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Washington, DC 20548

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March 16, 2012

Congressional Committees

**Subject: *Military Training: Observations on the Army's Implementation of a Metric for Measuring Ground Force Training***

In 2008, the Army issued a field manual that identified the need to expand its training focus so units would be trained and ready to operate across a full spectrum of operations including offensive, defensive, stability, and civil support operations.<sup>1</sup> To support operations in Iraq and Afghanistan, for the last several years, the Army has focused its ground force training on preparing units for counterinsurgency operations. With the withdrawal from operations in Iraq, fewer units are engaged in counterinsurgency operations and now have more time to train for full spectrum operations.

To reflect the shift in training focus, the Army, in April 2011, updated its training strategy and also established a new metric to measure training activity—referred to as the full spectrum training mile metric. This metric replaced the Army's traditional tank mile metric, which represented the average number of miles the Army expected to drive its tanks while conducting training. In its fiscal year 2012 budget materials, the Army provided background information on its transition to the new metric, and, starting in fiscal year 2012, began using the new metric.

House report 112-78<sup>2</sup> directed GAO to review the Army's transition to the full spectrum training mile metric and report its findings by February 28, 2012. To address this mandate, we determined (1) how the Army's full spectrum training mile metric differs from its traditional tank mile metric; (2) the key assumptions associated with the full spectrum training mile metric and to what extent these assumptions reflect actual conditions; and (3) to what extent the Army uses the full spectrum training mile metric to measure training execution and develop training cost estimates and related funding needs. Additionally, for background purposes, this report includes information on how training is reflected in the Army's operation and maintenance budget-justification materials.

We briefed the congressional defense committees in January 2012 and have included the briefing in enclosure 1 of this report.

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<sup>1</sup>Army Field Manual 7-0, *Training for Full Spectrum Operations* (Dec. 2008).

<sup>2</sup>H.R. Rep. No. 112-78, which accompanied a bill for the National Defense Authorization Act for 2012, Pub. L. No. 112-81 (2011).

## Scope and Methodology

To address our objectives, we reviewed and analyzed a number of training- and budget-related documents including the Army's: training strategy, field manual for full spectrum operations training, relevant Army guidance, the Army's fiscal year 2012 operation and maintenance budget request and supporting budget-justification books, and several briefings that described the tank mile and full spectrum training mile metrics. We also reviewed recent evaluations of Army training, including prior GAO reports, and discussed all of these issues with responsible Department of the Army headquarters officials. Because it is used in developing cost estimates for training, we briefly discuss the Army's Training Resource Model in this report. However, we did not fully analyze the model or its output estimates.

We conducted this performance audit from June 2011 to March 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for any findings and conclusions based on our audit objectives.

## Summary

The full spectrum training mile metric is similar in some ways to the tank mile metric and dissimilar in other ways. Both metrics measure training activity of nondeployed units associated with recommended training events based on the Army's approved training strategy. Specifically, they both calculate the average number of miles a unit is expected to drive its vehicles on an annual basis for training that occurs during the reset and train/ready stages of the Army's Force Generation (ARFORGEN) cycle.<sup>3</sup> However, the full spectrum training mile metric applies to all Army components (active component, Army Reserve, and Army National Guard) while the tank mile metric does not apply to the Army Reserve, because the Army Reserve does not have tanks. The full spectrum training mile metric also is based on multiple vehicles including the M1 Abrams tank, M2/M3 Bradley, Stryker, up-armored high mobility multipurpose wheeled vehicle, medium tactical vehicle, and palletized load system, while the tank mile metric is limited to the M1 Abrams tank. According to Army officials, the full spectrum training mile metric—and its incorporation of a wider array of vehicles—is more reflective of the type of vehicles the Army is actually using to train its ground forces for full spectrum operations.

The Army's full spectrum training mile metric is based on certain assumptions associated with standards set in the Army's training strategy and force-generation model. Because the metric is a standard for actual training to be measured against, the metric's assumptions are based on desired or expected conditions and may not fully

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<sup>3</sup>The Army issued Army Regulation 525-29, *Army Force Generation* (Mar. 14, 2011), institutionalizing the Army Force Generation Model (ARFORGEN) and process in March 2011. The ARFORGEN model helps the Army manage its personnel and equipment, coordinate training, and prioritize resources. Under this model, units progress through a series of three stages—reset, train/ready, and available—and training varies during each of the stages.

align with actual conditions. For example, the Army made certain assumptions about the length of time units would spend in each stage of the ARFORGEN cycle, assumed that units would have all the vehicles that were included in their modified table of organization and equipment,<sup>4</sup> and assumed units would accomplish all the training in the Army's training strategy. However, prior GAO reports and Army readiness reports have both shown that units do not always have all the equipment, including vehicles included in their modified table of organization and equipment, available when they are conducting training. Army officials have also acknowledged that many units are not currently executing the ARFORGEN training cycle and the Army's training strategy as envisioned. To the extent that units do not have all of their equipment, including vehicles, or complete all recommended training, the units' actual miles driven may differ from the Army's full spectrum training mile metric. According to a responsible Army official, the Army tracks historical data on actual miles driven and has, in the past, adjusted assumptions used to develop its tank mile metric to more closely reflect actual conditions. The Army plans to continue this practice now with the new metric in place. For example, when conducting its 2010 training strategy review, the Army reduced its estimated miles per training day and event to more closely reflect actual miles driven.

The Army uses the full spectrum training mile metric to measure training activity. Specifically, the Army compares the actual miles its units have driven to conduct ground force training to its full spectrum training mile metric to determine how well it executed its training strategy. However, the Army does not use the full spectrum training mile metric to develop its training cost estimates or related funding needs. The Army uses its Training Resource Model, rather than its full spectrum training mile metric, to develop its training cost estimates and funding needs. While some of the inputs to the full spectrum training mile metric and the Training Resource Model are the same (i.e., the number and duration of training events and the numbers of units and vehicles available for training) the Training Resource Model contains unique inputs, such as cost factors that are not related to the full spectrum training mile metric. Specifically, the cost calculation in the Training Resource Model includes the cost to drive a vehicle, expressed as cost per mile, that are linked to the number of units and vehicles, as well as other indirect nonmileage support costs, such as civilian pay. The Training Resource Model, like the full spectrum training mile metric, assumes, among other things, that all recommended training events will be fully executed. To the extent that all training does not occur or other assumptions do not hold true, requirements could differ from estimates derived from the Training Resource Model. According to an Army official, the Training Resource Model is one of several sources of information the Army considers when developing its funding requests for training. For example, the official stated the Army uses historical data on actual miles driven to adjust its funding requests to more closely reflect actual conditions.

We provided a copy of this report to the Department of Defense for review. The department declined to comment on the report.

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<sup>4</sup> The Modified Table of Organization and Equipment (MTOE) is a document that prescribes the wartime mission, capabilities, organizational structure, and mission essential personnel and equipment requirements for military units.

We are sending copies of this report to the Secretary of Defense, the Secretary of the Army, and to the appropriate congressional committees. The report also is available at no charge on the GAO website at <http://www.gao.gov>. Should you or your staff have any questions concerning this report, please contact me on 202-512-9619 or [pickups@gao.gov](mailto:pickups@gao.gov). Contact points for our offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who contributed to this report are listed in enclosure II.

A handwritten signature in black ink that reads "Sharon L. Pickup". The signature is written in a cursive, flowing style.

Sharon L. Pickup  
Director  
Defense Capabilities and Management

Enclosures - 2

*List of Committees*

The Honorable Carl Levin  
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The Honorable John McCain  
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The Honorable Thad Cochran  
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The Honorable Norman D. Dicks  
Ranking Member  
Subcommittee on Defense  
Committee on Appropriations  
House of Representatives

Briefing for the Congressional Committees



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**Army Full Spectrum Training Mile Metric**

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Briefing for the Congressional Committees

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## Background

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- In 2008, the Army issued Field Manual 7-0, *Training for Full Spectrum Operations*, which identified the need to expand its training focus so units would be trained and ready to operate across a full spectrum of operations including offensive, defensive, stability, and civil support operations. The manual noted that “the Army learned that [its previous focus on] developing proficiency in performing offensive and defensive tasks does not automatically develop proficiency in performing stability or civil support tasks.” (FM 7-0, page 2-6, paragraph 2-31).
  - To support operations in Iraq and Afghanistan, for the last several years, the Army has focused its ground force training on counterinsurgency operations.
  - With the withdrawal from operations in Iraq, fewer Army units are engaged in counterinsurgency operations and now have more time to train for full spectrum operations.
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## Background

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- In April 2011, the Army updated its training strategy to reflect the shift in focus away from the counterinsurgency-based demand-driven training strategy to a strategy supporting training for full spectrum operations.
  - In light of the Army's shift in focus, and in an effort to establish more accurate training requirements and measure related training activity, the Army has transitioned from the traditional tank mile metric to a full spectrum training mile metric, which applies to a wider array of vehicles.
  - According to Army officials, the full spectrum training mile (FSTM) metric—and its incorporation of a wider array of vehicles—is more reflective of the vehicles the Army is actually using to train for full spectrum operations.
  - Both the tank mile and FSTM metrics represent the average number of miles a unit is expected to drive its vehicles on an annual basis. According to Army officials, the Army measures actual training activity (miles driven) against these metrics.
  - In fiscal year 2012, the Army began using the FSTM metric.
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## Background

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- In March 2011, the Army issued Army Regulation 525-29 institutionalizing the Army's Force Generation (ARFORGEN) process.
  - ARFORGEN is the Army's force-generation model. Under the model, units progress through a series of three stages—reset, train/ready, and available—in either a 36 month (active units) or 72 month (reserve and guard units) cycle.
  - Unit availability and training activity vary during each of the stages.
- Both the tank mile and FSTM metrics establish ground force training requirements based on an average of the miles expected to be driven while conducting recommended training during the ARFORGEN cycle.



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## Background

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- H.R. Rep. No. 112-78, which accompanied a bill for the National Defense Authorization Act for 2012, directed GAO to review the Army's transition to the full spectrum training mile metric including elements such as the methodology, assumptions, and use of the metric.
- GAO is to report to the congressional defense committees by February 28, 2012.



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## Objectives

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- 1) How does the Army's FSTM metric differ from its traditional training metric, the tank mile?
- 2) What are the key assumptions associated with the FSTM metric and to what extent do these assumptions reflect actual conditions?
- 3) To what extent does the Army use the FSTM metric to evaluate training and develop related funding needs?

In addition, we are providing information on how training is reflected in the Army's operation and maintenance budget justification materials.



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**Objective 1: How does the Army's full spectrum training mile metric differ from the tank mile metric?**

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- The tank mile and FSTM metrics are similar in some ways, including:
  - Both metrics capture training activity (miles) required for ground force training.
  - Both capture average miles associated with recommended training events based on the Army's approved training strategy and do not include training accomplished while units are deployed.
  - Both metrics serve as a training-strategy standard and the Army uses actual miles driven to assess training activity against that standard.
- The two metrics differ in several ways, including:
  - FSTM applies to all Army components (active, Reserve and National Guard), whereas tank miles did not apply to the Army Reserve because the Army Reserve does not have tanks.
  - The M1 tank was the only vehicle considered in the tank mile metric. FSTM takes into consideration the M1 tank as well as other vehicles.
  - The only consideration when computing the tank mile metric was the training strategy (number and duration of training events). FSTM also takes into account force structure changes (number of units and number of vehicles) and deployment schedules (number of units available for training).
- The two metrics are compared in more detail on the next slide.



**Objective 1: How does the Army’s full spectrum training mile metric differ from the tank mile metric? (cont’d)**

**Comparison of the Tank Mile and Full Spectrum Training Mile Metrics**

Characteristics	Tank mile	FSTM
Capture training activity for ground forces	✓	✓
Applies to all Army components (active, Reserve, and National Guard)	Did not apply to the Army Reserve	✓
Captures average mileage requirements for multiple unit types including heavy, infantry, and stryker brigade combat teams, as well as engineering and sustainment brigades	Estimates based on heavy brigade combat teams	✓
Captures average mileage associated with recommended training events during the time units are available for training and does not include training once units are deployed	✓	✓
Training activity measured based on multiple vehicles including the M1 Abrams, M2/M3 Bradley, Stryker, Up-Armored High Mobility Multipurpose Wheeled Vehicle, the Palletized Load System, and the Medium Tactical Vehicle	Activity measured based on just M1 tank	✓
Takes into consideration the number and duration of training events, number of vehicles, and number of units in computing mileage requirements	Only considers number and duration of training events	✓

Source: GAO analysis of information provided by the Army.



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**Objective 2: Key assumptions associated with the full spectrum training mile metric and whether they reflect actual conditions**

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- The Army used certain assumptions in establishing its FSTM requirements. For example:
  - Units will accomplish all recommended training.
  - Units will have all the vehicles that are included in their modified table of organization and equipment.
  - Units will deploy as scheduled.



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**Objective 2: Key assumptions associated with the full spectrum training mile metric and whether they reflect actual conditions (cont'd)**

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- Because the FSTM metric is a standard to measure actual training against, the metric's assumptions are based on desired or expected conditions and may not fully align with actual conditions. For example:
  - Units may not fully execute recommended training.
    - GAO has previously reported that unit training has focused on preparing for ongoing operations, often at the expense of training for full spectrum operations.
    - Army officials acknowledge that, although deployment commitments are not as high as in past years, they are still not executing ARFORGEN and the associated training strategy as envisioned. For example:
      - Many units are not currently progressing through the ARFORGEN cycle in the projected time intervals envisioned.
      - Because of ongoing operations in Afghanistan, some units that are getting set to deploy there are focusing their training on more-limited missions rather than full spectrum operation missions.



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**Objective 2: Key assumptions associated with the full spectrum training mile metric and whether they reflect actual conditions (cont'd)**

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- Units may not have all the equipment, including vehicles, in their modified table of organization and equipment for use during training.
  - GAO has previously reported that the Army has transferred equipment from nondeploying units to support deploying units, affecting the availability of items for nondeployed units to meet other demands such as training.
  - GAO's ongoing work examining the Army's process for resetting, or restoring equipment to combat capability, indicates units in training rely on several sources to augment their equipment inventory and lessen the effect of equipment shortages.





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**Objective 2: Key assumptions associated with the full spectrum training mile metric and whether they reflect actual conditions (cont'd)**

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- To the extent that some units: focus on counterinsurgency or training other than the full spectrum training called for in the Army's training strategy; progress through the ARFORGEN cycle slower or quicker than the time intervals envisioned; and lack equipment, including vehicles that are included in their modified table of organization and equipment, when conducting training, their actual miles driven may differ from the Army's established FSTM requirement.
- According to a responsible Army official, the Army tracks historical data on actual miles driven and has, in the past, adjusted assumptions used to develop its tank mile metric to more closely reflect actual conditions. The Army plans to continue this practice now that the new metric is in place.
  - For example, in its 2010 training strategy review, the Army reduced its estimated miles per training day and event to more closely reflect actual miles driven.



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**Objective 3: To what extent does the Army use the full spectrum training mile metric to evaluate training and develop related funding needs?**

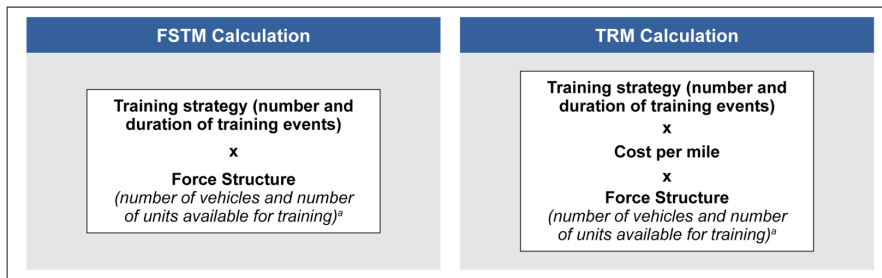
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- The Army establishes FSTM requirements and then compares actual full spectrum training miles to the FSTM requirement to determine how well the Army executed its training strategy. The FSTM metric is not a model for developing training cost estimates or funding needs.
  - The Army uses its Training Resource Model (TRM) rather than FSTM to develop its training cost estimates and related funding needs.
  - While FSTM is not used to develop the Army's training cost estimates and related funding needs, both FSTM and TRM consider some of the same mileage-related inputs (training strategy and force structure).
  - Unlike FSTM, TRM also incorporates other cost factors (the cost to drive a vehicle, expressed as cost per mile), and other indirect costs that are not directly associated with vehicle mileage, such as support costs for civilian pay, when determining training cost estimates and related funding needs.



**Objective 3: To what extent does the Army use the full spectrum training mile metric to evaluate training and develop related funding needs? (cont'd)**

- The graphic below shows the inputs that are used to calculate FSTM mileage requirements and the mileage-related inputs within TRM that are used to calculate training funding needs.



Source: GAO analysis of information provided by the Army.  
\*Does not include training provided to deployed units.



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**Objective 3: To what extent does the Army use the full spectrum training mile metric to evaluate training and develop related funding needs? (cont'd)**

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- TRM calculations, like the FSTM metric, are based on some of the same assumptions such as that units will complete all of the training called for in the Army's training strategy, which as we previously stated, may not be occurring. To the extent that all training does not occur or other assumptions do not hold true, requirements could differ from estimates derived from the TRM.
- According to an Army official, TRM is one of several sources of information the Army considers when developing its funding requests for training. For example, the official stated that the Army uses historical data on actual miles driven to adjust its funding requests to more-closely reflect actual conditions.



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## **Additional Information on How Training Is Reflected in the Army's Budget Justification Materials**

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- The Army's fiscal year 2012 budget request for operation and maintenance was about \$44.9 billion (active, Reserve and National Guard).
- Army training expenses, including those for ground forces training, are reported in the operations tempo (OPTEMPO) subactivity groups (SAG) 111-116.
- About 21 percent, or \$9.5 billion, of the \$44.9 billion requested was for OPTEMPO SAGs 111-116.
- Activities other than those associated with training, such as costs to operate Army headquarters are also funded in SAGs 111-116.

Direct Costs

- Fuel and oil
- Repair parts
- Depot level repairs
- Contractor logistics support

Indirect Costs

- Combat training center support
- Soldier support (e.g., clothing, tools, admin. supplies)
- Fixed wing aircraft maintenance (contractor logistics support)
- Equipment contract logistics support
- Civilian pay

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Note: OPTEMPO is a term used within the Department of Defense to refer to the pace of operations. Funding in SAGs 111-116 is referred to as "OPTEMPO funding."

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## **Additional Information on How Training Is Reflected in the Army's Budget Justification Materials (cont'd)**

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- The Army fiscal year 2012 budget justification materials noted some training-related adjustments as compared to previous levels of activity. For fiscal year 2012,
    - \$127 million reduction due to the transition to full spectrum operations training, and
    - \$611 million increase to support increased number of units available to conduct home-station training.
  - In addition, the Army anticipates \$1 billion savings in OPTEMPO funding in fiscal years 2012-2016 as a result of the shift in the Army's training strategy, including the move from major combat operations to full spectrum operations training.
    - According to the Army, several factors contribute to the estimated savings including: implementation of reduced training during the 6-month ARFORGEN reset period; and a reduction in the use of tanks—among the most expensive of the Army's vehicles to operate—in training.
    - Estimated savings are spread as follows: \$182 million in 2012, \$175 million in 2013, \$193 million in 2014, \$232 million in 2015, and \$301 million in 2016.
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**Additional Information on How Training Is Reflected in the Army's Budget Justification Materials (cont'd)**

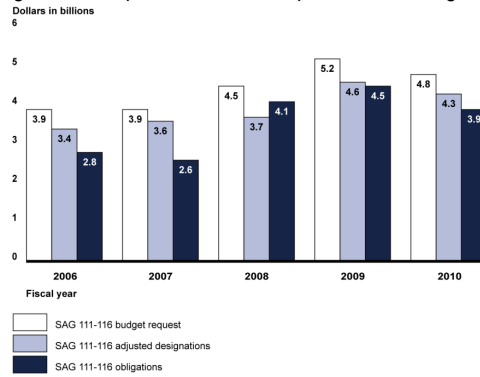
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- When funds are appropriated for the Army's operation and maintenance functions, the Army then allocates those funds to organizations within the various subactivity groups, including the OPTEMPO SAGs (SAGs 111-116) that fund training.
- The Army might request OPTEMPO funding at a certain level, but then reprogram OPTEMPO funds to other operation and maintenance non-training-related SAGs.
- As shown on the graphic on the following page, over the last 5 years the Army has not consistently executed its OPTEMPO dollars, which could occur for various reasons including the following:
  - Reprogramming funds between SAGs to meet unanticipated or emergent requirements, or both, that were not addressed in the initial budget request.
  - DOD typically has authority to reprogram funds among SAGs, subject to certain conditions.



## Additional Information on How Training Is Reflected in the Army's Budget Justification Materials (cont'd)

**Army Execution of Training Funds**  
Obligations Compared to Funds Requested and Designated by the Department



Note: Data are from Army fiscal year 2006-10 operation and maintenance budget justification materials. The term "designated" above refers to the amounts set forth at the subactivity group-level in an appropriation bill's conference report. These recommended amounts are not binding unless they are incorporated directly or by reference into an appropriation act or other statute. DOD adjusts the initial amounts that Congress designates for SAGs to reflect congressional intent, undistributed adjustments, and general provisions directed by Congress. We refer to these amounts as "adjusted designations" above. The above numbers do not include funding requests or obligations related to overseas contingency operations.



## Enclosure II

### GAO Contact and Staff Acknowledgments

#### GAO Contact

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#### Staff Acknowledgments

In addition to the contact named above, key contributors to this report included Mike Ferren, Assistant Director; Bruce Brown; Grace Coleman; Donna Evans; Charles Perdue; Steve Pruitt; Sharon Reid; Amie Steele; Susan Tindall; and Nicole Willems.

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