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MILITARY TRAINING

Actions Needed to Assess Workforce Requirements and Appropriate Mix of Army Training Personnel

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G A O
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Highlights

MILITARY TRAINING

Actions Needed to Assess Workforce Requirements and Appropriate Mix of Army Training Personnel

Why GAO Did This Study

To support ongoing operations, the Army gives priority to providing personnel to its operating forces over its support organizations, including Training and Doctrine Command (TRADOC).TRADOC performs various functions, such as developing warfighting doctrine and providing training. To help manage its workforce, TRADOC has taken certain actions, such as relying more on contractors and reassigning other staff to be instructors. In a February 2010 memorandum, the TRADOC Commander stated that because of various factors TRADOC's ability to successfully perform its core competencies and functions was increasingly at risk. House Armed Services Committee report 111-491 directed GAO to evaluate the availability of Army trainers. GAO assessed the extent to which TRADOC has (1) identified the number and type of personnel needed to carry out its training mission and (2) evaluated the impact of its workforce management actions on the quality of training. GAO interviewed key Army and TRADOC officials and reviewed relevant doctrine, guidance, curricula, personnel requirements data, and training survey results.

What GAO Recommends

GAO recommends that TRADOC establish a plan to (1) update its personnel requirements models, doctrine, and curricula; (2) complete a personnel mix assessment; and (3) establish metrics to evaluate its workforce management actions. DOD concurred with the recommendations.

What GAO Found

TRADOC annually determines its requirements for key training positions, but limitations exist in its underlying approach, such as the use of outdated personnel requirements models. From fiscal years 2005 through 2011, TRADOC's requirements for instructors, training developers, and training support personnel have remained relatively steady while the student workload has increased by about a third. To determine personnel requirements, TRADOC uses various models involving formulas that rely on a range of assumptions and inputs. Army guidance requires Army commands to update models at least every 3 years, but TRADOC has not updated its model for determining the number of instructors it needs since 1998. As a result, assumptions and inputs used in the model may not reflect changes in how training is currently provided, such as the greater use of self-paced computerized learning in place of classroom instruction. Such changes could affect the number of instructors required to teach a course. In addition, TRADOC has used the same number, with minor modifications, for training developer requirements for the last 3 fiscal years. TRADOC officials recognize that using the same number for training developer requirements is not a valid approach and that an updated model is needed; however, they are unsure when they will be able to update the model. Lastly, TRADOC has not conducted an assessment to determine the optimum mix of military, Army civilian, and contractor personnel to use to execute its training mission. Without the benefit of models that are updated to more closely reflect current training conditions and without conducting a mix analysis, TRADOC does not have a sound basis for accurately identifying the number and types of personnel needed for key training personnel and making the most cost-effective use of training resources.

TRADOC has taken various workforce management actions in order to execute its training mission, but its quality assurance program does not collect certain information needed to evaluate the impact of these actions on the quality of training. Among other things, TRADOC has increased the number of students that an instructor teaches, relied on more contractors as instructors, and reassigned doctrine and training developers to serve as instructors. Through surveys and other tools, TRADOC evaluates factors such as students' knowledge of course materials and whether an instructor is teaching from the curriculum, but it does not systematically collect the data needed to evaluate the impact of changing the student to instructor ratio or the type of instructor on the quality of training. TRADOC officials expressed mixed views about the impact of using contractors on the quality of training. Some believed that more military trainers are needed because these personnel have the knowledge and credibility gained from combat experience to teach soldiers. While others stated that contractors provide the same quality of training as military personnel. GAO noted that TRADOC's use of doctrine and training developers to serve as instructors is among the factors that have led to a backlog in updating doctrine and curricula, which could affect the quality of training. Doctrine should be reviewed at least every 18 months because it determines what soldiers are trained on. As of May 2011, there was a backlog of 436 man-years in doctrine development. TRADOC officials stated that as a best practice, curricula should be updated every 3 years. However, as of April 2011, TRADOC had a backlog of 204 man-years for developing, updating, and reviewing curricula and has not established a plan to address this backlog. In some cases, instructors, with approval from the head of the school, adapt the curricula to incorporate more current data. If curricula are not kept current, students may not be trained on the most recent information and information is not being institutionalized for future instruction.

_____ **United States Government Accountability Office**

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U.S. Army Training and Doctrine Command (TRADOC) develops the Army's soldiers and civilian leaders to ensure that the Army remains a modern and capable fighting force by performing various functions, including developing warfighting doctrine and providing training to soldiers. It provides training at various locations, using a mix of military personnel, Army civilians, and contractors. Since 2001, the Army has faced significant demands to provide military personnel to support ongoing contingency operations and other missions. Each year, Army leadership allocates military personnel among the Army's warfighting or "operating" forces and supporting or "generating" forces, the largest component of which is TRADOC. To meet operational demands, the Army has been giving higher priority to staffing its operating forces than its generating forces. Therefore, to help manage its workforce, TRADOC has taken various actions, including using contractors as instructors, increasing the number of students that an instructor teaches, and reassigning personnel who develop doctrine and training curricula to serve as instructors. In a February 2010 memorandum,[1] the Commander of TRADOC stated that TRADOC's ability to successfully perform its core competencies and functions was increasingly at risk because of manning issues. In particular, the memorandum noted that TRADOC had

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[1] Department of the Army, Headquarters, United States Army Training and Doctrine Command Memorandum, *Erosion of TRADOC's Core Competencies and Functions* (Feb. 16, 2010).

increased its reliance on contractor personnel in lieu of military trainers who can offer knowledge and credibility gained from combat experience when they teach, coach, and mentor soldiers attending TRADOC schools.[2] The memorandum also noted that shortfalls in the number of training developers, who are responsible for developing curricula for TRADOC courses, has led to a substantial backlog with regard to developing these curricula.

The House Armed Services Committee report accompanying a proposed bill for the fiscal year 2011 National Defense Authorization Act (H.R. 5136) directed GAO to evaluate the availability of Army trainers.[3] Specifically, we determined the extent to which TRADOC has (1) identified the number and type of personnel it needs to carry out its training mission and (2) evaluated the impact of its workforce management actions on the quality of training.

To determine the extent to which TRADOC has identified the number and type of personnel it needs to carry out its training mission, we focused our review on instructor, training developer, and training support personnel—personnel types that TRADOC officials identified as having key roles in executing the training mission. We reviewed Army and TRADOC guidance and analyzed personnel requirements. Additionally, we interviewed key officials from the Department of the Army Headquarters, TRADOC, and several TRADOC schools. Specifically, we selected seven schools to visit that were identified by TRADOC headquarter officials and in the TRADOC Commander's 2010 memorandum as being representative of TRADOC's challenges in providing training, such as having high student workload[4] or using a large number of contractors. To determine the extent to which TRADOC has evaluated the impact of the workforce management actions it has taken to execute its training mission on the quality of training provided, we evaluated the results of quality assurance instruments, including surveys conducted at TRADOC schools, and training and doctrine development workload data. We also interviewed key Department of the Army Headquarters, TRADOC, and TRADOC school officials.

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[2]We use "trainer" and "instructor" interchangeably in this report.

[3]H.R. Rep. No. 111-491, at 256 (2010).

[4]Student workload is defined as the total number of students TRADOC expects to train in a year.

We conducted this performance audit from August 2010 to September 2011 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 our findings and conclusions based on our audit objectives. We discuss our scope and methodology in more detail in appendix I.

Background

The Army is made up of both operating and generating forces. Operating forces consist of combat units, including divisions, brigades, and battalions that conduct operations around the world, including contingency operations in Iraq and Afghanistan, as well as humanitarian assistance and civil support missions. The Army's generating force consists of organizations that provide a broad range of support for the operating forces, such as training, supply, and maintenance. TRADOC is the largest part of the generating force and develops the Army's soldiers and civilian leaders to ensure that the Army remains a modern and capable fighting force by developing warfighting concepts and doctrine and by providing recruiting, training, and associated support for military personnel. TRADOC's core functions include, among other things, providing initial military training, leadership courses, and continued professional education courses to soldiers at all levels.

TRADOC carries out its mission at 32 schools located on 15 different installations throughout the continental United States. The schools specialize in such training as infantry, intelligence, and aviation (see fig. 1).

Figure 1: Map of TRADOC Installations
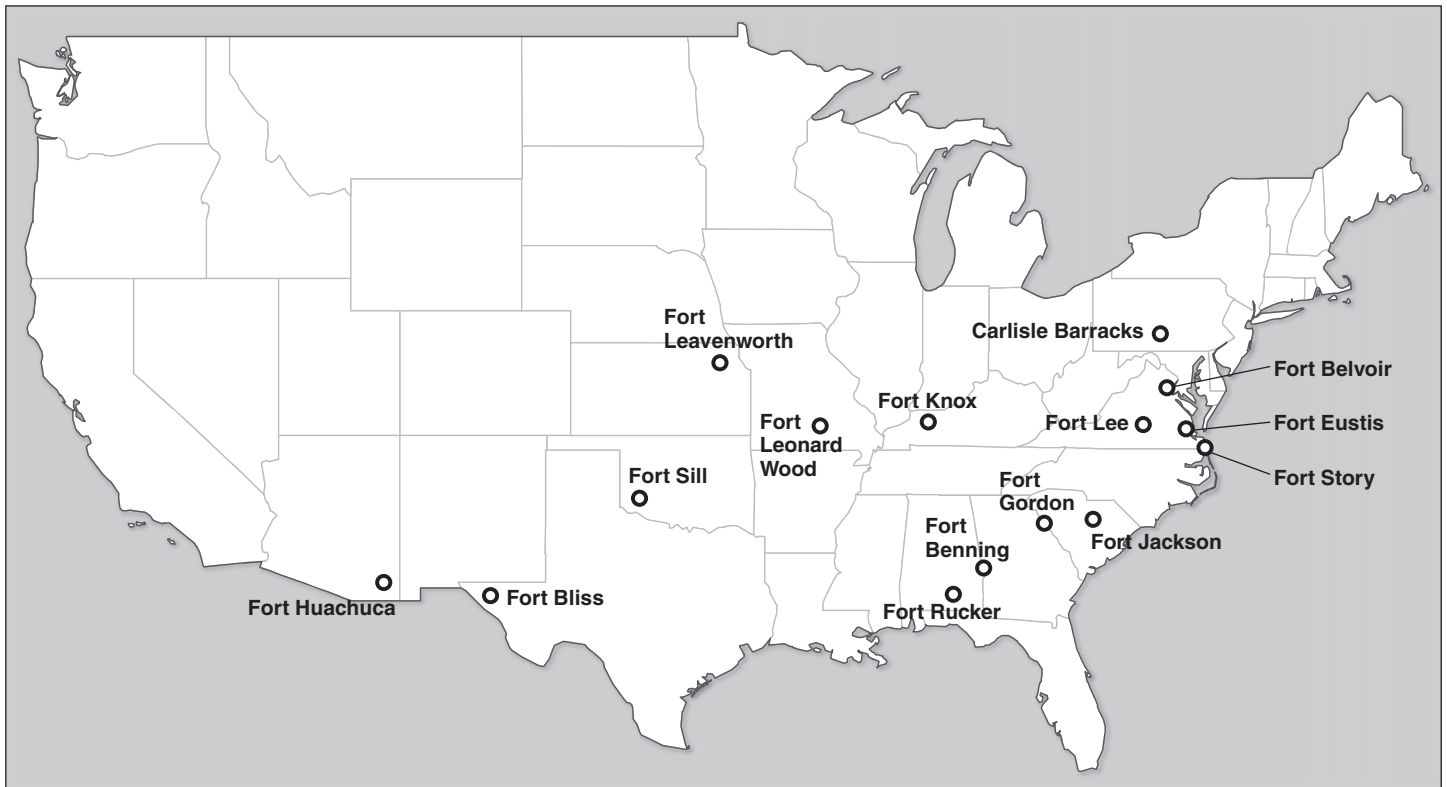
Source: TRADOC.

TRADOC uses a mix of three types of personnel—military, Department of the Army civilian, and contractor—to train soldiers. These personnel serve in various key roles, such as

- instructors who teach the classes;

- doctrine developers who develop, review, and update the doctrine, including field manuals and training circulars;

- training developers whose function is to analyze, design, develop, and evaluate training and training products; and

- training support personnel who perform functions necessary to conduct field training exercises.

To determine its requirements for the aforementioned and other personnel, TRADOC uses a variety of methods, including modeling and manpower studies. For example, to determine personnel requirements for instructors, TRADOC uses a model that takes the projected student workload and determines the number of instructors needed to meet that workload. The model also relies on other inputs and assumptions, such as optimal class size. TRADOC has developed similar models to determine personnel requirements for training developers and training support personnel. Once TRADOC has determined its requirements based on model outputs and other variables, the Army determines authorized personnel levels—the maximum number of military and civilian personnel TRADOC can assign in order to execute its mission. Authorized personnel levels are typically less than requirements because of budget constraints. Once the Army has determined authorized personnel levels, TRADOC positions can then be assigned to military personnel or filled by Department of the Army civilians or contractors.

During fiscal year 2010, TRADOC was authorized about 41,000 positions. TRADOC received about $4.1 billion of the Army's appropriation, of which 62 percent or approximately $2.5 billion was dedicated to training and training development. TRADOC leadership decided how those appropriated funds were to be allocated to each of its schools.

## Limitations Exist in TRADOC's Approach to Determining Personnel Requirements and No Personnel Mix Assessment Has Been Completed

TRADOC officials expressed concerns about shortfalls in key personnel. However, limitations exist in their approach to determine personnel requirements. In addition, TRADOC has not conducted a personnel mix assessment to determine the optimum mix of military, Army civilian, and contractor personnel.

TRADOC Personnel Requirements Remain Relatively Steady and Student Workload Is Increasing

TRADOC's stated personnel requirements for instructors, training developers, and training support personnel have remained relatively steady from fiscal years 2005 through 2011, as shown in figure 2. The figure also shows that over the same time period, TRADOC's student workload has increased by about 185,000, or about one-third (399,371 to 584,299), as a result of factors such as increases in the Army's end strength to support ongoing operations, which have led to a larger number of soldiers who need TRADOC training.

Figure 2: Trends in Personnel and Student Workload Requirements for Fiscal Years 2005 through 2011
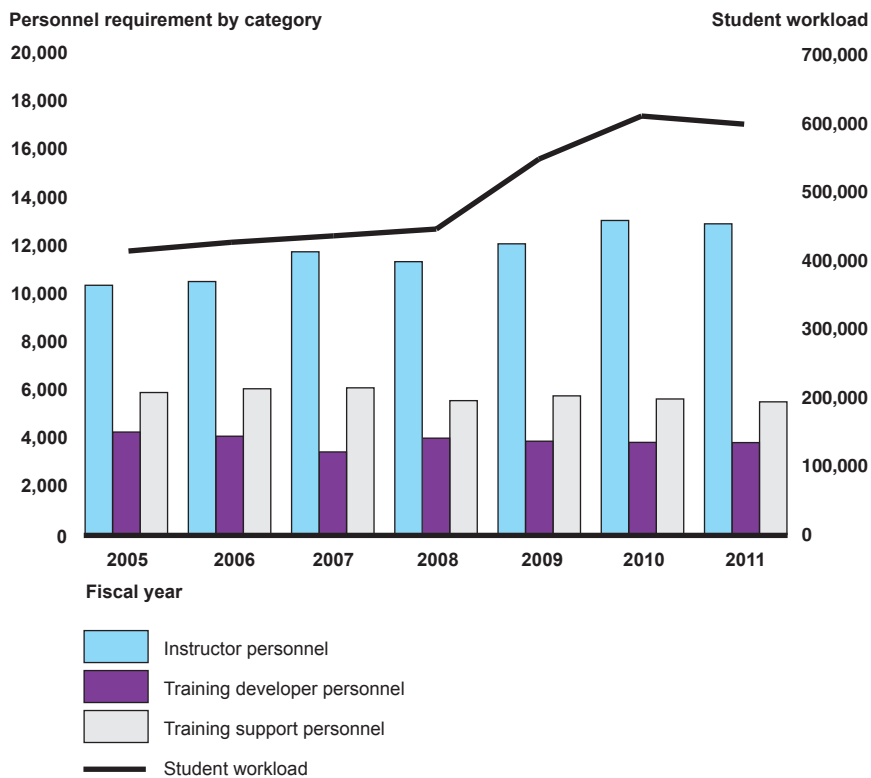
Source: TRADOC.

TRADOC's Models for Identifying Required Numbers of Instructors, Training Developers, and Training Support Personnel Have Some Limitations

In his 2010 memorandum, the TRADOC Commander raised concerns that manning shortfalls were putting TRADOC's ability to successfully perform its core competencies and functions at risk. Similarly, at the time of our review, TRADOC headquarters and school officials stated that considering increases in student workload, TRADOC continued to face shortages in instructors, training developers, and training support personnel. However, we found limitations in the models that TRADOC uses for identifying personnel requirements for these key personnel.

Instructors

In determining instructor personnel requirements, TRADOC uses an instructor model based on a formula that relies on assumptions and inputs. According to the Army's regulation on manpower management,[5] Army commands are required to review the models they use to determine manpower requirements at least every 3 years, or more often as needed. Further, the regulation requires the U.S. Army Manpower Analysis Agency to review and recommend approval of these models to the Assistant Secretary of the Army for Manpower and Reserve Affairs, who is responsible for approving the models. However, we found that the instructor personnel requirements model has not been updated since 1998, and the assumptions and inputs used in the model may not reflect changes in how training is currently provided. For example:

- The model assumes that a course can and will be conducted in the same way every time it is taught. However, we found that the way in which TRADOC delivers a course can vary. For example, instead of students traveling to attend training in the classroom, schools may use distance learning, which allows soldiers to complete computer-based training courses or selected modules of a course at their permanent duty locations. Some of these courses are self-paced and not instructor led; other courses are instructor led and utilize technology to reach more students. Because the model assumes that all courses are taught the same way, it does not take into consideration that in some cases, using distance learning may reduce the need for instructors while in other cases additional instructors may be needed to lead distance learning courses.

- The model also assumes that TRADOC schools can use the same instructor to teach different courses. Specifically, there is an

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[5]Headquarters Department of the Army, Army Regulation 570-4, *Manpower Management* (Feb. 8, 2006).

assumption that once an individual is certified as an instructor, that individual can teach any course by following the contents in the course curriculum. While this may be true for some general courses, more specialized courses require a background or familiarity with the subject matter in order to teach it. Because the model assumes that any instructor can teach any course, it may not accurately reflect the total number of instructors needed to teach all courses.

- The model uses inputs that include a number of variables, such as workload requirements and data from course curricula. For example, the model uses indirect contact hours—the time allotted for instructor duties not related to formal class time, such as reviewing lesson plans and providing private counseling to students. However, according to a TRADOC official, using indirect contact hours in the model could cause inefficiencies in determining personnel requirements because the indirect contact hours have not been reviewed and updated in 10 years. Another input that goes into the model is the manpower availability factor—the amount of time personnel is available to perform their primary duties. According to Army Regulation 570-4 for manpower management, during normal operations in the United States, military and civilian personnel should generally be available to perform their assigned tasks for 145 hours per month, or approximately 18 days. However, according to some TRADOC school officials, expecting these personnel to actually be available for that many hours may be unrealistic. Specifically, they stated that instructors were not available for the mandated amount of time because they had to perform other activities, such as attending training or taking sick and annual leave. Since the model does not fully account for these activities, it may not accurately identify the total number of instructors needed to execute the training mission.

Training Developers

In determining training developer personnel requirements, TRADOC had used a model but discontinued its use. The training developer model had not been updated since 1996, and TRADOC stopped using it in 2006 because the requirements it calculated were higher than those needed to complete the workload. Instead, in an effort to better align its requirements to its workload, TRADOC decided to use estimates of the time required to develop training products as the basis to determine the needed numbers of training developers. However, in 2009, the Army Manpower and Force Analysis Directorate stated that using this methodology was not a valid means of determining personnel requirements and TRADOC stopped using it. As a result, since 2009, TRADOC has used the same estimated number, with minor modifications, for training developer requirements from one fiscal year to

the next. TRADOC officials recognize that this is not a valid approach and that they need to use an updated model to determine training developer requirements. According to a TRADOC official, TRADOC tentatively plans to begin a review to develop a new model in the second half of fiscal year 2012. The official did not believe TRADOC would be able to meet this deadline, however, because of competing priorities to develop other models.

Training Support Personnel

In determining the number of training support personnel requirements, TRADOC uses a model that was updated and approved in 2010. The model originally defined training support personnel as individuals who performed classroom and field training activities. As part of the update, training support personnel were redefined to include only individuals who conducted some field training activities. As a result, requirements related to some activities covered under the original definition are not identified under the current process. For instance, prior to the update, the training support personnel model included requirements for individuals responsible for activities such as resetting computers in the classrooms or delivering ammunition to shooting ranges. These activities are no longer conducted by individuals who are considered training support personnel but are still needed to conduct the training mission. TRADOC has not developed personnel requirements models for these activities or factored in how these activities may be integrated into existing personnel requirements models. For example, TRADOC officials stated that they intend to develop a personnel requirements model for ammunition delivery, but as of July 2011, the model had not been developed. Similarly, tasks such as setting up computers may be assigned to instructors, but the instructor model has not been updated to reflect these workload requirements.

Several of these limitations were also identified in an August 2010 Army Audit Agency review of TRADOC's personnel requirements determination process for institutional training.[6] While TRADOC acknowledged these limitations and stated that it would work to address them, we found that as of July 2011, these limitations remained. According to TRADOC officials, these models have not been developed or updated because of a lack of manpower and competing demands on personnel time. Currently,

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[6]U.S. Army Audit Agency, *Table of Distribution and Allowances Workforce-Institutional Training*, A-2010-0149-FFS (Alexandria, Va.: Aug. 4, 2010).

the office responsible for developing personnel requirements models stated that priority has been placed on developing models that do not currently exist rather than updating existing models. TRADOC is in the process of revising its overall approach to training, moving from traditional classroom training to a more technology-driven approach intended to enable soldiers to learn using a variety of techniques, including simulations, gaming technology, or other technology-delivered instruction.[7] Officials stated that the impact on personnel requirements from this new approach to learning is unknown, but believe that it may reduce personnel requirements, particularly for instructors, because of an increased reliance on technology rather than classroom instruction. Officials acknowledge that these changes will need to be incorporated into personnel requirements models. However, we found that as of July 2011, TRADOC had not established a timeline for updating these models. Without updated models, TRADOC cannot ensure that it is accurately identifying the numbers of instructors, training developers, and training support personnel needed to carry out its training mission.

TRADOC Has Not Conducted a Personnel Mix Assessment

According to Army Regulation 570-4, determining manpower requirements includes a determination of optimum manpower mix. This step is typically completed after requirements and authorized personnel levels have been determined. TRADOC relies on a mix of military personnel, Army civilians, and contractors to accomplish its training mission. School officials we interviewed stated that their preference would be to solely use military personnel to provide training because military personnel have the knowledge and credibility gained from combat experience to teach and mentor soldiers; however, they recognize that this is impossible because of constraints on the availability of military personnel. Given those constraints, these officials agree that it is important to use an appropriate mix of personnel in order to maximize the benefit that each type of personnel adds to training. For example, officials say that civilians bring continuity to in-house training since they do not deploy and contractor personnel bring flexibility that allows TRADOC officials to adjust personnel to meet fluctuations in student workload.

According to TRADOC leadership, TRADOC schools rely heavily on contractors to execute training. TRADOC officials estimated that some

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[7]TRADOC, *The U.S. Army Learning Concept for 2015*, Pamphlet 525-8-2 (Jan. 20, 2011).

courses are taught by an instructor mix that is 30 percent military and 70 percent civilians, including contractors. In addition, officials at several schools noted that without contractors they would not be able to meet the student workload. While several officials stated that the mix of personnel they are currently using is inappropriate, most places we visited—including TRADOC headquarters—could not provide us with data about the number of contractors they were using to accomplish TRADOC's training mission. As a result, they were unable to identify what their true reliance on contractors is or whether the number of contractors being used is too high. We found that officials at only one school that we visited had documented the number of contractor personnel. In fiscal year 2010, using TRADOC data, we determined that contractors made up 46 percent of instructor personnel and 64 percent of training developer personnel at that school.

In March 2010, the Department of the Army issued a memorandum directing generating force commands, including TRADOC, to develop a Generating Force Manpower Mix Assessment no later than June 1, 2010.[8] According to the memorandum, the results of the manpower mix assessment are key to shaping strategic force structure decisions and should enable commands, including TRADOC, to do the right things in the most efficient manner to support Army requirements and standards. The memorandum identified several factors that should be considered in conducting the assessment, including reviewing tasks that are no longer necessary or are not being performed because of current manpower mix or levels. Further, the memorandum requires commands to project the mix of military, civilian, and contractor personnel in the most effective and cost efficient means as part of the assessment. According to TRADOC headquarters officials, each school should do its own mix assessment. However, TRADOC school officials stated that the schools have not done such assessments because of constant changes in funding, student workload, and availability of military personnel. TRADOC leadership recognizes that a personnel mix assessment is important and should be completed to ensure that the right mix of military, civilian, and contractor personnel are used as instructors in TRADOC courses. However, as of July 2011, TRADOC had no specific plan with milestones for its schools to conduct these personnel mix assessments.

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[8]Department of the Army, Office of the Deputy Chief of Staff, G-3/5/7, Memorandum, *Generating Force (GF) Manpower Mix Assessment* (Mar. 29, 2010).

Quality Assurance Program Does Not Enable TRADOC to Evaluate the Impact of Workforce Management Actions on the Quality of Training

TRADOC has taken various workforce management actions in order to execute its training mission, but its quality assurance program does not capture the level of detail needed to evaluate the impact of these steps on the quality of training provided to soldiers. Workforce management actions include increasing student to instructor ratios, using contractors to augment military and Army civilian instructors, and reassigning doctrine and training developers to serve as instructors.

TRADOC Has Developed a Quality Assurance Program to Evaluate Training

TRADOC has established a quality assurance program to collect information that it uses to measure the effectiveness and quality of its training. TRADOC's regulation setting out the description and requirements for the evaluation and quality assurance program assigns responsibilities to TRADOC regarding evaluations of its own courses and training materials.[9] In addition, the TRADOC pamphlet that provides implementing guidance, formats, and techniques for TRADOC's evaluation and quality assurance programs[10] details different types of information that should be considered as part of the evaluation, such as whether training objectives are met (e.g., whether students are able to perform core tasks) and whether instructors perform to standards. The Command's quality assurance program consists of the following types of evaluations:

- **Accreditation.** Accreditation is the formal recognition the TRADOC Commander gives to TRADOC schools, granting them authority to conduct or continue to conduct training. It certifies that a school's training program, processes, personnel, administration, operations, and infrastructure are adequate to support training to course standards and that the school is adhering to TRADOC training guidance and directives. TRADOC guidance calls for schools to be evaluated by TRADOC every 3 years, using the Army Enterprise

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[9]TRADOC Regulation 350-70, *Systems Approach to Training Management, Processes, and Products* (March 1999).

[10]TRADOC, *Systems Approach to Training: Evaluation*, Pamphlet 350-70-4 (Jan. 12, 2004).

Accreditation Standards.[11] Quality assurance officials at the schools conduct self-assessments to prepare for the accreditation process conducted by headquarters officials, and they also conduct accreditations of their own educational programs.

- **Internal evaluation.** This evaluation process includes classroom observations and internal surveys. During classroom observations, evaluators observe classes to ensure that training is being delivered in the right sequence, among other things. Evaluators use instructor performance checklists to capture information, such as how well the instructor introduces the course and presents course materials. An internal survey is conducted at the beginning of each course to determine the students' knowledge of course content prior to starting the course and again at the end of the course to determine if the objectives of the course have been met. Questions on this survey focus on critical tasks for the job specialty that the course covers. Students also have an opportunity to write in comments on the survey.

- **External evaluation.** This process uses an external survey to determine if soldiers who attended a course can meet job performance requirements as a result of the training they received or if additional training is needed. The survey is sent to the soldier or the soldier's supervisor, usually no sooner than 6 months after the soldier completes the training course. External evaluations determine if the training the soldiers receive prepares them to meet the needs of the operational Army.

TRADOC Has Taken Various Workforce Management Actions That Could Affect the Quality of Training

TRADOC has taken a number of workforce management actions in order to execute its training mission. As discussed below, these actions include increasing student to instructor ratios, using contractors to augment military and Army civilian instructors, and using doctrine and training developers as instructors. We found that there were mixed views about the impact of these actions on the quality of training from students and TRADOC officials at various levels. On the one hand, in a 2010 memorandum, TRADOC leadership raised concerns that the steps it had taken may be affecting TRADOC's ability to carry out its core

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[11]The Army Enterprise Accreditation Standards are used for measuring Army learning institution performance of functions required to educate and train. They require periodic updates to maintain relevancy.

competencies, which include providing quality training. On the other hand, survey results from students indicated that they believed they received quality training. Further, officials at TRADOC headquarters and schools, including quality assurance personnel, as well as some students stated that they believe that quality training is typically being provided. TRADOC has not established any metrics to measure the impact of its workforce management actions on training quality and without such metrics is unable to definitively determine what impact, if any, has occurred.

Changing the Student to Instructor Ratio

At times, TRADOC has accommodated increases in student workload by changing the student to instructor ratio for certain courses, increasing the number of students in the classroom without adding instructors. Officials throughout TRADOC expressed concerns that increasing student to instructor ratios from what is prescribed in course curricula would affect the quality of training because larger class sizes reduce the amount of one-on-one time that instructors can spend with students. For example, at the infantry school at Fort Benning, school officials stated that one of the mortar courses was designed to be taught with a student to instructor ratio of 8:1 but instead was taught with a ratio of 23:1 in order to meet the student workload. According to officials at the school, instructors had less time to spend with students, and therefore students were only able to become familiar with mortars but not get fully trained on them. Similarly, officials at the aviation school at Fort Rucker stated that their student to instructor ratio for one class sometimes has to be increased from 2:1 to 3:1. According to officials, the safety risk for this class was increased and the quality of the training was affected because the instructor's attention had to be divided among three students rather than two. The Army Audit Agency in its 2010 study identified these issues and others associated with the student to instructor ratios. For example, the study found that when student to instructor ratios increased, officer instruction became more task-centric, with less emphasis on leadership training. Quality assurance personnel evaluate compliance with student to instructor ratios by comparing the ratio used in the training environment to that outlined in the curricula. However, the quality assurance program captures only whether instructors are teaching the course with the student to instructor ratios identified in the curriculum; it does not further investigate the impact on training quality of the increased ratio. As a result, no data are captured that can be used to evaluate the impact of having more students assigned to one instructor. In its report, the Army Audit Agency recommended that TRADOC identify metrics that could capture data on the effects of not complying with recommended student to instructor ratios. TRADOC responded that it would require quality assurance personnel at the schools to report any quality of training issues they found when evaluating

their courses—including data on student to instructor ratios—beginning in the first quarter of fiscal year 2011. However, we found that as of July 2011, TRADOC schools had not yet been required to report this information. As a result, leadership lacks pertinent information that could help them assess the impact of increasing student to instructor ratios.

Using Contractors

As discussed earlier, TRADOC uses contractors to augment military and Army civilian training personnel. A mix of views has been expressed regarding the quality of training provided by contractor personnel. For example, in 2010, the Commanding General of TRADOC issued a memorandum stating that using contractors has led to a "degreening" of the force, meaning that not enough military personnel are involved in training soldiers. TRADOC officials believe that having military personnel in the classroom is extremely important because military personnel have the knowledge and credibility gained from combat experience to teach, coach, and mentor the soldiers they train. Alternatively, other TRADOC officials have noted the value that contractors bring by providing schools the flexibility to augment the number of instructors they have available in order to accommodate surges in student workload and fluctuations in the number of classes offered. Still other officials believe there is no significant difference in the quality of training provided by military, civilian, and contractor personnel. They noted that some of the contractor personnel used to provide training have prior military experience. For example, at Fort Huachuca, quality assurance officials stated that most of the contractor personnel used are former military personnel who had deployed at least one time.

TRADOC's quality assurance program does not systematically collect the data needed to evaluate the impact of the type of instructor on the quality of training. While TRADOC's quality assurance program captures information such as how well the instructor follows lesson plans, demonstrates techniques, and responds to students' needs, it does not systematically identify whether the instructor was military, civilian, or contractor. Further, internal surveys used to gather student feedback on courses do not include any specific questions requiring students to identify the type of instructor for the class. Students are able to provide their comments in the survey, which may include a discussion of the instructor, but there is no requirement for them to do so. As a result, TRADOC has no systematic method of compiling this data to determine the impact of instructor type on the quality of instruction.

Using Doctrine and Training Developers as Instructors

Another workforce management action TRADOC has taken is to use doctrine and training developers to serve as instructors. TRADOC's quality assurance program evaluates whether instructors are teaching in accordance with what is in the curricula. However, when doctrine and training developers are being used as instructors, developers are not available to perform their primary task of developing, reviewing, and updating Army doctrine and curricula for TRADOC courses, which could affect the quality of training. Doctrine and curricula serve as the core for training at TRADOC schools, and developing, updating, and reviewing doctrine and curricula are critical to ensuring that TRADOC provides quality training. Doctrine, in the form of field manuals and other publications, establishes the foundation for how to think about operations and what to train soldiers on so that they can conduct operations. From doctrine, curricula are developed that provide a general description of course content, among other things. Army doctrine and curricula must complement one another so that soldiers are trained in accordance with guidance.

Based on TRADOC guidance, doctrine should be reviewed at least every 18 months. According to a 2010 memorandum to the Department of the Army Headquarters, TRADOC was behind in integrating lessons learned, developing training, and updating doctrine. As a result, there is a substantial doctrine and training development backlog. During the time of our audit, TRADOC doctrine developers were working on 223 doctrinal and supporting publications. As of May 2011, TRADOC had a backlog of 436 man-years[12] for doctrine development. Our analysis of TRADOC data shows that only 37 percent of the 447 doctrinal publications in TRADOC's inventory at that time were current. The remaining doctrinal publications either needed to be developed, reviewed, or updated. Since doctrine guides what training is needed to enable soldiers to conduct operations, if it is not current, the quality of training provided to soldiers may be affected.

TRADOC officials stated that as a best practice, curricula should be updated every 3 years. School officials stated that they try to update one-third of their curricula each year, but a number of factors, including using training developers to serve as instructors, have led to a backlog in

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[12]A man-year is defined as the ideal amount of work that can be accomplished by one person in a year.

updating curricula. As of April 2011, TRADOC had a backlog of 204 man-years for developing, updating, and reviewing 232 curricula that are considered critical to train soldiers on the necessary skills needed to perform their duties. In October 2010, TRADOC headquarters issued a tasking order to TRADOC schools requiring them to review and update the curricula for initial military training courses and to make necessary changes based on relevant and improved doctrine. No similar priority has been given for TRADOC's schools to update other curricula. If curricula are not kept current, students could potentially not be trained on the most recent information, and this information is not being institutionalized for future instruction. For example, according to school officials, having updated curricula is important because instructors are required to teach the information contained in those curricula. According to TRADOC officials, most schools are allowing instructors, with approval from the head of the school, to deviate from the curricula so that they can incorporate current lessons learned and best practices from the field into class instruction. While this enables individual instructors to overcome outdated material in the curricula, there is no way to ensure that different instructors for the same course will choose to incorporate the same information in their instruction. As a result, TRADOC is unable to guarantee that all students in the same course receive the same quality of training they need to successfully perform their tasks.

Conclusions

To remain a modern and capable fighting force, the Army needs a training system that can respond to changing national security needs while balancing competing demands for personnel. At the same time, the Department of Defense is facing internal fiscal pressures and emphasizing the need to find greater efficiencies across the Department and opportunities for cost savings. In this environment, it is important that TRADOC strengthen its approach for determining the appropriate number and mix of personnel to serve as instructors, training developers, and training support personnel to execute its training mission. Currently, certain key personnel requirements models used by TRADOC are out of date, and the command has not conducted an assessment to determine the right mix of personnel—military, civilian, and contractor—it needs to provide training. As a result of these limitations, TRADOC officials lack a sound basis for quantifying concerns they have raised about manning shortfalls among key personnel. Similarly, limitations in TRADOC's quality assurance program make it difficult for TRADOC to evaluate the impact of the workforce management actions it has taken to meet increased student workload. At the same time, the decision to use doctrine and training development personnel as instructors has contributed to the

backlog of doctrine and curricula that need to be updated. As a result, soldiers are not always receiving instruction on the most current and relevant information. Strengthening its approach to determining personnel requirements, setting priorities for updating doctrine and curricula, and assessing the impact of its workforce measures will enable TRADOC to make necessary adjustments and potentially achieve greater efficiencies, save costs, and maximize the use of training resources.

Recommendations for Executive Action

To ensure that TRADOC is requesting the appropriate number and mix of personnel to serve as instructors, training developers, and training support personnel, we recommend that the Secretary of the Army direct TRADOC to take the following three actions:

- Develop a plan with specific implementation milestones to update its personnel requirements models for training personnel, including (1) updating models for instructors and training developers and (2) developing models for field training and classroom setup personnel not covered in the training support personnel model, and adjust requirements accordingly.

- Perform an assessment to determine the right mix of military, civilian, and contractor personnel needed to accomplish the training mission and make necessary adjustments to the current mix.

- Establish metrics within its quality assurance program to enable TRADOC to evaluate how its workforce management actions, such as increasing reliance on contractors, affect the quality of training and use the data collected from these metrics to make adjustments to training as needed.

To ensure that soldiers are being trained on the most current and recent information, we recommend that the Secretary of the Army direct TRADOC to establish a plan to enable TRADOC to develop, review, and update doctrine and curricula by (1) setting additional priority areas beyond initial military training on which doctrine and training developers should focus and (2) identifying timelines by which these reviews should be completed.

Agency Comments and Our Evaluation

In written comments on a draft of this report, DOD concurred with our four recommendations. The full text of DOD's written comments is reprinted in appendix II.

DOD concurred with our recommendation that the Secretary of the Army direct TRADOC to develop a plan with specific implementation milestones to update its personnel requirements models for training personnel and adjust requirements accordingly. In its comments, DOD stated that TRADOC is currently undertaking an in-depth review of instructor and training developer functions that will establish new staffing criteria for these personnel. This study, termed the Army Learning Concept 2015, is expected to be completed in the summer of 2012. According to DOD, the study will also determine manning requirements for field training. DOD added that development of a model for ammunition delivery/recovery mentioned in the report has been completed, and documentation for this new model is now being prepared for commandwide staffing to assist Army headquarters in revising manning models. In a follow-up discussion, DOD and TRADOC officials stated that they are currently updating their instructor and training developer models and they intend to incorporate the results of the Army Learning Concept 2015 review in subsequent updates of those models. The officials added that classroom setup and other training support tasks are a normal function of instructors and that these tasks will therefore be addressed in the instructor model.

DOD concurred with our recommendation that the Secretary of the Army direct TRADOC to perform an assessment to determine the right mix of military, civilian, and contractor personnel needed to accomplish the training mission and make necessary adjustments to the current mix. DOD stated that because of the different standards and requirements for divergent courses, there is no single standard for a mix of cadre across TRADOC. DOD agreed that some type of study is needed and that TRADOC will conduct this analysis and include the results in its curricula. DOD further stated that TRADOC will also examine the potential to include an analysis of the optimum mix of instructors within the curricula for individual courses. According to DOD, this data would allow TRADOC to better articulate its true needs and to understand the potential to rebalance the existing instructors across courses in support of the new training load.

DOD concurred with our recommendation that the Secretary of the Army direct TRADOC to establish metrics within its quality assurance program to enable TRADOC to evaluate how its workforce management actions—such as increasing reliance on contractors—impact the quality of training

and use the data collected from these metrics to make adjustments to training as needed. In its comments, DOD stated that TRADOC will implement initiatives to develop metrics and collect data that will enable it to evaluate its workforce management actions while assisting TRADOC and Army headquarters in assessing training effectiveness. DOD added that establishing these metrics is contingent upon availability of resources and funding, noting that TRADOC's quality assurance program must maintain the personnel required to collect this data as well as acquire statisticians to analyze the data for management decisions. If resourced to conduct this analysis, TRADOC anticipates developing the metrics by August 2012. We recognize that resources are needed to develop metrics to capture the impact of workforce management actions on the quality of training. However, in the absence of allocating resources to develop such metrics, TRADOC will continue to lack a sound basis for evaluating the impact of workforce management actions on the quality of training. As a result, TRADOC risks missing opportunities to make any necessary adjustments that could potentially enhance its ability to maximize the use of training resources.

Finally, DOD concurred with our recommendation that the Secretary of the Army direct TRADOC to establish a plan to enable TRADOC to develop, review, and update doctrine and curricula by setting additional priority areas on which doctrine and training developers should focus and identifying timelines by which these reviews should be completed. DOD stated that priorities for updating TRADOC's doctrine and curricula are established to meet operational requirements that change based on the needs of the force. DOD added that update requirements have accelerated for the past decade and that TRADOC has been working to reduce the backlog. According to DOD, TRADOC has taken certain steps including refining guidance and establishing a plan and time frames for updating doctrine. For example, DOD noted that the TRADOC Commanding General has refined his doctrine development guidance in his Doctrine 2015 strategy, which called for the doctrine development process to be faster and accessible to the force. DOD also stated that a transition plan for Doctrine 2015 and a plan for managing the execution of Doctrine 2015 are being developed. We view these actions as positive steps with respect to updating doctrine. As a result, we continue to believe that such a plan is needed to address the backlog in curricula development to ensure that curricula are kept current. Without such a plan, TRADOC risks soldiers not receiving instruction on the most current and relevant information.

We are sending copies of this report to the Secretary of Defense, the Secretary of the Army, and the Commander of U.S. Army Training and Doctrine Command. In addition, this report also is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-9619 or pickups@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are James A. Reynolds (Assistant Director), Chaneé Gaskin, Brian Mateja, and Sonja Ware.

Sharon L. Pickup
Director
Defense Capabilities and Management

Appendix I: Objectives, Scope, and Methodology

As mandated by the House Armed Services Committee report accompanying a proposed bill for the fiscal year 2011 National Defense Authorization Act (H.R. 5136), we examined the extent to which U.S. Army Training and Doctrine Command (TRADOC) has (1) identified the number and type of personnel it needs for instructors, training developers, and training support personnel to carry out its training mission and (2) evaluated the impact of its workforce management actions on the quality of training.

To determine the extent to which TRADOC has identified the number and type of personnel it needs to carry out its training mission, we focused our review on instructor, training developer, and training support personnel—personnel types that TRADOC officials identified as having key roles in executing the training mission. We met with Department of the Army Headquarters officials; TRADOC personnel; and operations, budget, and training officials at TRADOC headquarters and schools. We discussed the process for determining student workload and personnel requirements, establishing authorized personnel levels, and allocating personnel among Army commands resulting from the Total Army Analysis process. In addition, we held discussions and obtained documentation from the Army Manpower Analysis agency on the mathematical models and studies planned or completed by TRADOC to develop manpower estimating criteria. We also discussed the types of personnel (military, Army civilian, or contractor) who provided training to soldiers and the challenges associated with obtaining and using those types of personnel. We obtained and analyzed pertinent personnel and workload documentation to perform a trend analysis on personnel requirements, authorized personnel levels, and student workload from fiscal year 2005 through fiscal year 2011. Our analysis of personnel data compared the differences in required and authorized personnel for fiscal years 2005 through 2011. We focused our analysis on that time frame because we were able to obtain more complete information from these years. In addition, we reviewed curricula used to provide training to soldiers to determine the type of information included in the curricula and whether this information was current. We also examined relevant Department of Defense (DOD), Army, and TRADOC guidance, including DOD's policy and procedures for determining workforce mix, the Army's manpower management guidance, and TRADOC's *Systems Approach to Training*. Finally, we reviewed previous reports issued by GAO and the U.S. Army Audit Agency on personnel requirements.

To determine the extent to which TRADOC has evaluated the impact of workforce management actions it has taken to execute its training mission

on the quality of training provided, we met with TRADOC personnel and operations and training officials, including quality assurance, doctrine, and training development officials, at TRADOC schools and headquarters. At the TRADOC schools we visited, we discussed the quality assurance instruments used to measure the quality of training provided, time frames for conducting the evaluations, and information gained from them. In addition, we collected examples of surveys, survey results, and accreditation summary reports. At TRADOC headquarters, we discussed and obtained documentation related to the Command's ability to measure mission effectiveness. We discussed the Command's accreditation process and TRADOC Headquarters' involvement in its schools' quality review processes. At both TRADOC Headquarters and TRADOC schools, we discussed challenges associated with developing, reviewing, and updating the doctrine and curricula used to provide training. Additionally, we obtained data on TRADOC's doctrine and training development workload. We reviewed and analyzed the data to determine what percentage of the data was current and what percentage needed to be developed, reviewed, or updated. We obtained data to show a trend in doctrine and training development backlogs from fiscal years 2007 through 2010. We focused our analysis on that time frame because we were able to obtain more complete information from these years. Finally, we obtained and reviewed relevant TRADOC guidance on conducting quality review assessments and developing, reviewing, and updating doctrine and curricula.

We visited seven schools that were identified by TRADOC Headquarters officials and in the TRADOC Commander's 2010 memorandum as being representative of TRADOC's challenges in providing training, such as having high student workload or using a large number of contractors. We conducted work at the following schools:

- United States Army Aviation Logistics School, Fort Eustis, Virginia;

- Maritime Transportation School, Fort Eustis, Virginia;

- Aviation Center of Excellence, Fort Rucker, Alabama;

- Infantry School, Fort Benning, Georgia;

- Military Police School, Fort Leonardwood, Missouri;

- Intelligence Center of Excellence, Fort Huachuca, Arizona; and

- Signals Center of Excellence, Fort Gordon, Georgia.

We also conducted work at the following locations:

- Department of the Army Headquarters, Pentagon, Arlington, Virginia;

- TRADOC Headquarters, Fort Monroe, Virginia;

- Combined Arms Command, Fort Leavenworth, Kansas;

- Army Manpower Analysis Agency, Fort Belvior, Virginia; and

- Army Human Resources Command, Fort Knox, Kentucky.

We conducted this performance audit from August 2010 to September
2011 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 our findings
and conclusions based on our audit objectives.

Appendix II: Comments from the Department of Defense

OFFICE OF THE UNDER SECRETARY OF DEFENSE
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PERSONNEL AND
READINESS

SEP 9 2011

Ms. Sharon L. Pickup
Director, Defense Capabilities and Management
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Ms. Pickup,

   This is the Department of Defense (DoD) response to the GAO Draft Report, GAO-11-845, 'MILITARY TRAINING: Actions Needed To Assess Workforce Requirements and Appropriate Mix of Training Personnel' dated August 9, 2011 (GAO Code 351516). Thank you for the opportunity to comment. The Department concurs with the four GAO recommendations presented in the draft report. Details are provided in the enclosure to this letter.

Sincerely,

Laura J. Junor
Deputy Assistant Secretary of Defense
Readiness

ENCLOSURE

GAO DRAFT REPORT DATED AUGUST 9, 2011
GAO-11-845 (GAO CODE 351516)

"MILITARY TRAINING: ACTIONS NEEDED TO ASSESS WORKFORCE
REQUIREMENTS AND APPROPRIATE MIX OF TRAINING PERSONNEL"

DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommends that the Secretary of the Army direct Training
and Doctrine Command (TRADOC) to develop a plan with specific implementation milestones to
update its personnel requirements models for training personnel, including 1) updating models for
instructors and training developers and 2) developing models for field training and classroom setup
personnel not covered in the training support personnel model, and adjust requirements accordingly.

DoD RESPONSE: Concur. TRADOC is currently undertaking an in-depth review of instructor and
training developer functions that will establish new staffing criteria. The Army Learning Concept
(ALC) 2015 introduces significant changes to traditional Army training strategies, technologies, and
delivery methods. TRADOC and the ALC 2015 proponents are working to redefine instructor and
training developer roles in preparation for onsite workload measurement. The ALC 2015/instructor
review is targeted to be completed in the summer of 2012.

This study will determine manning requirements for field training; development of the other field
training model referenced in the GAO report (Ammunition Delivery/Recovery) has been completed
since the last correspondence with GAO in June 2011. Documentation for this new model is now
being prepared for command-wide staffing to assist HQDA in revising manning models. This
instructor function will be included in the ALC 2015/instructor review described above, and no
separate model/study is necessary.

RECOMMENDATION 2: The GAO recommends that the Secretary of the Army direct Training
and Doctrine Command (TRADOC) to perform an assessment to determine the right mix of military,
civilian, and contractor personnel needed to accomplish the training mission and make necessary
adjustments to the current mix.

DoD RESPONSE: Concur. Due to the different standards and requirements for divergent courses,
there is no single standard for a mix of cadre across TRADOC. The Department agrees that some
type of study is needed; TRADOC will conduct this analysis and include the results in their programs
of instruction (POIs); TRADOC will also examine the potential to include an optimum instructor
analysis within each POI. This data would allow the command to better articulate to HQDA the true
needs and to understand the potential to rebalance the existing instructors across courses in support of
the new training load.

RECOMMENDATION 3: The GAO recommends that the Secretary of the Army direct Training and Doctrine Command (TRADOC) to establish metrics within its quality assurance program to enable TRADOC to evaluate how its workforce management actions, such as increasing reliance on contractors, impact the quality of training and use the data collected from these metrics to make adjustments to training as needed.

DoD RESPONSE: Concur. The GAO report references a TRADOC Quality Assurance (QA) Program, with policy codified in TR 350-70, dated September 1999. As the Army's Executive Agent for the Army QA Program, TRADOC will implement initiatives to develop metrics and collect data that will enable it to evaluate its workforce management actions while assisting TRADOC and HQDA in assessing training effectiveness. However, establishing metrics within TRADOC's QA Program is contingent upon availability of resources and funding. Specifically, the QA Program must maintain the personnel required to collect the data as well as acquire statisticians to analyze the data for management decisions. If resourced to conduct this analysis, TRADOC anticipates developing the metrics by August 2012.

RECOMMENDATION 4: The GAO recommends that the Secretary of the Army direct Training and Doctrine Command (TRADOC) to establish a plan to enable TRADOC to develop, review, and update doctrine and curricula by setting additional priority areas beyond Initial Military Training on which doctrine and training developers should focus and identifying timelines by which these reviews should be completed.

DoD RESPONSE: Concur. The Department agrees with TRADOC establishing a plan to develop, review, and update doctrine and curricula. TRADOC's doctrine and curriculum update priorities are established to meet operational requirements that change based on the needs of the force. For the past decade, doctrine and curriculum update requirements have accelerated at an unprecedented rate. TRADOC has updated doctrine and curriculum at an unmatched rate and quality and is diligently working to reduce the backlog.

HQ TRADOC publishes annual priorities and guidance in a FY TRADOC Campaign Plan. The Commanding General (CG), Combined Arms Center (CAC) serves as the lead for the doctrine core function within TRADOC and published specific FY 11 Doctrine Priorities and Guidance. This provided guidance to assist doctrine proponents in prioritizing and forecasting TRADOC's limited resources to support the most important doctrine development needs of the Army. Once TRADOC updates the manpower model for training developers, HQDA will be able to determine manpower requirements to meet training requirements.

Midway through this fiscal year the CG TRADOC refined his doctrine development guidance in his "Doctrine 2015" strategy which called for the doctrine development process to be faster, fewer, shorter, clearer, and accessible to the force. The CG CAC is developing a detailed transition plan for "Doctrine 2015" (to be completed NLT 30 September 2011) as well as a plan for managing the execution of "Doctrine 2015" in a four-phased approach (to be completed by December 2015).

Related GAO Products

Military Training: Army and Marine Corps Face Challenges to Address Projected Future Requirements. GAO-10-720. Washington, D.C.: July 16, 2010.

Military Readiness: Navy Needs to Reassess Its Metrics and Assumptions for Ship Crewing Requirements and Training. GAO-10-592. Washington, D.C.: June 9, 2010.

Military Training: Actions Needed to Further Improve the Consistency of Combat Skills Training Provided to Army and Marine Corps Support Forces. GAO-10-465. Washington, D.C.: April 16, 2010.

Reserve Forces: Army Needs to Reevaluate Its Approach to Training and Mobilizing Reserve Component Forces. GAO-09-720. Washington, D.C.: July 17, 2009.

Military Training: Actions Needed to More Fully Develop the Army's Strategy for Training Modular Brigades and Address Implementation Challenges. GAO-07-936. Washington, D.C.: August 6, 2007.

Human Capital: A Guide for Assessing Strategic Training and Development Efforts in the Federal Government. GAO-04-546G. Washington, D.C.: March 2004.

Defense Management: Army Needs to Address Resource and Mission Requirements Affecting Its Training and Doctrine Command. GAO-03-214. Washington, D.C.: February 10, 2003.