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Report to the Chairman, Subcommittee on Military Construction, Committee on Appropriations, House of Representatives

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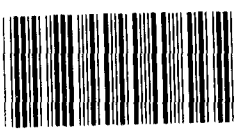
FORCE STRUCTURE

Army Needs to Further Test the Light Infantry Division



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National Security and
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The Honorable W. G. Hefner
Chairman, Subcommittee on
Military Construction
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

This report responds to your request that we examine the Army's evaluation of the concept, design, and war-fighting capability of the light infantry division. You asked that we determine (1) what standards were used to assess the division's capability, (2) what deficiencies were identified, (3) what solutions have been proposed, (4) how the Army plans to resolve remaining deficiencies, and (5) what the implications of the evaluation results for one division are for the remaining light infantry divisions.

Our work is summarized below and described in more detail in appendix I.

Background

In the early 1980s, the Army decided to develop a light, division-sized force that would be capable of rapid deployment to an area of conflict using a minimum number of aircraft. This new light infantry division was proposed in response to concerns about the Army's ability to adequately perform in conflicts of varying intensity in all parts of the world. In addition, the Army believed that early and rapid deployment of a credible fighting force to a crisis area could preclude the subsequent necessity to use a larger, more costly force.

Key elements of the new division's operational concept and organizational design were that it (1) consist of about 10,000 soldiers, (2) be deployable in about 500 C-141B aircraft sorties[1] in about 6-days' time, and (3) be designed to engage light enemy forces by itself and heavier forces by adding support units. In contrast to other infantry divisions, the new light division was to contain less soldiers and equipment and be able to deploy in fewer than one third the number of C-141B aircraft sorties and in one third the time.

[1] A sortie is the combat flight of a single aircraft from takeoff to the end of its flight.

The Army's objective in testing the new light infantry division was to evaluate the adequacy of the division's concept, design, and warfighting capability so that appropriate changes could be made to its structure, equipment, and training programs. This evaluation process, referred to as "certification" by the Army, was a unique test process, because its objective was not to assess the capability of the specific unit tested but rather to determine whether the concept and design of the light infantry division, in general, were valid. The Army selected the 7th Infantry Division to serve as a test base for certification because it was the first light infantry division to be created.

The Army's Training and Doctrine Command was responsible for the test and developed a comprehensive plan for evaluating the light infantry division's effectiveness in meeting the Army's objectives for this new type of division. The plan outlined more than 90 questions covering combat, combat-support, and combat service-support operations and related test criteria designed to evaluate the division's performance.[2] The questions were addressed during various field training and testing exercises engaged in by the 7th Division. The conclusions and recommendations resulting from these exercises were combined with information from previous analyses, studies, and other tests to form the basis for making changes in the organization, equipment, doctrine, and training of light divisions. The test was conducted from the summer of 1985 until the fall of 1986.

Unresolved Deficiencies

The Army's evaluators concluded that the operational concept and design of the light infantry division were sound. However, the evaluators identified deficiencies that need to be resolved before light infantry divisions can be fully effective. Some of these deficiencies, such as the following, pertain to the need for certain types of equipment:

- The division's helicopters cannot readily move its radar system for detecting enemy aircraft. The radar equipment and the vehicle that carries it are so heavy that they must be disassembled and moved on two helicopters rather than one. The proposed solution to this problem is the acquisition of lighter-weight, mobile radar equipment that can be carried

[2]Combat support provided to combat forces includes chemical, intelligence, and signal services. Combat-service support includes food, supplies, ammunition, water, maintenance, transportation, and health services.

on one helicopter. However, this equipment is not expected to be available before 1992. Acquisition of the lighter radar equipment would enhance the division's mobility.

- Some combat and combat service-support battalions did not have sufficient numbers of vehicles to carry their equipment and basic unit loads. As a result, they could not carry all their equipment and enough food, water, fuel, and munitions to sustain them until divisional resupply became available. The Army plans to increase the number of vehicles assigned to the division.
- According to the Army, the items that an average-sized, light infantry division soldier carries should not exceed about 45 percent of his body weight, or generally about 72 pounds. At the time of testing, however, the load of a typical light division soldier was about 87 pounds. In some cases, the load approached 130 pounds. The Army is conducting research to develop lighter equipment and clothing. However, in the interim, the Army has had to increase the number of trailers needed to carry the soldiers' individual equipment and supplies, thus reducing the division's mobility.

Other deficiencies pertain to the division's organizational structure, weapons, doctrine, and training. In all, Army evaluators identified a total of 27 deficiencies that they believed were significant. The evaluators judged numerous other identified deficiencies to be minor.

Numerous changes were recommended by subject matter experts and organizations throughout the Army to resolve the problems identified during the certification process. Army officials told us that in all, about 4,000 recommendations for changes to the division's equipment and personnel were made. About 2,000 of these recommendations were accepted, and many are currently being implemented. Most of the remaining recommendations were rejected by Army evaluators as inappropriate or unrealistic. Army officials told us that many of the changes recommended during the certification process can be made quite easily in the near term, as they involve obtaining currently available equipment, making minor personnel reallocations within the division, or making minor additions and deletions of personnel. Other changes will take several years to implement, as they involve equipment that is not yet available.

Army officials recognize the need for further testing to ensure that the recommended changes adequately correct identified problems. These officials told us that the Army plans to test the changes made to the light divisions during their regular training and testing programs.

Impact of Changes on Light Infantry Divisions

According to Army officials, the light infantry division design developed as a result of certification will serve as the model for the configuration of light divisions throughout the Army. However, the Army's ability to organize and equip the divisions in accordance with the approved design will depend on the availability of equipment and personnel. The officials said that the Army probably will be unable to equip all five of its light infantry divisions in accordance with the approved design for quite some time because of equipment shortages.

The Army's Evaluation Is Incomplete

The Army's certification of the light infantry division's operational concept and organizational design is incomplete in two major areas. The first has to do with the question of whether non-divisional units can adequately and promptly support and reinforce light divisions after they deplete initial supplies and need more specialized support units to permit prolonged engagements. All Army divisions rely extensively on non-divisional units to enhance their combat and support capability following initial combat operations. However, because it has less soldiers and equipment, a light infantry division's reliance on non-divisional support units is greater. According to the Army, a light infantry division is vulnerable to defeat after 48 hours if non-divisional combat-support and combat service-support assistance is not provided. Also, because of the division's unique support requirements, some non-divisional combat service-support units were formed specifically to support it. The Army's certification of the division, however, did not test either (1) the support demands placed on non-divisional units or (2) the capability of newly formed non-divisional units to meet the light division's requirements because, according to Army officials, support provided to light divisions is similar to that provided other Army divisions, some support units were not yet formed, and resources were limited. Army officials acknowledged, however, that because of the light infantry division's greater reliance on non-divisional support units, some of which were specifically formed to support light infantry divisions, the omission of testing these units leaves questions about the division's supportability unanswered.

The second area has to do with the question of whether two light infantry divisions, partially comprised of reservists and another entirely comprised of National Guard reservists, can meet light infantry division requirements. The Army's certification did not test the deployment capability of light infantry divisions organized in this manner, largely or entirely made up of reserve units. According to Army officials, the ability of reserve units to rapidly deploy as "light" fighters was not tested

because the 7th Infantry Division contained no reservists—the 7th Division is comprised entirely of active Army personnel. Army officials told us that, in their opinion, reservists probably could not meet the Army's 6-day deployment criterion for light divisions.

Conclusions and Recommendations

The Army is in the process of implementing numerous changes to the light infantry division. In our opinion, the viability of the light infantry division's concept and design cannot be fully validated until the major changes the Army proposes to make can be completed, implemented, and tested. The Army's plan to test the changes made to the light division should resolve this issue. Also, since the certification process did not assess the division's sustainability, the Army was not able to obtain direct knowledge of the demands placed on non-divisional support units. Because of the light infantry division's greater reliance on non-divisional support units (some of which were specifically formed to support light infantry divisions), we believe that an assessment of its sustainability is essential. Finally, in view of the importance of reserve units to the organizational structure of three of the five light divisions and the uncertainty about their deployment capability, an evaluation of the capability of these units to rapidly mobilize and deploy appears to be crucial to the certification of the light division concept. Consequently, although the Army has concluded that the light infantry division's design and concept are sound, some key questions about its capabilities remain unanswered.

We recommend that the Secretary of the Army

- conduct testing of non-divisional support units to assess their capability to adequately support the light division and
- determine how long it will take light divisions comprised totally or partially of reserve units to mobilize and deploy and whether these divisions can effectively fulfill the light division concept.

As requested by your office, we did not obtain official agency comments on this report. However, we have discussed its contents with Army officials.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 5 days from the date of the report. At that time, we will send copies to the Secretary of the Army and make copies available to others upon request.

Sincerely yours,

Frank C. Conahan
Assistant Comptroller General

Contents

Abbreviations

GAO	General Accounting Office
SME	subject matter expert
TCATA	TRADOC's Combined Arms Test Activity
TIED	TRADOC's Independent Evaluation Directorate
TRADOC	Training and Doctrine Command

Army Needs to Further Test the Light Infantry Division

Background

In August 1983, the Chief of Staff of the Army directed the Training and Doctrine Command (TRADOC) to develop proposals for a light, division-sized force designed to rapidly deploy and represent a credible fighting force on the future's most likely battlefields. This directive responded to concerns about the Army's ability to adequately perform in low- to mid-intensity conflicts in all types of geographical environments.[1] The Army recognized that its available forces were large, flexible, and powerful when operating on the battlefield but that getting them to the battlefield could be slow. According to the Army, there was an apparent need for a "fighter-heavy," more rapidly and easily deployable force that could be delivered to an area of conflict using minimum transportation resources.

With guidance provided by the Army's leadership, TRADOC developed plans for a new light infantry division. These plans were approved by the Chief of Staff of the Army in October 1983. The key elements of the division's operational concept and organizational design were that it

- consist of about 10,000 soldiers and contain nine infantry battalions, with about 50 percent of its personnel in infantry units (the remaining personnel would be in other combat units, such as artillery and combat-support and combat service-support units);
- be deployable in about 500 sorties of C-141B aircraft;
- be designed for engaging light enemy forces in low-intensity conflicts but capable of engaging heavier forces in mid- and high-intensity conflicts[2] with the addition of support units to provide additional forces, weapons, and equipment;
- be suitable for use in a North Atlantic Treaty Organization conflict; and
- include those functions and assets always needed by the division, with non-divisional organizations providing functions only occasionally required.

[1]A low-intensity conflict is defined by the Army as a struggle, short of conventional warfare, which may include activities such as demonstrations of force, peacekeeping operations, and counter-terrorism. This type of conflict does not include protracted engagement against conventional heavy armed forces.

A mid-intensity conflict, according to the Army, involves the use of military power that does not include the use of nuclear weapons. It is characterized by the use of armed forces in combat but may include some or all of the techniques and characteristics of low-intensity conflict.

[2]A high-intensity conflict involves the relatively unconstrained use of military power and is characterized by the use of the full range of military force. It may include the use of nuclear weapons and some or all aspects of low- and mid-intensity conflicts.

In contrast to other infantry divisions, the new light infantry division was designed to have about 6,000 fewer soldiers and to be capable of deploying in fewer than one third the number of C-141B aircraft sorties and in one third the time. The Army believes that early and rapid deployment of a fighting force to a crisis area may well preclude the subsequent necessity for using a larger, more costly force.

Between 1983 and 1985, the Army conducted a number of analyses, studies, and field tests, which provided the basis for refining the light infantry division's operational concept and design. According to the Army, a light division is to be able to mobilize, depart from its home station, and arrive at its final destination in about 6 days; conduct operations for about 48 hours without external support; conduct air assault operations; participate in amphibious operations; conduct military operations in villages and cities; and be capable of defeating light enemy forces, including terrorists and insurgents. Moreover, when assisted by corps[3] and other non-divisional units, it is designed to be capable of defeating heavy enemy forces in a favorable environment, such as wooded terrain.

While the light infantry division is designed to be light, flexible, and rapidly deployable, the Army recognizes that the division has certain limitations and vulnerabilities. These include

- constrained tactical mobility due to its limited number of vehicles and aircraft;
- dependence on corps combat-service support after 48 hours; and
- dependence on local air superiority and, in some cases, naval support for deployment into a hostile area.

In addition, the division is vulnerable to attack by heavy forces on open terrain such as plains or rolling hills, air attack when local air superiority has not been attained, and defeat if corps combat-service support is not provided after the first 48 hours of combat.

The Army has designated five light infantry divisions. The 7th Infantry Division at Fort Ord, California, was the first light division created and the one to serve as the test base for the Army's certification. Other light divisions include the 10th Mountain Division at Fort Drum, New York; the 6th Division in Alaska; the 29th National Guard Division at Fort Belvoir, Virginia; and the 25th Division in Hawaii. The 6th and 10th

[3]A corps serves as a means of command, control, and support for several divisions.

Divisions each have a reserve component brigade as part of their designs (about one third of their infantry force).

Objectives, Scope, and Methodology

Our objective was to examine the Army's certification of its light infantry division's operational concept and organizational design. In doing so, our review primarily focused on

- the standards the Army used in assessing the division's capability,
- deficiencies the Army identified,
- solutions it proposed,
- its plans to resolve remaining deficiencies, and
- the implications of the evaluation results on the light infantry divisions.

We reviewed the Army's plan for conducting the certification and examined mission statements for the light infantry division. We examined the certification test results primarily by analyzing and comparing reports prepared on field exercises conducted by the 7th Infantry Division and the findings and conclusions presented in final reports prepared by TRADOC's Combined Arms Test Activity (TCATA) and TRADOC's Independent Evaluation Directorate (TIED).

In performing our review, we visited the following locations:

- At the Department of Army Headquarters, Washington, D.C., and the Combined Arms Center, Fort Leavenworth, Kansas, we discussed the certification process and the Army's plans for implementing changes to the light infantry division.
- At the offices of the Certification Director, U.S. Army I Corps, Fort Lewis, Washington, and of the Deputy Certification Director, U.S. Army 7th Infantry Division, Fort Ord, California, we discussed their roles in the certification process and the Army evaluators' conclusions and recommendations concerning the division's capabilities and limitations.
- At TCATA, Fort Hood, Texas, and TIED, Fort Leavenworth, Kansas, we interviewed officials and researched documents to (1) gain an understanding of their role in the certification process, (2) determine what information had been collected during field training exercises, and (3) discuss their overall findings and conclusions on the certification.

Our review was performed from September 1986 to November 1987 in accordance with generally accepted government auditing standards.

Certification Process

To verify that the operational concept and organizational design of the newly created light infantry division were valid, the Army developed a comprehensive test plan, which the Army refers to as "certification," to evaluate the division's operational capability. Army officials told us that, because considerable analysis had gone into designing the division prior to certification, they generally looked upon certification as an opportunity to "fine-tune" the division. They explained that, prior to testing, the Army believed that the light division concept was valid and the structure was close to being right but that the certification process would help to identify necessary modifications.

The Army's certification plan primarily focused on examining the division's capability in low-intensity conflict. In developing this plan, TRADOC obtained information from its training schools and centers and the Army's major commands to identify major questions to be answered. In all, 91 questions—20 combat questions, 30 combat-support questions, 40 combat service-support questions, and 1 training question—were included in the plan. The plan also prescribed the test criteria for each question to be tested. Major questions included the following:

- What is the division's capability to conduct offensive operations?
- Are division artillery transportation assets adequate?
- Does the light infantry battalion have sufficient firepower to perform the operations and missions identified in the operational concept?
- How many aircraft sorties will it take to deploy the division?

Other questions, such as the following, dealt with answering more specific matters concerning the ability of the various divisional units to perform their missions:

- What is the capability of air defense artillery to provide adequate air defense protection?
- What is the ability of the engineer battalion headquarters to exercise command and control of corps support units?
- Do the division support command's communications assets provide the necessary communications to effectively manage the combat service-support mission?
- Can the maintenance battalion materiel section effectively manage organizational and divisional maintenance?

Seventy of the 91 questions in the certification plan involved combat-support and combat service-support functions. Army officials explained that emphasis had been placed on these functions because one of the

major differences between light and conventional divisions is the light division's reduced size, which was accomplished by eliminating or reducing some combat-support and combat service-support functions.

A number of Army organizations were involved in conducting the certification. TRADOC's Combined Arms Center and TIED were responsible for developing the certification plan prescribing the evaluation questions and test criteria. TRADOC also provided subject matter experts (SME) from its schools and centers to collect and report on test results observed during various field exercises. The professional military judgment of the SMEs was the primary source of information used in determining whether the division met established test criteria. The Army's Combat Developments Experimentation Center at Fort Ord, California, coordinated the field portion of the certification and prepared a report consolidating the SMEs' findings on each field certification event. Upon completion of field testing, TCATA prepared a report summarizing certification test results and proposing changes to improve the division's capability. TIED then prepared a separate report on the certification results, drawing from its own independent observation, the TCATA report, and information received from other organizations throughout the Army. TIED's report represents the final evaluation of the certification process.

The various exercises conducted were designed to test the division's capability in low-, mid-, and high-intensity conflicts, with emphasis placed on low-intensity conflict. These exercises included various Army training and evaluation programs, a command post exercise, and six field training exercises. The final field exercise was the only one that involved testing the entire division. It was particularly important, as it was the only opportunity to assess several of the divisional combat-support and combat service-support units in the field. Almost all the field exercises were conducted at Fort Hunter Liggett, California, where weather and terrain were favorable to the division's design and exercises involved combat situations that were very similar to each other. TIED's report pointed out that, because of the favorable weather conditions and similarities in combat situations, the certification process might not have identified deficiencies in the division's organizational design or operational concept that could occur in other climates or combat situations.

Army Concludes That the Division Concept Is Sound but Some Problems Remain

After testing, the Army concluded that the light infantry division's organizational design and operational concept were essentially sound. However, the Army said that numerous changes were needed to solve problems identified during certification. Although the Army's certification process envisioned making changes to the division as the various evaluations were completed and then testing the changes to determine whether they corrected identified problems, we found that this process was not followed. Consequently, no major changes were made or tested during certification. Instead, Army officials told us that major problems or weaknesses were accumulated, and solutions were not implemented until after the overall test was complete.

The Army evaluators emphasized that care should be taken to use the division within its design capabilities and limitations. The evaluators therefore suggested that a detailed hostile environment analysis be made prior to employing the division to ensure that it could be properly supported.

Changes Needed to Solve Problems

Army officials told us that about 4,000 changes had been recommended by SMEs and organizations throughout the Army as a result of the certification process and that about 2,000 changes are currently being implemented. Many recommendations not being implemented were rejected by Army evaluators as inappropriate or unrealistic because required equipment was not available. According to Army officials, many changes the Army plans to make can be made immediately, since they involve reallocation of personnel within the division. Some changes, however, will take years to implement because they involve equipment that has yet to be developed or produced.

After completing the certification process, the evaluators' final recommendations were presented to the Army Chief of Staff. He approved the recommended design changes in May 1987, subject to a number of conditions, including limiting the division's personnel strength and the number of aircraft sorties required for deployment to the original design criteria. Prior to certification, the light infantry division's design called for 10,786 soldiers and 522 aircraft sorties. The final design approved by the Chief of Staff calls for 10,778 soldiers and 516 aircraft sorties, or 8 fewer soldiers and 6 fewer aircraft sorties than originally proposed.

The four problems identified by the Army's evaluators as being the most significant, as well as some of the other problems they identified, are discussed below.

- Warning of enemy aircraft. The air defense early warning communications system did not adequately alert all of the division's units of approaching enemy aircraft. This problem was caused by an insufficient number of radios and trained personnel to receive and disseminate enemy aircraft warnings sent over the division's radio network. Due to this communications problem, Army evaluators concluded that two of the four test criteria were not satisfied and that the division could not satisfy specified performance requirements. The Army expects to solve this problem with the introduction of a new air defense warning system, the Forward Area Air Defense Command, Control and Intelligence System, projected to be available in 1992. According to Army officials, this system will provide a separate radio network to disseminate enemy aircraft warnings to all units.
- Mobility of aircraft radar system. The division's helicopters cannot readily move the radar system used to alert the division of enemy aircraft. During ground operations, this radar equipment is carried in one of the division's vehicles. However, when the division is required to move by air, the radar equipment must be disassembled, because the weight of the vehicle and the equipment is too great for one helicopter to carry. This process is considered impractical in tactical situations, as it takes too much time and requires the use of a 5-ton wrecker. Army evaluators concluded that the division currently cannot satisfy the mobility performance requirement for this equipment. They recommended that the current radar equipment be replaced with lightweight, mobile equipment that can be handled by one or two soldiers. New air defense radar equipment, which is expected to solve this problem, is not scheduled to be fielded until 1992.
- Spare parts storage containers. The division's storage containers for aviation maintenance spare parts do not fit in the Air Force C-141B aircraft designated to deploy the division, and the new containers that will fit in these aircraft will not be available for some time. Accordingly, evaluators were not able to determine whether the new containers will provide the storage, accessibility, and maneuverability required by light divisions. Army officials said that current plans are to buy about 20 new containers per year over the next 8 years to meet the requirements of the five light divisions. During the certification process, the Army was able to "make do" with temporary containers, including "MIL-Vans" and plywood boxes constructed by the 7th Division.
- Language capability. The military intelligence battalion did not have a "go anywhere" capability, as its linguistic personnel did not have proficiency in all foreign languages. Consequently, the division could not satisfy this performance requirement. The Army evaluators recommended the creation of corps units to provide a "plug-in" language capability. At

the time of our review, the Army had approved the use of corps personnel to provide this capability.

The Army identified 23 additional problems, which evaluators characterized as less severe. Included are problems involving equipment, training, weapons, organizational structure, and doctrine. Some of these problems are discussed below.

- Some combat and combat service-support elements, including the infantry battalions and the 105-mm artillery batteries, did not have enough vehicles and trailers to carry their equipment and basic unit loads. Consequently, they could not carry all their equipment and enough food, water, ammunition, and fuel.
- Personnel whose secondary mission was to provide air defense protection for the division using antiaircraft missiles could not fire their weapons accurately.
- The reconnaissance squadron requires improved radios, vehicles, and weapons to better accomplish its intelligence-gathering missions. (Because of conflicting and inconclusive test results, proposals for changes in the reconnaissance squadron are being studied further.)
- The division was not authorized sufficient wire and cable for its communications network.
- The aviation maintenance company requires an enhanced capability to maintain the division's aircraft at an acceptable level.
- The equipment and supplies a light infantry division soldier must carry exceed the maximum weight established by the Army for the soldier to be combat effective. The Army's criterion for maximum weight is based on scientific studies which indicate that weights above 45 percent of body weight degrade the capability to function. Certification testing indicated that the load the typical light division infantryman carried (including tent, clothing, food, water, weapon, and ammunition) was about 87 pounds. The load of those soldiers who carried the Dragon antitank weapon was even greater, about 100 pounds. This weight is far in excess of the 72 pounds the Army considers reasonable for a typical 160-pound soldier to carry. To resolve this problem, the Army is conducting research to develop lighter equipment and clothing. However, this research is not complete and, in the interim, the Army has had to increase the number of trailers needed to carry the soldiers' individual equipment and supplies.

Changes Have Not Been Tested

The Army originally planned to make changes to the division as problems were identified during certification. These changes were then to be tested to determine whether they had corrected the problems. However, this process, referred to as "check-fix-check," was not followed because the Army decided instead to maintain a consistent basis for testing. Consequently, the Army has not yet verified that the changes being made to the division are either viable or that they will solve identified problems. Army officials told us that they will evaluate changes made as a result of certification recommendations in the future during the light divisions' regular training and testing programs.

The Army's independent evaluator, TIED, also suggested that some decisions regarding potential changes be delayed until further study and testing are conducted. Included were decisions on (1) the mix of weapons in the reconnaissance squadron, (2) a proposal to reorganize the reconnaissance squadron, (3) the requirement for an airborne command post, and (4) the adequacy of the helicopter used as a command and control aircraft.

The Army's Certification Is Incomplete

The Army's testing of the operational concept and organizational design of the light infantry division is incomplete in two major areas. First, the division relies heavily on corps units to provide assistance in the early stages of conflict, yet the Army did not test the performance of corps units during certification. Second, two of the Army's light divisions are partially comprised of reserve units, and another is completely made up of reserve units, yet the Army's certification did not test these units' abilities to rapidly deploy. These omissions in the Army's certification process leave significant questions unanswered regarding the capability of light divisions to perform assigned missions.

Non-Divisional Support Units' Capability Not Tested

Although light divisions are separate and distinct fighting organizations, they do not function entirely by themselves. The divisions require the assistance of outside, or non-divisional, corps units. Accordingly, how well a light division carries out an assigned mission or how long it can fight depends on how well non-divisional support units perform their missions with light divisions.

Corps assistance can be categorized as either combat, combat-support, or combat service-support assistance provided by organizations ranging in size from small units to a full brigade. The exact nature of support provided is dependent on a number of factors, including the geography

and climate of the location to which the division is sent, expected length of deployment, and type and intensity of expected combat. Corps units provide the following types of supplies, equipment, and services: petroleum, medical services, ammunition, aviation, signal, air defense artillery, and transportation.

The light infantry division's design relies heavily on combat-service support from the non-divisional corps. In fact, a number of corps units were formed specifically to provide combat-service support for the light divisions. According to the Army, a light division is vulnerable to defeat if corps combat-support and combat-service support are not provided after the first 48 hours of combat.

Non-divisional units formed specifically to support light divisions perform a number of different combat service-support functions, including a large portion of the division's equipment maintenance and repair. A light division is designed to provide only about 55 percent of its own aviation maintenance and repair. According to the Army, some of these newly formed corps units would be required to support light divisions in all deployment situations, and some would be expected to deploy concurrently with the division. The exact timing of their deployment depends on the situation in which the division is deployed. Table I.1 lists some of the corps units formed specifically to support light divisions and explains their missions.

Table I.1: Corps Support Units

Unit	Mission
1. Intermediate Direct Support Maintenance Company	This unit is designed to offset the shortfalls in maintenance capability designed into the light division and provide backup support to division maintenance elements.
2. Missile Support Team	This team is dedicated to augmenting the division's missile maintenance support element.
3. Aviation Intermediate Maintenance Support Team	This team provides supplemental aviation maintenance support to handle the maintenance passback work load from the division.
4. Graves Registration Team	This team processes body remains, performs search and recovery, and operates a collection and evacuation point.
5. Explosive Ordnance Detachment	This unit provides "render-safe" services on enemy nuclear, conventional, chemical, or biological ordnance that fail to detonate.
6. Surgical Squads	These squads will provide resuscitative surgery within the division area and be sent forward when critically injured patients cannot be evacuated in 4 hours and when hospitals are not yet established.
7. Air Ambulance Detachment or Company	This unit will clear seriously injured patients from the forward area and provide rapid transportation of critical medical supplies, equipment, and personnel.
8.Water Supply Companies	If the division is deployed to arid or tropical regions of the world, detachments from these units will be provided for water purification, storage, and distribution.
9. Rear Area Operations Center	This unit assists the division in countering rear area attacks.

The Army's certification of the light division specifically excluded evaluation of the corps units, which would be called on to help the division perform assigned missions. Army officials explained that the certification process had excluded testing corps units because (1) the support provided by the corps to light divisions is essentially the same as the support they are expected to provide other types of divisions, (2) some corps units required to support the light divisions had not yet been formed, and (3) the resources (evaluation personnel and travel funds) available for evaluation were limited. Army officials acknowledged, however, that because of the light infantry division's greater reliance on non-divisional support units, some of which were specifically formed to support light infantry divisions, the omission of testing these units leaves questions about the division's supportability unanswered.

During the major divisional field training exercise (Celtic Cross IV), a number of corps units provided assistance to the division. Although the Army, in accordance with its certification plan, did not test these units' ability to adequately support a light division, one problem area was identified. Army evaluators commented that several corps units did not have the necessary logistical support to conduct operations. The evaluators recommended that procedures for ensuring appropriate logistical support for non-divisional support elements be included in future doctrinal manuals. According to the evaluators, the inclusion of these procedures would help to ensure that commanders and staffs plan, coordinate, and execute appropriate logistics support for units assisting light divisions. In addition, evaluators recommended that proper planning should entail the determination of what, when, where, and how non-divisional support elements will be used and supported.

Rapid Deployment Capability Not Tested

A major reason for creating the light infantry division was to enable the Army to develop the capability to more rapidly deploy a credible fighting force to an area of conflict. Two of the five divisions are partially comprised of reservists, and another is entirely a National Guard Division. None of the three are expected to be able to deploy as quickly as divisions of active Army units.

Army officials told us that light divisions are to be able to mobilize and deploy in about 6 days, or one third the time needed to deploy other infantry divisions. In discussing the difficulties of quickly mobilizing and deploying reserve personnel assigned to light divisions, Army officials said that, although their deployment capability had not been tested during certification, reservists probably could not meet the 6-day deployment criterion. Army officials told us that only the two divisions made up entirely of active-duty personnel, the 7th and the 25th, are expected to be able to deploy in a short time. The officials said that there are several options for deploying the other divisions. One option is to initially deploy only the active elements of the 6th and 10th divisions, with the reserve components to follow later. Another option is to activate the reserve components of the three divisions on a contingency basis once the 7th and 25th divisions are deployed.

The Army is not ignoring potential problems with reserve unit deployment. It is currently reviewing the requirements and capabilities of one type of reserve unit assigned to support light infantry divisions. These units—rear area operations centers—are among those expected to be required in most deployment situations and to have an early deployment

mission. All of the Army's rear area operations center units are in the reserve components.

Some of the types of problems that might be encountered in rapidly mobilizing and deploying reservists are illustrated in our report Problems in Alerting and Preparing Army Reservists for Mobilization (GAO/NSIAD-84-52, Feb. 27, 1984). In a sample representing about 24,000 reservists who were to mobilize within 72 hours, we found that over 20 percent of them might not be contacted because of incorrect telephone numbers and addresses. In addition, we found that many reservists had not received required information on personal readiness topics, such as wills and power of attorney forms. The purpose of providing this information is to minimize any reporting delays that might occur if reservists believe that they are not personally prepared to leave their families in the event of mobilization. The Department of Defense agreed to take actions to ensure that unit alert rosters are accurate and complete and that reservists receive information to help them arrange their personal affairs.

Impact of Design Changes on Light Infantry Divisions

Army officials told us that the light infantry division design developed as a result of certification will serve as the model for the configuration of light divisions throughout the Army. The officials said, however, that the Army's ability to organize and equip the divisions in accordance with the approved design will depend on the availability of equipment and personnel.

According to Army officials, the Army probably will be unable to equip all five divisions in accordance with the approved design for quite some time because of equipment shortages. The officials pointed out that, even in the case of the 7th Infantry Division, which had a high priority for obtaining equipment because of its role in the certification process, it was necessary to borrow some equipment or use substitute equipment.

Based on the geographical locations of light divisions, there will be some design variations among them. For example, the 6th Division's mission includes the defense of critical sites in Alaska and the initial defense of the Aleutian Islands, which requires arctic equipment unlike that normally issued to a light division. In addition, the division is designed and will be equipped to deploy outside of Alaska.

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