Transforming an Army at War

Designing the Modular Force, 1991–2005

William M. Donnelly

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by

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Foreword

By the summer of 2003, the intensive combat operations in Iraq and Afghanistan were placing a great strain on the U.S. Army. General Peter J. Schoomaker, sworn-in as the chief of staff of the Army on 1 August 2003, believed that these operations, along with the demands of an open-ended Global War on Terror, called for a major change in how the service organized its forces. In early September 2003, he ordered the U.S. Army Training and Doctrine Command to begin the process of converting the Army to a modular, brigade-based force. This massive effort would represent the most far-reaching transformation of the Army's operational forces since World War II and the most radical since the Pentomic reorganization of the late 1950s.

This study, prepared at the U.S. Army Center of Military History, examines the origins of the modular concept, the reasons for undertaking it, and the process of developing modular unit designs. The Army had been exploring the notion of modularity since shortly after the end of the Cold War. Modularity, at its most basic, was the idea for creating a pool of standardized, self-contained units—combat, support, and headquarters—that could be assembled into, or "plugged into" (and unplugged from), larger formations as needed with minimal augmentation or reorganization. A modular force, in theory, would greatly enhance the ability of the Army to construct packages of units tailored for specific missions identified by regional combatant commands. For General Schoomaker, modularity also offered the opportunity to lessen the strain that prosecuting the wars in Iraq and Afghanistan was placing on the Army. Converting to a modular force could increase the number of brigade combat teams in the Army without increasing the overall size of the service, and more brigades would mean longer times between overseas deployments. Scheduled to return to Iraq in early 2005, the 3d Infantry Division would be the first formation to change to a modular configuration.

With speed essential, the chief of staff directed that normal force development methods not be used. Instead, an ad hoc group, Task Force Modularity, would be created at the Training and Doctrine Command to develop the modular force designs. The work proved grueling. Nevertheless, by the time the task force disbanded in February 2005, almost all the major decisions for the modular force had been made and modular brigade combat teams of the 3d Infantry Division had deployed to Iraq.

This preliminary account of that effort highlights a critical part of the Army's plans to prepare for an increasingly turbulent world and illustrates the intellectual and organizational resources employed to carry out that initiative. However, the basic purpose of the following study is to provide, in layman's terms, an understanding of the Army organizational transformation process; the hard choices that had to be made in balancing tactical and operational capabilities; and the relationship of those organizational changes to developments in the areas of military doctrine, training and education, and the acquisition of advanced weapons, communications, and transportation systems.

Washington, D.C.
1 August 2007

JEFFREY J. CLARKE
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Illustrations

All illustrations are from Department of Defense files.

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Introduction

In September 2003, the U.S. Army began converting itself from an organization centered on divisions numbering from 10,000 to 18,000 soldiers to one based upon brigades totaling at most 3,900. The means for doing this became known as *modularity*, which the Army defined as a design methodology aimed at creating standardized, expandable Army elements capable of being tailored to accomplish virtually any assignment. The new units would be as capable as their predecessors, but they would also be adaptable enough to assume whatever form was necessary to meet a broad range of missions. Over the fifteen months that followed, the service completed a design, tested it, and then deployed the first of the new modular units into combat in Iraq. The changes in organization involved were as extensive as any that accompanied the mobilization for World War II, when the Army replaced the ponderous, four-regiment, 28,000-man division of World War I with a more mobile triangular division composed of three regiments totaling 17,000 men. They were also as radical as the ones that followed the Pentomic reorganization of the late 1950s, when the service replaced the triangular division with a new 13,500-man design composed of five self-contained battle groups that could disperse and converge quickly on a nuclear battlefield.

The reorganization resembled its two predecessors in many ways, but it was also very different. As with them, it came in response to a new strategic threat. It also relied heavily on recent technological advances and had the benefit of decisive leadership from a deeply concerned chief of staff. Unlike them, however, the reorganization altered every echelon of the force from battalion to army. Occurring in time of war rather than peace and confronting huge budgetary and manpower limitations, the reorganization also placed greater emphasis than before on the interdependence of Army units with those from the other services. Drawing on a bank of expertise and experience that far surpassed what had been

available in the earlier periods, it likewise used emerging technology to a greater extent than in the past. As a result, it depended heavily not only on traditional means such as firepower and mobility to achieve its ends, but also upon the acquisition, analysis, and transmission of computerized information.

This study will examine how the reorganization occurred: the origins of the modular idea, the reasons for undertaking the changes it envisioned, and the process of developing unit designs for the new Army in prospect.

The Concept of Modularity, 1991–2003

When General Gordon R. Sullivan became the chief of staff of the Army in June 1991, the service was beginning to change from a forward-deployed force oriented toward deterring the Soviet Union to a smaller, more flexible body based primarily in the United States. This more compact force would have to be prepared to conduct missions of all sizes, not just large-scale, high-intensity combat, and would have to develop what service members called an expeditionary mind-set, to be capable of quick deployment overseas when necessary. Concerned after a year in office that existing methods for changing the Army were too slow to meet those demands, General Sullivan organized a set of experiments and exercises known as the Louisiana Maneuvers to investigate how to hasten developments. Much of the work that followed covered two main areas: how best to design units that had fighting power equal to or greater than that of current units but could deploy more quickly and how to use new and future digital technology to improve command and control. To save time and money, many of the experiments and exercises relied on computer simulations.[1]

Sullivan set the Army to work on his concept for change in March 1994. Named Force XXI, the campaign initially developed along two lines. The first, involving the redesign of the service's operational

[1] U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 525–5, *Force XXI Operations* (Fort Monroe, Va.: Headquarters, U.S. Army Training and Doctrine Command, 1 August 1994), hereafter cited as TRADOC Pamphlet 525–5; James L. Yarrison, *The Modern Louisiana Maneuvers* (Washington, D.C.: U.S. Army Center of Military History, 1999); Military History Office, U.S. Army Training and Doctrine Command, *U.S. Army Training and Doctrine Command Annual Command History, 1 January to 31 December 1994*, ch. 5, Historians files, U.S. Army Center of Military History (CMH), Washington, D.C.

forces, became the responsibility of the Army's Training and Doctrine Command. The second, an effort to develop and field digital information technologies, came under a newly established Army Digitization Office. Sullivan soon realized that the breadth of the reorganization he envisioned would require the participation not only of combat units, but also of those parts of the Army that generated and supported them. He instructed the vice chief of staff of the Army to oversee that work.[2]

General Sullivan

Much of the experimentation and testing for Force XXI used computer modeling. One of the best known of those exercises involved a series of computer simulations conducted by the Louisiana Maneuvers in 1994 and 1995. They involved a hypothetical armored division called the Mobile Strike Force that used technologies expected to be available in 2010, particularly sensors and digital command and control systems. It featured well-armed and well-supplied brigade formations that included both artillery and a versatile aviation component capable of air attack and air landing operations. General Sullivan knew, however, that war games had their limits. To compensate, he assigned the 2d Armored Division at Fort Hood, Texas, as an experimental force. In addition to their regular responsibilities, the division's troops would test how prospective technologies, doctrines, and unit designs worked in the hands of real soldiers. The unit was reflagged the 4th Infantry Division shortly thereafter, but it continued to fill this role over the years that followed.[3]

The Training and Doctrine Command published a pamphlet in 1994 on Force XXI that set out the characteristics operational forces

[2] TRADOC Pamphlet 525–5.

[3] Technical Memorandum TRAC–TM–0194, *Mobile Strike Force 2010* (Fort Leavenworth, Kans.: TRADOC Analysis Center (TRAC), September 1994); Stephen L. Y. Gammons and William M. Donnelly, *Department of the Army Historical Summary Fiscal Year 1995* (Washington, D.C.: U.S. Army Center of Military History, 2004), pp. 37–38; *TRADOC Annual Command History, 1994*, ch. 5; Yarrison, *The Modern Louisiana Maneuvers*, pp. 57–58, 67–69.

would need if they were to succeed in the early twenty-first century. In that world, the publication noted, soldiers would face a "varied and multifaceted" strategic setting and would need to be flexible in their application of the U.S. Army's principles for fighting war. Based mainly in the United States, the smaller post–Cold War Army would need a high degree of strategic mobility to put itself in "the right place at the right time with the right capabilities." This would require lighter combat forces, but the service could not afford to achieve that end at the cost of diminished combat power, so the new units would have to possess at least as much combat power as current heavy forces. (Existing light units, whose design emphasized mobility, used relatively austere amounts of equipment and did not have tracked armored fighting vehicles. Existing heavy units, designed for sustained high-intensity combat, were based around large numbers of tracked armored fighting vehicles and thus emphasized combat power over mobility.)[4]

Given the political and military situation in the post–Cold War world, moreover, the Army could probably never again expect to conduct major operations on its own. Versatile enough to deploy for almost any mission, from humanitarian assistance to a major conventional war, its forces would have to be able to work effectively with the other American military services. Army command elements might also have to serve as combined headquarters with the militaries of other nations or coordinate with nongovernmental agencies.[5]

The pamphlet continued that modularity, defined as adaptable standardization, would be an important characteristic of the future Army because the service would probably lack the scale of organization necessary to meet all possible requirements for ground troops in the post–Cold War world. Since, for example, the United States having enough air and maritime transportation available to move ground forces rapidly would be unlikely, commanders might well find that the Army could provide only those that were absolutely necessary to meet the demands of a specific operation. The pamphlet cautioned that implementing modularity in the Force XXI Army would require fielding the sort of computerized information technologies that would allow fewer personnel to do as much or more than the larger staffs currently in place. The publication suggested that the division would remain the Army's main tactical formation but asserted that when necessary modularity would allow a

[4] TRADOC Pamphlet 525–5.

[5] Ibid.

rapid, task-related configuration of a division and its support elements to do a specific job.[6]

The Training and Doctrine Command provided further guidance in a January 1995 pamphlet. The publication specified that modularity was, for the time being, a concept that focused on echelons above division and on combat support units (such as engineers and signal elements that provided operational assistance to forces in a battle zone) and on combat service support units (such as ordnance and transportation that sustained fighting forces in theater at all levels of war).

Within that context, it discussed two approaches. Under the first, organizations would be composed of "functionally emulative increments," elements that each contained the complete functions of the organization. These would be interchangeable and expandable so that commanders could tailor them to meet changing conditions. This approach would apply mainly to service support organizations at echelons above division and to those components that were expected to contribute elements early in an operation before the entire force deployed.[7]

The second approach, labeled "modular designed units," would craft organizations from discrete elements with different capabilities that in combination would produce a functional military unit. Applicable to combat, service, and service support units, the concept would allow subelements detached from a parent unit to be assigned to a contingency force for an indefinite period. This would make the Army more responsive than in the past by allowing it to tailor ground forces to fit specific requirements.[8]

There were several implications in adopting a modular force. In reconfiguring units, for example, the Army would have to make certain that the new designs provided adequate materiel both for deploying elements and for those remaining behind or going into action later. Training programs for individuals and for units would have to be modified to reflect the modularity concept, particularly where guidance on when to employ the new elements or to add increments to them was concerned. Soldiers in the units and their families would also have to be prepared for

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[6] Ibid.

[7] TRADOC Pamphlet 525–68, *Concept for Modularity* (Fort Monroe, Va.: Headquarters, U.S. Army Training and Doctrine Command, 10 January 1995), par. 2-1 thru 3-5. The definitions are from Joint Doctrine Division, J–7, Joint Staff. Joint Publication 1–02, *DOD Dictionary of Military and Associated Terms*, 8 August 2006, Historians files, CMH.

[8] TRADOC Pamphlet 525–68, par. 3-6.

the possibility of more deployments and rotations than might otherwise have been normal.[9]

The January 1995 pamphlet highlighted three sets of circumstances that seemed particularly important. The first was that the success of the idea itself would depend on the presence of effective information systems linked to reliable telecommunications. This would ensure that all the units involved in an operation were reliably connected. The second was that the new approach would require major changes in how the Army trained its people. The troops and their officers would sometimes assume greater responsibilities than those normally associated with their ranks or positions, particularly in joint operations with units from the other American military services or in combined operations with forces from allied nations. The third was that a modular force might need more leaders of all ranks than a conventionally configured force. Their technical expertise and experience would come in handy in the highly automated units, and their presence would sometimes be necessary to provide command and control for the many independent elements that some missions would entail.[10]

General Dennis J. Reimer succeeded Sullivan as chief of staff on 20 June 1995. He continued Force XXI but added an additional program titled Army After Next in February 1996. The new effort had the task of defining the probable nature of warfare thirty years in the future and of identifying future issues that might be of critical importance to the Army.[11]

In four war games, the Army After Next experimented with various "battle force" organizations in which new digital information technologies, changes in officer training and education, and new personnel policies eliminated one or more of the Army's command echelons. Among the elements considered were what became known as *echelons of maneuver*: fixed combined arms components constructed of artillery, tank, infantry, reconnaissance, and, at times, helicopter units that could be augmented with additional forces if a particular mission required. Personnel in these formations would serve together far longer than in existing units in order to create the cohesion and teamwork vital to mastering new equipment and new unit designs. A second set of elements, known as *echelons of concentration*, would consist of headquarters whose subordinate organizations varied depending on mission. These formations would

[9] Ibid., pars. 4-1, 4-2, 4-4, 4-5, and 4-6.

[10] Ibid., pars. 4-3 and 4-4.

[11] Office of the Chief of Staff, Army, Knowledge & Speed: The Annual Report on the Army After Next Project to the Chief of Staff of the Army, July 1997, p. B-1.

also depend on personnel serving together for lengthy periods to build cohesion and teamwork.[12]

In the end, the program's analysts concluded that "the winds of change are blowing in the direction of a more dangerous battlefield that will raise the performance bar. Meeting such a challenge will deeply touch soldiers and their organizations."[13] They sought to prepare the Army by highlighting the need for it to "support rapid tailoring to respond to unpredictable crises" and to have "a broad mix of capabilities." This would call for a middleweight force that could "arrive at a crisis early, with sufficient combat power to deliver a critical blow to an adversary's operation."[14] To meet this requirement, the Training and Doctrine Command developed the concept of a brigade-size "strike force" composed of modular elements that could be tailored to the demands of each mission by adding units with the necessary skills. The force would employ advanced digital information technologies that provided "the information we need, when we need it and in the format we need."[15]

General Reimer

Reimer's successor in 1999 as chief of staff, General Eric K. Shinseki, stressed the need for the Army to quicken the pace of its transformation into a post–Cold War force. "Our heavy forces are too heavy and our light forces lack staying power," he observed on 23 June. "Heavy forces must be more strategically deployable and more agile with a smaller logistical

[12] Brig. Gen. Huba Wass de Czege, U.S. Army (Ret.), and Maj. Jacob Biever, U.S. Army, "Optimizing Future Battle Command Technologies," *Military Review* 78 (March/April 1998): 15–21.

[13] Ibid.

[14] Margaret A. Fratzel et al., *Army After Next Spring Wargame 1998: Integrated Analysis Report* (Fort Leavenworth, Kans.: TRADOC Analysis Center, 1999), p. 55.

[15] Lt Col Mark G. Cianciolo, U.S. Marine Corps, U.S. Army Strike Force—A Relevant Concept? (Student paper, School of Advanced Military Studies, U.S. Army Command and General Staff College, Fort Leavenworth, Kans., 1999), pp. 4–14. Quote from Wass de Czege and Biever, "Optimizing Future Battle Command Technologies," p. 21.

General Shinseki speaks with troops of the 101st Airborne Division in Iraq in 2003.

footprint, and light forces must be more lethal, survivable, and tactically mobile."[16] To improve the Army's strategic responsiveness, Shinseki established a transformation process that would begin with current units, designated as the Legacy Force, and move through an Interim Force to what planners termed an Objective Force, the Army of the future. Upon completion of the process, the service would be able to field a combat-ready brigade anywhere in the world in 96 hours, a division in 120 hours, and five divisions in 30 days. The key component of the Interim Force would be medium brigade combat teams that could deploy more quickly than existing heavy brigades but be more lethal and have greater tactical mobility than existing light brigades. Converted from several existing heavy and light brigades over a relatively short period of time and named Stryker Brigade Combat Teams after the wheeled armored vehicles they used, these units would be equipped with advanced digital command and

[16] Gen Eric K. Shinseki, "Intent of the Chief of Staff, Army," 23 June 1999, Historians files, CMH.

Soldiers of the 5th Battalion, 20th Infantry, 3d Brigade, 2d Infantry Division (Stryker Brigade Combat Team), in Samarra, Iraq

communications systems developed by Force XXI programs. In addition to giving the Army a capability that war games had identified as crucial in the post–Cold War world, the new brigades would serve as prototype organizations to test concepts for the final Objective Force.[17]

When the Training and Doctrine Command began to build Stryker Brigade Combat Teams in December 1999, it also started working on the design of the Objective Force. To stress that this concept would not be a mere refinement of the existing Army's structure, its developers created a "Units of Purpose Framework" to provide what they called "a means for investigation and discussion outside current parameters." There were two basic groups in this framework: units of action (UAs) and units of employment (UEs). Fixed organizations designed to accomplish distinct, prescribed, mission-essential tasks, units of action would replace the Army's existing brigades.[18] Units of employment would supplant Army elements above the brigade at the

[17] Mark J. Reardon and Jeffery A. Charlston, *From Transformation to Combat: The First Stryker Brigade at War* (Washington, D.C.: U.S. Army Center of Military History, 2007), pp. 3–8.

[18] TRADOC Pamphlet 525–3–91, Draft version 2.1, *Objective Force Tactical Operational and Organizational Concept for Maneuver Units of Action* (Fort Monroe, Va.: Headquarters, U.S. Army Training and Doctrine Command, 6 November 2001), p. 4.

division, corps, and army levels. Lacking any fixed organization beyond a base of components that would allow them to serve as cores for highly versatile headquarters, they would take any form that was necessary to complete a mission. They would do this by taking command of other units of employment and various units of action that were drawn from pools of forces and designed to meet the requirements of whatever assignment they received.[19]

A further step forward occurred in the fall of 2002, when the U.S. Army War College received an assignment directly from Secretary of the Army Thomas E. White to answer the question: "Given the improvements in communications and situational awareness, can the Army reduce/flatten the layers of command through army without loss of effectiveness?" The study's leader, the director of Army planning at the War College, Col. James H. Embrey, rephrased the question and passed it to a select group of the college's students. The group submitted its findings on 29 January 2003. Besides recommending that the Army combine its division, corps, and army levels above brigade into two echelons, it suggested the streamlining of theater command. In place of the operating systems at that level—movement and maneuver, fire support, operational protection, intelligence, and logistics—there would be just three major components: sustainment, protection, and information superiority. This proposed structure would become the basis of the theater-level designs the modularity builders would later use.[20]

By the end of General Shinseki's term as chief of staff in June 2003, modularity had become a key characteristic spanning all of the elements in the design for the future Army. Units of action would be the building blocks of that force. Fixed organizations with discrete sets of capabilities that nonetheless employed as many standardized systems as possible, they would be able to plug into any organization because of the common parts they shared. This would increase the strategic responsiveness of the Army many-fold by giving the service a pool of readily adaptable forces from which it could draw to provide higher commands with components tailor-made for whatever job they needed to do. If changing circumstances so required, commanders would find

[19] Ibid.

[20] Quote from Final Briefing, Col Jim Embrey, USAWC [U.S. Army War College], to Secretary of the Army, Headquarters Redesign, 29 Jan 03. PowerPoint Slide, Objective Force ASCC [Army Service Component Command], 4 Sep 03. For the traditional organization of theater command, see Department of the Army, Field Manual (FM) 100–7, *Decisive Force: The Army in Theater Operations,* 31 May 1995, pp. 5-1 to 5-22.

making quick adjustments to the mix or size of the forces pursuing a mission easy.[21]

Following that approach, by the time that General Peter J. Schoomaker succeeded General Shinseki as chief of staff on 1 August 2003, the unit of action had developed into two basic types: maneuver and support. The maneuver units would be the tactical arm of the new Army. Composed of three battalions that contained built-in infantry, artillery, tank, reconnaissance, aviation, and logistical elements, the force would have a headquarters that could draw from a troop pool to incorporate any additional combat or support units it needed. The units would use digital command, communications, and intelligence systems both to control their subordinate commands and to keep informed of what was happening around them. Those improvements would greatly increase their combat power in comparison with that of previous Army brigades. Of course, these qualities, and the units' ability to deploy anywhere in the world in ninety-six hours, depended heavily on the development and acquisition of new vehicles, weapons, and digital systems.[22]

The support units of action were much less developed. By June 2003, Training and Doctrine Command had identified all the functions such as intelligence and force protection that these units should provide, but it had yet to prepare detailed plans on how to approach them. Issues involving elements that combined the capabilities of more than one branch of the Army were of particular concern. Although the existing Army contained multifunctional units such as divisional support battalions, the high technology force of the future would need many more of them. The change from one system to the other would require major revisions in doctrine, unit training, and leader development programs.[23]

The Training and Doctrine Command released the final coordinating draft of its concept for the unit of employment in May 2003. The plan

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[21] Final Coordinating Draft, TRADOC Pamphlet 525–3–92*, Objective Force: Unit of Employment Concept* (Fort Monroe, Va.: Joint/Army Concepts Directorate, Deputy Chief of Staff for Doctrine, Concepts, and Strategy, Headquarters, U.S. Army Training and Doctrine Command, 20 May 2003), p. 4; Intervs, J. Patrick Hughes and Jeffery A. Charlston, CMH, with Michael Burke, Combined Arms Doctrine Directorate (CADD), U.S. Army Training and Doctrine Command, 7 Jun 06, and Clinton Ancker, Combined Arms Doctrine Directorate, U.S. Army Training and Doctrine Command, 7 Jun 06, CMH; TRADOC Pamphlet 525–3–91, Draft version 2.1, pp. 41–43.

[22] Change 2 to TRADOC Pamphlet 525–3–90 O&O [Operational and Organizational]*, The United States Army Objective Force Operational and Organizational Plan Maneuver Unit of Action (FINAL)*, (Fort Knox, Ky.: Unit of Action Maneuver Battle Lab, 30 June 2003), pp. 1-6 to 1-7, 3-1 to 3-2.

[23] Final Coordinating Draft, TRADOC Pamphlet 525–3–92, pp. 6, 51–53.

outlined a new design for levels above the unit of action in the restructured Army. Instead of having divisions, corps, and armies above the brigade as had been the case in the past, there would be only two levels—a unit of employment at the operational level and a unit of employment at the higher tactical level. Combining many of the functions of the army and the corps, the unit of employment at the operational level would be the primary integrator of U.S. and multinational land-based forces during a campaign. Able to plan its operations four to five days in advance and to control an area of operations of up to 500 square kilometers, it would allocate support units as needed and direct the battles its forces fought until it achieved its goals (*Chart 1*).[24]

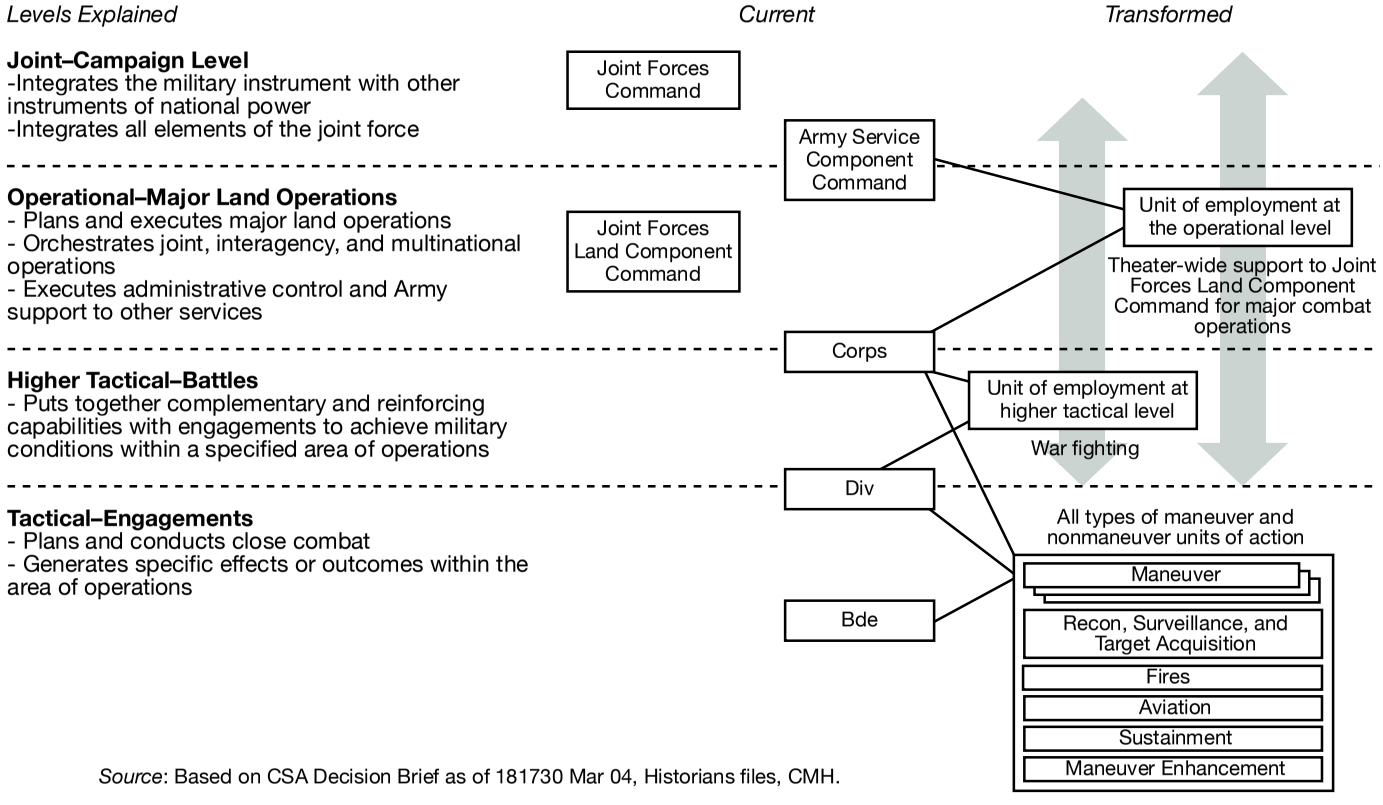
The unit of employment at the higher tactical level would combine some of the functions of both a corps and a division. Commanding flexible sets of subordinate units of action, this headquarters would rotate its forces through cycles of engagement and resupply in order to maintain continuous pressure on an enemy. It could project its operations two to three days in advance and would have an operating radius of up to 150 kilometers.[25]

The Army later coined the term *unit of employment Y* (*UEy*) to label the unit of employment at the operational level, and the term *unit of employment X* (*UEx*) to label the unit of employment at the higher tactical level. Neither was of any particular size. The span of control in each would vary according to the mission it received and the number of units assigned to accomplish the task. In effect, a small but versatile headquarters commanding a standard base of communications, sustainment, intelligence, surveillance, and reconnaissance forces could draw on whatever additional assets it needed to achieve its ends. With the number and type of units of action it commanded varying from conflict to conflict, the headquarters had the ability to perform not only Army functions, but also those of joint task forces and joint forces land component commands. Should the need arise, it would also be able to interact effectively with nonmilitary U.S. government agencies, multinational forces, and nongovernmental organizations.[26]

The May 2003 draft pamphlet cautioned that the execution of the unit-of-employment concept was dependent on "the development and incorporation of a large variety of advanced capabilities." The most important were in command, control, communications, computers, intelligence, surveillance, and reconnaissance. These improvements, the

[24] Ibid., pp. 6, 24–25.
[25] Ibid.
[26] Ibid., pp. 6, 40–41.

Chart 1—Original Concept of Flattening Levels of Command



Source: Based on CSA Decision Brief as of 181730 Mar 04, Historians files, CMH.

pamphlet predicted, would form "the backbone of the Objective Force" and introduce "potentially the most revolutionary advances in force effectiveness." In addition, the Objective Force would require fielding what had become known as Future Combat Systems (FCS). Networking existing equipment with state-of-the-art weapons and sensors, some in design but others still only concepts, this would add immeasurably to the Army's ability to achieve the rapid tactical decisions the program's planners sought.[27]

By the early summer of 2003, the Army had developed the concept for what it envisioned as the ultimate form of its post–Cold War operational forces. Even so, modularity and the Objective Force were still only concepts. By then, however, the Army was at war in Afghanistan and Iraq. Facing circumstances for which the service was ill prepared, a new chief of staff would turn to modularity for part of the solution for the immediate and pressing problems he faced.

[27] Ibid., pp. 44–45.

Decision to Create a Modular Army

Within a month of taking office, General Schoomaker instructed the Army to begin work on converting to a modular, brigade-based force. His directive was part of a larger effort he was making to adapt the service to the conditions it faced in the summer of 2003. The Army had gone to war in Afghanistan and Iraq, but those conflicts were hardly the only challenges it had to face. It was also continuing a long-time commitment in Korea, conducting stability operations in the Balkans and the Sinai, and participating in counterterrorism operations in various countries around the world. He stressed during his confirmation hearing that the United States and its Army were in "a long fight" for the "very survival of our way of life." In a world where the strategic environment had been transformed since the terrorist attack of 11 September 2001, he said, the Army would have to adjust its priorities and be prepared to reexamine even its fundamental way of thinking.[28]

Unspoken at the time but clear was Schoomaker's estimation that much of the Army was still mired in a mentality created by decades of preparing to fight the Soviet Army. Under the circumstances, he reasoned, the need to transform the service to make it react more quickly to the demands of regional unified commands such as the U.S. Central Command was particularly important. Changing would have to be a long-term effort rather than an objective in itself because an Army at war could not wait to perfect all the systems required for the future force before fielding them. As systems designed for that force became available, it had to move them into its current formations to improve their capabilities.[29]

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[28] Opening Statement (As Prepared) of General Peter J. Schoomaker Before the Senate Armed Services Committee, 29 Jul 03, Historians files, CMH.

[29] Transcript of Testimony of General Peter J. Schoomaker Before the Senate Armed Services Committee, 29 Jul 03, Historians files, CMH.

General Schoomaker

During July and August, Schoomaker formed an estimate of what he needed to do during his tenure as chief of staff. After consulting with senior Army leaders, he had his transition team, the Training and Doctrine Command, and the Army Staff develop a set of focus areas highlighting aspects of the Army that needed immediate attention for change to begin. The list that resulted covered an expanse of topics: the Army's public relations, adapting leader development for the "long fight," revising the way units were manned and deployed, and reversing the post–Vietnam War policy of placing most support units in the reserve components. Modularity, the effort to build a standardized, brigade-based force, was the most prominent among the topics requiring prompt scrutiny. The Army Staff and the Training and Doctrine Command then developed a set of essential tasks for each focus area. None of those efforts were to be seen as stand-alone activities. Rather, each was to be viewed as part of an integrated whole, the campaign to transform the Army. Schoomaker assigned responsibility for each focus area to an Army major command, with the majority of the areas going to the Training and Doctrine Command. The command, in turn, formed a task force for each of its focus areas with the mission to achieve the objective the chief had set for that area.[30]

[30] Interv, Jeffery A. Charlston, CMH, with Col Robin P. Swan, Office of the Deputy Chief of Staff for Operations, Headquarters, Department of the Army, 12 Dec 05, Historians files, CMH; Information Paper, Col Robin P. Swan, DAMO-ZT, 14 Oct 03,

General Schoomaker decided to convert the Army to a modular, brigade-based force for several reasons. At that point, 73 percent of the Regular Army's brigade combat teams and 33 percent of the Army National Guard's were deployed overseas in the Balkans, the Sinai, Afghanistan, and Iraq.[31] Since the Army relied mainly on unit rotations rather than individual replacements to fill personnel requirements and since many rotations involved only a brigade combat team, the brigade rather than the division had become the main tactical echelon in planning for deployments. Senior commanders in Iraq, moreover, had begun responding to the various tactical problems they encountered by tailoring units into temporary and permanent groupings. This meant that even when a division deployed to Iraq, it might soon relinquish operational control of some of its brigade combat teams while assuming control of other nondivisional elements. The process of force tailoring also affected smaller units, which were sometimes rendered incapable of performing their full missions for lack of manpower or expertise. Schoomaker concluded that a modular, brigade-based force was the answer to the problems that resulted. This new force organization would not only provide better support for current operations, it would also help the Army react more quickly to the needs of regional commanders when future contingencies arose.[32]

Another reason to convert to a brigade-based Army was that it offered the opportunity to expand the number of brigade combat teams. Given the tempo of operations around the world, the existing division-based force of thirty-three Regular Army and thirty-six Army National Guard maneuver brigades was too small to allow a sufficient interval between deployments. One of the modularity effort's objectives thus became to produce new unit designs that would allow the fielding of between seventy-seven and eighty-two

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sub: Information Paper–Background on CSA [Chief of Staff, Army] Immediate Focus Areas, Historians files, CMH.

[31] Spec Bill Putnam, Army News Service, "Keane Announces Overseas Unit Rotation Schedule," 23 Jul 03, Historians files, CMH; Kim Burger, "US Army To Refocus Modernization," *Jane's Defense Weekly* 38 (1 October 2003).

[32] John J. McGrath, *The Brigade: A History, Its Organization and Employment in the US Army* (Fort Leavenworth, Kans.: Combat Studies Institute Press, 2004), pp. 110–11; Information Paper, Col Rickey Smith, Task Force Modularity, 11 Oct 03, sub: Modularity, Historians files, CMH; Thom Shanker, "Army Is Designing Ways To Reorganize Its Forces," *New York Times*, 6 Aug 03; Putnam, "Keane Announces Overseas Unit Rotation Schedule."

Soldiers of the 3d Brigade Combat Team, 101st Airborne Division, next to a Humvee during a firefight in Iraq

brigade combat teams with a temporary increase of only 30,000 in the Regular Army's strength.[33]

Recent experience in Iraq provided another justification for Schoomaker's interest in a modular force. According to Lt. Gen. William S. Wallace, the commander of V Corps during the 2003 invasion, U.S. Army units equipped with digital information technologies had "provided a substantial glimpse into the advantage of waging network enhanced warfare." Although V Corps had experienced problems with these technologies, especially in getting information to and from echelons below division, the Army's command had gained a clear view of the digital information future.[34]

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[33] Task Force Modularity Mission Analysis Backbrief, 30 Sep 03, copy in Historians files, CMH; Defense Department Special Briefing on U.S. Army Transformation by General Peter Schoomaker, Chief of Staff, U.S. Army, 26 Jul 04, Historians files, CMH.

[34] Statement by Lieutenant General William S. Wallace, Commanding General, Combined Arms Center, U.S. Army Training and Doctrine Command, Before the Subcommittee on Terrorism, Unconventional Threats and Capabilities, Armed Services Committee, United States House of Representatives, on C4I Interoperability: New Challenges in 21st Century Warfare, 21 Oct 03.

Since the creation of the Force XXI program, however, the Army had fielded a variety of digital information systems. As a result, there was no standardization across the force in that area. To remedy the problem, Schoomaker directed the Training and Doctrine Command's Combined Arms Center and the Army's operations staff, or G–3, to determine which parts of the existing Army Battle Command System could be used to provide a reasonably effective command and control package to all of the Army's units. The result of that effort became known as the Good Enough Battle Command system. Developers of modular unit designs would rely heavily on it in their work.[35]

Although General Schoomaker expected the Global War on Terror to be long, he nonetheless felt that little time remained to make the shift to the new force. For the moment, he reasoned, the war was not a factor in the Army's annual budget. Instead, the administration of President George W. Bush had covered its cost through supplemental appropriations from Congress. Growing pressures on the federal budget, however, especially from Social Security and the nation's health care requirements, and an increasing reluctance in Congress to fund the conflict with supplementary appropriations, suggested that change was in the offing. When it occurred, the Army might face budget cuts or have to pay the cost of the war out of current operating expenses. In either case, the service would find it difficult to pay for the war while converting to a modular organization and continuing to support the development and fielding of the future force.[36]

Schoomaker's relationship with Secretary of Defense Donald H. Rumsfeld also figured into his determination to move ahead. Rumsfeld, who had taken office in early 2001, was determined to transform a military that he believed was still mired in Cold War concepts and practices. Although he declined to shut down General Shinseki's Army Transformation project, he was dissatisfied with the rate of change that the general's programs had achieved. Rumsfeld thought the proper organization of a post–Cold War force should rest on digital technology.

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[35] Patrick Chisholm, "'Good Enough' Battle Command," *Military Information Technology* 8 (17 August 2003) online edition, Historians files, CMH; Lt Col Nello Thomas, "Task Force Network Formed," *Army Communicator* 28 (Winter 2003): 18–21; Headquarters, Department of the Army, *United States Army Transformation Roadmap 2003*, 1 Nov 03, pp. 8-6 to 8-8.

[36] Memorandum for Record (MFR), Col John J. Twohig, Task Force Modularity, 4 Feb 04, sub: After Action Review of Task Force Modularity Decision Brief to CSA, Historians files, CMH; U.S. Army War College Strategy Research Project, Robert M. McCaleb, Long Term Budgetary Implications of Today's Army Decisions, 18 Mar 05, pp. 5–10.

He felt that this would greatly increase the effectiveness of long-range precision-guided munitions by perfecting the command and intelligence systems necessary to use them. In pursuit of those ends, he established an Office of Force Transformation in 2001 to push the services into examining new ideas. When Shinseki's term in office ended in 2003, the secretary also passed over all of the service's active senior officers to pull Schoomaker out of retirement to take the job. At the general's swearing-in, Rumsfeld said that the new chief of staff was "the right man to lead the United States Army as it continues its transformation into a force that will provide 21st century capability to the challenges we will face." With such an endorsement, Schoomaker believed that he could expect nothing less than strong support for the modularity program from the Office of the Secretary of Defense.[37]

Schoomaker had one final advantage. He knew that the Army could draw on a large bank of research and experience it had built up over the fourteen years since 1991, when General Sullivan had begun the process of changing the service into a post–Cold War force. Besides producing an extensive body of work on modularity, the studies and experiments that resulted had given Army planners considerable experience in how to analyze and alter force structures. The knowledge could serve to shorten timetables and smooth the way to change.[38]

The chief of staff, however, was concerned about the institutions—the Training and Doctrine Command and the Army Staff—that would run the effort. During July, while awaiting confirmation, he met with Maj. Gen. William G. Webster Jr., who would shortly take command of the 3d Infantry Division (Mechanized). Aware that the general had just served as deputy commander of the Combined Forces Land Component Command in Iraq and was thus well versed in how a regional command worked, Schoomaker gave him a special job. After setting out his reasons for converting the Army to a modular force, he told the general to begin thinking about how that force should be organized. Once Webster took

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[37] Department of Defense News Release 599–01, 26 Nov 01, Cebrowski Appointed as Director of Force Transformation, Historians files, CMH; Office of the Secretary of Defense, Transformation Planning Guidance, Apr 03; Peter J. Boyer, "A Different War," *New Yorker* 78 (1 July 2002): 54–67; John Hendren, "Army Holds Its Ground in Battle With Rumsfeld," *Los Angeles Times*, 19 Nov 02; Erin Q. Winograd, "Rumsfeld Wants Independent Panel to Review Army Transformation," *Inside the Army*, 17 Mar 03. Quote from Department of Defense News Release 566–03, 1 Aug 03, Schoomaker Sworn in as Army Chief, Historians files, CMH.

[38] Col Jeffrey R. Witsken et al., *Task Force Modularity: The Role of Analysis in the Creation of the Modular Force* (Fort Leavenworth, Kans.: TRADOC Analysis Center, July 2005), pp. 2–3.

command of the 3d Division, he was to prepare the unit for its second deployment to Iraq by developing a plan to convert its three brigades into five heavy units of action, using only the men and materiel it already possessed. Webster and his planners were to refrain from consulting with the Army Staff and the Training and Doctrine Command until they had a full course of action in hand. Normal force development processes would be too slow, Schoomaker said, because the Training and Doctrine Command was too steeped in outmoded, Cold War ways of thinking, and the Army Staff was already too busy running a service at war.[39]

Schoomaker nonetheless broadened the effort to transform the Army in a 2 September 2003 memorandum that directed the Training and Doctrine Command to organize not only the 3d Infantry Division but also the 101st Airborne Division (Air Assault) into prototype modular organizations. In so doing, the command was to avoid augmenting the two units in any way by making the best use it could of their existing men and materiel and nothing more. To assist, it was to create a coordination cell in each organization. That group would consult with the regional commands to ensure that the final designs for the two forces met their requirements.[40]

The design and decision process for modularity was to be quick. The deadline for delivery of the new heavy and infantry brigade combat team organizations was set for January 2004; those for support brigades and echelons above the brigade came later in the year. The reorganization of the 3d Infantry and the 101st Airborne Divisions was also to occur during 2004 so that those units would be fully redesigned when they deployed to Iraq in 2005. To expedite the process, the chief of staff stated that nothing had to be perfect. In fact, he expected the initial versions to have weak points. They could be fixed later as the Army conducted additional analysis and gained operational experience with the designs. That said, Schoomaker nonetheless set three goals that the initial modular brigade combat teams had to meet. First, they had to be as capable as current units. Second, they had to be easier to deploy than existing units. Finally, they had to be configured in a way that permitted the Army to duplicate them without having to seek an increase in manpower.[41]

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[39] Interv, J. Patrick Hughes, CMH, with Maj Gen William G. Webster Jr., former commanding general, 3d Infantry Division (Mechanized), 12 Sep 06, Historians files, CMH.

[40] Information Paper, Smith, 11 Oct 03, sub: Modularity. Hereafter, the 101st Airborne Division (Air Assault) will be referred to by its more familiar designation as the 101st Airborne Division.

[41] Witsken et al., *The Role of Analysis in the Creation of the Modular Force*, p. 1; Col Rickey Smith, Task Force Modularity, Task Force Modularity Talking Points for CSA Backbrief, 24 Sep 03, Historians files, CMH.

Task Force Modularity, 2003–2005

In early September 2003, responding to the chief of staff's directive, the head of the Training and Doctrine Command, General Kevin P. Byrnes, organized Task Force Modularity at Fort Monroe, Virginia. Byrnes selected his deputy chief of staff for developments, Maj. Gen. Robert W. Mixon Jr., to lead the effort.

At its peak strength, Task Force Modularity employed about fifty people, with another thirty-five providing analytical support. The core of the project's personnel came from the Training and Doctrine Command's subordinate organizations and from a Unit of Employment Integrated Concept Team that the command had established in January 2003 to work on Objective Force echelons above the brigade. Because the conversion to a modular, brigade-based Army would be a sweeping change for the service, the task force requested and received personnel from the Headquarters, Department of the Army; the Assistant Secretary of the Army for Acquisition, Logistics, and Technology; the National Guard Bureau; the Office, Chief of Army Reserve; the Judge Advocate General; Forces Command; the Army Materiel Command; and the Army War College. The staff was a mix of active-duty and retired officers, civil servants, and civilian contractors. In keeping with Schoomaker's emphasis on making units more capable of operating jointly and the Army more responsive to the needs of regional combatant commanders, the task force also requested and received personnel from the other military services and from the Joint Forces Command.[42]

[42] After Action Review (AAR), Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, pp. 3–4, Historians files, CMH; Witsken et al., *The Role of Analysis in the Creation of the Modular Force*, p. 2; Col Jeffrey R. Witsken, Maj Patrick L. Walden, and Peggy Fratzel, *Task Force Modularity: Integrated Analysis Report, Analysis Underpinning Recommendations to the CSA, September 2003–March*

General Byrnes

Schoomaker's stress on speed and a belief on the part of team members that few problems would develop led the task force's leaders to expect that the project would last only three or four months. As a result, many of the subject matter experts working with the group served on temporary duty orders and returned to their parent organizations in early 2004. In the event, as the task force's after action review commented, the expectation proved "incredibly optimistic." Difficulties arose in settling the designs for theater-level organizations and for several of the support brigades. Further analyses also identified areas in the plans that needed modification. Questions cropped up as well when the group became involved in the program's implementation phase. In the end, the task force ran for nearly sixteen months and did not disband until February 2005.[43]

In an unusual arrangement for a force development project, Task Force Modularity operated under "close hold" while it was formulating its initial designs during 2003 and 2004. In effect, members of the group could request information from other organizations, but they had to obtain permission to discuss what they were doing with outsiders, even members of their own parent agencies. General Schoomaker established this policy to keep information on the project from reaching the chiefs of the Army's branches and the commandants of their schools. He hoped to prevent the sort of friction that had occurred during earlier development efforts, when branches such as the Infantry, Armor, Artillery, or Engineers had

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2004 (Fort Leavenworth, Kans.: TRADOC Analysis Center, 31 March 2004), p. 9; Spreadsheets, Task Force Modularity, 28 Oct 03, sub: TFM [Task Force Modularity] Roster as 28 Oct 03, and 4 Nov 03, sub: TFM Roster 4 Nov 03; E-mail, Clinton Ancker, CGSC [Command and General Staff College], to Col Rickey E. Smith, TRADOC DCSDEV [Deputy Chief of Staff for Developments], et al., 10 Oct 03, 3:24 P.M., sub: Support UAs [Units of Action]. Last three in Historians files, CMH.

[43] AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, pp. 21, 23.

sometimes sought to protect their interests at the expense of the overall force. As General Byrnes emphasized in a 30 September 2003 briefing at the Training and Doctrine Command, this was to be a time "for free-thinking and innovation, not parochialism."[44] General Mixon, as a result, would only brief the schools' commandants in February 2004, after the chief of staff had approved the design for the heavy brigade combat team and concepts for other modular organizations. After that, the branches became more involved with the process, particularly with work on the support brigades and with the development of doctrine for modular units. Until it disbanded, however, the task force continued to guard against parochialism. General Mixon was convinced that the entire project would probably have failed if Schoomaker had followed normal procedure and sought branch participation.[45]

General Mixon

Another unusual aspect of the modular design process was the 3d Infantry Division's independent work on the design for a heavy unit of

[44] AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, p. 5. Quote from Information Paper, Lt Col DeVito, TRADOC HUB, 30 Sep 03, sub: TF Mission Analysis Back Briefs to CG, TRADOC, 30 Sep 03. E-mail, Col Rickey E. Smith, TRADOC DCSDEV, to Col John Twohig, FDD [Force Development Directorate], et al., 25 Sep 03, 10:12 A.M., sub: TF Modularity Close Hold Information. All in Historians files, CMH.

[45] AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, pp. 10–11; MFR, Col John J. Twohig, Task Force Modularity, 5 Feb 04, sub: After Action Review of Task Force Modularity CSA Decision Brief to Commandants; E-mail, Maj Gen Robert W. Mixon, TRADOC FC [Futures Center], to Gen Kevin P. Byrnes, TRADOC CG [Commanding General], 5 Feb 04, 9:28 P.M., sub: Commandant Backbrief; Memo, Lt Gen William S. Wallace, U.S. Army Combined Arms Center, 30 Jun 04, sub: Assignment of Doctrine Proponency for Modular Organizations; E-mail, Col John Twohig, TRADOC DCG [Deputy Commanding General]/COFS [Chief of Staff], to Col Henry M. St. Pierre, Army G8-FD, et al., 20 Feb 04, 9:59 P.M., sub: Playing Both Ends Against the Middle; Interv, J. Patrick Hughes, CMH, with Maj Gen Robert W. Mixon Jr., former director, Task Force Modularity, 7 Sep 06. All in Historians files, CMH.

action. That effort remained largely separate from that of the task force until 7 November 2003, when Schoomaker rejected Webster's design and decided to use a task force proposal as the basis for the unit's further development. During that time, General Webster had authority to bypass the chain of command to communicate directly with the chief of staff on this matter. [46]

Even so, the parallel efforts conducted by Webster and the task force were not totally separate. Webster and Mixon were friends, so Mixon knew of the Schoomaker assignment. Although the two groups never interacted directly, whenever one team developed a key finding pertinent to the other, its commander would inform his counterpart without revealing larger aspects of the team's work. By the early fall of 2003, the Training and Doctrine Command's Analysis Center had the 3d Infantry Division's designs in hand and was simulating them in its explorations. Circumstances changed further following Schoomaker's decision in November. Within the week, a team from Task Force Modularity was visiting the division to help reconcile design differences.[47]

Although the chief of staff ordered a close-hold approach to design details given to the Army's branches and schools, he instructed Task Force Modularity to make early contact with the regional commands, Army service component commands, the Joint Forces Command, and the Navy, Air Force, and Marine Corps. He wanted to ensure that the task force created designs that fulfilled the requirements of those organizations while improving the ability of modular units to cooperate with forces from the other services. The general also had a second motive. He hoped to gain support for the Army's effort to change itself by keeping those organizations informed of the process.[48]

These contacts began almost immediately. Shortly after its formation the task force analyzed material developed by the Joint Forces Command's Joint Futures Lab to learn the concerns of joint and regional commanders most likely to employ Army units in combat. Identifying issues that pertained to the new brigade- and division-level echelons under construction, the task force passed the resulting analyses back to the Joint Forces Command and the joint and regional commanders for comment. Some of the responses were influential. Later, once draft

[46] Interv, Hughes with Webster, 12 Sep 06.

[47] Ibid. See also Witsken et al., *The Role of Analysis in the Creation of the Modular Force*, ch. 5; Col Jeffrey R. Witsken, Comments on draft, 19 Mar 07, item 14, Historians files, CMH.

[48] AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, pp. 6, 11–12.

designs were ready, a team from the task force presented them to the other military services, the Army service component commands, and various other commands and joint organizations. The additional comments also proved useful.

The consultations varied, depending on the type of unit under consideration and the nature of the organization consulted. The most important of the consultations involved the Central Command's Army service component command, the Third Army, and the commanders of its theater-level subordinate commands. Their recent combat experience and their strong views on the theater-level echelon would have a major influence on the final designs of theater-level support commands and the unit of employment at the operational level's headquarters.[49]

Task Force Modularity also worked closely with Headquarters, Department of the Army, whose staff sections required the information to plan and coordinate the rapid implementation of modularity. In turn, the Army Staff provided the task force with important information on the number of soldiers the service could call and the quantity of equipment it could provide. The data were crucial to the design of both maneuver and support units of action. The task force also briefed the Army Staff on its decisions before presenting them to the chief of staff. Army Staff personnel who had served on temporary duty with the task force in 2003 often served as key links in this process.[50]

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[49] Ibid., pp. 11–12. E-mails, Col Rickey E. Smith, TRADOC DCSDEV, to Maj Gen Robert W. Mixon, TRADOC DCSDEV, 8 Oct 03, 4:50 P.M., sub: Combatant Command Review of Needed Capabilities; Maj John Jones, TRADOC DCG/COFS, to Col Rickey E. Smith, TRADOC DCSDEV, 17 Oct 03, 9:22 A.M., sub: Regional Combatant Commanders' Required Capabilities Trip 10–21 Nov 03; Col Rickey E. Smith, TRADOC DCSDEV, to Maj Gen Robert W. Mixon, TRADOC DCSDEV, 30 Sep 03, 1:30 P.M., sub: JFCOM [Joint Forces Command] Assessment of Our Synthesis of Their Work; Maj Gen Robert W. Mixon, TRADOC FC, to Gen Kevin P. Byrnes, TRADOC CG, 3 Nov 03, 6:15 P.M., sub: Briefs with LTG [Lieutenant General] McKiernan and LTG McNeill; Col Rickey E. Smith, TRADOC DCSDEV, to John W. McDonald, 20 Oct 03, 8:11 A.M., sub: FW: Continued Work on TF MODULARITY COA [Courses of Action]; and Mike Burke, TRADOC DCG/COFS, to Clinton Ancker, CGSC, 31 Oct 03, 10:30 A.M., sub: Meeting with AEF [Air Expeditionary Force], 30 Oct 2003. MFRs, John J. Twohig, Task Force Modularity, 21 Jun 04, sub: AAR for the Task Force Modularity UEx and UEy VTC [Video Teleconference] to the United States Army Space and Missile Defense Command (USASMDC) and the Military Surface Deployment and Distribution Command (MSDDC) 21 June 2004, and 18 Jun 04, sub: Results Task Force Modularity UEy Update to ASCCs–17 June 2004. All in Historians files, CMH.

[50] AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, pp. 16, 20; Col. Henry M. St-Pierre et al., *Transforming to the Modular Force: A Review on the Design Development and Division Execution to the Modular Design* (Carlisle Barracks, Pa.: U.S. Army War College, 20 March 2005), ch.

The task force also established and maintained close coordination with a number of the task forces working on the chief of staff's other focus areas. For the most part, this involved providing information the groups would need to incorporate modularity into their work, but two of the task forces were particularly important to the modularity effort itself. Given the complexity of designing aviation units and of devising concepts for their use, General Byrnes gave Task Force Aviation the lead for developing concepts and designs for aviation in the modular force. Similarly, although Task Force Modularity oversaw the design of the sustainment brigade and settled whatever theater-level sustainment issues arose, Task Force Logistics provided substantial assistance in those areas. Task Force Modularity also worked with the "HUB," a group General Byrnes had established at Fort Monroe to manage the efforts of the Training and Doctrine Command's various focus area teams. Since the HUB determined time lines for important issues shared by more than one of the command's task forces, the connection enabled Task Force Modularity to plot dates for key decisions it and the other teams had to make to meet the chief of staff's objectives.[51]

Early in the design process, General Schoomaker directed Task Force Modularity to enlist the services of respected experts who could be counted on to review with rigor the concepts and designs for brigade combat teams, units of employment at the higher tactical level, and support brigades. The appointees the task force selected fell into three groups. The first, composed of retired senior officers from the Army and the other military services, was known as The Devil's Advocates. The second, consisting of retired senior Army officers, some of whom had extensive experience in previous redesigns, was called The Grey Beards. The third was dubbed the The Critics. The chief of staff's intent in this was

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4; Headquarters, Department of the Army, *2004 Army Transformation Roadmap*, July 2004, pp. 1-7 to 1-9. An example of these "pre-briefs" to the Army Staff is Memo, John J. Twohig, Task Force Modularity, 14 Jun 04, sub: Army Staff UEy Update Pre-Brief, Historians files, CMH.

[51] AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, p. 13; Information Paper, DeVito, 30 Sep 03, sub: TF Mission Analysis Back Briefs to CG, TRADOC, 30 Sep 03; TF Mission Analysis Backbriefs to CG, TRADOC, 30 Sep 03; Spreadsheets, Nena Barley, Strategic Plans Directorate, 6 Oct 03, sub: HUB RFIs [Requests for Information] 6 OCT 03 (1) (1), and n.d. [c. Apr 04], sub: Issue Crosswalk (Encl 2); Briefings, TRADOC HUB, 13 Jul 04, sub: HUB TF Update Brief (13 Jul), and Brig Gen E. J. Sinclair, CDR, U.S. Army Aviation Warfighting Center, May 04, sub: Modular Force Aviation Structure; PowerPoint Presentation, TRADOC HUB, 16 Jul 04, sub: TRADOC Focus Areas: Minutes from TF Lead Update Briefs to CG TRADOC. All in Historians files, CMH.

not only to tap into another source of expertise. Some of the individuals who would be involved had been very critical of other Army programs and policies. By consulting them early in the process, the general sought to gain their support for the new modular Army. In the end, the groups provided a valuable service. The task force's after action report concluded that the three teams had helped to guard against any tendency on the part of team members to develop a group-think mentality.[52]

In September 2003, before starting on any designs, General Mixon directed the task force to conduct a detailed analysis of its mission. During the discussions that followed, the Training and Doctrine Command's deputy chief of staff for intelligence provided an assessment of the operational environment in which modular forces could expect to operate. Task force members also searched force development literature for useful studies and defined key terms so that everyone would use the same vocabulary. They also developed a list of specified and implied tasks.

One of the first of those efforts, begun on Schoomaker's and Byrnes' instruction, was to "map functions to organizations"—that is, to establish what the ground forces were required to do before designing forces that could achieve those results. Since the chief of staff had stressed that one goal of modularity was to produce Army units better able to operate in a joint environment than in the past, the task force examined both the Army's list of functions (as defined by Field Manual 3–0*, Operations*) and similar lists developed by various joint organizations. Based on this analysis, the group concluded that a modular Army would require the following types of units: unit-of-employment headquarters; heavy brigade combat teams; infantry brigade combat teams; aviation brigades; strike brigades—later termed *fires* brigades; reconnaissance, surveillance, and target acquisition brigades—later designated as battlefield surveillance

[52] AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, pp. 17–18; Witsken, Walden, and Fratzel, *Integrated Analysis Report*, p. 9; Draft Paper, Task Force Modularity, 6 Feb 04, sub: Army Reorganization: Doctrine, Organization, Training, Materiel, Leader Development and Education, Personnel, and Facilities (DOTMLPF), 6 February Change Recommendation; E-mails, John Tilelli to Col Rickey E. Smith, 13 Oct 03, 8:00 A.M., sub: Modularity, and 17 Oct 03, 11:21 A.M., sub: TF Modularity Notes; UEx Comments from GEN(R) Tilelli 13 Nov 03; E-mails, John McDonald, TRADOC DCG/COFS, to Col Rickey E. Smith, TRADOC DCSDEV, et al., 12 Oct 03, 5:59 P.M., sub: Trefry Comments, and John W. McDonald to Maj Gen Robert W. Mixon,TRADOC DCSDEV, et al., 12 Nov 03, 1:19 P.M., sub: Critics; MFR, Col Rickey E. Smith, Task Force Modularity, 7 Jan 04, sub: After Action Review of Task Force Modularity Experts Day I–6 January 2004; Interv, J. Patrick Hughes, CMH, with Brig Gen (Ret.) Thomas R. Goedkoop, 14 Aug 06. All in Historians files, CMH. Goedkoop was a senior adviser to Task Force Modularity.

brigades; protection brigades—later designated as maneuver enhancement brigades and then changed again to combat support brigades (maneuver enhancement); and sustainment brigades.

The task force ended its analysis by identifying five essential tasks the Army would have to complete if it was to succeed in transforming itself into a modular force. First, it would need to shift from a division-centered to a brigade-centered organization based on heavy (armored) and infantry units of action. Second, the Army would have to develop both single-function and multifunctional modular support units of action. Next, it must redesign the headquarters elements for echelons above brigade using concepts for the units of employment at the operational and higher tactical levels. Fourth, the service had to reorganize the 3d Infantry and the 101st Airborne Divisions as modular units using only their existing resources without disrupting their scheduled deployment to Iraq in 2005. Last, the Army would need to reorganize the remaining Regular Army divisions and the echelons above division along with Army National Guard–enhanced separate brigades as modular units without disrupting scheduled overseas rotations.[53] When the process was near completion, the task force's leaders briefed Generals Schoomaker and Byrnes on the group's findings to ensure that its conclusions meshed with the chief of staff's intentions.

Since a heavy division would be the first unit to be reorganized, the task force gave priority to developing a heavy brigade design. Given Schoomaker's insistence on fielding modular units quickly, however, the task force also began work on designs for the other parts of the modular force. As one design neared completion, the group wasted no time in shifting its priorities to another. As a result, the emphasis moved from the heavy brigade to the infantry brigade combat team. From there it switched to the headquarters of the unit of employment at the higher tactical level, then to the support brigades, and finally to the headquarters of the unit of employment at the operational level and its theater-level commands.[54]

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[53] This discussion of Task Force Modularity's mission analysis is based on AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, pp. 4–5, 17; Smith, Task Force Modularity Talking Points for CSA Backbrief, 24 Sep 03; Briefing, Task Force Modularity, 30 Sep 03, sub: Mission Analysis Back Brief 30 Sep 03; PowerPoint Presentations, FDD, TRADOC, 17 Sep 03, sub: Modularity Construct 171532Sep03, and CADD, TRADOC, 29 Sep 03, sub: Assumptions (V3) 291600SEP03. All in Historians files, CMH.

[54] AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, 28 Feb 05, p. 5; Witsken, Walden, and Fratzel, *Integrated Analysis Report*, p. 11.

Even so, Task Force Modularity could never have met Schoomaker's deadlines without the assistance of the Training and Doctrine Command's Analysis Center, which supported its efforts in four ways. First, the center provided rapid assessments of the task force's first designs and the associated work. Second, it compared competing designs to weigh their relative strengths and weaknesses. Third, it conducted analyses in response to questions and concerns General Schoomaker raised as he reviewed the proposed designs and concepts. Finally, after the chief of staff had approved a design, the center assisted in the refinement of the operational and organizational ideas.[55]

The center ran a number of analyses to obtain maximum results in the shortest time. Using existing simulations and scenarios where possible, center analysts made four key assumptions: the scenarios were representative of the full spectrum of operations a modular force would face; the operations and equipment of the opposing forces in the scenarios were adequate representations of the threats which would confront it; the use of assets from the other military services and their effects were consistent with the level of joint interdependence expected to exist between 2005 and 2008; and the technologies the modular force would need such as the Good Enough Battle Command would be available. Instead of placing sole reliance on quantitative analysis, both the center and the task force employed professional military judgment to ensure that their analyses properly addressed all aspects of organizational design. This was particularly important because there was too little time to address the entire range of possibilities that might occur between low-intensity stability and support operations and high-intensity conflict.

Much of the analytical effort focused on the chief of staff's criterion that unit designs should be at least as good as those then in operation. This led to a search for "show stoppers," designs that somehow crippled or degraded critical functions a unit had to perform. When problems of the sort appeared, further analysis determined whether design changes could either fix the problem or reduce the risk to an acceptable level. If not, the design was discarded.

The Analysis Center conducted its assessments by using simulations that reproduced the operational and the tactical levels of war. To conduct and evaluate them, the center formed a team of retired and active-duty brigade commanders, active-duty operations officers, experts from the Training and Doctrine Command's schools and centers, and individuals

[55] This discussion of analytical support for Task Force Modularity is based on Witsken, Walden, and Fratzel, *Integrated Analysis Report*, and Witsken et al., *The Role of Analysis in the Creation of the Modular Force*.

who had gained experience testing designs for General Shinseki's Objective Force. Experts on the threats the modular force could expect to encounter on the battlefield played the opposing forces.

The tactical-level simulations the modelers used focused on brigade combat teams. Those at the operational level centered on the unit of employment at the higher tactical level. The teams conducting them contained retired colonels who had commanded brigades, retired military personnel with experience in the Battle Command Training Program, former division and corps staff officers, and experts with relevant experience from the Training and Doctrine Command's schools and centers. To ensure that operational assessments reflected the results of the tactical assessments, personnel who worked on the tactical simulations also participated in the operational simulations. Throughout the process, a group of retired general officers served as senior mentors, providing valuable insights and advice.

In addition to conducting operational and tactical simulations, the Analysis Center worked on modular designs for sustainment, training, and deployment organizations that would become necessary if the Army adopted the modular idea. Using examples from the simulations it had completed and coordinating with Task Force Logistics, the center sought to determine how a modular force would conduct sustainment operations and the amount and composition of support a brigade combat team would require in the field. It also conducted an analysis to examine how the Army's new organization would affect the service's ability to deploy forces overseas. While making these assessments, the center twice surveyed participants in its simulations on the changes a modular reorganization would impose on training and leader development programs.

Besides simulations and the assistance of senior mentors, Task Force Modularity sought other sources of support. A study of military history provided material to compare the processes and effects of earlier redesigns with those of the one in progress. The task force also used lessons from recent combat operations in Iraq and Afghanistan. Once designs for the brigade combat team and the unit of employment at the higher tactical level were approved, the task force sent teams to monitor the reorganization of the 101st Airborne and 3d Infantry Divisions. The insights those observers gained helped to speed the fine-tuning of the designs being adopted by these divisions.

As part of their reorganization, the 101st Airborne and 3d Infantry Divisions rotated their newly designed brigade combat teams to the National Training Center at Fort Irwin, California, and the Joint Readiness Training Center at Fort Polk, Louisiana. Task force working groups

Soldiers of the 26th Support Battalion, part of the 2d Unit of Action, 3d Infantry Division, at the National Training Center

accompanied the units, but the need to prepare the two divisions for deployment to Iraq in 2004 and 2005 resulted in such a rapid conversion that the usefulness of what the teams learned was limited. The deadlines that resulted kept the Army's logistics and personnel support organizations from supplying all of the troops and materiel the new designs required. The 3d Infantry Division's brigades thus adopted only part of the modular format, and its officers and troops received little instruction on how modular forces operated before they began their training rotations. Despite these difficulties, the 3d Infantry Division's commander, General Webster, appreciated the observers' contributions. He later said that their appraisals proved invaluable in teaching his troops to use both the headquarters at the higher tactical level and the heavy unit of action.[56]

[56] See Maj. Gen. William G. Webster, Brig. Gen. (Ret.) Thomas R. Goedkoop, and Maj. Eugene A. Yancey III, *Task Force Modularity: Initial Insights Memorandum, National Training Center Rotation 04–07* (Fort Leavenworth, Kans.: TRADOC Analysis Center, 22 July 2004); Col. Jeffrey R. Witsken and Maj. Eugene A. Yancey III, *Task Force Modularity: Initial Insights Memorandum, National Training Center Rotation 04–05* (Fort Leavenworth, Kans.: TRADOC Analysis Center, 29 April 2004); Memo, TRADOC Analysis Center, 20 Jul 05, sub: Modular Force Collection Effort: Comprehensive Insights and Analysis Memorandum, and PowerPoint Presentation, Headquarters, 3d Infantry Division (Mechanized), sub: 3ID [3d Infantry Division] Reorganization: GAO [General

Soldiers of the 1st Battalion, 15th Infantry, 3d Infantry Division, at the Joint Readiness Training Center

General Schoomaker's judgment that the Army had a narrow window of opportunity resulted in an accelerated design effort unlike any other in the recent history of the Army. How Task Force Modularity did its job, however, is only part of the story. The case histories that follow describe the final products and how they came to be.

Development of the Heavy Unit of Action

The initial guidance Task Force Modularity received was to create a design the Army could use to form five heavy units of action from three existing heavy brigade combat teams. The task force established several planning teams to produce initial designs. Since General Schoomaker had instructed the commander of 3d Infantry Division to produce his own proposal, the task force also included that design in its analysis. As the effort gained momentum, the task force imposed two conditions on its developers. The units they designed had to be able to fill any mission the force might receive, and they could make use of only equipment and technology either currently in the Army's inventory, commercially available, or soon to be added. When completed, each proposal was to be measured against the existing heavy brigade organization in use by the 3d Infantry Division. (*See Appendix.*) The comparison would demonstrate if the new design met Schoomaker's mandate that it be as capable as the one it replaced.[57]

Accounting Office] Brief 16 Nov 04, both in Historians files, CMH; Intervs, Hughes with Webster, 12 Sep 06, and Goedkoop, 14 Aug 06. Goedkoop led the collection effort.

[57] This discussion of the development of the heavy unit of action is based on Witsken et al., *The Role of Analysis in the Creation of the Modular Force*, pp. 12–34; E-mail, Col Rickey E. Smith, TRADOC DCSDEV, to Expert Panel Team II TRADOC DCSDEV et al., 3 Oct 03, 7:35 P.M., sub: RE: CLOSE HOLD TF Modularity Timeline Task Force Modularity; PowerPoint Presentation, Task Force Modularity, sub: COA Comparison for

During October 2003, simulations employing a process known as concept design exploration tested five proposals at the unit of action Maneuver Battle Lab at Fort Knox, Kentucky. The first plan offered a radical alternative to the 3d Infantry Division's organization by combining the heavy brigade's armor and infantry elements at the platoon level. Labeled the "network enabled" design because of its heavy dependence on digital information technologies, it featured three maneuver battalions composed of four line companies, with each battalion supported by an engineer company. The other two combat units were a strike battalion, composed of two howitzer batteries and a multiple-launch rocket battery, and an armed reconnaissance troop that included a tactical unmanned aerial vehicle (UAV) platoon. Flying camera-equipped unmanned aerial vehicles, the unit could see over and around obstacles to provide ground commanders with live pictures of what was going on in a combat zone beyond their immediate lines of sight.

The second proposal used the Stryker Brigade Combat Team as its model. It also contained three maneuver battalions of four line companies each, but its infantry and armor elements were combined at the company level, and it had an engineer platoon to support each battalion. This proposal featured an armed reconnaissance squadron that had two UAV platoons and an aerial reconnaissance troop of scout and attack helicopters.

The third and fourth proposals drew on the years of work the Army had spent developing the Objective Force unit of action. As with the first two proposals, the third featured three maneuver battalions of four combined arms companies each and a strike battalion. A key difference was that, along with its armed reconnaissance squadron, it had an aviation battalion with scout and attack helicopters. The fourth was a version of the third that featured only two maneuver battalions.

The fifth proposal came from the 3d Infantry Division. It divided the division's assets into five units of action. Each unit had one armor battalion and one mechanized infantry battalion, a howitzer battalion, an engineer battalion, and an armed reconnaissance troop. No aviation

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CSA Brief 061300 Nov 03; MFRs, Col John J. Twohig, Task Force Modularity, 7 Nov 03, sub: Results Task Force Modularity Heavy Brigade Combat Team Design Briefing to CSA 7 November 2003, and 19 Jan 04, sub: After Action Review of Teleconference with Senior Advisors; Task Force Modularity, Overarching Modular Briefing to CSA, 4 Feb 03; John W. McDonald, John's Notes to Modular Briefing to CSA Backups, version 2.0; Donald Meyers, TF Mod Infantry UA Comparison 2 Feb 04; John Bonin, Briefing Notes, 4 Feb. All in Historians files, CMH. MFR, Twohig, 4 Feb 04, sub: After Action Review of Task Force Modularity Decision Brief to CSA; Interv, Hughes with Goedkoop, 14 Aug 06.

or multiple-launch rocket systems were included, but there was an unmanned aerial vehicle platoon. The division's design fell short of the benchmark established by General Schoomaker. Since its designers had assumed that no external equipment or personnel would be available, its "five out of three" format was much smaller than the other designs and suffered from very limited combat power when compared with them.

The exploration process generated a string of insights that would guide the task force's subsequent development of the heavy unit of action design. A number stood out. Three maneuver elements were necessary for effective operations. Every echelon needed its own set of sensors and weapons. The force required a "robust" reconnaissance organization with both air and ground capabilities. Each maneuver battalion required the support of at least one engineer company. The target acquisition element of the fires battalion needed both counterbattery radar to pinpoint the location of enemy artillery and unmanned aerial reconnaissance vehicles. Helicopters should be retained by the unit of employment at the higher tactical level for distribution to units of action as needed.

At the close of the concept design exploration phase, Task Force Modularity's leadership decided to discard options three and four and to develop the first two proposals. The 3d Infantry Division meanwhile revised its proposal into a third alternative. At this time, the Headquarters, Department of the Army, informed the task force and the 3d Division's planners that the Army could not meet Schoomaker's objective to increase the number of brigade combat teams if heavy units of action contained three maneuver battalions.

By late October, the task force could choose from three courses of action. The first, from the 3d Infantry Division, closely resembled the division's first proposal. It divided the division's assets into five units of action, each possessing two maneuver battalions of three companies each. The task force determined that the design had better command and intelligence capabilities than the 3d Infantry Division's existing arrangement but less maneuverability and firepower.

The second course of action reflected the limitations on resources with which the task force had to work. Rather than carve five units of action from three existing brigade combat teams, it called for just four. Each had an armor battalion and a mechanized infantry battalion of three line companies, an engineer company, and a combined arms company that would serve as a reserve force. Other combat units included an armed reconnaissance squadron composed of two ground reconnaissance troops and an unmanned aerial vehicle platoon and a fires battalion with two howitzer batteries. Each line company, the fires battalion, the support

A Shadow tactical unmanned aerial vehicle is prepared for launch.

battalion, and the unit's headquarters and headquarters company had small-unit unmanned aerial vehicles—reconnaissance drones weighing only a few pounds—that were easily deployed by units below the brigade level. The unit of action also had a signal company and a military intelligence company that contained an analysis platoon, a human intelligence section, and an integration platoon designed to process and coordinate all of the intelligence obtained from the various sources available to a unit in the field. The task force concluded that this design had better command and intelligence capacities than those of the 3d Division and a much greater ability to conduct reconnaissance. The cuts in maneuver and firepower capabilities, however, meant that the unit's tactics would be more predictable than those of the benchmark and render it more dependent on joint air and artillery fire support.[58]

The third course of action used proposals for the Future Combat Systems unit of action as a starting point but also drew on assets from nondivisional units. It had three different maneuver battalions: an armor battalion of three companies, a combined arms battalion of two mechanized

[58] S. Sgt. Raymond Piper, Army News Service, "Small UAV Provides Eyes in the Sky for Battalions," 17 Feb 05, Historians files, CMH.

A soldier prepares to launch a Raven unmanned aerial vehicle.

infantry companies and one armor company, and an infantry battalion consisting of one mechanized and two light infantry companies. As with the second course of action, the armed reconnaissance squadron had two ground reconnaissance troops and a tactical unmanned aerial vehicle platoon, but the fires battalion had three howitzer batteries. As in the second course of action, this design also had a support battalion, a military intelligence company, and a signal company. In its assessment, the task force noted that the design had better command and intelligence capabilities than the 3d Infantry Division's plan. It also surpassed the other two courses of action because it had a third maneuver battalion. This gave it an edge in close combat by making it more flexible and less predictable.

During a 7 November 2003 briefing for General Schoomaker, General Byrnes explained the task force's selections. The group, he said, had found producing five units of action from three brigade combat teams impossible. Even so, a four-from-three solution would still draw five or six extra brigades from the Army's five regular heavy divisions. This would give the Regular Army thirty-eight or thirty-nine maneuver units of action even before it converted its other five regular divisions to the new format. Byrnes emphasized that the new brigades would be more lethal than current designs.

The chief of staff responded that the 3d Infantry Division would be a provisional modular formation in 2005. The task force should support the division in its transition, he said, but nonetheless concentrate its main effort on the wider Army. Turning to the three courses of action, Schoomaker stressed that maneuver units of action had to put "more boots on the ground" by preparing more soldiers than before to do missions previously considered infantry-only. He also directed the task force to investigate the feasibility of creating, within units of action, engineer, military police, and chemical units capable of performing secondary mis-

sions as infantry. Complimenting the task force on its efforts to increase human intelligence capabilities, Schoomaker nonetheless observed that existing brigade combat teams were weak in their ability to detect what an opposing force was doing or could do to thwart a mission. In that light, he directed the task force to join with Task Force Intelligence to improve tactical intelligence capabilities. Turning to the Army's readiness for joint operations, the general stated that diluting the service's unique skills and capabilities to achieve that end was unnecessary. Instead, planners had to find ways to plug the Army's strengths into a joint force.

During the discussion, a representative of the Army's G–3 office underscored the difficulties in providing the resources to carry out the third, three-battalion course of action. Schoomaker acknowledged the problem but stated that the effort would serve to frame the case for increasing the Army's strength by specifying precisely what was needed to do so. At the end of the briefing, the general chose the second and third courses of action for further analysis and development.

Between the November 2003 briefing and February 2004, the task force sought to create a final design it could recommend. Its main problem was the development of a two–maneuver battalion unit that could reduce the risks such a force incurred. These included limited flexibility in responding to tactical developments, a lack of endurance, and a need often to fight simultaneously on a line rather than sequentially in the safer triangular formation of two up and one back. Compounding these problems, the unit of employment at the higher tactical level often had to commit its reserve early during simulations, when its assigned units of action had only two maneuver battalions. General Mixon would later call this issue the "most fundamental challenge" the developers faced during the entire design process.[59]

There were other challenges. Simulations had shown that designs containing fewer maneuver companies did worse in battle than those with more. This was because the smaller number of maneuver companies proved more susceptible to attrition. Assessments had likewise shown that if there were many ways to neutralize an enemy the real issue was finding him. Maneuver units of action had to be able to conduct reconnaissance in complex terrain and in areas where the enemy could mingle with noncombatants. This meant that they required highly capable sensors, manned reconnaissance, informers and other undercover agents, and teams trained to analyze the resulting data to create the kind of information on the enemy and his intentions that tactical units needed.

[59] Interv, Hughes with Mixon, 7 Sep 06.

To alleviate those problems, the task force employed a series of technological and organizational expedients that its designers termed *enablers*. On the technological level, these included reliance on the Good Enough Battle Command system, counterbattery radar, various threat detecting sensors, and tactical and small-unit unmanned reconnaissance vehicles.

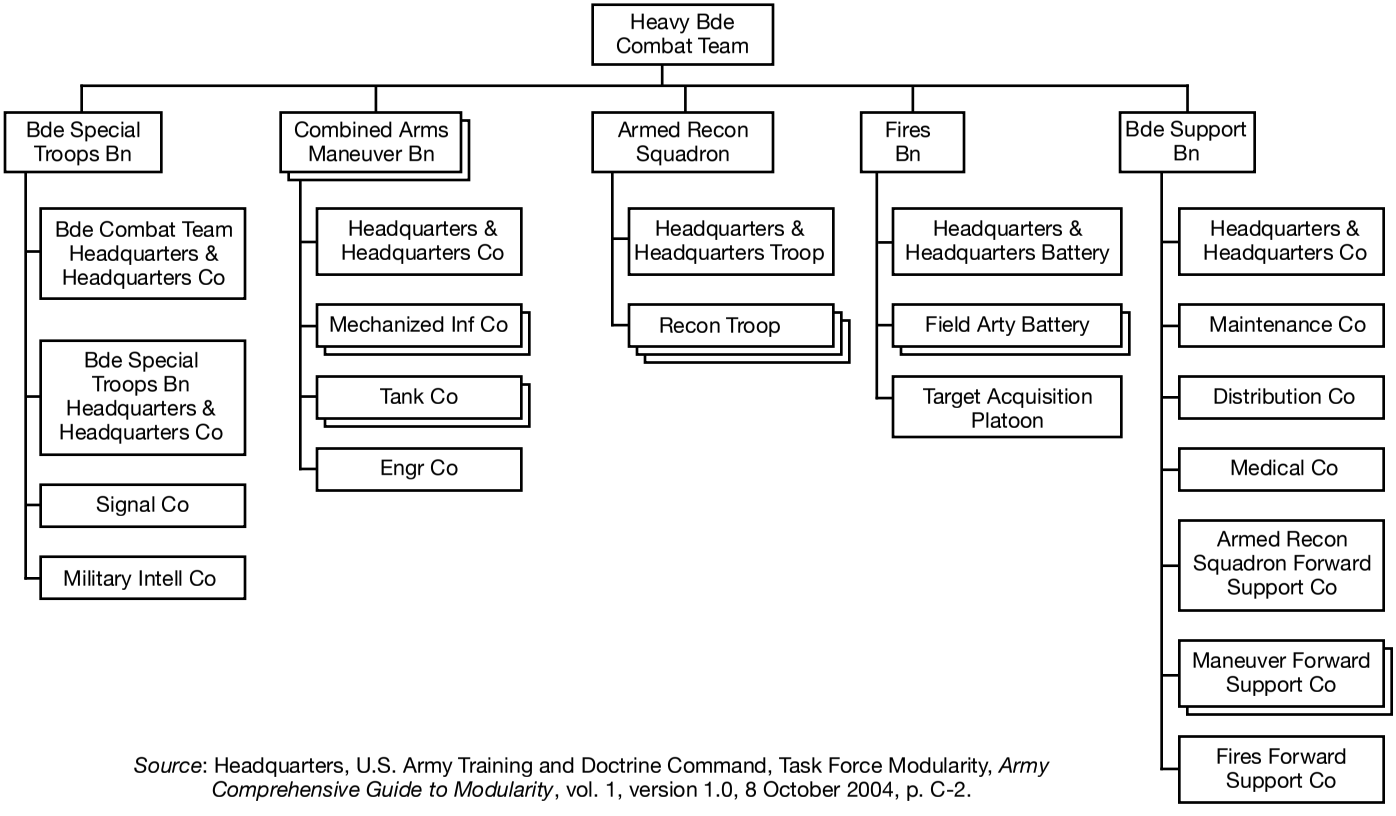
All of those additions were useful, but the organizational enablers made the real difference. To enhance the heavy unit of action's flexibility, the two maneuver battalions it contained would become combined arms forces employing two armor and two mechanized infantry companies and an engineer company. The unit's armed reconnaissance squadron would meanwhile gain a third ground reconnaissance troop and a forward support company, and the two batteries of its fires battalion would field eight rather than six howitzers. A new brigade troops battalion (later designated the special troops battalion) also came into being to provide command, security, and support for the headquarters, separate companies, and any attachments (*Chart 2*).

To enhance logistics, each combat battalion was also to have a forward support company, but that changed later in 2004, when complaints began to arise that the military occupational specialties the units mainly employed were open to women, who constituted a large percentage of the Army's soldiers in those fields. In that sense, by putting the units on the tables of organization of combat battalions, the design violated a law that prohibited the assignment of female soldiers to positions with a high probability of becoming engaged in direct combat. Since finding enough men with the proper specialties to replace the women in all of the modular Army's forward support companies would be impossible, the designers moved the units to brigade support battalions. These organizations could retain mixed-gender companies because they were not combat arms units.[60]

To accommodate all the changes involved, the heavy unit of action's staff had to grow. A deputy commander was added along with a plans officer, a specialist in psychological operations and military deception, a civil-military relations officer, a public affairs component, a human intelligence cell, an operational law team, and an air defense–airspace management group. When circumstances required, there would also be a special operations liaison officer. The task force concluded that this

[60] Headquarters, U.S. Army Training and Doctrine Command, Task Force Modularity, *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, pp. 8-5 and 9-6; Rowan Scarborough, "Women in Combat Ban Again at Issue," *Washington Times*, 4 Feb 05.

Chart 2—Organization of a Modular Heavy Brigade Combat Team, September 2004



Source: Headquarters, U.S. Army Training and Doctrine Command, Task Force Modularity, *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, p. C-2.

headquarters, if necessary, could manage the addition of one or two more maneuver battalions without any loss of effectiveness.

On 4 February 2004, Task Force Modularity presented the chief of staff with an update on its work. After examining the new heavy brigade combat team design, Schoomaker approved it for the 3d Infantry Division but not for the rest of the Army's heavy divisions. He wanted to see how it worked in practice and to evaluate the refinements that would occur when reality collided with design before doing anything final. He also agreed with Task Force Modularity that a three-battalion unit of action was best. Because of that, he wanted to delay service-wide fielding of the two-battalion force until his G–3 office had decided how many heavy units of action the Army needed. If a lower number would work, he might not have to settle for the smaller design. The problem remained, however, that the Army was at war and had few resources to spare for the conversion to a modular structure. No one could be sure, the vice chief of staff noted at the meeting, whether the service would have the means in the near future to organize the three-battalion heavy units everyone wanted. In that light, the two-battalion design might be the best available.

Development of the Infantry Unit of Action

As with the heavy units, both the task force and the first unit scheduled for conversion to the infantry unit of action, the 101st Airborne Division, developed designs to compare against a standard reference derived from the 101st's existing organization.[61] (*See Appendix.*) The developers had instructions to produce a design that could replace the current light infantry, air assault, and airborne brigades with one general-purpose formation. That force was to be capable of conducting the forcible entry mission then assigned only to airborne and air assault units. In doing this, designers were to follow the same guidance they had received for the heavy unit of action. The new designs were to be at least as capable as but more deployable than existing brigade combat teams. They were to allow the Army to create more infantry brigade combat teams without increasing its strength. As with the

[61] This discussion of the infantry UA design is based on Witsken et al., *The Role of Analysis in the Creation of the Modular Force*, pp. 26–36; Paper, John Bonin, Task Force Modularity, sub: Infantry UA Concepts, version 1.2, 261100 Nov 03, Historians files, CMH; Overarching Modular Briefing to CSA, 4 Feb 03; John's Notes to Modular Briefing to CSA Backups, version 2.0; TF Mod Infantry UA Comparison 2 Feb 04; Bonin, Briefing Notes, 4 Feb; MFR, Twohig, 4 Feb 04, sub: After Action Review of Task Force Modularity Decision Brief to CSA.

heavy unit of action, they were only to employ systems and technologies that could be fielded by 2005.

This guidance, but especially the requirement to produce more units, led task force developers to rely on the experience they had gained in designing the heavy unit of action. Discerning early, for example, that the goal of turning three existing infantry combat teams into five units of action would be difficult, they replaced it with the four-from-three solution they had used before. Using as a reference a recent light infantry improvement study, they relied mainly on organizational concepts from the heavy unit of action such as the brigade troops battalion; a fires battalion instead of an artillery battalion; a variant of the armed reconnaissance squadron; and a larger, more capable brigade staff. As before, the designers used digital communications and threat detecting technology such as radar, thermal imaging, and unmanned aerial vehicles to ensure that the new units' lethality compared favorably with that of the old.

Task Force Modularity considered three courses of action in designing the infantry unit of action. The first came from the 101st Airborne Division, which proposed a force with three fully motorized infantry battalions; a three-battery, 105-mm. howitzer battalion; a forward support battalion; an engineer company; a military intelligence company; a signal company; and a headquarters company. The task force had two main objections to this proposal. First, the design was not truly modular because it received a portion of its assets from a division. Second, the undersized brigade headquarters and support battalion diminished the unit's ability to take independent action. Several items in the plan, however, attracted the designers' interest. In the end, they adopted the 101st's proposal to mount scouts, mortar units, and weapons units in wheeled vehicles.

The other two proposals came from the task force. The first underwent a number of modifications during its development but ended with a maneuver force of two infantry battalions, each with three rifle companies, a weapons company, and a forward support company. The weapons company featured a sniper section, a mortar platoon, a scout platoon, and three assault platoons of armored High Mobility Multipurpose Wheeled Vehicles (popularly known as Humvees) armed with heavy machine guns, grenade launchers, and tube-launched, optically tracked, and wire-guided (TOW) antitank missiles. The forward support company included a transportation platoon that could move one rifle company. The reconnaissance squadron had two motorized and one dismounted reconnaissance troops, a tactical unmanned aerial vehicle platoon and other sensors, and a forward support company. The fires battalion had two firing batteries of eight 105-mm. howitzers each, tactical unmanned aerial

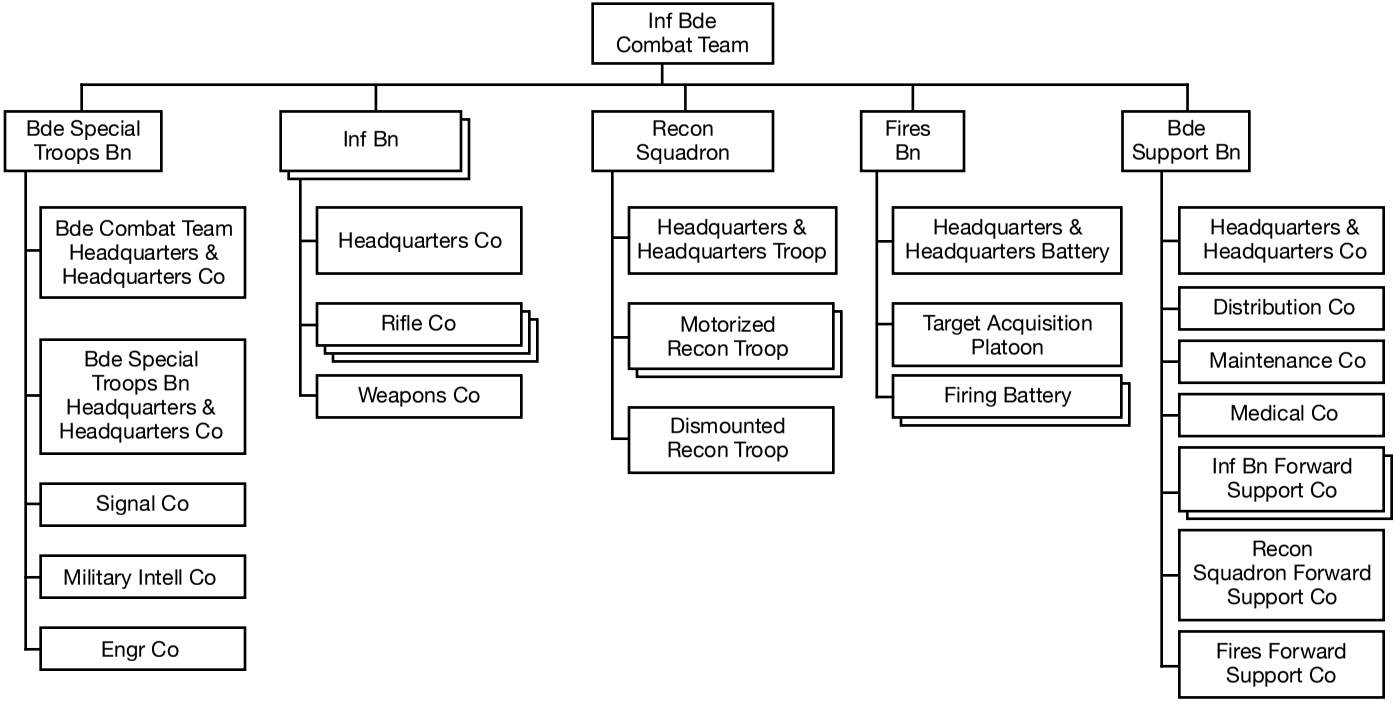
vehicles, and new, lightweight countermortar radars that the Army was procuring for the special operations forces. The support battalion included a transportation platoon that could move two rifle companies. The brigade troops battalion had a two-platoon engineer company, a signal company, and a military intelligence company. As with the heavy unit of action, the proposed unit's table of organization contained extensive intelligence elements and a more robust staff than those of the reference unit. The task force considered increasing the size of the unit's rifle squads to twelve men to meet the chief of staff's desire for more infantrymen. In the end, however, the need to remain within the Army's existing end strength forced the task force to retain the standard design.

The task force's second proposal was similar to the first with the addition of a third infantry battalion. The engineer company in this design also gained a third platoon to support the new unit.

The task force's initial assessment of the three courses of action led the infantry UA design team to drop the 101st's recommendation because the design was not achievable by 2005. Later, more detailed assessments of the task force's other two courses of action found several flaws. The two-battalion design contained the same risks as the two-battalion heavy unit of action: limited flexibility, a lack of endurance, and a necessity to fight on a line rather than in a safer two-up-and-one-back formation. Furthermore, the range of the fires battalion's 105-mm. howitzers limited the battalion's ability to support its forces in the field, especially the wide-ranging reconnaissance squadron. This compelled the battalion to depend more on external fire support than was the case with the heavy unit of action. The task force could have reduced this risk by replacing the 105s with towed 155s, but this would have compromised the new unit's ability to conduct airborne and air assault operations. The heavy 155s were transportable only by the Army's medium-lift helicopters, which were already much in demand as troop and materiel transporters. Another area of risk was in antitank capability. Lacking tanks, the two designs had to depend on infantry antitank weapons such as the portable Javelin and larger, Humvee-mounted TOWs. Compared with the benchmark brigade combat team, however, the task force's designs slightly increased the number of Javelins but significantly decreased the number of larger missiles.

At the 4 February briefing for General Schoomaker, Task Force Modularity recommended that the chief of staff approve the two-battalion course of action (*Chart 3*). The planners argued that the design would allow the Army to field more infantry units of action using the service's existing resources while reducing risks by exploiting new organizations

Chart 3—Organization of a Modular Infantry Brigade Combat Team, September 2004



Source: *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, p. D-2.

and technologies. Units of action designated as airborne would be manned with parachute-qualified personnel, but specialists essential to their operations such as parachute riggers would be drawn from echelons above the brigade. Schoomaker approved this recommendation and directed that the Army activate two of the brigade combat teams during fiscal year 2004. Even so, he was unwilling to abandon all thought of a three-battalion unit of action. He instructed both the task force and Headquarters, Department of the Army, to study further whether the design might yet be feasible.

Development of the Support Units of Action: An Overview

The work on the units of employment had shown that the new commands would need support units of action if they were to replace the division and corps echelons. To provide support units of action, designers would have to split the capabilities in existing divisions and corps between new maneuver units of action and new support units. Receiving an assignment and the forces necessary to complete it, a unit-of-employment headquarters could allocate missions directly to one of its support units of action or place that command under the control of a maneuver unit of action.

Following General Schoomaker's directive to tie functions to organizations and drawing heavily on the work of the Unit of Employment Integrated Concept Team, the task force's designers decided that the modular Army would need five types of support units of action: a battlefield surveillance brigade, a fires brigade, a maneuver enhancement brigade, an aviation brigade, and a sustainment brigade. The units were to share several characteristics. They were to be fully modular, easily tailored to meet the different demands of each new mission, and in possession of the technology and liaison officers necessary to work directly for units of employment, joint headquarters, and multinational headquarters. Besides being able to reinforce other units of action, all but the aviation brigade could fill several roles rather than just one. The maneuver enhancement brigade, for example, would support armor and infantry units in the field by combining engineer, military police, and air and chemical defense functions in one unit.

As the effort to design the units continued, a question arose: were the brigades of "campaign quality?" In other words, could they sustain a unit of employment at the higher tactical level and its subordinate units well enough to enable the force to fight at a level equal to that of a current corps or division? As a result, the designers had to work with

a support unit of action that, as a permanent base, consisted only of a headquarters, a basic organization, and some core capabilities. For each mission it received, that unit would acquire a different set of subunits, with the mix of those forces changing as its missions changed. In the end, the command's success as a support unit of action would depend on how well unit-of-employment commanders learned to manage their units' capabilities and how well they tailored the mix to achieve their goals.

The simulators ran more iterations of the computer war game simulations than normal to learn how to do this. In the process, they identified a need for extensive changes in doctrine and training if leaders were to use support units of action effectively. In the Army of the 1990s, for example, divisional artillery or signal battalion commanders served as senior staff officers for the division commander within their specialized functions. In the new modular force, the unit of employment at the higher tactical level would have no permanently assigned battalions or brigades. Designers had to work out who the senior staff officers for such functions would be at that level.[62]

By early March 2004, work on concepts and designs for both the support units of action and the unit of employment at the higher tactical-level headquarters seemed far enough advanced for General Mixon to brief General Schoomaker. He did so on 19 March, noting that the three support brigades that differed the most from existing designs—fires, maneuver enhancement, and battlefield surveillance—needed additional analysis. During the discussion that followed, General Byrnes noted that he was willing to use the five designs as prototypes in creating units. They were the "80 percent solution" General Schoomaker wanted and could always be modified later in the light of additional analysis and field experience. On that basis, General Schoomaker approved the designs.[63]

Task Force Modularity did not propose to eliminate all functional support brigades. For some tasks, pure civil affairs, military police, air defense, and engineer brigades, among others, would still be required. These units would normally be attached to a unit of employment at the operational level. They would then either work directly for that command or, if a mission so required, become attached to a unit of employment at the higher tactical level. Conversely, if that command received units

[62] Witsken et al., *The Role of Analysis in the Creation of the Modular Force*, pp. 38–42; Interv, Hughes and Charlston with Ancker, 7 Jun 06.

[63] MFR, Col John J. Twohig, Task Force Modularity, 19 Mar 04, sub: Results Task Force Modularity Current Force Unit of Employment Decision Brief to CSA 19 March 2004; CSA Decision Brief as of 181730 Mar 04. Both in Historians files, CMH.

smaller than a brigade, it would in turn attach them to its subordinate units.[64]

Development of the Fires Unit of Action

The fires unit of action was at first named the strike unit of action. The task force's initial work on it drew heavily on the concept of "effects-based operations." This is defined as a process for imposing a desired result on an enemy by applying a full range of military, diplomatic, economic, and psychological means across every possible level of action from the tactical to the strategic.[65] Following this approach, the new unit of action would use both lethal and nonlethal means, applying force when necessary but also knowledge drawn from such disciplines as psychological operations, civil-military operations, and electronic warfare.[66]

By early February 2004, the task force had given the strike unit of action three missions: strike (destruction of enemy forces, battle command, and support functions), shaping (destruction of enemy capabilities and forces not in contact with maneuver units of action), and close support (providing additional fires and effects to maneuver units of action and other support units of action). The base for this version of the force was a headquarters and a support battalion. The headquarters would include a counterbattery radar platoon and a tactical unmanned aerial reconnaissance vehicle platoon. To accomplish its missions, the unit would command a variety of forces received through the process of force-tailoring. These could include field artillery, Army attack helicopters, air assault infantry, special operations forces, information operations contingents, and units from the other military services.[67]

Within a month, however, further analysis led to a major change. Task force designers found that since attack helicopters would carry out most long-range strike operations and experienced pilots would have to be involved in the planning, transferring those missions to the aviation unit of action made sense. From then on, the main focus of the strike unit of action became the provision of close support against enemy forces in

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[64] *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, pp. 5–27.

[65] Quote from Lt. Col. Robert G. Black Jr. and Col. Eugene B. Smith, "Operational Effects in OIF," *Field Artillery* (January-February 2005): 29.

[66] PowerPoint Presentation, Task Force Modularity, sub: Design Guidance v.1.3 241200 Oct 03, Historians files, CMH.

[67] Overarching Modular Briefing to CSA, 4 Feb 03; John's Notes to Modular Briefing to CSA Backups, version 2.0.

contact with allied units, counterfire against enemy artillery and mortars, and precision fire using pinpoint accurate munitions such as wire- and laser-guided projectiles. To enhance that function, task force designers added a multiple-launch rocket and missile battalion to the unit's basic organization. To signify that the force would concentrate on its combat role, they then renamed it the fires unit of action (*Chart 4*).[68]

Development of the Sustainment Unit of Action

Early designs for the sustainment unit of action expected it to plan, coordinate, and control combat service support within the unit of employment at the higher tactical level's area of responsibility. It would conduct contracting and aid operations with host nations, provide support to joint and multinational forces, and attend to the restoration and refitting of U.S. units depleted by combat. Replacing existing division and corps logistics management structures, it would support up to ten maneuver and support units of action and could use logistical assets received from the unit of employment at the operational level. The task force's early work envisioned a fixed organization containing both multifunctional and single branch units. The unit of action could control additional units assigned to it from a force pool or by a unit of employment at the higher tactical level. By March 2004, however, the task force had developed a pared-down design with only a headquarters and a brigade troops battalion as its base. The unit would obtain the remainder of its complements when it received a mission. Organizing to fulfill whatever task it received, it could make effective use of both multifunctional support battalions—which could fill quartermaster, ordnance, maintenance, or other roles equally well—and battalions that concentrated on only a single function. The mission of the sustainment unit of action remained the same as in the early design. The chief of staff approved this design for implementation (*Chart 5*).[69]

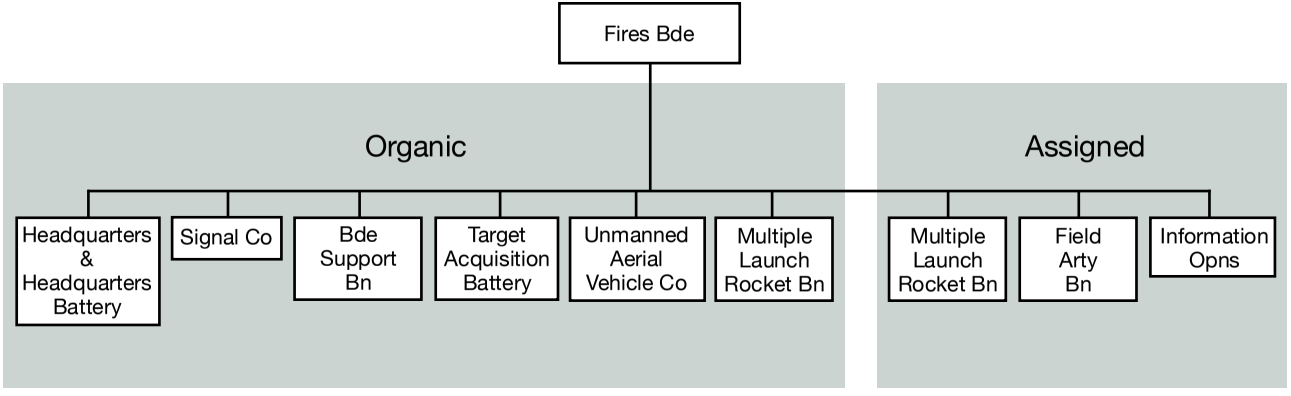
Development of the Aviation Unit of Action

Task Force Modularity worked closely with Task Force Aviation in developing designs for aviation units of action. Its early ideas on the subject called for a force that could provide reconnaissance, security,

[68] CSA Decision Brief as of 181730 Mar 04.

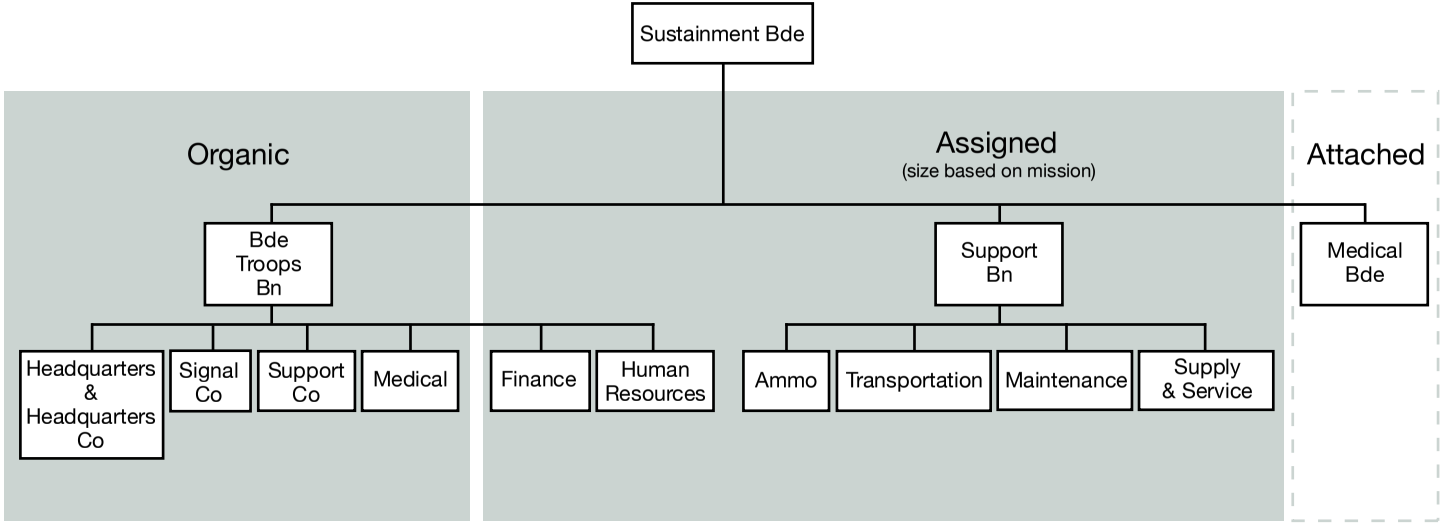
[69] PowerPoint Presentation, Task Force Modularity, sub: SUA [Support Units of Action] Horseblankets (12 Nov 03) v.JWM2, Historians files, CMH; Overarching Modular Briefing to CSA, 4 Feb 03; John's Notes to Modular Briefing to CSA Backups, version 2.0.

Chart 4—Organization of a Modular Fires Brigade, September 2004



Source: *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, p. 1-16.

Chart 5—Organization of a Modular Sustainment Brigade, September 2004



Source: *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, p. 1-16.

attack, and lift support to maneuver units of action; could conduct reconnaissance, counterreconnaissance, and screening operations for the unit of employment at the higher tactical level; and could function within a combat radius of 150 kilometers. The unit would contain up to six aviation battalions if a mission so required. Providing expert planning to synchronize aviation operations, it would coordinate Army aviation with the aviation assets of the other military services. When Task Force Modularity revised the strike unit of action into what became the fires unit of action, it transferred that force's long-range strike mission to the aviation unit of action.[70]

By March 2004, Task Force Aviation had created two types of aviation units of action. One was heavy and the other light, but both could support up to five brigade combat teams. Each had two attack battalions, one assault battalion, one general support battalion, one aviation support battalion, and a headquarters. The difference between the two designs was that the heavy one employed attack helicopters in its attack battalions while the light one used armed observation helicopters (*Chart 6*).[71]

Later in the year, Task Force Aviation developed a medium unit of action. A cross between the heavy and light versions, it contained the usual attack battalions, but one was armed with attack helicopters and the other with armed observation helicopters. Task Force Aviation also developed an aviation expeditionary brigade for the Army National Guard. This design not only allowed Guard units to fulfill homeland defense as well as expeditionary roles, but it also complied with Secretary Rumsfeld's directive to rebalance the active and reserve components. The unit had much the same mix of battalions as the other three aviation units of action, but it exchanged one attack battalion for a security and support battalion that would be equipped with a new light utility helicopter. Theater-level aviation brigades that would serve primarily in reserve components also received the task force's attention. They were designed without any attack units and with fixed-wing support aircraft.[72]

Development of the Maneuver Enhancement Unit of Action

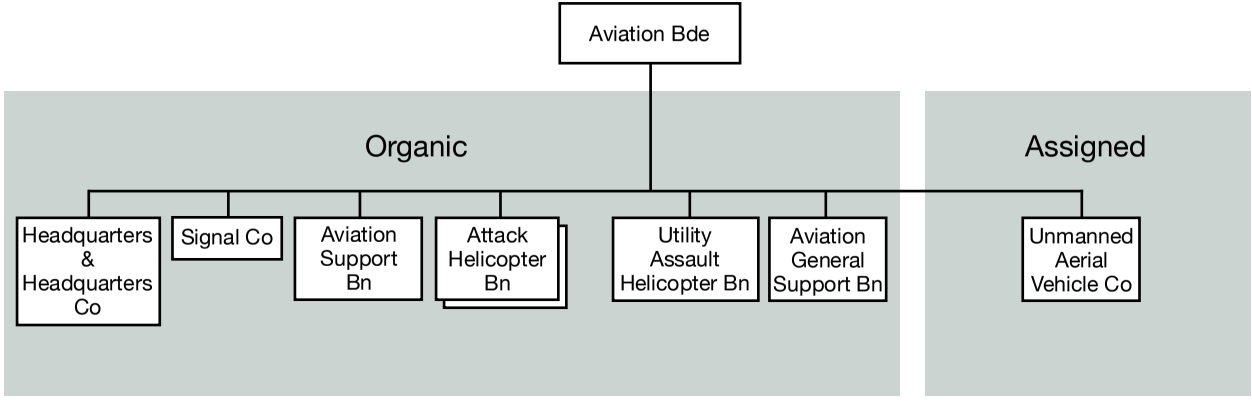
In its analysis, the task force concluded that units from many of the Army's branches filled a protective function by executing missions

[70] PowerPoint Presentation, Task Force Modularity, sub: SUA Horseblankets (12 Nov 03) v.JWM2.

[71] Overarching Modular Briefing to CSA, 4 Feb 03; John's Notes to Modular Briefing to CSA Backups, version 2.0; Briefing, Modular Force Aviation Structure.

[72] Briefing, Modular Force Aviation Structure.

Chart 6—Organization of a Modular Aviation Brigade, September 2004



Source: *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, p. 1-16.

that prevented or mitigated the effects of hostile action. Because these forces all served the same purpose, the designers decided that assigning them to the same unit of action headquarters was logical. Originally named the protection unit of action because of this, the command that resulted marked a radical departure from the Army's traditional practice of creating and organizing force structure by branch. The new unit's headquarters would be its only permanent part. When a mission arose, it would deploy with and use components of whatever sort were necessary to do the job.[73]

By mid-November 2003, the protection unit of action was responsible for preventing or at least reducing the effects of hostile actions against U.S. Army and joint force personnel, resources, facilities, and data. As part of this mission, it would coordinate and supervise security operations in areas designated by higher headquarters. As a standing, multifunctional headquarters, its staff had the expertise to control a mission-oriented grouping of chemical, engineer, air defense, and military police units. With augmentation from civil affairs, psychological operations, and combat service support forces, the protection unit of action could also conduct security, stabilization, and reconstruction operations.[74]

The task force's designers were very conscious of the way the war in Iraq was evolving and the dispersed nature of many operations there. This led them to stress the protection unit of action's ability to coordinate and control a range of security operations. Whether employed by the unit of employment at the operational level, by the unit of employment at the higher tactical level, or by joint commanders, the force could make effective use of all the combat power it had in a single area, control battalion-size maneuver units, or serve as a stability or reconstruction headquarters.[75]

The protection unit of action's structure was radically different from that of the chemical, engineer, air defense, and military police units in the Army's branch-specific brigades. As a result, concerns inevitably arose about how well the force's officers and troops would understand the way the unit of action was supposed to work. Reasoning that the

[73] PowerPoint Presentation, Task Force Modularity, sub: Design Guidance v.1.3 241200 Oct 03; PowerPoint Presentation, Task Force Modularity, sub: SUA Horseblankets (12 Nov 03) v.JWM2.

[74] The design of the protection unit of action was influenced by a study conducted at the National Defense University in 2004. See National Defense University, Transforming Stabilization and Reconstruction Operations, May 2004, Washington, D.C., Historians files, CMH.

[75] PowerPoint Presentation, Task Force Modularity, sub: SUA Horseblankets (12 Nov 03) v.JWM2.

word *protection* hardly conveyed the full role the unit was designed to serve, General Byrnes ordered a change to a more suitable title: maneuver enhancement unit of action. Soon afterward, during a 19 March 2004 task force briefing, General Schoomaker stressed that since the missions the force would receive required it to have "a combat arms mentality," meaning soldiers needed to be technical specialists willing and able to enter into and survive dangerous situations. Thus the Army had to develop the means to inculcate that mentality. The general also expressed concern about how the units' commanders would acquire the knowledge necessary to make effective use of units drawn from so many different branches of the service. Reasoning that deferring such questions to when the Army actually established the unit seemed best, he approved the design, but work on it nonetheless continued until well into 2005 (*Chart 7*).[76]

Development of the Battlefield Surveillance Unit of Action

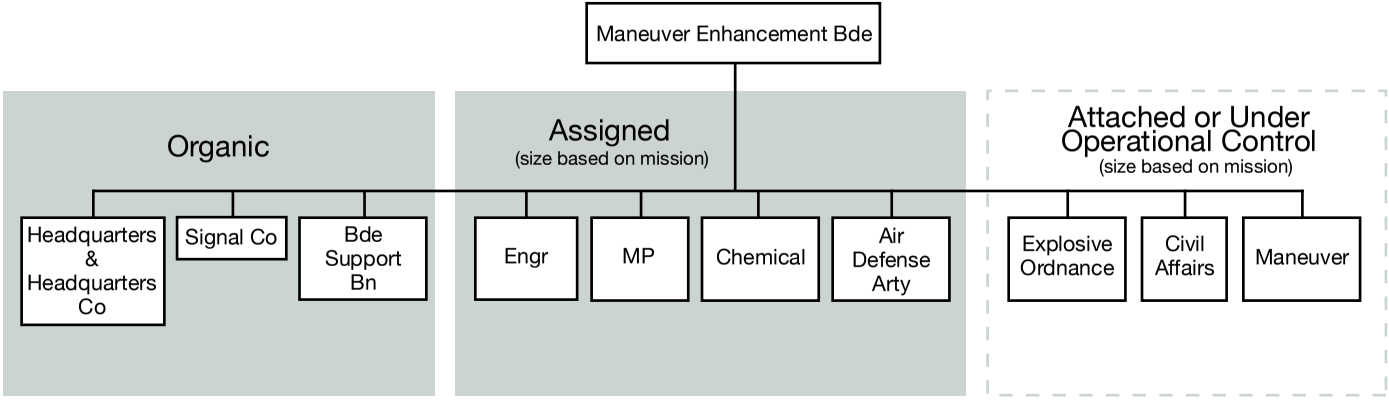
During the design of the five support units of action, the effort to develop the battlefield surveillance unit proved to be particularly difficult and contentious. Should the unit of action most resemble a military intelligence brigade, an armored cavalry regiment, or some combination of the two? Early guidance from the task force clearly favored the intelligence option. It described the new organization as an "information superiority" unit of action, stressed multidisciplinary intelligence efforts, and said little about an armed reconnaissance role. Because of the significant reconnaissance and surveillance capabilities maneuver unit of action designs already contained, task force planners assumed that those units would fill that role if it became necessary. Using their inherent intelligence capabilities and combat power, the reasoning went, the units would have little difficulty doing jobs divisional cavalry squadrons and corps armored cavalry regiments had always done.[77]

By November 2003, the task force had renamed the unit the intelligence, surveillance, and reconnaissance unit of action and had included

[76] MFRs, Col John J. Twohig, Task Force Modularity, 9 Mar 04, sub: After Action Review of Briefing to CG, TRADOC ref: Support Unit of Action Requirements Determination—Continuation from 2 March 2004 Session, and 19 Mar 04, sub: Results Task Force Modularity Current Force Unit of Employment Decision Brief to CSA 19 March 2004; Interv, J. Patrick Hughes with Lt Col Telford E. Crisco Jr., Combined Arms Doctrine Directorate, U.S. Army Training and Doctrine Command, 8 Jun 06; Col Jeffrey R. Witsken, Comments on draft, 19 Mar 2007, item 14. All in Historians files, CMH.

[77] Quote from PowerPoint Presentation, Task Force Modularity, sub: Design Guidance v.1.3 241200 Oct 03. Witsken et al., *The Role of Analysis in the Creation of the Modular Force*, p. 46.

Chart 7—Organization of a Modular Maneuver Enhancement Brigade, September 2004



Source: *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, p. 1-16.

in its design all aspects of military intelligence. The force now had the ability both to mount surveillance in regions that separated brigade combat teams' areas of operation and to reinforce maneuver unit of action intelligence efforts. Its mission was to provide timely, relevant, and accurate intelligence to the commanders and subordinate commands of units of employment at the higher tactical level and joint task forces. If necessary, special operations forces and Army aviation units could be assigned to the unit for reconnaissance operations.[78]

Further analysis followed. By February 2004, it had led to more revisions and yet another new name: reconnaissance and surveillance unit of action. The force's base structure remained generally the same as before, with a headquarters, a military intelligence battalion that included a tactical reconnaissance unmanned aerial vehicle element, a support element, and a long-range surveillance unit. The command could still obtain special operations units from force pools, but it could now also command a ground armed reconnaissance element if needed. This change came in response to concerns that occasions might arise when the unit would have to fight to obtain information or to conduct security operations. At that time, however, little work had been done on how the unit would conduct such missions.[79]

By early March, the force had been renamed once again, this time as the reconnaissance, surveillance, and target acquisition unit of action. Its mission and characteristics, however, remained the same. At a 9 March briefing, General Byrnes remarked that there remained a role for cavalry in the modular force and that manned reconnaissance required the "professional judgment of a soldier." He suggested that the Army create a force pool of such units for the modular force instead of an organization akin to the current armored cavalry regiments. During the 19 March briefing, General Schoomaker, who had served in armored cavalry units earlier in his career, also addressed the issue. He thought that the unit of action's overall design needed more analysis and refinement, particularly on how to provide the resources for ground reconnaissance and the role armored cavalry units should play. Perhaps, he said, the time had come to consider eliminating cavalry regiments as separate organizations.[80]

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[78] PowerPoint Presentation, Task Force Modularity, sub: SUA Horseblankets (12 Nov 03) v.JWM2.

[79] John's Notes to Modular Briefing to CSA Backups, version 2.0; Witsken, Walden, and Fratzel, *Integrated Analysis Report*, p. 46.

[80] MFRs, Col John J. Twohig, Task Force Modularity, 9 Mar 04, sub: After Action Review of Briefing to CG, TRADOC ref: Support Unit of Action Requirements Determination—Continuation from 2 March 2004 Session, and 19 Mar 04, sub: Results

Further changes occurred on 30 July 2004, during a briefing at the Training and Doctrine Command, when General Byrnes questioned whether the unit of action needed a ground reconnaissance squadron. That a unit of employment at the higher tactical level could simply assign the mission to one of its brigade combat teams, he said, made more sense. When told that the unit of action needed an all-weather armed ground reconnaissance unit to round out its other resources, the general responded that this was "old think." He argued that it reflected neither the modularity effort's concept of brigade-centered operations nor the reconnaissance abilities of maneuver units of action. The chief of the Army's Armor Branch, Maj. Gen. Terry L. Tucker, objected. Assessments had shown, he said, that if the commander of a unit of employment at the higher tactical level lacked such a force, he would have to call in elements of a brigade combat team, thereby degrading the parent unit's combat power. One of Task Force Modularity's key senior mentors, Brig. Gen. (Ret.) Huba Wass de Czege agreed with Tucker, but Byrnes remained unconvinced. He ordered the removal of the ground reconnaissance element from the design.[81]

Finally, in August 2004, General Schoomaker asked if the reconnaissance, surveillance, and target acquisition unit of action was needed at all. Might not an augmented Stryker Brigade Combat Team do the same job when it became necessary? One reason for his inquiry was that, with a war in progress, the Army was having difficulty finding the troops and equipment to man all the projected units of action. The Stryker units seemed a likely possibility, and they were already present in the force.

Task Force Modularity undertook another round of assessments and analyses to answer the question. By October, it had developed a new concept of close, near, and far reconnaissance, surveillance, and target acquisition operations for the modular force. Under it, brigade combat teams had the primary responsibility for close operations; the reconnaissance, surveillance, and target acquisition unit of action took primary responsibility for near operations; the unit of employment at the operational level and joint commands had responsibility for far operations. Analyses indicated that this unit of action needed air and ground capabilities that were adjustable based on the mission it received

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Task Force Modularity Current Force Unit of Employment Decision Brief to CSA 19 March 2004.

[81] MFR, John J. Twohig, Task Force Modularity, 30 Jul 04, sub: After Action Report from TF MOD [Task Force Modularity] Brief to CG TRADOC on "How the UEx Fights" and RSTA [Reconnaissance, Surveillance, and Target Acquisition] Brigade Mission/Organization, Historians files, CMH.

from the unit of employment at the higher tactical level. Its design thus retained the long-range surveillance detachment that was part of its brigade troops battalion and the unmanned aerial vehicle company that belonged to its military intelligence battalion. In addition, the unit of action headquarters had the ability to control supplementary ground and air reconnaissance and surveillance units attached to it for the duration of a mission (*Chart 8*).[82]

The designers considered turning the job over to Stryker forces when the need arose, but they found that although those units could perform the mission, they would need significant augmentation to do so. The use of a Stryker force in this way, moreover, removed a powerful maneuver element from the unit of employment at the higher tactical level. In light of these findings, General Schoomaker decided to retain the unit of action in the modular force. Reflecting the new concept of reconnaissance, surveillance, and target acquisition for the modular force, it received yet another name, becoming the battlefield surveillance brigade.

Development of the Units of Employment

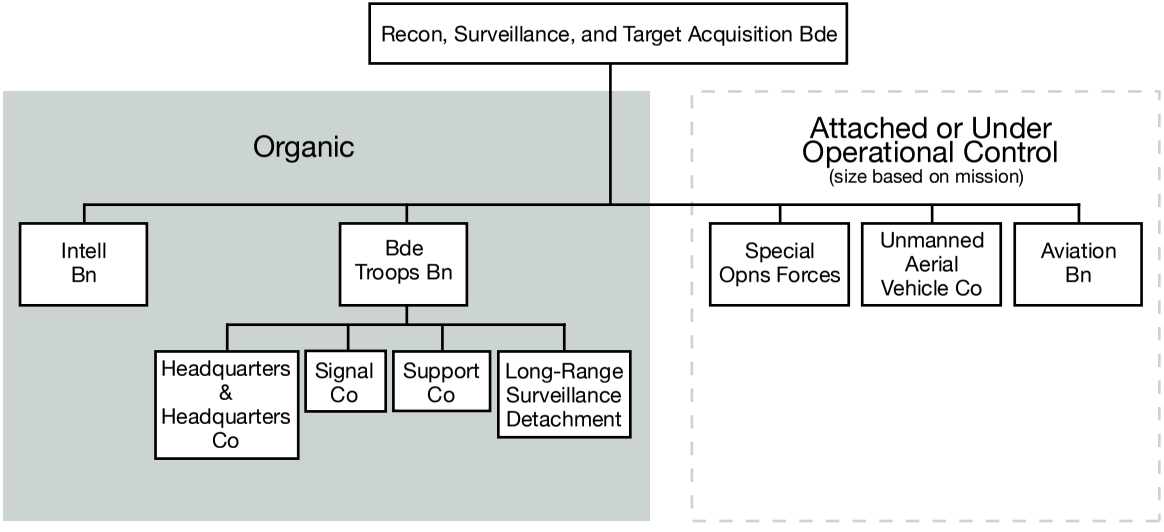
In November 2003, Task Force Modularity published the initial draft of a white paper entitled *Unit of Employment (UE)*. The report's concepts relied heavily on the force design work done by the Army over the years prior to the creation of Task Force Modularity. It proposed replacing the three echelons above brigade—division, corps, and army—with a modular organization of two echelons. (*See Chart 1.*)

The study warned that while thinking of the new commands as improvements on the division and corps was natural, they would not be altered versions of their predecessors. Instead, both would be "modular entities designed to employ a tailored mix of forces."[83] The two units of employment would be designed around the future Battle Command System, a joint command and control system that would allow operations between Army forces and other joint forces to be integrated to a degree unattainable in the current force. The unit of employment at the higher tactical level would be the "primary tactical echelon," combining the functions of the current division with the tactical responsibilities of the corps. The unit of employment at the operational level would consolidate most of the functions done by corps and armies into a single level. Both units of employment

[82] Witsken et al., *The Role of Analysis in the Creation of the Modular Force*, pp. 46–49; Briefing, Task Force Modularity, 3 Dec 04, sub: TF Modularity RSTA Brigade Analysis: Briefing to LTG Wallace 3 Dec 04, Historians files, CMH.

[83] Task Force Modularity, *Unit of Employment (UE)*, Initial Draft, 14 Nov 03, p. 6.

Chart 8—Organization of a Modular Reconnaissance, Surveillance, and Target Acquisition Brigade, September 2004



Source: *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, p. 1-16.

would have the ability to "flex"—that is, to form an intermediate third echelon in the hierarchy of command structures. For example, one unit of employment at the higher tactical level could command another or a division headquarters in the current field army. In this case, it would serve as a land component headquarters having direct charge of a force composed primarily of ground combat units. In the same way, a unit of employment at the operational level serving as the land component headquarters in a major combat operation could command another.[84]

The unit of employment at the operational level would have the ability to function as the senior Army command in a theater and as the Army component command in charge of all Army personnel, organizations, units, and installations in a unified, multiservice force. Without adding components, it could also serve either as the Army forces headquarters and joint land forces component command in a major combat operation or as the joint task force headquarters in a smaller scale contingency. The unit of employment at the higher tactical level, for its part, would serve as the primary combat-level headquarters of the modular Army with control over a mission-tailored mix of combat and support units of action. In smaller scale contingencies, it could serve with no supplementary units as the Army forces headquarters or the joint forces land component command. It might also serve with little or no increase in assets as a joint task force headquarters.[85]

According to the white paper, a unit of employment at the higher tactical level would exercise its authority through four command posts: a home station operations center, two deployable command posts, and a mobile command group. Although the home station operations center would not deploy, it would be more than just a rear detachment. Using satellite communications and digital information technologies, it would provide detailed analytical and planning support for deployed forces. Each of the other three command posts would be fully deployable with its own self-contained security and support elements. At this level, the normal relationship between the unit of employment at the higher tactical level and its subordinate units would be operational control. With the theater support command tailoring support units to the needs of the forces in operation, the unit of employment would assign tasks, designate objectives, and issue whatever directions were needed to accomplish its mission.

[84] Ibid., pp. 6–7.
[85] Ibid., pp. 38–46.

In most cases, the force's primary focus would be on areas of operation, which could be either contiguous or noncontiguous. To accomplish its mission, the unit's commander would develop a plan that specified objectives, established areas of responsibility, allocated resources, and outlined relationships between the forces under their control.[86] Concerned mainly with efforts in the field at the tactical level and the roles of the heavy unit of action and unit of employment at the higher tactical level, the white paper presented few details on how the unit of employment at the operational level would exercise command and control.

Between November 2003 and February 2004, Task Force Modularity continued to develop and analyze the unit of employment at the higher tactical level, using the same methods that it employed for developing and refining other aspects of the modular concept. War games and simulations involving heavy and infantry units of action produced insights into how those forces would relate to units of employment at the operational and higher tactical levels. Designs for the two units of employment and for the various support units of action were also assessed, using a corps- and division-level war fighting simulation. During this period, Secretary Rumsfeld expressed an interest in the possibility of eliminating an echelon above brigade.[87]

At a 19 February 2004 Task Force Modularity briefing, General Schoomaker approved the emerging design of the unit of employment at the operational level and its supporting elements for continued development. He stressed that the unit of employment at the higher tactical level should be focused on "war fighting" while the unit of employment at the operational level concentrated on "creating conditions for the success of the fight." At that time, he instructed the task force to remove the home station operations center from the design. Headquarters of the sort would be more useful if situated at key installations, where they could support more than one deployed unit of employment at the higher tactical level.[88]

On 19 March 2004, Task Force Modularity returned to General Schoomaker to obtain his decisions on the unit of employment at the

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[86] Ibid., pp. 30–35, 48–51.

[87] AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, pp. 5–10, 16–19; Witsken, Walden, and Fratzel, *Integrated Analysis Report*, pp. 6–11, 43–47; E-mail, Col John J. Twohig to Brig Gen David C. Ralston, Army G–3, et al., 19 Jan 04, 1:25 P.M., sub: Additional Information Reference Headquarters Layering, Historians files, CMH.

[88] MFR, 19 Feb 04, sub: Results Task Force Modularity Heavy Brigade Combat Team Design Briefing to CSA 19 February 2004.

higher tactical-level and support unit-of-action prototype designs. At that point, the unit of employment's headquarters had a mobile command group, two tactical command posts, and a main command post, along with security, support, and signal elements (*Chart 9*). Its subordinate units would vary according to the demands imposed by the missions it received. The headquarters design provided the command with the means to control combat and support units of action as well as to serve as an Army force headquarters without the addition of supplementary elements. If augmented, it could be a joint task force or combined or joint forces land component command. In his comments approving the design, the chief of staff highlighted the fact that the unit of employment at the higher tactical level was not just a division headquarters under another name, but rather a tactical and operational headquarters that would do tasks that only divisions and corps had done. He added that the design for the maneuver units of action would permit the modular force to add the equivalent of three and one-third divisions to the Regular Army without increasing the number of headquarters above brigade. While the approach involved some risk, he was willing to take it since the organizations in modular force were so "very capable."[89]

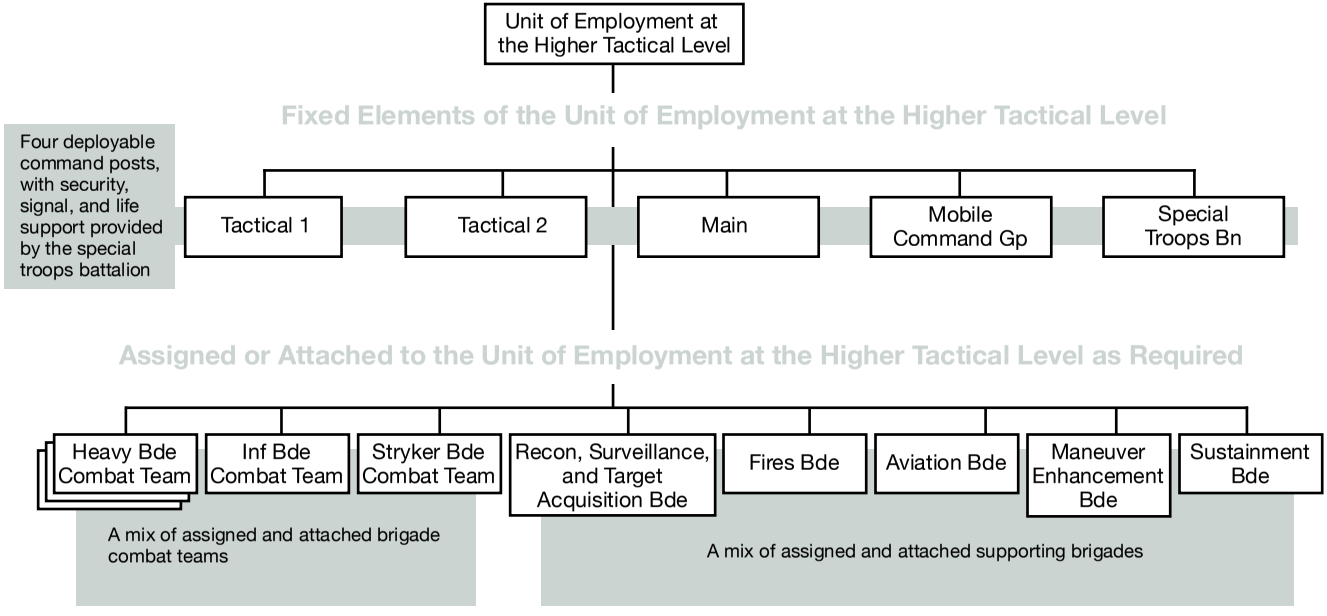
In April 2004, Task Force Modularity created an integrated concept team to design the headquarters for the unit of employment at the operational level and its associated theater-level commands. The task force relied heavily on the expertise in theater-level operations of Col. (Ret.) John Bonin, professor of concepts and doctrine at the Army War College and a member of the task force. It also consulted frequently with regional combatant commands such as the European Command and the Central Command and Army service component commands such as U.S. Army, Europe, and U.S. Army, Pacific. The work generated significant debate in two areas: on designs for theater-level commands and on the number of echelons that should exist above the unit of action.[90]

The task force's initial idea, based on Bonin's work, provided for three different theater-level commands: a theater information superiority command, which combined intelligence and communication functions; a theater protection command, which united area security with air defense; and a theater sustainment command, which had charge

[89] Quote from Ibid. Briefing, Task Force Modularity, sub: Task Force Modularity Current Force Unit of Employment Decision Brief to CSA 19 March 2004, Historians files, CMH; Interv, Hughes and Charlston with Ancker, 7 Jun 06.

[90] Witsken, Walden, and Fratzel, *The Role of Analysis in the Creation of the Modular Force*, p. 42; AAR, Modularity Implementation Within the Institutional Army, Task Force Modularity, pp. 11–12, 19.

Chart 9—Organization of a Unit of Employment at the Higher Tactical Level October 2004



Source: *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, p. 1-11.

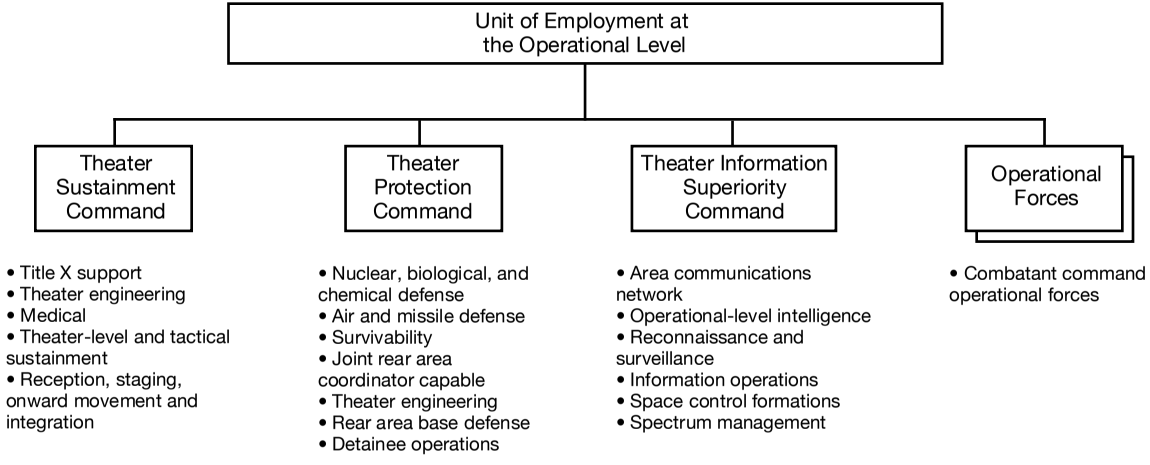
of logistics. The commands would receive a mix of units from force pools tailored to the demands of each mission (*Chart 10*).[91] Third Army, which the task force was using as the developmental framework for the unit of employment's staff, objected to this concept, arguing instead that more conventional theater commands would suffice. Threatened with the loss of theater-level headquarters under this design, a number of the Army's branches also demurred. The debate that ensued led the Training and Doctrine Command to convene a high-level workshop on 25 May 2004, with generals attending from the Third Army; the U.S. Army, Pacific; the Joint Forces Command; and the Training and Doctrine Command. At this conference, General Byrnes decided to develop a modified course of action proposed by the Third Army's representatives. This design eliminated the theater information superiority command and the theater protection command. It also organized the command's headquarters by joint functions that included, as necessary, elements representing such specialties as signals and communications, military intelligence, sustainment, and civil affairs. Byrnes directed the task force to prepare a basic organizational plan for the unit of employment and to examine how to tailor this design to each regional ground combat command.[92]

Task Force Modularity presented these revisions to the chief of staff on 15 June. General Schoomaker approved both the modified theater-level commands structure and the continued development of a basic design for the unit of employment at the operational level. Each headquarters and its theater-level commands would share the same functional organization but would vary in size depending on the needs of the regional combatant command it was assigned to support. In that way, the command could be modified to become the Army service component commander for a regional combatant command, yet retain its ability to be at some other time a joint task force or a joint forces land component command. General Schoomaker stressed his earlier guidance that the unit of employment at the higher tactical

[91] Paper, John Bonin, The "UEy" Echelon in the Future Force, 20 Nov 03. See also idem, Theater Protection Command Concept Paper, version 1.1, 2 Apr 04, and Theater Information Superiority Command Concept Paper, version 1.0, 2 Apr 04. All in Historians files, CMH.

[92] Witsken, Walden, and Fratzel, *The Role of Analysis in the Creation of the Modular Force*, pp. 42–43; E-mail, Col John Twohig, 26 May 04, sub: Results of UEy Senior Leader Workshop at Fort Monroe 25 May 2004, with atch FW: Email to Commandants, and Interv, J. Patrick Hughes and Jeffery A. Charlston, CMH, with John Bonin, U.S. Army War College, 21 Mar 06, both in Historians files, CMH; Intervs, Hughes and Charlston with Burke, 7 Jun 06, and Hughes with Crisco, 8 Jun 06.

Chart 10—Original Task Force Modularity Design for a Unit of Employment at the Operational Level, April 2004



Source: Task Force Modularity, In Progress Review (IPR) for the Chief of Staff of the Army, Unit of Employment at the Operational Level (UEy), 15 Jun 04, as of 141639 Jun 04, Historians files, CMH.

level was primarily responsible for the tactical command and control of units of action, with the capability to be a joint task force or joint forces land component command headquarters for smaller operations. He also provided additional guidance to design the staffs of units of employment at the operational level with core capabilities but not to overstructure them.[93]

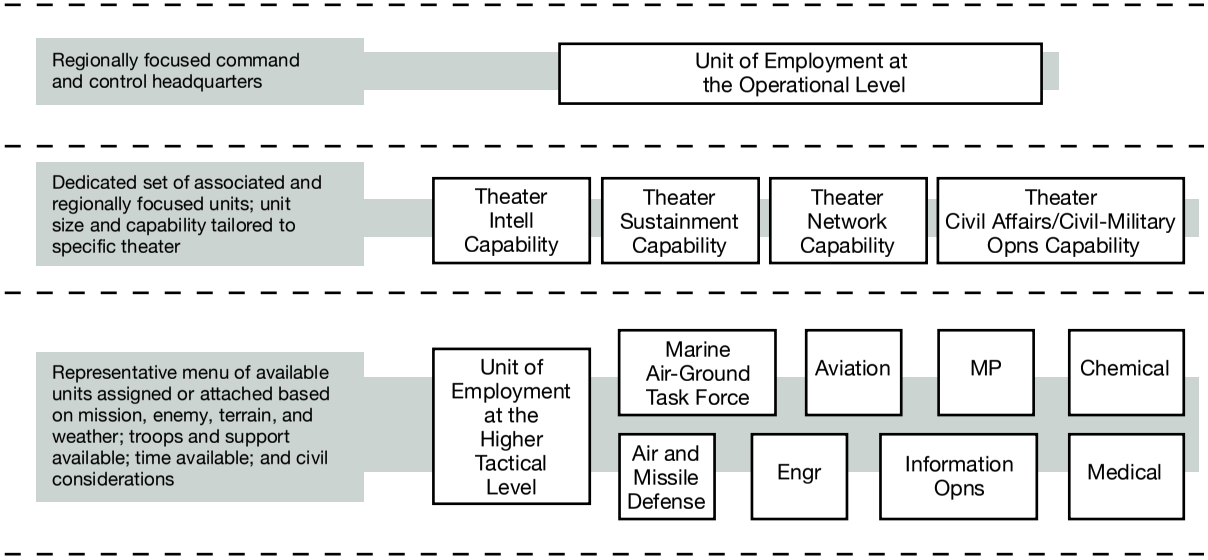
On 27 September, after further work that included conferences with Army service component commanders, war game assessments, and presentations to senior leaders of the other military services, Task Force Modularity returned to General Schoomaker for a decision. The briefing detailed the group's conclusions on the unit of employment at the operational level and its subordinate commands. One important new influence on the team's final product had been the experience of V Corps in Iraq after the end of major combat operations in 2003. The Central Command directed the corps to serve as the headquarters for Joint Task Force 7, but without the additional staff necessary for it to function effectively as, in effect, a theater-level echelon. This led the task force's designers to develop a very robust organization for the new command's headquarters. In the end, the chief of staff approved the prototype designs for the headquarters and for the theater intelligence brigade, the theater sustainment command, the theater network command, and the theater civil affairs brigade (*Chart 11*). Although every one of the task force's unit-of-employment, unit-of-action, and theater-command designs would undergo further refinement, the Training and Doctrine Command published version 1.0 of the *Army Comprehensive Guide to Modularity*, volume 1, which presented the Army with information on brigade combat teams and the two units of employment in October 2004.[94]

The final major decision on the unit of employment had to do with how many echelons above brigade the new modular force should have. Operational assessments had shown that occasions would arise when, either for political reasons or because of the complexity of an operation, having an intermediate tactical echelon between the two regular units of

[93] MFR, John J. Twohig, Task Force Modularity, 15 Jun 04, sub: Results Task Force Modularity UEy Update in Progress Review to CSA 15 June 04, Historians files, CMH.

[94] Task Force Modularity, UE Decision Briefing to CSA, 27 Sep 04, Historians files, CMH; Witsken, Walden, and Fratzel, *The Role of Analysis in the Creation of the Modular Force*, pp. 44–45; MFR, John J. Twohig, Task Force Modularity, 27 Sep 04, sub: Results Task Force Modularity Unit of Employment Decision Briefing to CSA 27 September 2004, Historians files, CMH; Interv, Hughes and Charlston with Bonin, 21 Mar 06. TRADOC planned for volume 2 of *Army Comprehensive Guide to Modularity* to discuss the support units of action.

Chart 11—Overview of the Organization of a Unit of Employment at the Operational Level, September 2004



Source: Task Force Modularity, CSA Decision Brief, 27 Sep 04, v7 10Sept04 without backups, Historians files, CMH.

employment would be wise. The task force had then to consider whether occasions of the sort were common enough to warrant the creation of permanent intermediate headquarters with their own supporting assets.[95]

Task Force Modularity had concluded that only the two echelons were necessary, a position reflected in the *Army Comprehensive Guide to Modularity*, volume 1. The publication addressed the issue by noting that "the Army tailors the UEy with an additional UEx headquarters and forces to serve as the intermediate tactical level." The only change necessary in a unit of employment at the higher tactical-level headquarters that received such a mission would be the replacement of its commander, a major general, with a lieutenant general for the duration of the operation. Then, if the operation transitioned into a protracted effort to stabilize the command's area of responsibility, the additional unit of employment would go back to its home station, and the normal two-echelon arrangement would remain.[96] Further assessments in January 2005 and discussions between the Combined Arms Center; the Headquarters, Department of the Army; and the retired officers mentoring the modularity effort led in March 2005 to a Training and Doctrine Command decision to retain the original design. The format the task force laid down for a unit of employment at the higher tactical level was generic. If the need arose, the command could be tailored to perform as an intermediate stage.[97]

Regional combatant commands and Army service component commands, however, strongly supported the existing system of three echelons above brigade at the division, corps, and army levels. They argued that the span of control in some operations was so broad and complex that only a headquarters trained to handle situations of the sort could master them. Although the Training and Doctrine Command argued that the standard unit of employment at the higher tactical-level headquarters could do the job, it concluded that the modular force would not be compromised by the addition of a second version of the command. General Schoomaker had the final say. In April, he directed the organization of two types of units of employment at the higher tactical level. The first was referred to as the "two-star" unit of employment at the higher tactical level because it would be commanded by a major general. The second was referred to as the "three-star" unit of employment at the higher tactical level

[95] Witsken, Walden, and Fratzel, *The Role of Analysis in the Creation of the Modular Force*, p. 51.

[96] *Army Comprehensive Guide to Modularity*, vol. 1, version 1.0, 8 October 2004, pp. 5-5, 5-11.

[97] Witsken, Walden, and Fratzel, *The Role of Analysis in the Creation of the Modular Force*, p. 51.

because it would be commanded by a lieutenant general. The former would be somewhat smaller than the latter because the three-star version would serve mainly as a joint task force or joint forces land component command while retaining the role of an intermediate headquarters as a secondary mission.[98]

[98] Intervs, William Donnelly, Stephen Lofgren, and Mark Sherry, all of CMH, with Col Rickey E. Smith, TRADOC Futures Center, 6 Feb 06, Historians files, CMH; Hughes and Charlston with Burke, 7 Jun 06, and with Ancker, 7 Jun 06. Smith served as the first Task Force Modularity chief of staff.

Unit Designations in the Modular Force

Previous Army force redesigns had rarely prompted unit redesignations. The main exception had been the Pentomic design, which replaced the three regiments in infantry and airborne divisions with five battle groups. The term *battle group* had been selected because the new units were smaller than the regiments they replaced but larger than the battalions those forces had originally contained. This new designation also emphasized that Pentomic infantry and airborne divisions were radically different from their predecessors.[99]

In the same way, the designers of the Objective Force and later Task Force Modularity had used the expressions *unit of employment* and *unit of action* to emphasize that their designs were radical departures from those of the past. The terms were intended to create a conceptual break between traditional unit designations and the functions performed at a given echelon of command. The idea was to encourage fresh thinking and to avoid preconceived notions based on traditional terms such as *corps* and *division*. The terms, moreover, were never meant to be the final names for the units they created. Instead, in early 2004, the agency responsible for determining official Army designations, as well as unit lineages and honors, the U.S. Army Center of Military History, embarked on a long series of briefings and consultations in search of alternatives. After seeking the opinions of concerned parties within the Army and of General Sullivan, who at the time headed the Association of the United States Army, it proposed three courses of action.

The first offered few changes. Corps designations and lineages would be assigned to units of employment at the operational level and division lineages to units of employment at the higher tactical level.

[99] John K. Mahon and Romana Danysh, *Infantry, Part I: Regular Army*, Army Lineage Series (Washington, D.C.: Office of the Chief of Military History, 1972), pp. 96–100.

Lineages for brigades that were listed on the tables of organization of divisions would go to maneuver units of action. The plan sought, in particular, to maintain as far as possible historic connections between the maneuver units of action and their subordinate components. For the support units of action, the planners sought to retain current divisional designations and lineages for the sustainment, fires, and aviation unit of action headquarters. New designations with no previous lineages would be used for the battlefield surveillance unit of action and maneuver enhancement unit of action headquarters. Subordinate units for all the units of action would keep their current designations and lineages to the extent possible under the modular structure. This plan, which was already being used in the first divisions switching to the modular organization, had the advantage of maintaining the lineages of existing divisions and their constituent brigades and of limiting changes primarily to the unit of employment at the operational level. It had the disadvantage, however, of obscuring the point that modular units were different from the old designs.

The second course of action, a "hybrid regiment" plan, suggested assigning lineages and numbered army designations such as Eighth Army to the units of employment at the operational level. Each unit of employment at the higher tactical level would inherit the name and lineage of an existing division. Maneuver unit-of-action headquarters would receive regimental headquarters designations and lineages. Maneuver units subordinate to them would use the battalion lineages traditional to those regiments. Other units within the unit of action would retain their current designations and lineages to the extent possible. Among support units of action, however, only the aviation units could follow this plan because only they had fixed subordinate battalions. The other support units of action would have to use brigade, rather than regimental, lineages.

Overall, the approach had three advantages. It maintained current division lineages, returned historical regimental headquarters lineages to active use, and retained numbered army designations. As for disadvantages, it cut about 25 percent of the Army's existing armor and infantry regimental lineages from the active force. In addition, extensive unit reflagging would be necessary at the battalion level, resulting in a confusing and disruptive exchange of flags and lineages among many units. This, in turn, would cause emotional turmoil when officers and troops learned they would have to exchange historic battle flags, guidons, unit awards, and heirlooms for those of other units. Complicating matters, each unit would receive new shoulder patches, but some of the new

lineages that would have to be employed did not include them. Finally, of all the support units of action, this alternative was applicable only to the aviation unit of action. The other support units of action would have to use brigade, rather than regimental, lineages.

The third course of action gave each unit of employment at the operational level a numbered army designation and lineage. Each unit of employment at the higher tactical level received a corps designation and lineage. Brigade designations, using lineages from separate brigades and divisions, would go to the maneuver units of action. Units subordinate to these would, when possible, retain their current regimental designations and lineages. Among support units of action, sustainment, fires, and aviation headquarters would receive separate brigade designations with lineages from appropriate previous units. Separate brigade designations with no previous lineage would go to the battlefield surveillance unit-of-action and maneuver enhancement unit-of-action headquarters. Subordinate elements in all support units of action would retain their existing designations and lineages in every case where the modular design allowed it. In addition to emphasizing that the unit of employment at the higher tactical level was not merely a redesigned division, this plan preserved most current lineages, reactivated many historically significant but inactive lineages, and provided each maneuver unit of action with a historic shoulder patch. Disadvantages included the absence of any Army National Guard corps lineages for Guard unit-of-employment headquarters at the higher tactical level, and some Regular Army units would receive Army Reserve division or brigade lineages. The plan also required the redesignation of many units, which could damage morale and siphon off funds.[100]

In September 2004, the Center of Military History's director, Brig. Gen. John S. Brown, briefed General Schoomaker on the three options. The chief of staff delayed making a decision, saying that he wanted a blue ribbon panel headed by General Sullivan and composed of other retired generals to examine the issue and to make a recommendation. On 25 January 2005, the panel advised the adoption of the first course of action, that of minimal change. While its members noted that the option might lead some people to think that the modular force was less than a major change in organization, they concluded that soldiers "are dealing with a lot

[100] The discussion of the three courses of action is based on PowerPoint Presentation, U.S. Army Center of Military History, May 04, sub: Unit Designations in the Modular Army, Historians files, CMH.

of uncertainty in today's world" and that giving them "a sense of stability" was important by reducing the number of unit redesignations.[101]

By April 2005, the chief of staff had decided to retain the three echelons above the brigade. In that light, he directed the Center of Military History to adopt a modified version of the first course of action by assigning the lineages of numbered armies to units of employment at the operational level, those of corps to three-star units of employment at the higher tactical level, and those of divisions to two-star units of employment at the higher tactical level. Finally, units of employment at the operational level were to use geographical rather than numerical designations, employing, for example, such terms as U.S. Army, Europe, to designate the Army component of the European Command. Schoomaker also directed that, except for the aviation unit of action, which remained designated as a divisional brigade, support units of action were to be designated as separate brigades. The Army formally announced this final designation plan in October 2005.[102]

[101] Edward N. Bedessem, CMH, Chronology for Work on Designation in the Modular Force, December 2004; Ltr, Gen (Ret.) Gordon R. Sullivan to Gen Peter J. Schoomaker, 25 Jan 05. Both in Historians files, CMH.

[102] TRADOC Pamphlet 525–5; Bedessem, Chronology for Work on Designation in the Modular Force; PowerPoint Presentation, U.S. Army Center of Military History, Oct 05, sub: Unit Designations in the Army Modular Force, Historians files, CMH.

Conclusion

Although the Training and Doctrine Command would continue to revise unit designs as they were tested in the field, the chief of staff's decisions on unit designations marked the end of the design stage for the modular force. While it was running, three major influences were in play. The first was General Schoomaker, whose ideas shaped the process. Coming out of retirement, the general entered office during an open-ended war that was placing excessive strain on the all-volunteer Army and its division-based force. Unlike General Shinseki, he wanted a rolling set of changes leading from a current to a future force instead of a sharply defined set of Legacy, Interim, and Objective Forces. The new chief of staff also concluded that the service faced a narrow window of opportunity, both financially and politically, in which to make radical changes not only to deal with problems existing operations posed but also to set standards for the future force. These considerations led Schoomaker to begin the most radical transformation in force structure the Army had experienced since the Pentomic era of the 1950s.

The second influence was the requirement that Task Force Modularity should work within the existing end strength of the Army and use only those technologies and systems that would be available by 2005. These limitations forced designers into compromises based on resource constraints. The most notable was the decision to field brigade combat teams with only two maneuver battalions and a reconnaissance, surveillance, and target acquisition squadron and to rely on technological and organizational enablers to ensure that those forces could perform as well as three-battalion brigades. Although Schoomaker preferred the three-battalion design himself, he approved the two-battalion version because he understood that the Army could not field the larger force with the resources it had on hand.

The third influence was the emphasis on quickly fielding modular designs in the operational force. The judgment that there was a narrow window of opportunity for an expensive redesign and a pressing need for more units to support operations led Schoomaker to insist on an accelerated force development program. He judged that the 80 percent solution was sufficient for initial implementation and that the Army would have the opportunity to improve its modular designs after it gained operational experience. Task Force Modularity met the chief of staff's objective by drawing on the huge bank of insight and expertise the Army had accumulated since General Sullivan had begun the effort to transform the Army to fit a post–Cold War world. Compressing the process, however, had certain costs, in particular, a lack of sufficient doctrine and proper training packages for the first modular units. The gap between design and doctrine was especially troubling because the modular Army with its two-battalion maneuver brigades and multifunctional support brigades was radically different from the force it was to replace.

In many ways, the design process was far different from those of earlier efforts to change the Army. Most notable was General Schoomaker's decision that the need for speed required a close hold on the task force's early work to avoid what he saw as the delaying effects of branch parochialism. Furthermore, his requirement that the modular force be capable of conducting joint operations affected not only the designs, but also led to frequent consultations with Army service component commands and the joint regional combatant commands. In order to meet the chief of staff's deadlines, the effort employed a robust series of analyses that relied in part on computer simulations. It also relied, however, on experienced retired officers and senior mentors who enriched the entire process with their insights.

Task Force Modularity achieved the objectives General Schoomaker had set for it, quickly producing farsighted designs for a modular, brigade-based Army. That, however, was only a beginning. Just as important was how those designs would work in the real world. If earlier Army transformations are any indication, the service will adopt one of three approaches. It may keep the redesign and build on it because it fits the Army's needs into the foreseeable future. Then again, it could abandon everything because of changes in national security strategy or the emergence of a new or evolving threat. Finally, the service could choose a middle course, keeping some innovations but discarding others. A case in point occurred following World War II, when the Army dropped such promising prewar designs as the tank destroyer unit because they had not performed well in combat. It kept many others, however, such as

the triangular division, a separate armor force, and specialized airborne units, all of which remained in use for years. At this point, as far as the modular Army is concerned, all options are open.

Appendix

Representative Divisional Brigade Combat Team Organizations, 2003

In 2003, the U.S. Army organized the maneuver brigades in its divisions using a variation of the Reorganization Objective Army Divisions (ROAD) concept it had adopted in 1961 to replace the failed Pentomic organization. At the time of the invasion of Iraq, most divisions had a common base organization of a headquarters, a division artillery, a division support command, three maneuver brigade headquarters, an aviation element, a reconnaissance element, an air defense element, an engineer element, a signal element, a military police element, a military intelligence element, and a band. The exact size and composition of these base components varied, depending on the type of division.

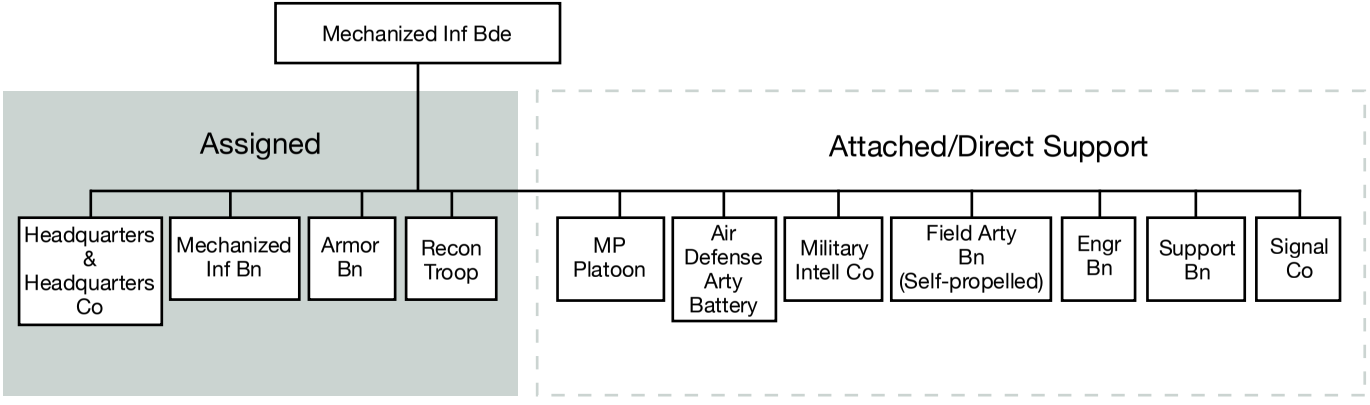
The ROAD concept allowed the division commander to tailor his forces. The only organic element in the maneuver brigade was its headquarters. While three maneuver battalions were normally assigned to each brigade (along with a reconnaissance troop in the armored and mechanized infantry divisions), the division commander could add or subtract battalions as needed. In combat, however, each brigade required a "division slice"—a portion of the division's base elements. Division commanders thus normally provided each brigade with the same set of units from the base components in order to develop a habitual association among the brigades and these units that would promote maximum combat effectiveness.

By 2003, this practice of habitual association generally meant that divisions had formed de facto brigade combat teams; indeed, divisions often identified their maneuver brigades as brigade combat teams. Generally, these brigade combat teams would consist of a brigade head-

quarters (and its reconnaissance troop in armor and mechanized infantry divisions); three maneuver battalions; a field artillery battalion; a forward support battalion; an air defense element; an engineer element; a signal element; and a military intelligence element. Depending on the mission and the situation, division commanders would provide brigade combat teams additional resources either from the division base or from units the corps had placed under the division's operational control.

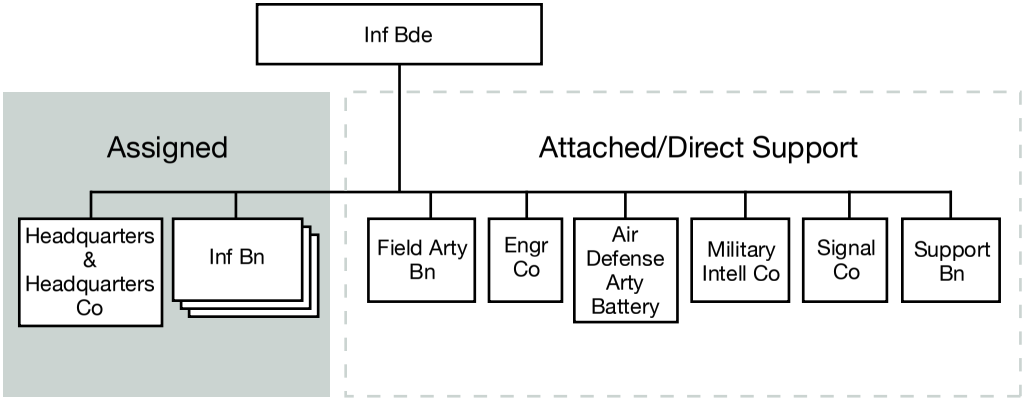
The following charts are examples of typical brigade combat team organizations prior to modular force designs.

Typical Heavy Brigade Combat Team, 2003



Source: TRADOC Analysis Center, *Task Force Modularity Integrated Analysis Report: Analysis Underpinning Recommendations to the CSA, September 2003–March 2004*, p. B-6.

Typical Light Infantry/Air Assault/Airborne Brigade Combat Team Organization, 2003



Source: TRADOC Analysis Center, *Task Force Modularity Integrated Analysis Report: Analysis Underpinning Recommendations to the CSA, September 2003–March 2004*, p. B-126.

Bibliographical Note

Unpublished Sources

The most important source for this work was Task Force Modularity's records. Members of the U.S. Army Center of Military History (CMH) collected copies of the task force's electronic records from the TRADOC Futures Center Forward (now the Army Capabilities Integration Center Forward) in Arlington, Virginia; the TRADOC Combined Arms Center, Fort Leavenworth, Kansas; and the TRADOC History Office at Fort Monroe, Virginia. These records include e-mails, memorandums, information papers, after action reviews, and briefings, as well as reference works collected by the task force. Especially useful were the detailed memorandums prepared after every briefing of General Schoomaker by the task force and the after action review written by the task force shortly before it disbanded.

Several other sets of records were consulted. At Headquarters, Department of the Army, CMH historians collected documents from the Office of the Deputy Chief of Staff, G–3/5/7, and the Office of the Deputy Chief of Staff, G–8. Two members of the task force, Brig. Gen. (Ret.) Huba Wass de Czege and Professor John Bonin of the U.S. Army War College, provided documents from their personal files. For information on the designations of modular force units, records at CMH's Force Structure and Unit History Branch were used.

In 2005 and 2006, CMH historians conducted interviews on the subject of the design of the modular force and the first steps taken toward its implementation. Among those interviewed were Clinton Anker, Marsha D. Arrington, Peter B. Bechtel, John Bonin, Michael Burke, Wayne F. Chalupa, Lt. Col. Randy Copeland, Lt. Col. Telford E. Crisco Jr., Lt. Col. Charles Davis, Col. Rodney Dixon, Col. James Doty, Mark

H. Gerner, Brig. Gen. (Ret.) Thomas R. Goedkoop, Judith A. Guenther, Col. David R. Hampton Jr., Douglas V. Johnson II, Lt. Col. M. Wade Markel, Maj. Gen. Robert W. Mixon Jr., Lt. Col. Karl D. Reed, Col. John D. Renaud, Lt. Col. Laura Richardson, Col. Mark Rocke, Col. Earl M. Silver, Maj. Stephen B. Sledge, Col. Rickey E. Smith, Col. Ralph Sparks, Lewis S. Steenrod, Col. Robert L. Steinrauf, Lt. Col. Fred L. Svedarsky, Col. Robin Swan, Col. Paul D. Thornton, Col. (Ret.) John J. Twohig, Lt. Col. Thomas E. Wallen, Brig. Gen. (Ret.) Huba Wass de Czege, Maj. Gen. William G. Webster, Lt. Col. Clifford Wheeler, and Col. Jeffrey R. Witsken.

Published Sources

The leading published primary sources were from the U.S. Army. A key document is Task Force Modularity's *Army Comprehensive Guide to Modularity,* volume I, version 1.0. Designed to explain modularity to the Army, this reference provides an excellent overview of the subject as of October 2004 and gives ample information on brigade combat teams and units of employment. The guide, however, does not discuss support units of action at any length, and later decisions, especially on the echelons of command, modified the modularity concept presented in the publication.

Much of the detail on the origins of the modularity concept came from Training and Doctrine Command publications such as pamphlets, operational and organizational concept documents, and reports on various experiments. Especially useful for the key design issues faced by Task Force Modularity are two publications from the TRADOC Analysis Center, *Task Force Modularity Integrated Analysis Report: Analysis Underpinning Recommendations to the CSA, September 2003–March 2004*, and *Task Force Modularity: The Role of Analysis in the Creation of the Modular Force*. Interviews and congressional testimony given by General Schoomaker provided his reasons for directing the conversion to a modular force structure.

Because the events discussed in this monograph are so recent, relatively few secondary sources were used. A number of such documents were useful in tracing the beginnings of the modularity concept, outlining the state of the Army in mid-2003, and explaining some of the technologies the modular designs would depend on to meet General Schoomaker's "as-capable-as" criteria.

Abbreviations and Acronyms

AAR	After Action Review
AEF	Air Expeditionary Force
Arty	Artillery
ASCC	Army Service Component Command
Bde	Brigade
Bn	Battalion
CADD	Combined Arms Doctrine Directorate
CDR	Commander
CG	Commanding General
CGSC	Command and General Staff College
CMH	Center of Military History
Co	Company
COA	Course of Action
COFS	Chief of Staff, Army
CSA	Chief of Staff of the Army
DCG	Deputy Commanding General
DCSDEV	Deputy Chief of Staff for Developments
Div	Division
Engr	Engineer
FC	Futures Center
FCS	Future Combat Systems
FDD	Force Development Directorate
FM	Field Manual

GAO	General Accounting Office
Gp	Group
ID	Infantry Division
Inf	Infantry
Intell	Intelligence
JFCOM	Joint Forces Command
LTG	Lieutenant General
MFR	Memorandum for Record
MP	Military Police
OIF	Operation Iraqi Freedom
Opns	Operations
Recon	Reconnaissance
Ret.	Retired
RFI	Request for Information
ROAD	Reorganization Objective Army Division
RSTA	Reconnaissance, surveillance, and target acquisition
SUA	Support Unit of Action
TF	Task Force
TFM	Task Force Modularity
TF MOD	Task Force Modularity
TOW	Tube-launched, optically tracked, wire-guided
TRAC	TRADOC Analysis Center
TRADOC	U.S. Army Training and Doctrine Command
UA	Unit of action
UAV	Unmanned Aerial Vehicle
UE	Unit of employment
UEx	Unit of employment X
UEy	Unit of employment Y
USAWC	U.S. Army War College
VTC	Video Teleconference

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