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## **FORCE STRUCTURE**

# **Capabilities and Cost of Army Modular Force Remain Uncertain**

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# Report Documentation Page

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Highlights of [GAO-06-548T](#), a testimony before the Subcommittee on Tactical Air and Land Forces, Committee on Armed Services, House of Representatives

## Why GAO Did This Study

The Army considers its modular force transformation the most extensive restructuring it has undertaken since World War II. Restructuring the Army from a division-based force to a modular brigade-based force will require extensive investments in equipment and retraining of personnel. The foundation of the modular force is the creation of standardized modular combat brigades designed to be stand-alone, self-sufficient units that are more rapidly deployable and better able to conduct joint operations than their larger division-based predecessors.

GAO was asked to testify on the status of the Army's modularity effort. This testimony addresses (1) the Army's cost estimate for restructuring to a modular force, (2) progress and plans for equipping modular combat brigades, (3) progress made and challenges to meeting personnel requirements, and (4) the extent to which the Army has developed an approach for assessing modularity results and the need for further adjusting designs or implementation plans.

This testimony is based on previous and ongoing GAO work examining Army modularity plans and cost. GAO's work has been primarily focused on the Army's active forces. GAO has suggested that Congress consider requiring the Secretary of Defense to provide a plan for overseeing spending of funds for modularity.

[www.gao.gov/cgi-bin/getrpt?GAO-06-548T](http://www.gao.gov/cgi-bin/getrpt?GAO-06-548T).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Janet St. Laurent at (202) 512-4402 or [stlaurentj@gao.gov](mailto:stlaurentj@gao.gov).

## FORCE STRUCTURE

### Capabilities and Cost of Army Modular Force Remain Uncertain

#### What GAO Found

Although the Army is making progress creating modular units, it faces significant challenges in managing costs and meeting equipment and personnel requirements associated with modular restructuring in the active component and National Guard. Moreover, the Army has not provided sufficient information for the Department of Defense and congressional decision makers to assess the capabilities, costs, affordability, and risks of the Army's modular force implementation plans. The Army's cost estimate for completing modular force restructuring by 2011 has grown from an initial rough order of magnitude of \$28 billion in 2004 to \$52.5 billion currently. Although the Army's most recent estimate addresses some shortcomings of its earlier estimate, it is not clear to what extent the Army can achieve expected capabilities within its cost estimate and planned time frames for completing unit conversions. Moreover, according to senior Army officials, the Army may request additional funds for modularity beyond 2011.

Although modular conversions are under way, the Army is not meeting its near-term equipping goals for its active modular combat brigades, and units are likely to have shortfalls of some key equipment until at least 2012. The Army plans to mitigate risk in the near term by providing priority for equipping deploying units and maintaining other units at lower equipping levels. However, it has not yet defined specific equipping plans for units in various phases of its force rotation model. As a result, it is unclear what level of equipment units will have and how well units with low priority for equipment will be able to respond to unforeseen crises.

In addition, the Army faces significant challenges in implementing its plan to reduce overall active component end strength from 512,400 to 482,400 soldiers by fiscal year 2011 while increasing the size of its modular combat force from 315,000 to 355,000. This will require the Army to eliminate or realign many positions in its noncombat force. The Army has made some progress in reducing military personnel in noncombat positions through military civilian conversions and other initiatives, but some of its goals for these initiatives may be difficult to meet and could lead to difficult trade-offs. Already the Army does not fully plan to fill some key intelligence positions required by its new modular force structure.

Finally, the Army does not have a comprehensive and transparent approach to measure progress against stated modularity objectives and assess the need for further changes to modular designs. The Army has not established outcome-related metrics linked to many of its modularity objectives. Further, although the Army is analyzing lessons learned from Iraq and training events, the Army does not have a long-term, comprehensive plan for further analysis and testing of the designs and fielded capabilities. Without performance metrics and a comprehensive testing plan, neither the Secretary of Defense nor congressional leaders will have full visibility into the capabilities of the modular force as it is currently organized, staffed, and equipped.

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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here to discuss our ongoing work on the Army's plans for restructuring into a modular brigade-based force. In 2004, the Army began its modular force transformation to restructure itself from a division-based force to a modular brigade-based force—an undertaking it considers the most extensive reorganization of its force since World War II. This restructuring will require a significant investment of billions of dollars at a time when the Army is developing other high-cost capabilities, such as the Future Combat Systems.<sup>1</sup> For example, the administration requested \$6.6 billion for modularity as part of its fiscal year 2007 budget request. The foundation of the modular force is the creation of standardized modular brigade combat teams designed to be stand-alone, self-sufficient units that are more rapidly deployable and better able to conduct joint and expeditionary operations than their larger division-based predecessors. The Army plans to achieve its modular restructuring without permanently increasing its active component end strength above 482,400 soldiers, primarily by eliminating some noncombat positions in which military personnel currently serve, and transferring these positions to its operational combat forces.<sup>2</sup> The February 2006 Quadrennial Defense Review (QDR) specified that the Army would create 70 modular combat brigades in its active component and National Guard. This represents a 7-brigade reduction from the Army's original plan of having 77 modular combat brigades. However, according to Army officials, resources from the 7 brigades subtracted from the original plan will be used to increase support units in the reserve component, and Department of Defense (DOD) officials believe that 70 brigades will be sufficient to execute the defense strategy.

For this hearing, you asked us to update our March 2005 testimony before this committee, in which we provided preliminary observations on the Army's plan to implement and fund modular forces.<sup>3</sup> At that time we

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<sup>1</sup> Future Combat Systems is a program that consists of a family of systems composed of advanced network combat and sustainment systems, unmanned ground and air vehicles, and unattended sensors and munitions.

<sup>2</sup> Army personnel assigned to noncombat positions provide management, administrative, training, and other support. Operational combat forces include personnel assigned to the Army's combat, combat support, and combat service support units, including the modular brigade combat teams.

<sup>3</sup> GAO, *Force Structure: Preliminary Observations on Army Plans to Implement and Fund Modular Forces*, [GAO-05-443T](#) (Washington, D.C.: Mar. 16, 2005).

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observed that because the Army is undertaking this effort while executing operations in Iraq, Afghanistan, and elsewhere and developing other new capabilities, such as the Future Combat Systems, DOD may face some long-term affordability challenges as it moves forward with these and other initiatives. Since that hearing, in September 2005 we issued a report on the costs of modularity, and we are drafting a report on the Army's plans for modularity, which we expect to issue this spring.<sup>4</sup> Specifically, my testimony today will address (1) the Army's cost estimates for restructuring to a modular force, (2) the Army's progress and plans for equipping modular combat brigades, (3) progress made and challenges to managing personnel requirements of the modular force, and (4) the extent to which the Army has developed an approach for assessing implementation of modularity and for further adjusting designs or implementation plans.

My testimony is based on both our September 2005 report on cost issues and on our past and ongoing work examining the Army's plans for implementing modularity. For our ongoing work, we interviewed officials and obtained documents from Headquarters, Department of the Army; U.S. Army Training and Doctrine Command; and U.S. Army Forces Command to determine the Army's modular force implementation plans, organizational design requirements and supporting analysis, equipment and personnel requirements for the brigade combat teams, and plans for equipping and staffing modular brigade combat teams to the required levels. We visited the first three Army divisions undergoing modular conversions to obtain information on the plans for organizing, staffing, and equipping the modular brigades and discussed modular force support requirements with officials from the U.S. Army Center for Army Analysis. To assess the Army's cost estimates, we updated our September 2005 report with information from the fiscal year 2007 President's Budget request and discussions with Army officials about implications of the QDR on the cost of modular restructuring. To address equipment plans and status, we analyzed Department of the Army data on selected equipment the Army identified as essential for achieving the modular combat brigades, required operational capabilities and reviewed unit readiness reports from those brigades that had completed or were in the process of completing their modular conversion as of February 2006. To assess personnel plans, we discussed the implications of force structure changes

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<sup>4</sup> GAO, *Force Structure: Actions Needed to Improve Estimates and Oversight of Costs for Transforming Army to a Modular Force*, [GAO-05-926](#) (Washington, D.C.: Sept. 29, 2005).

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and plans for eliminating noncombat positions with officials from the Department of the Army Deputy Chiefs of Staff for Personnel (G1) and Intelligence (G2). Finally, to assess the framework for assessing modularity implementation, we examined key Army planning documents and discussed objectives, performance metrics, and testing plans with appropriate officials in the Department of the Army Headquarters, especially officials from the Deputy Chief of Staff for Operations and Training (G3) and the Training and Doctrine Command. In addition, we relied on our past reports assessing organizations undertaking significant reorganizations. We conducted our work from May 2005 through March 2006 in accordance with generally accepted government auditing standards and determined that the data used were sufficiently reliable for our objectives.

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## Summary

The Army is making progress converting active Army combat units to the new modular structure at a time of war. The Army's goals for increasing combat power while introducing predictability in deployments for its soldiers are important, and the Army leadership in headquarters, military and civilian staffs, and operational and support units throughout the Army have dedicated considerable attention, energy, and time to achieving these goals under tight time frames. However, the Army faces significant challenges in executing its modularity plans to fully achieve planned capabilities within the time frames it established. In short, because of uncertainties in cost, equipment, and personnel plans and the absence of a comprehensive approach for assessing modularity results, we do not believe decision makers have sufficient information to assess the capabilities, costs, and risks posed by the transformation to a modular force. I will now turn to our four main issues.

First, the lack of clarity in the Army's cost estimates for modularity may limit the Secretary of Defense and Congress's ability to weigh competing funding priorities. The Army's cost estimate through fiscal year 2011 has increased from an initial rough order of magnitude estimate of \$28 billion in 2004 to \$52.5 billion currently. Of this \$52.5 billion estimate, \$41 billion, or 78 percent, has been allocated to equipment, with the remaining \$11.5 billion allocated to military construction, facilities, sustainment, and training. Although the estimate has grown, the Army's rationale for allocating dollar amounts to specific aspects of modularity has not become more transparent. For example, it is not clear how the Army will distinguish between costs associated with modularity and the costs associated with modernizing equipment or restoring equipment used during ongoing operations. In addition, despite recent force structure

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changes, schedule changes, and design refinements, the Army has not updated its cost estimate or funding plan. Moreover, the Army may seek additional funding after 2011 to buy equipment required for modular restructuring. In short, it is not clear what level of capability the Army will achieve with the \$52.5 billion it plans to spend on its modular restructuring through fiscal year 2011. As a result, decision makers may not have adequate information on which to weigh competing demands for funding.

Second, while the Army is well under way in creating active component modular combat brigades, it is not meeting its equipping goals for these brigades and is still developing its equipping strategy, raising considerable uncertainty as to the levels of equipment they will have in both the near term and longer term. Although active modular combat brigades are receiving considerable quantities of equipment, they will initially lack required quantities of items such as communications systems that are key for providing the enhanced intelligence, situational awareness, and network capabilities needed to help match the combat power of the Army's former brigade structure. The Army will likely face even greater challenges fully equipping 28 planned National Guard modular combat brigades since the National Guard has historically been underequipped. To mitigate equipment shortages, the Army is developing an equipping strategy that will provide varying levels of equipment to brigades depending on their phase of readiness—that is, whether the brigades are available for deployment, training for deployment, or returning from deployment. However, the Army has not yet defined specific equipping plans for brigades in each of the various readiness phases. Until the Army completes development of its equipping strategy, the Secretary of Defense and Congress will not be in a good position to assess the Army's equipment requirements and the level of risk associated with the Army's plans.

Third, while the Army has made some progress meeting modular personnel requirements in the active component by shifting positions from its noncombat force to its operational combat force, it faces significant challenges in meeting its goal to reduce its overall active end strength to 482,400, as specified by the QDR, while increasing the size of its modular combat force. The Army has developed initiatives to reduce and realign its end strength, but some of these initiatives may not meet the Army's initial expectations. In addition, the Army does not plan to fill some key intelligence positions required by its new modular force structure design in part because of the requirement to reduce overall end strength. Without continued, significant progress in meeting personnel requirements, the Army may need to accept increased risk in its ability to conduct

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operations and support its combat forces or it may need to seek support for an end strength increase from DOD and Congress.

Finally, the Army lacks a comprehensive and transparent approach to effectively measure progress against stated modularity objectives, assess the need for further changes to its modular unit designs, and monitor implementation plans. GAO and DOD have identified the importance of establishing objectives that can be translated into measurable metrics, which in turn provide accountability for results. The Army has identified objectives for modularity, but metrics for assessing the Army's progress on modularity-specific goals are extremely limited. In 2004, the Army's Training and Doctrine Command (TRADOC) conducted a wide-ranging baseline analysis of the modular design using measures of effectiveness; however, the Army does not have a long-term plan to conduct similar analysis so that it can compare the performance of actual modular units with the TRADOC-validated design. Without performance metrics and a comprehensive testing plan, neither Army nor congressional leaders will be able to assess the capabilities of and risks associated with the modular force as it is currently organized, staffed, and equipped.

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## Background

The Army's conversion to a modular force encompasses the Army's total force—active Army, Army National Guard, and Army Reserve—and directly affects not only the Army's combat units, but related command and support organizations. A key to the Army's new modular force design is embedding within combat brigades battalion-sized, reconnaissance, logistics, and other support units that previously made up parts of division-level and higher-level command and support organizations, allowing the brigades to operate independently. Restructuring these units is a major undertaking because it requires more than just the movement of personnel or equipment from one unit to another. The Army's new modular units are designed, equipped, and staffed differently than the units they replace; therefore successful implementation of this initiative will require changes such as new equipment and a different mix of skills and occupational specialties among Army personnel. By 2011, the Army plans to have reconfigured its total force—to include active and reserve components and headquarters, combat, and support units—into the modular design. The foundation of the modular force is the creation of modular brigade combat teams—combat maneuver brigades that will have a common organizational design and will increase the rotational pool of ready units. Modular combat brigades will have one of three standard designs—heavy brigade combat team, infantry brigade combat team, and Stryker brigade combat team.



Until it revised its plans in March 2006, the Army had planned to have a total of 77 active component and National Guard modular combat brigades by expanding the existing 33 combat brigades in the active component into 43 modular combat brigades by 2007, and by creating 34 modular combat brigades in the National Guard by 2010 from existing brigades and divisions that have historically been equipped well below requirements. To rebalance joint ground force capabilities the 2006 QDR determined the Army should have a total of 70 modular combat brigades—42 active brigades and 28 National Guard brigades. Also in March 2006, the Army was in the process of revising its modular combat brigade conversion schedule; it now plans to convert its active component brigades by fiscal year 2010 instead of 2007 as previously planned, and convert National Guard brigades by fiscal year 2008 instead of 2010. As of March 2006 the Army had completed the conversion of 19 active component brigades to the modular design and was in the process of converting 2 active and 7 National Guard brigades. Table 1 shows the Army’s schedule as of March 2006 for creating active component and National Guard modular combat brigades.

**Table 1: Army Schedule for Creating Active Component and National Guard Modular Combat Brigades as of March 2006**

	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	Total
Active component combat brigades	2	11	8	14	3	2	1	1	42
National Guard combat brigades	—	—	7	7	7	7	—	—	28
<b>Total</b>	<b>2</b>	<b>11</b>	<b>15</b>	<b>21</b>	<b>10</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>70</b>

Source: GAO analysis of Army data.

According to the Army, this larger pool of available combat units will enable it to generate both active and reserve component forces in a rotational manner that will support 2 years at home following each deployed year for active forces. To do this, the Army has created a rotational force generation model in which units rotate through a structured progression of increased unit readiness over time. Units will progress through three phases of operational readiness cycles, culminating in full mission readiness and availability to deploy.

The Army’s objective is for the new modular combat brigades, which will include about 3,000 to 4,000 personnel, to have at least the same combat capability as a brigade under the current division-based force, which range from 3,000 to 5,000 personnel. Since there will be more combat brigades in

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the force, the Army believes its overall combat capability will be increased as a result of the restructuring, providing added value to combatant commanders. Although somewhat smaller in size, the new modular combat brigades are expected to be as capable as the Army's existing brigades because they will have different equipment, such as advanced communications and surveillance equipment, and a different mix of personnel and support assets. The Army's organizational designs for the modular brigades have been tested by its Training and Doctrine Command's Analysis Center against a variety of scenarios, and the Army has found the new designs to be as capable as the existing division-based brigades in modeling and simulations.

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## Lack of Clarity in Army's Cost Estimate for Modularity Limits Decision Makers' Ability to Weigh Funding Priorities

The Army's cost estimate for modularity has continued to evolve since our September 2005 report.<sup>5</sup> As we reported, the Army's cost estimate for transforming its force through fiscal year 2011 increased from \$28 billion in the summer of 2004 to \$48 billion in the spring of 2005. The latter estimate addressed some of the shortcomings of the initial rough order of magnitude estimate and included lessons learned from operations in Iraq. For example, it included costs of restructuring the entire force, to include 77 brigade combat teams, as well as the creation of support and command units. However, it excluded some known costs. For example, the \$48 billion estimate did not include \$4.5 billion in construction costs the Army plans to fund through business process engineering efficiencies, which historically have been difficult to achieve. The Army added these costs when it revised its cost estimate in March 2006, bringing the most recent total to \$52.5 billion. As shown in table 2, most of the planned funding for modularity—\$41 billion, or about 78 percent—will be used to procure equipment, with the remaining funds divided between military construction and facilities and sustainment and training. In addition, Army leaders have recently stated they may seek additional funds after 2011 to procure additional equipment for modular restructuring.

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<sup>5</sup> [GAO-05-926](#).

**Table 2: Modular Force Cost Estimates for the Entire Army by Function**

Dollars in billions									
	2005	2006	2007	2008	2009	2010	2011	Total	Percentage
Equipping	\$4.7	\$5.8	\$5.4	\$5.9	\$6.5	\$6.7	\$6.0	<b>\$41.0</b>	78
Military construction/facilities	0.3	0.0	0.5	0.5	1.5	1.5	1.5	<b>5.8</b>	11
Sustainment and training	0.0	0.7	0.7	1.2	1.1	1.0	1.0	<b>5.7</b>	11
<b>Total</b>	<b>\$5.0</b>	<b>\$6.5</b>	<b>\$6.6</b>	<b>\$7.6</b>	<b>\$9.1</b>	<b>\$9.2</b>	<b>\$8.5</b>	<b>\$52.5</b>	100

Source: GAO analysis of Army data.

In our September report, we highlighted uncertainties related to force design, equipment, facilities, and personnel that could drive costs higher. Some of these uncertainties have been clarified. For example, we noted that costs in equipment and facilities would increase significantly if the Secretary of Defense decided to add 5 brigades to the Army's active component to create a total of 48 brigade combat teams—a decision that was scheduled to be made in fiscal year 2006. The decision about the number of brigades was made based on the QDR. Instead of a 5 brigade combat team increase, the report stated that the Army would create a total of 42 such brigades in the active component, a 1 brigade combat team reduction from the Army's plan. In addition, the number of National Guard brigade combat teams was reduced from 34 to 28. In sum, the QDR decisions reduced the number of planned brigade combat teams from 77 to 70. However, Army officials stated that the Army plans to fully staff and equip these units. Moreover, Army officials told us that the Army plans to use resources freed up by this decision to increase support units in the reserve component and to fund additional special operations capability in the active component. We also noted in our September 2005 report that the Army had not completed designs for all the support units at the time the estimate was set. According to Army officials, these designs have been finalized. Despite these refinements to the design and changes to the planned number of combat and support brigades, the Army has not made revisions to its \$52.5 billion cost estimate or funding plan based on these changes.

Moreover, as I will discuss shortly, uncertainty remains in the Army's evolving strategy for equipping its modular combat brigades. As a result, based on discussions with Army officials, it remains unclear to what extent the \$41 billion will enable the Army to equip units to levels in the

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Army's tested design. In addition, it is not clear how the Army will distinguish between modularity, costs associated with restoring equipment used in operations, or modernizing equipment. In estimating its equipment costs for modularity, the Army assumed that some equipment from ongoing operations would remain in operational condition for redistribution to new and restructured modular units. To the extent equipment is not returned from operations at assumed rates, it is not clear how this will affect equipping levels of modular units or how the Army would pay for such equipment. As a result, the Secretary of Defense and Congress may not be in a sound position to weigh competing demands for funding and assess whether the Army will be able to fully achieve planned capabilities for the modular force by 2011 within the planned funding level.

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## Although the Army Is Well Under Way in Its Active Modular Combat Brigade Conversions, Its Ability to Meet Its Equipping Goals by 2011 Is Unclear

The Army has made progress in creating active component modular combat brigades, but it is not meeting its equipping goals for these brigades and is still developing its overall equipping strategy, which raises concerns about the extent to which brigades will be equipped in the near and longer term. While active brigades are receiving significant amounts of new equipment, Army officials indicated that they may seek additional funding for equipment beyond 2011. Moreover, brigades will initially lack key equipment, including items that provide enhanced intelligence, situational awareness, and network capabilities needed to help the Army achieve its planned capabilities of creating a more mobile, rapidly deployable, joint, expeditionary force. In addition, because of existing equipment shortages, the Army National Guard will likely face even greater challenges providing the same types of equipment for its 28 planned modular combat brigades. To mitigate equipment shortages, the Army plans to provide priority for equipment to deploying active component and National Guard units but allocate lesser levels of remaining equipment to other nondeploying units based on their movement through training and readiness cycles. However, the Army has not yet determined the levels of equipment it needs to support this strategy, assessed the operational risk of not fully equipping all units, or provided to Congress detailed information about these plans so it can assess the Army's current and long-term equipment requirements and funding plans.

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## Army Facing Difficulty Meeting Its Goals for Equipping Active Modular Combat Brigades

The Army faces challenges meeting its equipping goals for its modular brigades both in the near and longer term. As of February 2006, the Army had converted 19 modular combat brigades in the active force. According to the Army Campaign Plan, which established time frames and goals for the modular force conversions, each of these units individually is expected to have on hand at least 90 percent of its required major equipment items within 180 days after its new equipment requirements become effective.<sup>6</sup> We reviewed data from several brigades that had reached the effective date for their new equipment requirements by February 2006, and found that all of these brigades reported significant shortages of equipment 180 days after the effective date of their new equipment requirements, falling well below the equipment goals the Army established in its Campaign Plan. Additionally, the Army is having difficulty providing equipment to units undergoing their modular conversion in time for training prior to operational deployments, and deploying units often do not receive some of their equipment until after their arrival in theater. At the time of our visits, officials from three Army divisions undergoing modular conversion expressed concern over the lack of key equipment needed for training prior to deployment.

The Army already faced equipment shortages before it began its modular force transformation and is wearing out significant quantities in Iraq, which could complicate plans for fully equipping new modular units. By creating modular combat brigades with standardized designs and equipment requirements, the Army believed that it could utilize more of its total force, thereby increasing the pool of available and ready forces to meet the demands of sustained rotations and better respond to an expected state of continuous operations. Also, by comparably equipping all of these units across the active component and National Guard, the Army further believes it will be able to discontinue its practice of allocating limited resources, including equipment, based on a system of tiered readiness,<sup>7</sup> which resulted in lower-priority units in both active and

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<sup>6</sup> The Army defines this in its Campaign Plan as the effective date on which the new modular organizational designs' equipment requirements formally apply to converting brigades. The Army calls this a Modified Table of Organization and Equipment, which documents the specific types and amounts of equipment Army units are authorized to have.

<sup>7</sup> Under this model, which the Army calls its tiered readiness system, high priority or first to deploy units in the active component received much higher levels of resources than lower priority or later deploying active and reserve component units. While some units maintained high levels of readiness, a large part of both the active and reserve components were in a low state of readiness with the expectation that there would be sufficient time to add the required resources prior to deployment.

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reserve components having significantly lower levels of equipment and readiness than the higher priority units. However, because of the need to establish a larger pool of available forces to meet the current high pace of operational commitments, the Army's modular combat brigade conversion schedule is outpacing the planned acquisition or funding for some equipment requirements. The Army has acknowledged that funding does not match its modular conversion schedule and that some units will face equipment shortages in the early years of transformation. The Army says it will manage these shortfalls; however, according to Army officials, the Army may continue to seek modular force equipment funding beyond 2011 and may exceed its \$52.5 billion modularity cost estimate.

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### Equipment Shortages Include Key Equipment the Army Identified as Essential for Achieving Modular Force Capabilities

Active modular combat brigades will initially lack required numbers of some of the key equipment that Army force design analyses determined essential for achieving their planned capabilities. Army force designers identified a number of key organizational, personnel, and equipment enablers they determined must be present for the modular combat brigades to be as lethal as the division-based brigades they are replacing, achieve their expected capabilities, and function as designed. Essential among these is the equipment that will enable the modular combat brigades to function as stand-alone, self-sufficient tactical forces, capable of conducting and sustaining operations on their own if required without also deploying large numbers of support forces. They include battle command systems to provide modular combat brigades the latest command and control technology for improved situational awareness; advanced digital communications systems to provide secure high-speed communications links; and advanced sensors, providing modular combat brigades their own intelligence-gathering, reconnaissance, and target acquisition capabilities.

We reviewed several command and control, communications, and reconnaissance systems to determine the Army's plans and timelines for providing active modular combat brigades some of the key equipment they need to achieve their planned capabilities and function as designed. According to Army officials responsible for managing the distribution and fielding of equipment, in 2007 when 38 of 42 active component modular combat brigades are to complete their modular conversions, the Army will not have all of this equipment onhand to meet the new modular force design requirements. These shortfalls are due to a range of reasons, but primarily because the modular conversion schedule is outpacing the planned acquisition or funding. For example, the Army does not expect to meet until at least 2012 its modular combat brigade requirements for Long-

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Range Advanced Scout Surveillance Systems, an advanced visual sensor that provides long-range surveillance capability to detect, recognize, and identify distant targets. In addition, because of an Army funding decision, the Army only plans to meet 85 percent of its requirements across the force for Single Channel Ground and Airborne Radio Systems, a command and control network radio system that provides voice and data communications capability in support of command and control operations. Finally, a recent DOD decision could set back the Army's schedule for the acquisition of Joint Network Node, a key communications system that provides secure high-speed computer network connection for data transmission down to the battalion level, including voice, video, and e-mail. According to Army officials, DOD recently decided to require the Army to have Joint Network Node undergo developmental and operational testing prior to further acquisition, which could delay equipping active and National Guard modular combat brigades.

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## National Guard Faces Significant Equipping Challenges

In addition to the challenges the Army faces in providing active component modular combat brigades the equipment necessary for meeting expected capabilities, the Army will face greater challenges meeting its equipping requirements for its 28 planned National Guard combat brigades. The Army's modular force concept is intended to transform the National Guard from a strategic standby force to a force that is to be organized, staffed, and equipped comparable to active units for involvement in the full range of overseas operations. As such, Guard combat units will enter into the Army's new force rotational model in which, according to the Army's plans, Guard units would be available for deployment 1 year out of 6 years. However, Guard units have previously been equipped at less than wartime readiness levels (often at 65 to 75 percent of requirements) under the assumption that there would be sufficient time for Guard forces to obtain additional equipment prior to deployment. Moreover, as of July 2005, the Army National Guard had transferred more than 101,000 pieces of equipment from nondeploying units to support Guard units' deployments overseas. As we noted in our report last year on National Guard equipment readiness,<sup>8</sup> National Guard Bureau officials estimated that the Guard's nondeployed units had only about 34 percent of their essential warfighting equipment as of July 2005

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<sup>8</sup> GAO, *Reserve Forces: Plans Needed to Improve Army National Guard Equipment Readiness and Better Integrate Guard into Army Force Transformation Initiatives*, [GAO-06-111](#) (Washington, D.C.: Oct. 4, 2005).

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and had exhausted inventories of 220 critical items. Although the Army says it plans to invest \$21 billion into equipping and modernizing the Guard through 2011, Guard units will start their modular conversions with less and much older equipment than most active units. This will add to the challenge the Army faces in achieving its plans and timelines for equipping Guard units at comparable levels to active units and fully meeting the equipping needs across both components. Moreover, the Army National Guard believes that even after the Army's planned investment, the Army National Guard will have to accept risk in certain equipment, such as tactical wheeled vehicles, aircraft, and force protection equipment.

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### To Mitigate Equipment Shortages, Army Plans to Rotate Equipment among Units Based on Their Movement through Training, Readiness, and Deployment Cycles

Because the Army realized that it would not have enough equipment in the near term to simultaneously equip modular combat brigades at 100 percent of their requirements, the Army is developing a new equipping strategy as part of its force rotation model; however, it has not yet determined equipping requirements for this new strategy. Under the force rotation model, the Army would provide increasing amounts of equipment to units as they move through training phases and near readiness for potential deployment so they would be ready to respond quickly if needed with fully equipped forces. The Army believes that over time, equipping units in a rotational manner will enable it to better allocate available equipment and help manage risk associated with specific equipment shortages.

Under this strategy, brigades will have three types of equipment sets—a baseline set, a training set, and a deployment set. The baseline set would vary by unit type and assigned mission and the equipment it includes could be significantly reduced from the amount called for in the modular brigade design. Training sets would include more of the equipment units will need to be ready for deployment, but units would share the equipment that would be located at training sites throughout the country. The deployment set would include all equipment needed for deployment, including theater-specific equipment, high-priority items provided through operational needs statements, and equipment from Army prepositioned stock. With this cyclical equipping approach, the Army believes it can have from 12 to 16 active combat brigades and from 3 to 4 Army National Guard combat brigades equipped and mission ready at any given time.

However, the Army has not yet determined equipping requirements for units as they progress through the rotational cycles. While the Army has developed a general proposal to equip both active and Army National Guard units according to the readiness requirements of each phase of the rotational force model, it has not yet detailed the types and quantities of



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items required in each phase. We noted in our October 2005 report on Army National Guard equipment readiness<sup>9</sup> that at the time of the report, the Army was still developing the proposals for what would be included in the three equipment sets and planned to publish the final requirements in December 2005. However, as of March 2006 the Army had not decided on specific equipping plans for units in the various phases of its force rotation model.

Because the Army is early in the development of its rotational equipping strategy and has not yet defined specific equipping plans for units as they progress through rotational cycles, the levels of equipment the deploying and nondeploying units would receive are currently not clear. Therefore, it is difficult to assess the risk associated with decreasing nondeploying units' readiness to perform other missions or the ability of units in the earlier stages of the rotational cycle to respond to an unforeseen crisis if required.

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## The Army Faces Challenges in Managing Personnel Requirements for Its New Modular Force Structure

The Army has made some progress meeting modular personnel requirements in the active component by shifting positions from its noncombat force to its operational combat force but faces significant challenges reducing its overall end strength while increasing the size of its modular combat force. The Army plans to reduce its current end strength of 512,400, based upon a temporary authorized increase,<sup>10</sup> to 482,400 soldiers by 2011 in order to help fund the Army's priority acquisition programs. Simultaneously, the Army plans to increase the number of soldiers in its combat force from approximately 315,000 to 355,000 in order to meet the increased personnel requirements of its new larger modular force structure. The Army plans to utilize several initiatives to reduce and realign the Army with the aim of meeting these planned manpower levels.

For example, the Army has experienced some success in converting nonoperational military positions into civilian positions, thereby freeing up soldiers to fill modular combat brigades' requirements. During fiscal year

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<sup>9</sup> GAO-06-111.

<sup>10</sup> The National Defense Authorization Act for Fiscal Year 2006, Pub. L. No. 109-163, § 401 (Jan. 6, 2006), sets the end strength level for the Army at 512,400 but stipulates costs of active duty personnel of the Army for that fiscal year in excess of 482,400 shall be paid out of funds authorized to be appropriated for that fiscal year for a contingent emergency reserve fund or as an emergency supplemental appropriation.

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2005, the Army converted approximately 8,000 military positions to civilian-staffed positions within the Army's institutional force. However, officials believe additional conversions will be more challenging to achieve. In addition to its success with the military-to-civilian conversions, the Army has been given statutory authority to reduce active personnel support to the National Guard and Reserves by 1,500.<sup>11</sup> However, the Army must still eliminate additional positions, utilizing these and other initiatives, so it can reduce its overall end strength while filling requirements for modular units.

While the Army is attempting to reduce end strength and realign positions to the combat force via several initiatives, it may have difficulty meeting its expectations for some initiatives. For example, the Army expected that the Base Realignment and Closure (BRAC) decisions of 2005 could free up approximately 2,000 to 3,000 positions in the institutional Army, but the Army is revisiting this assumption based upon updated manpower levels at the commands and installations approved for closure and consolidation. Army officials believe they will be able to realign some positions from BRAC, but it is not clear whether the reductions will free up 2,000 to 3,000 military personnel. In the same vein, Army officials expected to see reductions of several hundred base support staff resulting from restationing forces currently overseas back to garrisons within the United States. However, Army officials are still attempting to determine if the actual savings will meet the original assumptions.

In addition, the Army's new modular force structure increases requirements for military intelligence specialists, but according to Army officials the Army will not be able to fully meet these requirements. The modular force requires the Army to adjust the skill mix of its operational force by adding 8,400 active component intelligence specialist positions to support its information superiority capability—considered a key enabler of modular force capabilities. However, the Army plans to fill only about 57 percent of these positions by 2013 in part because of efforts to reduce overall end strength. According to Army officials, despite these shortfalls, intelligence capability has improved over that of the previous force; however, shortfalls in filling intelligence requirements have stressed intelligence specialists with a high tempo of deployments. However, since

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<sup>11</sup> The Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, Pub. L. No. 108-375, § 515 (Oct. 28, 2004) reduces the minimum number of active component advisors required to be assigned to units of the selected reserve from 5,000 to 3,500.

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intelligence was considered a key enabler of the modular design—a component of the new design’s improved situational awareness—it is unclear how this shortage in planned intelligence capacity will affect the overall capability of modular combat brigades.

If the Army is unable to transfer enough active personnel to its combat forces while simultaneously reducing its overall end strength, it will be faced with a difficult choice. The Army could accept increased risk to its operational units or nonoperational units that provide critical support, such as training. Alternatively, the Army could ask DOD to seek an end strength increase and identify funds to pay for additional personnel. However, DOD is seeking to reduce end strength in all the services to limit its personnel costs and provide funds for other priorities.

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## The Army Has Objectives and Time Frames for Modularity but Lacks Performance Metrics to Measure Progress

The Army lacks a comprehensive and transparent approach to effectively measure its progress against stated modularity objectives, assess the need for further changes to its modular unit designs, and monitor implementation plans.

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## Army Lacks Performance Metrics to Measure the Results of Modularity

GAO and DOD, among others, have identified the importance of establishing objectives that can be translated into measurable, results-oriented metrics, which in turn provide accountability for results. In a 2003 report we found that the adoption of a results-oriented framework that clearly establishes performance goals and measures progress toward those goals was a key practice for implementing a successful transformation.<sup>12</sup> DOD has also recognized the need to develop or refine metrics so it can measure efforts to implement the defense strategy and provide useful information to senior leadership.

The Army considers the Army Campaign Plan to be a key document guiding the modular restructuring. The plan provides broad guidelines for

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<sup>12</sup> GAO, *Results-Oriented Cultures: Implementation Steps to Assist Mergers and Organizational Transformations*, [GAO-03-669](#) (Washington, D.C.: July 2, 2003).

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modularity and other program tasks across the entire Army. However, modularity-related metrics within the plan are limited to a schedule for creating modular units and an associated metric of achieving unit readiness goals for equipment training and personnel by certain dates after unit creation. Moreover, a 2005 assessment by the Office of Management and Budget identified the total number of brigades created as the only metric the Army has developed for measuring the success of its modularity initiative. Another key planning document, the 2005 Army Strategic Planning Guidance, identified several major expected advantages of modularity, including an increase in the combat power of the active component force by at least 30 percent, an increase in the rotational pool of ready units by at least 50 percent, the creation of a deployable joint-capable headquarters, a force design upon which the future network-centric developments can be readily applied, and reduced stress on the force through a more predictable deployment cycle. However, these goals have not translated into outcome-related metrics that are reported to provide decision makers a clear status of the modular restructuring as a whole. Army officials stated that unit creation schedules and readiness levels are the best available metrics for assessing modularity progress because modularity is a reorganization encompassing hundreds of individual procurement programs that would be difficult to collectively assess in a modularity context.

While we recognize the complexity of the modular restructuring, we also note that without clear definitions of metrics, and periodic communication of performance against these metrics, the Secretary of Defense and Congress will have difficulty assessing the impact of refinements and enhancements to the modular design, such as changes in the number of modular combat and support brigades reported in the QDR and any changes in resource requirements that may occur as a result of these changes.

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### Army Lacks a Long-term Plan for Comprehensively Evaluating Modular Designs

In fiscal year 2004, TRADOC's Analysis Center concluded that the modular brigade combat team designs would be more capable than division-based units based on an integrated and iterative analysis employing computer-assisted exercises, subject matter experts, and senior observers. This analysis culminated in the approval of modular brigade-based designs for the Army. The assessment employed performance metrics such as mission accomplishment, units' organic lethality, and survivability, and compared the performance of variations on modular unit designs against the existing division-based designs. The report emphasized that the Chief of Staff of the Army had asked for "good enough" prototype designs that could be

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quickly implemented, and the modular organizations assessed were not the end of the development effort.

Since these initial design assessments, the Army has been assessing implementation and making further adjustments in designs and implementation plans through a number of venues, to include

- unit readiness reporting on personnel, equipment, and training;
- modular force coordination cells to assist units in the conversion process;
- modular force observation teams to collect lessons during training; and
- collection and analysis teams to assess units' effectiveness during deployment.

TRADOC has approved some design change recommendations and has not approved others. For example, TRADOC analyzed a Department of the Army proposal to reduce the number of Long-Range Advanced Scout Surveillance Systems, but recommended retaining the higher number in the existing design in part because of decreases in units' assessed lethality and survivability with the reduced number of surveillance systems.

Army officials maintain that ongoing assessments provide sufficient validation that the modularity concept works in practice. However, these assessments do not provide a comprehensive evaluation of the modular design as a whole. Further, the Army does not plan to conduct a similar overarching analysis to assess the modular force capabilities to perform operations across the full spectrum of potential conflict. In November 2005, we reported that methodically testing, exercising, and evaluating new doctrines and concepts is an important and established practice throughout the military, and that particularly large and complex issues may require long-term testing and evaluation that is guided by study plans.<sup>13</sup> We believe the evolving nature of the design highlights the importance of planning for broad-based evaluations of the modular force to ensure the Army is achieving the capabilities it intended, and to provide an opportunity to make course corrections if needed. For example, one controversial element of the design was the decision to include two maneuver battalions instead of three in the brigade combat teams.<sup>14</sup>

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<sup>13</sup> GAO, *Military Readiness: Navy's Fleet Response Plan Would Benefit from a Comprehensive Management Approach and Rigorous Testing*, GAO-06-84 (Washington, D.C.: Nov. 22, 2005).

<sup>14</sup> Brigades are made up of battalions; battalions made up of companies.

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TRADOC's 2004 analysis noted that the brigade designs with the two maneuver battalion organization had reduced versatility compared to the three maneuver battalion design, and cited this as one of the most significant areas of risk in the modular combat brigade design. Some defense experts, to include a current division commander and several retired Army generals, have expressed concerns about this aspect of the modular design. In addition, some of these experts have expressed concerns about whether the current designs have been sufficiently tested and whether they provide the best mix of capabilities to conduct full-spectrum operations. In addition, the Army has recently completed designs for support units and headquarters units. Once the Army gets more operational experience with the new modular units, it may find it needs to make further adjustments to its designs. Without another broad-based evaluation, the Secretary of Defense and congressional leadership will lack visibility into the capabilities of the brigade combat teams as they are being organized, staffed, and equipped.

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## Concluding Remarks

The fast pace, broad scope, and cost of the Army's restructuring to a modular force present considerable challenges for the Army, particularly as it continues to be heavily involved in fighting the Global War on Terrorism. These factors pose challenges to Congress as well to provide adequate oversight of the progress being made on achieving modularity goals and of funds being appropriated for this purpose. In this challenging environment, it is important for the Army to clearly establish and communicate its funding priorities and equipment and personnel requirements and assess the risks associated with its plans. Moreover, it is important for the Army to clearly establish a comprehensive long-term approach for its modular restructuring that reports not only a schedule of creating modular units, but measures of its progress toward meeting its goal of creating a more rapidly deployable, joint, expeditionary force. Without such an approach, the Secretary of Defense and Congress will not have the information needed to weigh competing funding priorities and monitor the Army's progress in its over \$52 billion effort to transform its force.

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Mr. Chairman and members of the subcommittee, this concludes my prepared remarks. I would be happy to answer any questions you may have.

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## Contacts and Acknowledgments

For future questions about this statement, please contact Janet St. Laurent at (202) 512-4402. Other individuals making key contributions to this statement include Gwendolyn Jaffe, Assistant Director; Margaret Best; Alissa Czyz; Christopher Forys; Kevin Handley; Joah Iannotta; Harry Jobes; David Mayfield; Sharon Pickup; Jason Venner; and J. Andrew Walker.

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