.pdf (accessed 10 FEB 2012).

[89] U.S. Army officer, information collected on 13 Jan 2012 at Fort Leavenworth, KS. The Army officer served in Afghanistan as an anti-tank platoon leader from 2003-2004 in RC East and as a company commander from 2006-2007 in RC East.

requirements appeared as the Regional Commands stood up throughout the country, units conducted economy of force missions that put platoons out in areas that would normally fall under an entire battalion or brigade and widened a commander's span of control over entire Provinces for decentralized operations.[90] Thus, from 2003-2004 many units that went into sector focused on securing and pushing out in limited operations from Provisional centers effectively making these their centers of gravity. This resulted in many areas of assumed risk with two-thirds of many Provinces not patrolled.[91]

The economy of force missions continued under modularity even as forces increased in number and units pushed out in other areas of Afghanistan to accomplish mission requirements. As units occupied more land and conducted maneuver operations, additional requirements such as security assistance training became responsibilities for commanders. Spans of control widened, just as in Iraq to command and control multiple subordinate elements. In one case, a brigade commander had 13 battalion commanders reporting to him to include maneuver forces, embedded training teams, and provincial reconstruction teams (civil affairs).[92] The Brigade staffs were large enough (twice the size of pre-modular formations) to enable the commanders to widen their spans of control.[93] However, it is difficult to control this number of units, rather one "commands it and does their best to process different feeds of information" coming in from subordinates.[94] Commanders took novel approaches to meet their mission requirements, widening spans of

[90] U.S. Army officer, information collected on 13 Jan 2012 at Fort Leavenworth, KS. The Army officer served in Afghanistan as an anti-tank platoon leader from 2003-2004 in RC East and as a company commander from 2006-2007 in RC East.

[91] Ibid.

[92] U.S. Army officer, information collected on 11 Jan 2012 at Fort Leavenworth, KS. The Army officer served in Afghanistan as a battalion commander from 2008-2009 in RC East, Afghanistan.

[93] Ibid.

[94] Ibid.

control, adding maneuver capability, augmenting force capability, and employing organic units in non-doctrinal ways.

One light infantry battalion in Regional Command East (RC East) immediately realized it faced severe manpower limitations to conduct effective maneuver operations. To handle the size of the area of operations for the battalion, an increased threat from the Taliban, and landowning operations they received an additional maneuver company, a maneuver company provided by the Polish forces, and finally local national security for fixed site requirements.[95] This battalion commander effectively controlled six maneuver units (four were organic) during operations. There was also an Afghan Kandak (battalion) with advisers operating in this commander's area of operations. Interestingly, the S3 and later executive officer of the unit felt that they could have employed an additional maneuver company (effectively giving the battalion seven maneuver companies) or even an entire battalion of extra troops to handle the mission requirement for an area of operations as large as theirs.[96] The commander could have handled the span of control. Further, he felt that stability and counterinsurgency operations actually support widened spans of control and that a commander's capabilities to control larger maneuver formations increase when he is not conducting major combat operations requiring constant fire and maneuver.[97]

At the battalion headquarters, there were also challenges to the modular force, not necessarily from the number of units underneath a commander, but from the impact of terrain upon decision-making. Commanders had to think in terms of the missions subordinate elements conducted be they U.S. coalition, or host-nation and how to respond when a number of these units

[95] U.S. Army officer, information collected on 13 Dec 2011 at Fort Leavenworth, KS. The Army officer, served in Afghanistan as an S3 and an executive officer from 2008-2009 in RC East.

[96] Ibid.

[97] Ibid.

were in contact with the enemy.[98] Landowning requirements and the vast distances to cover within areas of operation challenged the organic maneuver elements to accomplish doctrinal missions with existing force structure and as in Iraq, non-maneuver units received tasking as force structure stopgaps, conducting maneuver and landowning operations.[99]

Within RC East in 2008-2009, at least two brigades faced severe personnel shortages to cover wide areas of operation. To meet mission requirements in one BCT, the separate troops battalions, field artillery battalion, and reconnaissance and surveillance squadron took over land owning responsibilities. In addition, the BCT hired local nationals to augment fixed site security responsibilities.[100]

Separate troops battalions, field artillery battalions, and reconnaissance, surveillance, and target acquisition squadrons do not conduct landowning operations and dismounted patrols as part of their doctrinal requirements. The separate troops battalion augments the brigade combat team with engineer, military intelligence, signal, military police, and CBRNE enablers. The field artillery battalion provides fire support, and the reconnaissance squadron provides mounted reconnaissance and surveillance capability. However, they do not have the required manpower or doctrinal mission set for landowning operations.[101] Further, the supporting staffs and leadership of the battalions are not composed of the prerequisite subject matter expertise to support subordinate units conducting missions throughout the area of operations, nor are the companies and troops doctrinally capable to support the ad hoc employment.[102] These units stretched

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[98] U.S. Army officer, information collected on 11 Jan 2012 at Fort Leavenworth, KS. The Army officer served in Afghanistan as a battalion commander from 2008-2009 in RC East, Afghanistan..

[99] Ibid.

[100] U.S. Army officer, information collected on 13 Dec 2011 at Fort Leavenworth, KS. The Army officer, served in Afghanistan as an S3 and an executive officer from 2008-2009 in RC East.

[101] Ibid.

[102] U.S. Army officer, information collected on 24 Jan 2012 at Fort Leavenworth, KS via ako email. The Army officer, served in Afghanistan as an engineer company commander in RC East from 2009-2010.

themselves to the limits of their capabilities and in many cases, additional maneuver companies came in to augment these battalions straining the combat capability of their original parent organization.[103]

In regards to span of control and maneuver formations, all the oral histories once again pointed to widened spans of control and additional line units added to maneuver battalions as a response to the large areas of operations and mission requirements for decentralized operations in Afghanistan. Though the large areas of operations limited the ability of a commander to control subordinates, one can still effectively command these elements through clear guidance, enabled by technology, training, leadership, and self-adaptive subordinates. As one Soldier stated, there is an "upfront cost for a commander to prepare a subordinate unit, but a self-adaptive element can then run on its own."[104] These oral histories were also critical at the level of ad hoc task organization that leaders employed to meet mission requirements. One commander made it clear additional combat power (more tooth) for a maneuver battalion is possible if higher echelon command and control nodes pay the bill for force structure (less skull) required at the lower echelon.[105] Thus, larger maneuver formations and widened spans of control are possible as they are manageable.

Both the OIF and OEF case studies highlighted a number of the challenges facing modular forces and how the units within these formations used novel approaches to meet operational challenges. Modularity was ill prepared for the decentralized land owning and patrolling requirements of stability and counterinsurgency operations. One would assume that as a response to these challenges, adding more organic line companies to the maneuver battalions of

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[103] U.S. Army officer, information collected on 24 Jan 2012 at Fort Leavenworth, KS via ako email. The Army officer, served in Afghanistan as an engineer company commander in RC East from 2009-2010.

[104] Ibid.

[105] U.S. Army officer, information collected on 11 Jan 2012 at Fort Leavenworth, KS. The Army officer served in Afghanistan as a battalion commander from 2008-2009 in RC East.

BCTs is an appropriate solution. As this monograph argued thus far, unit integrity, leadership, training, technology, and self-adaptive units support this stance. Widened spans of control and self-adaptive units allow for it. Uncertainty in future engagements demands it. Finally, organic units training together prior to deployment work more effectively upon redeployment removing the necessity to task organize ad hoc forces across numerous formations. It also ensures that resource allocation greater supports tooth vice increased skull.

Historic Challenges

The previous contemporary vignette on modularity and case studies on OIF and OEF provided examples on modular force employment and the inherent challenges that the Iraq and Afghan theaters provided for these formations. Commanders at all levels task organized their forces and added further combat power to their formations at the battalion, brigade, and division level. Span of control widened and task organization provided additional boots on the ground for missions to fill the gaps in existing force structure. As these examples demonstrated, current force structure and modularity did not take into account the additional requirements upon maneuver formations to include land owning and operations over such vast distances to conduct the wide range of mission sets to include counterinsurgency operations. Thus, having additional line units within maneuver battalions should be a sustainable response by the U.S. Army. However, that was not the case and is not in the plans for future force structure.

Modular and premodular formations centered on battalions with three to four maneuver units. Interestingly, this force structure was a central aspect of almost every formation following World War I regardless of the threat opposing the U.S. Army. However, this next section provides a historic sketch of a past increase in the number of line units within maneuver formations. Further, it will argue that some of the problems with these formations from vision to implementation would cloud future discussions on the addition of man and widened spans of control within the maneuver formations.

Following the Korean War, the U.S. Army experimented with a new divisional construct that provided a formation that contained additional maneuver capability. The U.S. Army attempted to visualize and apply force against a battlefield that covered an area thousands of square miles in extent. There was a wider dispersion of formations to minimize the effect of an enemy's tactical atomic weapons. At the same time, this force would be capable of a swift concentration of combat power providing an overwhelming assault force that fully exploited friendly fire power.[106] The sweeping reorganization to meet the requirements of the atomic battlefield became the Pentomic Division.

The Pentomic Division, officially known as the Reorganization of the Current Infantry, went through frequent changes from its conception in 1954 through its final TOE in 1960. Focused mainly on improving the survivability of the infantryman in the atomic fight, the Pentomic Division structurally eliminated the regiment and battalion, replacing both in the airborne and infantry divisions with five self-sustained "battle groups." These battle groups were larger than previous battalion formations, smaller than a regiment, and commanded by a colonel and later a brigadier general.[107] The self-contained battle groups consisted of four large rifle companies (approx. 243 personnel each), a mortar battery, and headquarters and service company. The armor and engineer battalions within the infantry division contained five line companies that could augment each one of the five battle groups, effectively creating a potential span of control for one battle group commander over eight companies.[108] In 1956, the Pentomic Division added an additional infantry company to the battalions in the battle group and decreased

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[106] John Cushman, "Pentomic Infantry Division in Combat," *Military Review*, January 1958, 30.

[107] John McGrath, *The Brigade: A History Its Organization and Employment in the US Army* (Fort Leavenworth, KS: Combat Studies Institute Press US Army Combined Arms Center, 2004), 59.

[108] Cushman, "Pentomic Infantry Division in Combat," 20-21.

the number of personnel in these companies.[109] Figure 3 provides a structural example of a Pentomic Infantry Division.

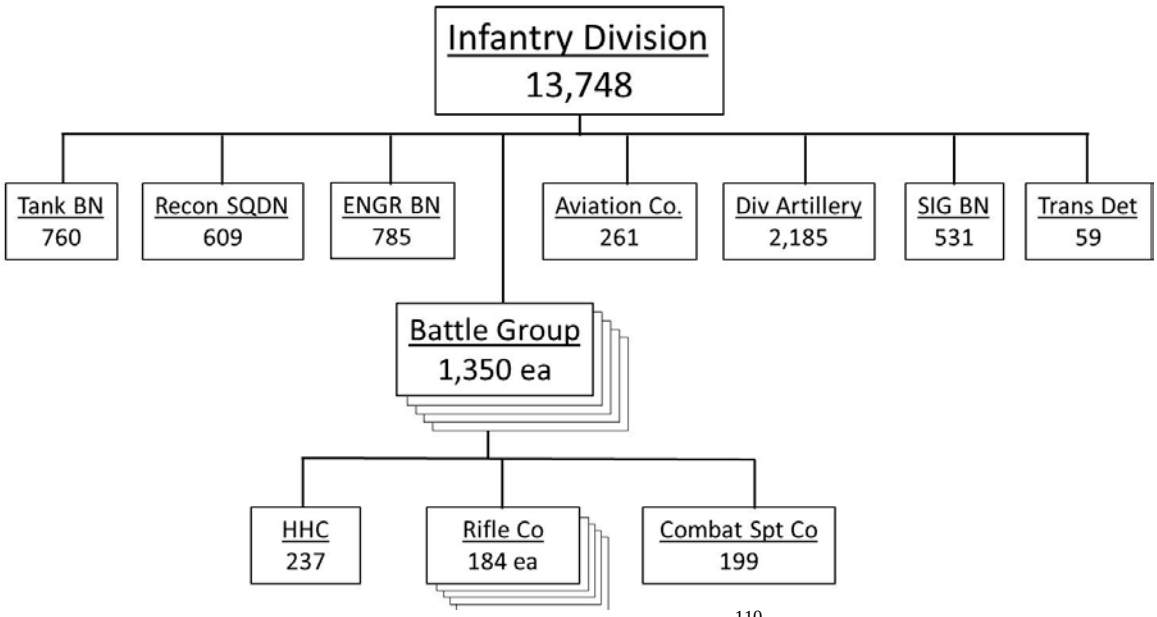

Figure 3: The Pentomic Infantry Division as of February 1, 1960[110]

The Pentomic Division never made it beyond the test and transition standpoint. Though carried out effectively by the units implementing the new force structure, concerns about the widespread implementation of the Pentomic Division across the U.S. Army arose almost immediately upon its inception. Lacking clear doctrine for battlefield employment, the Pentomic Division was a hastily conceived initiative in direct response to new technology (atomic weaponry).[111] Validation of the division design did not become operational nor was there a war to

[109] John Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades* (Washington, DC: United States Army Center of Military History, 1998), 274-278.

[110] Ibid, 283. Information in the task organization in Figure 3 is an adaptation from pertinent portions of a much larger table on page 283.

[111] *Sixty Years of Reorganizing for Combat: A Historical Trend Analysis* (Fort Leavenworth, KS: Combat Studies Institute Press US Army Combined Arms Center, 1999), 63. http://webcache.googleusercontent.com/search?q=cache:XDP_7AEfMjEJ:www.cgsc.edu/carl/download/csipubs/sixty.pdf+Sixty+Years+of+Reorganizing+for+Combat:+A+Historical+Trend+Analysis%E2%80%9D&cd=1&hl=en&ct=clnk&gl=us (accessed 9 OCT 2011).

test its capabilities.[112] The battle group structures also fell outside the traditional organizational norms of the U.S. Army.[113] Removal of battalions, regiments, and the smaller headquarters staffs at the battle group and division level strained the span of control for the battle group commander. "The command structure flattened from captain to colonel without any intermediate levels of command in between." Further, advances in communication technology did not compensate for the increased span of control for a division commander controlling vast distances of space.[114] Even if the Pentomic Division could discharge its primary function to operate on a nuclear battlefield, "it would not have been able to function on the lower ends of the spectrum of conflict, primarily against insurgencies."[115] Finally, the Eisenhower administration did not develop and fund airlift, communication, and artillery capabilities to put viable Pentomic Divisions into the field.[116]

The Pentomic Division provided further advances to future formations, technology and weapon systems, but it was not until the mid-1980s J series (TOE) under the Army of Excellence that a maneuver battalion would contain more than four maneuver units.[117] Span of control concerns did not manifest at the size of this formation; however, the killing strike against the J series TOE as well as the heavy battalions under the Division 86 construct in the Army of Excellence was due to personnel shortfalls and cost constraints. TRADOC estimated that it would require 836,000 soldiers to fill the ranks, but Congress only authorized 780,000 for the near

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[112] *Sixty Years of Reorganizing for Combat*, 20.

[113] Wilson, *Maneuver and Firepower*, 286.

[114] McGrath, *The Brigade: A History*, 61.

[115] *Sixty Years of Reorganizing for Combat*, 20.

[116] Ibid, 21.

[117] Rottman, *Inside the U.S. Army Today*, 23. The Mech. Infantry Battalions under the J Series TOE of a Heavy Division had four rifle companies, an anti-armor company, and a headquarters company. Battalion Commanders effectively controlled five organic maneuver companies.

future.[118] Ultimately, the high cost for reorganization under the Army of Excellence was too expensive.[119] Further, all the Armed services were competing for a cut of the modernization budget.

There is no empirical evidence that the Pentomic Division or Mechanized Infantry Battalions in the Army of Excellence unduly influenced a decision on the part of the U.S. Army to hold future formations within the maneuver battalions to three or four maneuver companies. Nevertheless, it is possible to assume that the span of control challenges within the Pentomic Divisions and the reorganization costs for the Army of Excellence played in the minds of senior military planners on future force discussions. One might further surmise that spans of control would more likely narrow in future combat formations, because of the number of constraints identified in the Pentomic Divisions. For the most part, up until modularity this appeared the case. Yet, the task organization of additional maneuver forces and widened spans of control to meet the requirements of the decentralized battlefields in OIF and OEF stand in contrast against this. The utility of additional maneuver units for current and future battles can break the mold of the three to four line companies per maneuver battalion concept. Additional research and application of force structure changes can confirm or deny these historic and contemporary arguments.

Conclusion

This monograph addressed the current challenges to force structure changes, provided the history behind span of control and modularity, and finally provided historic and contemporary examples of increased line units beyond four companies within the maneuver battalions. As the Army grows smaller, it will still need to meet its doctrinal demands and operational requirements. To maintain warfighting capability, the evidence presented in this monograph supports a change in force structure through the addition of line companies within maneuver battalions to meet

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[118] *Sixty Years of Reorganizing for Combat*, 42.

[119] *Wilson, Maneuver and Firepower*, 403.

current and future hybrid threats. There are valid concerns in adding maneuver units to BCTs. Span of control is a challenge for widely dispersed units, especially for non- TOE units that have an infrequency of contact between leaders and subordinates.[120] In addition, units will need to train with any new force structure changes and subordinates will need to adapt to widened spans of control.

When the U.S. Army rolled out the BCTs under modularity the strategic context behind this decision held influences from the 1990s and past deployments. Unfortunately, fiscal constraints and research and development programs also influenced the strategic context in the implementation of the modular force. Operational requirements and mission needs should be a truer driver for appropriate force structure. The Army learned of the importance of stability operations and should change its force structure to conduct decisive action in the future, improving the execution of combined arms maneuver and wide area security. Adding an additional line company in the maneuver battalions goes a long way toward consolidating and institutionalizing the Army's ability to conduct operations across the spectrum of conflict. This additional maneuver capability further ensures that the other non-maneuver formations in the BCT can focus on their doctrinal mission requirements rather than being task organized out as maneuver formations, as highlighted in the case studies of OIF and OEF. Doing so will increase the BCT's capability to meet future threats and operational requirements while not diluting its organic capabilities.

There are currently technological enablers in place to advance the recommendation of additional maneuver companies. "The vastly increased use of new command, control, communications, computers, and intelligence (C4I) systems in OIF is one of many successes for

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[120] U.S. Army Research Institute for the Behavioral and Social Sciences, "Vertical Teams in the Objective Force: Insights for Training and Leader Development," (Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 2002), 6, http://www.hqda.army.mil/ari/pdf/RR1798.pdf (accessed 7 OCT 2011).

the Army."[121] "Commanders from battalion to corps credited these systems with a large part of their ability to command and control larger than normal units (some divisions have commanded the operations of seven or more brigades at times) over vast distances and reduced fratricide rates to new lows."[122] Though the next quote preceded modularity, its point is still applicable to the current force structure recommendations,

> Advanced command and control tools in the future force will also support faster decision-making and therefore potentially more decisions in a period of time. It is also logical to expect that leader roles and unit staffing will change as information becomes more accessible to all and the need for staff information handlers/collectors diminishes. Future staffs may serve multiple vertical levels of organization in a dynamic environment.[123]

Widening span of control and adding organic maneuver capability provides a solution to the issue facing commanders of repeatedly task organizing non-organic units for missions. This lack of habitual relationship between commanders and supported units seems to have as much negative impact as the number of subordinate units and leader controls.[124] Finally, past commanders and staff at corps, division, brigade (and most company level) reported more severe negative impact from the complexity of the environment and the absence of assistance from their organizational structure than from an increased span of control through the addition of maneuver forces.[125]

Battle-trained subordinates and highly drilled units favor wider spans of control even though decentralized operations tend to favor narrow spans of control. With a professional

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[121] Donald P. Wright and Timothy R. Reese, *On Point II Transition to the New Campaign: The United States Army in Operation Iraqi Freedom May 2003-January 2005* (Fort Leavenworth, KS: Combat Studies Institute Press US Army Combined Arms Center, 2008), 581.

[122] Ibid, 581.

[123] U.S. Army Research Institute for the Behavioral and Social Sciences, "Vertical Teams in the Objective Force", 22.

[124] U.S. Army Research Institute for the Behavioral and Social Sciences, "Research Observations and Lessons Learned for the Future Combat Systems," (Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 2003), 42, http://www.hqda. army. mil/ari/pdf/RP2003-04.pdf (accessed 07 OCT 2011).

[125] Ibid, 42.

volunteer Army and its high level of combat tested training, permanently widening span of control through the addition of maneuver companies in the maneuver battalions is as feasible as it is applicable. Mission command, technology, and training allow for this:

> The complexity and decision cycles characteristic of operations at the tactical edge limit the accuracy and utility of a common operating view for centralized decision-making and command and control of formations or individuals. Although centralized command may work well for strategic initiatives, too much centralized decision making and execution in the tactical fight slow action and could surrender the initiative. Thus, we can expect to see additional decentralization and empowering of the tactical edge.[126]

In order to conduct future decisive action in an environment consisting of hybrid threats, the change in force structure recommended in this monograph provides the best conditions to meet these threats. Future operations are likely to resemble the more limited nature of engagements over the past decade. Though Secretary Gates accurately stated that predictions of future engagements based on the past have always been wrong, some evidence exists for decision-making.[127] There is a preponderance of evidence that the historic application of force has been more likely to support limited engagements than major combat operations against a world power belligerent.[128] It is understandable that there is risk associated with the preparation for limited engagements rather than major combat operations; however, the Army must make determinations based off past applications of force given the current strategic context and fiscal constraints. Finally, one can argue that adding more line companies to combat formations not only prepares the Army for limited offensives but also major combat operations against hybrid threats.

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[126] Cone, "Shaping the Army of 2020," 76.

[127] Colby, "With Downsizing in Sight."

[128] Richard F. Grimmett, "Instances of Use of United States Armed Forces Abroad, 1798-2010," Congressional Research Service, March 2011, http://assets. opencrs.com/ rpts/ R41677_20110310.pdf (accessed 08 SEP 2011). This report details each use of the US Armed Forces abroad since 1798. There are numerous examples of the limited use of force abroad and only very few for major combat operations.

There is a valid argument that merely adding a maneuver battalion to the light and heavy BCTs will alleviate the boots on the ground issues that BCTs faced in the post modular force. However, when one considers the number of units discussed in the case studies used in non-doctrinal roles as landowners and maneuver forces such as field artillery units, logistics units, and separate troops battalions, there is still not enough combat capability in the BCTs. Further, the addition of the maneuver battalions adds another unneeded headquarters element and the requirement for more robust battalions with five maneuver companies provides greater flexibility to a BCT commander to conduct decisive action across the spectrum of conflict.

Based on the evidence in this monograph there are a number of follow-on-actions to explore. First, new research can look at the factors affecting span of control within the modular force. Secondly, research can focus on the task organization of units over time to identify issues, ensuring that future force structure changes mitigate predisposed concerns and provide applicable solutions. These solutions should accurately reflect the capability, training, and experiences garnered from the recent campaigns in Iraq and Afghanistan when contrasted against historic force employments. Additionally, the US Army can experiment with battalion formation consisting of five to six maneuver companies through a rotation at a national training center and potentially through a deployment to explore the capabilities and constraints of this force structure. Specific guidance to any testing agency should mirror the last review in that one should:

> Give an implicit sense of direction to the testing agency and to the Army at large so that the goal of reorganization is commonly understood as well as setting specific concrete goals for the testing agencies, and assuring that the evaluation process is a valid test of the reorganization concept, not a rubber stamp.[129]

Following these procedures, will help assure that the reorganization process succeeds both institutionally and on the battlefields of the future.[130]

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[129] *Sixty Years of Reorganizing for Combat*, 65.

[130] Ibid, 65.

This monograph addressed only the addition of maneuver companies and spans of control. There is a direct relationship between maneuver forces and their combat support and combat service support brethren. An increase in maneuver forces will require an increase in other enabling/supporting elements. Further study can identify these requirements and experiment with the correct mix of support units accordingly as part of the Total Army Analysis review every two years.

There is an associated monetary cost to include personnel and equipment with the addition of line companies to BCTs, however, widening spans of control allows for the removal of some staff echelons. If Divisions, and BCTs are fighting and winning battles in the current construct it is possible to shed additional higher echelons, while placing more subordinate maneuver formations under a single commander to offset the cost of the addition of maneuver companies. This provides more tooth and less skull. Further research and the Total Army Analysis Process can identify what cost savings can provide for this change through offsets that might exist in the generating force, other places in the U.S. Army, or sister services. Finally, fiscal constraints are not an impediment for change but an opportunity force structure discussions.

Former Secretary (Robert) Gates stated, "We have a perfect record predicting what we need. We've been wrong every time."[131] Allowing for widened spans of control through the addition of line units to maneuver formations of BCTs provides the U.S. Army with an improved battle-tested ability to conduct decisive action against the threats of the future. Historical examples support this as much as the strategic context requires it. OIF and OEF provide critical examples on the force structure challenges that faced units and the remarkable ways in which they broadened spans of control and increased maneuver capability wherever possible. Finally, the uncertain future requires more not less maneuver capability within the brigade combat teams to meet it.

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[131] Colby, "With Downsizing in Sight."

APPENDIX A Oral History Participation

You have the right to choose whether you will participate in this oral history interview, and once you begin you may cease participating at any time without penalty. The anticipated risk to you in participating is negligible and no direct personal benefit has been offered for your participation. If you have questions about this research study, please contact the student at: 703-398-8678____ or Dr. Robert F. Baumann, Director of Graduate Degree Programs, at (913) 684-2742.

To: Director, Graduate Degree Programs

Room 3517, Lewis & Clark Center

U.S. Army Command and General Staff College

1. I, _____, participated in an oral history interview conducted by _____, a graduate student in the Master of Military Art and Science Degree Program, on the following date [s]: _____ concerning the following topic: _____.

2. I understand that the recording [s] and any transcript resulting from this oral history will belong to the U.S. Government to be used in any manner deemed in the best interests of the Command and General Staff College or the U.S. Army, in accordance with guidelines posted by the Director, Graduate Degree Programs and the Center for Military History. I also understand that subject to security classification restrictions I will be provided with a copy of the recording for my professional records. In addition, prior to the publication of any complete edited transcript of this oral history, I will be afforded an opportunity to verify its accuracy.

3. I hereby expressly and voluntarily relinquish all rights and interests in the recording [s] with the following caveat:

_____ None _____ Other: _____

_____

I understand that my participation in this oral history interview is voluntary and I may stop participating at any time without explanation or penalty. I understand that the tapes and transcripts resulting from this oral history may be subject to the Freedom of Information Act, and therefore, may be releasable to the public contrary to my wishes. I further understand that, within the limits of the law, the U.S. Army will attempt to honor the restrictions I have requested to be placed on these materials.

_____

Name of Interviewee Signature Date

_____

Accepted on Behalf of the Army by Date

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U.S. Army officer. Information collected on 13 Jan 2012 at Fort Leavenworth, KS. The Army officer served in Afghanistan as an anti-tank platoon leader from 2003-2004 in RC East and as a company commander from 2006-2007 in RC East, Afghanistan.

U.S. Army officer. Information collected on 12 Jan 2012 at Fort Leavenworth, KS. The Army officer served in a Brigade Support Battalion company commander in MND-B from 2007-2009.

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