

GAO

Report to the Honorable  
G.V. Montgomery, House of  
Representatives

November 1992

# ARMY TRAINING

## Replacement Brigades Were More Proficient Than Guard Roundout Brigades



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**National Security and  
International Affairs Division**

B-250554

November 4, 1992

The Honorable G.V. Montgomery  
House of Representatives

Dear Mr. Montgomery:

This report responds to your request that we review the active Army brigades that replaced the National Guard's combat roundout brigades for Operations Desert Shield and Desert Storm. You asked that we compare the replacement brigades and the roundout brigades in terms of such objective measures as officer and noncommissioned officer (NCO) leadership training completed, military occupational specialty (MOS) qualification rates, gunnery qualification rates, and collective training events completed. You also asked us to determine if new equipment issued to the replacement brigades posed operating difficulties and if equipment shortages were common to both roundout and replacement brigades.

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**Background**

Some active combat divisions are organized with one less active brigade than the number called for by the Army's divisional structure and are filled, or "rounded out," by National Guard brigades. Two of these active Army divisions—the 24th Infantry Division and the 1st Cavalry Division—were deployed to the Persian Gulf on essentially a no-notice basis in August and September 1990. However, rather than rounding them out with National Guard combat brigades, the Army decided to use other active Army brigades to round them out. In November and December 1990, the Secretary of Defense activated three National Guard roundout brigades—the 48th Infantry Brigade, the 155th Armor Brigade, and the 256th Infantry Brigade. The Army, however, did not deploy any of these brigades to the Persian Gulf. Instead, the brigades remained in a training status until the war was over.

The 48th was the roundout brigade for the 24th Infantry Division, whereas the 155th was the roundout brigade for the 1st Cavalry Division. Both of the brigades had long-standing relationships with their parent divisions and enjoyed the same priority for equipping as did the parent divisions. As a result, some roundout brigade soldiers as well as some Members of the Congress expected that the roundout brigades would deploy to a crisis shortly after the deployment of their parent divisions. Instead, the Army selected the 197th Infantry Brigade to replace the 48th Brigade and the 1st Brigade, 2nd Armored Division, to replace the 155th Brigade. The

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256th Brigade is the roundout for the 5th Infantry Division. It was neither deployed to the Gulf nor replaced by an active brigade.

The 197th Infantry Brigade, stationed at Fort Benning, Georgia, was organized as a separate, self-sustaining brigade. One of its missions was to maintain a level of readiness that would permit rapid deployment to a theater of operations to conduct sustained combat operations. Another mission of the 197th was to provide support to the U.S. Army Infantry Center and School, also located at Fort Benning. According to Brigade officials, providing year-round tactical support to the Infantry School resulted in additional training opportunities. Although the 2nd Armored Division was undergoing deactivation at the time of Desert Storm, the 1st Brigade was undergoing intensive training in preparation for a National Training Center rotation at the time it was selected for deployment with the 1st Cavalry Division.

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## Results in Brief

The replacement brigades demonstrated a higher level of proficiency at the time of their deployment to the Persian Gulf for almost every objective measure of individual and unit proficiency than the roundout brigades. Although the proficiency of the roundout brigades improved during post-mobilization training, their overall proficiency did not reach a level comparable to that of the replacement brigades.

Our analysis of the training conducted by the replacement and roundout brigades the year before Operation Desert Storm showed that replacement brigade soldiers had substantially more opportunities to develop proficiency in the key building blocks of Army training: leadership, individual, and crew skills. As a result, replacement brigade soldiers were better trained to lead, achieved higher rates of individual skill qualification, and were more proficient in tank and Bradley Fighting Vehicle gunnery skills. Replacement brigade units completed far more collective training exercises at the company, battalion, and brigade levels, thus providing brigade and battalion staffs with a greater opportunity to develop proficiency in complex synchronization skills—the most difficult doctrinal and leadership task in the Army.

The replacement brigades possessed greater proficiency in critical skill areas, and their post-deployment training took on a “honing” skills character. In contrast, the roundout brigades focused on developing skills for the first time. In addition, the proportion of soldiers in the roundout brigades who were unable to deploy with their units was more than twice as

high as in the parent divisions. Conversely, the National Guard roundout brigades reported a higher percentage of senior grade personnel assigned and lower personnel turnover than their replacement brigade counterparts, both of which are favorable readiness indicators.

The new equipment received by the replacement brigades did not pose operating difficulties, rather in all cases it enhanced their capability. Equipment shortages were similar in both roundout and replacement brigades and, to a large extent, reflected Army-wide shortages.

Many of the problems identified during the roundout brigades' post-mobilization training are long-standing; Desert Storm only served to highlight them. The Army's Bold Shift initiative, which focuses on improving individual and small unit skills in the reserves, as well as other initiatives aimed at correcting many of these problems, are a major step in the right direction. However, even if these initiatives are successful, there will still be some period of post-mobilization training required before reserve combat brigades will be ready to go to war in the future.

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## Active Brigade Officers and Noncommissioned Officers Were Better Trained to Lead

Officers and NCOs in the replacement brigades had generally completed the required professional education courses at the recommended points in their careers, giving them the skills needed to provide effective leadership over their commands and soldiers. Officers and NCOs in the roundout brigades, however, had not, in many instances, completed the required courses, thus contributing to significant leadership problems.

Our analysis of officer education in the roundout brigades and the replacement brigades showed that a significant variance existed in the number of officers at the grades of major and below who had completed required professional development courses. For example, the percentage of captains who had completed the Advanced Course, which prepares officers to command at the company and battery levels, exceeded 90 percent in the two active brigades, whereas in the two National Guard brigades only slightly more than 50 percent had completed the course. The fact that many National Guard officers had not completed required initial leadership courses adversely affected the roundout brigades' post-mobilization training. For example, officers had difficulty in the areas of (1) tactical and technical competence, (2) understanding and applying training standards, and (3) enforcing discipline.

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Differences in NCO leadership training completed were similar. For example, while 90 percent or more of the NCOs in the two active brigades had completed the Primary Leadership Development Course (PLDC), only 28 and 51 percent of the NCOs in the roundout brigades had completed the course. According to the Army Inspector General's report on the post-mobilization training of the roundout brigades, poor leadership in the NCO ranks of one brigade appeared to be the most serious of several brigade weaknesses, and in another brigade, rendered the brigade dysfunctional.<sup>1</sup> A more detailed discussion of professional education courses completed by officers and NCOs is presented in appendix I.

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## Active Brigade Soldiers Were More Ready for Deployment and Better Trained in Individual Job and Crew Skills

Objective measures of personnel readiness show that the replacement brigades had a higher percentage of the required soldiers assigned to their units and a greater proportion of soldiers who were qualified to perform their wartime duties. Because individual soldier job skills form the foundation of the Army's building block training strategy, their lack in the roundout brigades, coupled with personnel shortages and nondeployable personnel, adversely affected the early attainment of crew and squad proficiency during the critical post-mobilization collective training period.

The available strength reported by the replacement brigades was at least 13 percentage points higher than that reported by the roundout brigades. Moreover, for the combat arms specialties of infantry, armor, and artillery, the roundout brigades reported shortages 25 and 14 times greater than their replacement brigades. For example, for all of the combat arms specialties combined, the 197th Infantry Brigade and the 1st Brigade of the 2nd Armored Division were short 4 and 15 soldiers, respectively, while the 48th and 155th were short 99 and 206 soldiers, respectively. Likewise, the percentage of soldiers who were fully trained in their MOS was significantly higher in the replacement brigades than in the roundout brigades. In July 1990, the 197th Infantry Brigade reported a MOS trained rate 22 percentage points higher than that of the 48th Infantry Brigade. Likewise, the 1st Brigade of the 2nd Armored Division reported an MOS trained rate 16 percentage points higher than the 155th Armor Brigade. Even after extensive efforts—nearly 600 soldiers in the roundout brigades had to attend formal schooling in more than 40 job specialties—to increase the number of soldiers who were MOS trained, the 48th and 155th Brigades never matched the levels attained by the replacement brigades.

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<sup>1</sup>Special Assessment National Guard Brigades' Mobilization (June 1991).

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Proficiency in leadership, individual, and crews skills is at the heart of the Army's building block approach to training. Soldiers must be proficient in these skills before they can be expected to achieve proficiency in the more complex skills associated with higher echelons, such as platoons and companies. Because of significant differences in individual- and crew-level proficiency, the post-deployment training conducted by the replacement brigades differed markedly from the post-mobilization training conducted by the roundout brigades.

The replacement brigades were able to concentrate on honing individual and collective skills that soldiers and leaders already possessed, whereas the roundout brigades in many cases sought to achieve proficiency in many skills for the first time. For example, before deploying to the Persian Gulf, the armor battalions of both replacement brigades had already demonstrated the ability to engage stationary and moving targets while maneuvering. Once in the theater of operations, the armor battalions were able to concentrate on sustaining these skills. In contrast, the roundout brigades had not qualified one-half their tank crews on stationary and moving targets during the year before mobilization and had not had an opportunity to achieve platoon-level proficiency. Because of this, the training conducted by the roundout brigade armor battalions was concentrated on attaining initial crew- and platoon-level proficiency. A more detailed discussion of individual and crew proficiency is presented in appendix II.

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### More Collective Training Opportunities Resulted in Active Brigades That Were More Combat Ready

In large part, collective (unit-level) training takes the form of field training exercises (FTX) at platoon through battalion levels, command post exercises (CPX) for staff, live-fire exercises (LFX), and rotations to a combat training center, such as the National Training Center. While both active Army and roundout brigades conducted each of these levels of training, the replacement brigades had a much greater opportunity to conduct collective training. For example, during the year prior to Desert Storm, one replacement brigade conducted an average of seven field training exercises at the company, battalion, and brigade levels for its battalions. Conversely, the battle staff of one roundout brigade counterpart averaged only two field training exercises at the company, battalion, and brigade levels for its battalions. Accordingly, the proficiency of the replacement brigades in collective training skills was superior to that of the roundout brigades. A more detailed discussion of collective training opportunities is presented in appendix III.

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## **New Equipment for Replacement Brigades Did Not Pose Difficulties**

Both of the replacement brigades received some new equipment subsequent to their deployment to the Gulf. According to brigade officials, learning to operate this new equipment did not present difficulties in preparing for war and, in all instances, represented a significantly enhanced capability for the brigades. For example, the 1st Brigade, 2nd Armored Division received upgraded Bradley Fighting Vehicles to replace the older Bradleys that were issued to it in 1984. Brigade officials told us that the 3 days of new equipment training required did not interfere with their preparations for combat and that the new equipment represented a significant upgrade in their wartime capability.

Similarly, the 197th received the M1A1 Abrams Tank with a 120mm main gun. Although this tank represents an enhanced wartime capability for the brigade, significant training on the new tank primarily involved only the duties of the ammunition loader. Unlike the 1st Brigade, the 197th's armored personnel carriers were not upgraded. Despite having the less modern M113, officials told us that the brigade was fully capable of performing its assigned mission.

Both the roundout brigades and the replacement brigades were short authorized equipment items when they were alerted for Operation Desert Storm. Reported shortages were primarily in the areas of nuclear/biological/chemical equipment, communications equipment, and night vision equipment. A more detailed discussion of equipment shortages is presented in appendix IV.

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## **Army Initiatives to Address Reserve Component Training Shortfalls**

The Army has several initiatives underway to address problem areas in reserve training identified as early as 1989 and highlighted during Desert Storm.

A major initiative—the Reserve Component Training Development Action Plan—adopted in 1989 seeks to improve reserve component training in 39 areas. It focuses on individual soldier training, leader development, collective training, and training management. A review committee of 20 colonels from throughout the Army meet quarterly to assess progress under the action plan and to decide on needed plan revisions. Lessons learned from Operation Desert Storm have been incorporated into the plan.

The most far-reaching initiative is one that is called Bold Shift. This pilot project, initiated in September 1991, is designed to focus training for combat maneuver units during peacetime on the individual, crew, and



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platoon levels. Much like the Reserve Component Training Development Action Plan, it also includes initiatives to (1) improve individual soldier skills and leader proficiency by expediting training for NCOs and officers and providing training to soldiers who are not qualified for their assigned jobs and (2) involve active Army officers and NCOs to a greater extent in training reservists.

The rationale for Bold Shift is that by focusing the limited amount of training available to reservists during peacetime on the fundamental building blocks of Army training, reservists will be better prepared to develop the skills required at higher echelons during some period of post-mobilization training. The Army currently estimates that about 90 days of post-mobilization training will be required for National Guard combat brigades to achieve proficiency.

At the Army headquarters levels, other groups are concurrently addressing issues pertaining to reserve component leader development and the roundout brigades. The Leader Development Action Plan was developed to improve leadership in the reserve components. The action plan contains 13 issues that focus on such factors as leader selection procedures, the leader education system in the reserve components, and assessment procedures for leaders. The Roundout Brigade Task Force was formed in 1991 to address issues specific to the roundout brigades that affected training and use of the brigades during Operation Desert Storm. The 31 issues being addressed by the task force include leader development, MOS qualification, criteria for officer promotion, and measurements of training readiness. The Army plans to incorporate the issues contained in the Leader Development Action Plan and the Roundout Brigade Task Force into the Reserve Component Training Development Action Plan by the end of fiscal year 1992.

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## Scope and Methodology

To compare the proficiency and training status of the National Guard roundout brigades with their active component substitutes, we consulted with Department of the Army and Army National Guard officials to develop a list of measures that objectively describe a unit's proficiency in wartime skills. These measures consisted of the number and level of training opportunities available to the brigades for the year prior to alert for deployment, the rate of completion of officer and NCO professional education, MOS qualification rates, gunnery qualification results, weapons qualification results, personnel turnover, rates of nondeployability, personnel and equipment shortages, and the operational readiness of

equipment during extensive use. We then gathered information on these measures for a comparative analysis and interviewed knowledgeable brigade officials and key personnel who were assigned to the units during the year before deployment and during Operation Desert Storm. The primary sources of information for this analysis were unit training guidance, training calendars, quarterly training briefs, after-action reviews, gunnery results, and weapons qualification results.

Much of the information gathered on the National Guard roundout brigades was gathered during their mobilization and training phase. In contrast, the information on the active component brigades was gathered after they had redeployed to the United States. For the active brigades, we did not observe their performance during Operation Desert Storm or their training during the year before deployment.

To address the training and readiness of the National Guard roundout brigades, we used information gathered in our previous review and information published in our earlier report.<sup>2</sup> During our current review, we observed the conditions under which the units had trained after mobilization, discussed the training with unit officials, attended staff and logistics briefings, observed after-action reviews, and reviewed or discussed external evaluation reports. Because the 256th Infantry Brigade was neither deployed to the Gulf nor replaced by an active brigade, we have not included information on its post-mobilization training in this report. However, the nature of the 256th's training and the problems it encountered were similar to that of the other two roundout brigades.

To gain insights into the Army's policies and procedures for training both the active component brigades and National Guard roundout brigades, we interviewed officials at the following headquarters offices: the Office of the Secretary of Defense, Washington, D.C.; the Department of the Army, Washington, D.C.; the National Guard Bureau, Washington, D.C.; Forces Command Headquarters, Ft. McPherson, Georgia; 1st Cavalry Division, Ft. Hood, Texas; 3rd Brigade, 1st Cavalry Division, Ft. Hood, Texas; 24th Infantry Division, Ft. Stewart, Georgia; 3rd Brigade, 24th Infantry Division, (formerly the 197th Separate Infantry Brigade), Ft. Benning, Georgia; and Second U.S. Army, Ft. Gillem, Georgia.

We conducted our review of the National Guard roundout brigades from December 1990 to June 1991 and our review of the active component

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<sup>2</sup>National Guard: Peacetime Training Did Not Adequately Prepare Combat Brigades for Gulf War, (GAO/NSIAD-91-263, Sept. 24, 1991).

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replacement brigades from January 1992 to July 1992 in accordance with generally accepted government auditing standards.

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**Agency Comments**

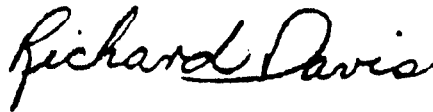
The Department of Defense agreed with our findings and conclusions (see app. VI).

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As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 5 days after its issue date. At that time, we will send copies to interested congressional committees; the Secretaries of Defense and the Army; and the Director, Office of Management and Budget.

Please contact me at (202) 275-4141 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix V.

Sincerely yours,



Richard Davis  
Director, Army Issues

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Figure IV.2: Night Vision Equipment Shortages Just Prior to  
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**Abbreviations**

ANCOC	Advanced Non-Commissioned Officer Course
BNCOC	Basic Non-Commissioned Officer Course
CAS3	Combined Arms and Service Staff School
CGSC	Command and General Staff College
CPX	command post exercise
1SG	First Sergeants Course
FTX	field training exercise
LFX	live-fire exercise
MOS	military occupational specialty
NCO	noncommissioned officer
OAC	Officer Advanced Course
OBC	Officer Basic Course
PLDC	Primary Leadership Development Course
UCOFT	Unit Conduct of Fire Trainer



# Active Brigade Officers and Noncommissioned Officers Were Better Trained to Lead

## Officer Professional Education

Officer professional education is satisfied by the Army's professional military schooling system, consisting of an Officer Basic Course (OBC), an Officer Advanced Course (OAC), the Combined Arms and Service Staff School (CAS3), the U.S. Army Command and General Staff College (CGSC), and the U.S. Army War College.

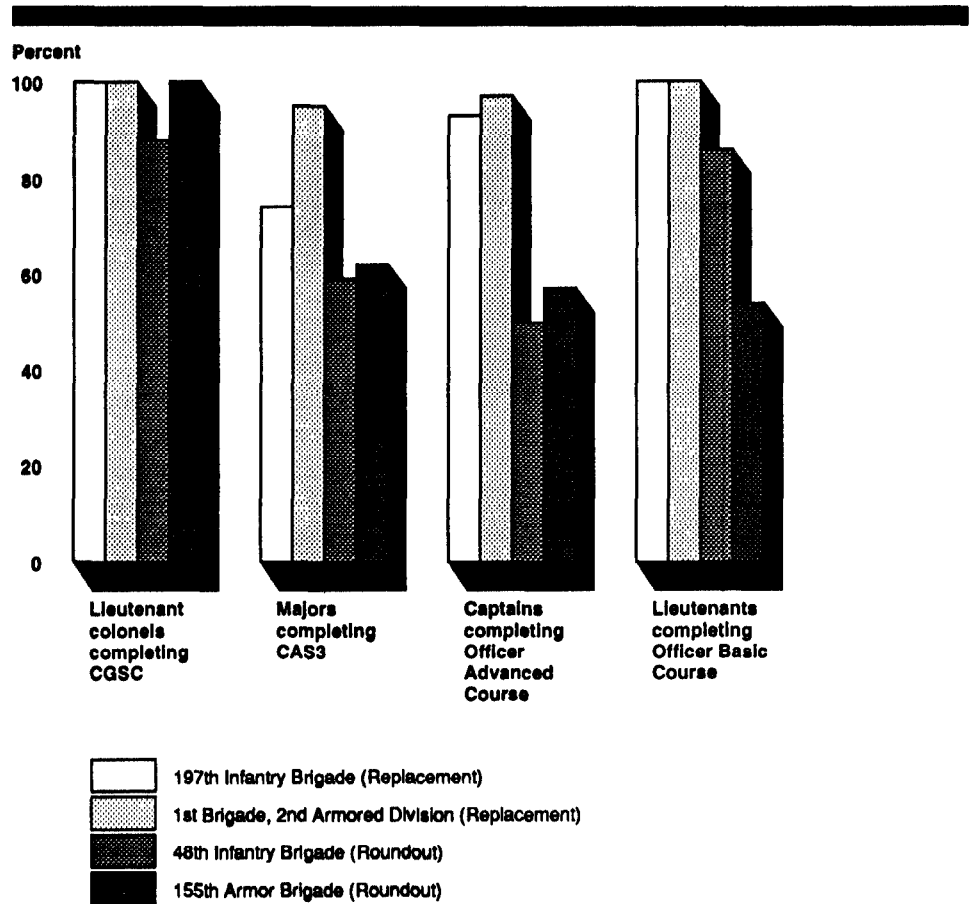
- OBC prepares newly commissioned lieutenants for their first duty assignment with instruction on methods for training individuals, teams, squads, and platoons. Familiarization training is provided in company/battery/troop tactics, organization, and administration.
- OAC is designed primarily to prepare captains to command and train at the company/battery/troop level.
- CAS3 primarily trains majors to function as staff officers with the Army in the field. It is a two-phased course, with an officer being eligible to take the nonresident phase upon completion of OAC. This is followed by a 9-week resident phase.
- CGSC primarily prepares lieutenant colonels to think, decide, and communicate and to act as staff officers and field grade commanders.
- Senior service colleges, such as the Army War College, prepare lieutenant colonels and colonels for senior command and staff positions with the Army and Department of Defense.

Our analysis of officer education in the roundout brigades and the replacement brigades showed that a significant variance existed in the number of officers at the grades of major and below who had completed required professional development courses. For example, in the two initial officer courses in which leadership skills are developed, all of the lieutenants in both the 1st and 197th brigades had completed OBC, while only 86 percent in the 48th Brigade and 54 percent in the 155th Brigade had completed the course. Likewise, the percentage of captains who had completed OAC was much higher in the two active brigades (97 percent in the 1st Brigade and 93 percent in the 197th Brigade) than in the two National Guard brigades (only slightly more than 50 percent). Figure I.1 shows officer education information.



**Appendix I  
Active Brigade Officers and Noncommissioned  
Officers Were Better Trained to Lead**

**Figure I.1: Percentage of Officers Who Had Completed Professional Education Courses**



CGSC = Command and General Staff College  
CAS3 = Combined Arms and Service Staff School

The fact that many National Guard officers had not completed required initial leadership courses adversely affected the roundout brigades' post-mobilization training. Specifically, the officers had difficulties in the areas of (1) tactical and technical competence, (2) understanding and applying training standards, and (3) enforcing discipline. Army trainers who assisted the roundout brigades after mobilization noted that even though the entire officer staffs of the roundout brigades completed the Tactical Commanders Development Course—a war-gaming staff exercise at the battalion and brigade levels— shortly after mobilization, the staffs continued to display tactical and technical weaknesses when they returned to their units.

During the post-mobilization training period for the roundout brigades, the Inspector General found that the training conducted was often inconsistent with Army standards because of inadequate leadership and weak technical skills.

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## **Noncommissioned Officer Professional Education**

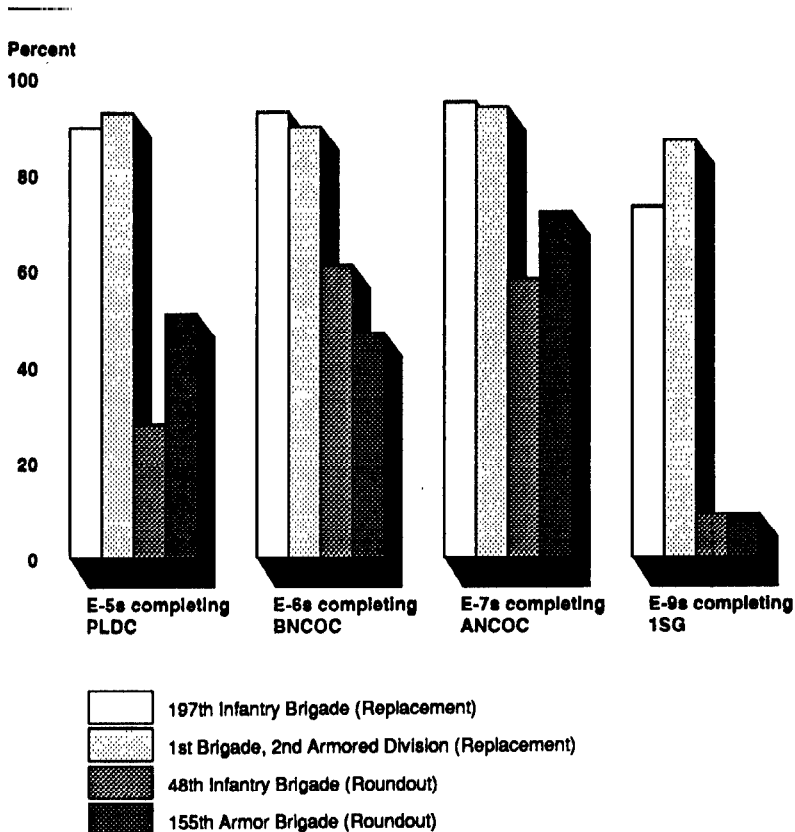
NCOs are responsible for leading enlisted soldiers and providing training in subjects from basic survival skills to specific job skills. Many NCOs in the roundout brigades, however, lacked the leadership skills and knowledge to fulfill these responsibilities.

To advance in proficiency and obtain promotions, NCOs in the active Army must complete a series of required NCO training courses, starting with the Primary Leadership Development Course (PLDC) at the rank of E-4. This course is followed by the Basic Non-Commissioned Officer Course (BNCOC) at E-5, the Advanced Non-Commissioned Officer Course (ANCOC) at E-6, Senior NCO Course at E-7, and the First Sergeants Course (1SG) and the Sergeants Major Academy at E-8. These courses are structured towards providing the knowledge and leadership skills needed by an NCO at each rank, so that proper leadership can be developed as responsibilities increase. In the National Guard, NCOs are generally one rank behind the active Army in completing each of the required courses, and completion of an NCO course is not always a prerequisite for promotion to the next higher rank. Therefore, knowledge and leadership ability within the National Guard NCO force is not always comparable to that of active Army NCOs.

Figure I.2 illustrates the difference in professional education completion rates for NCOs in the roundout brigades and the active replacement brigades. For example, although nearly all of the NCOs in the 1st Brigade and the 197th Brigade had completed the PLDC course (93 percent and 90 percent, respectively), only 28 and 51 percent in the 48th and 155th brigades, respectively, had completed the course. Similar completion trends were found for the basic NCO course. For example, 90 and 93 percent for the 1st and 197th brigades, respectively, and only 61 and 48 percent for the 48th and 155th brigades, respectively, had completed the course.

**Appendix I  
Active Brigade Officers and Noncommissioned  
Officers Were Better Trained to Lead**

**Figure I.2: Percentage of  
Noncommissioned Officers Who Had  
Completed Professional Education  
Courses**



Note: Comparable data was not available for E-8s.

PLDC = Primary Leadership Development Course

BNCOC = Basic Non-Commissioned Officer Course

ANCOC = Advanced Non-Commissioned Officer Course

1SG = First Sergeants Course

In September 1991, we reported that many NCOs in the roundout brigades lacked the leadership skills and job knowledge to train their soldiers.<sup>1</sup> For example, in one brigade, leadership deficiencies identified by active Army trainers included a lack of initiative, a lack of basic soldiering skills, and an indifferent attitude. At another brigade, Army trainers judged the NCOs to lack tactical and technical competence. Because of these shortcomings,

<sup>1</sup>National Guard: Peacetime Training Did Not Adequately Prepare Combat Brigades for Gulf War (GAO/NSIAD-91-263, Sept. 10, 1991).

formal schools were established to provide the required leadership training.

The Inspector General, in its report on the post-mobilization training of the roundout brigades, stated that of the several brigade weaknesses, poor leadership, especially in NCO ranks (staff sergeant and above), appeared the most serious, and in one brigade, rendered them dysfunctional. Lacking technical and tactical skills, many NCOs could not make routine operations happen. They sometimes demonstrated poor knowledge, insight, and command and control of daily activities, including preparing for training and maintenance. As training continued, NCOs demonstrated that they did not know how to help train their units.

We believe that a primary reason for the NCO problem in the National Guard is that leadership courses that can be completed in the 39-day training year available to guardsmen have only been in existence since 1988. Although the reserve component NCO education courses are generally similar in content to those in the active Army, they are sometimes shorter.

# Active Brigade Soldiers Were More Ready for Deployment and Better Trained in Individual Job Skills

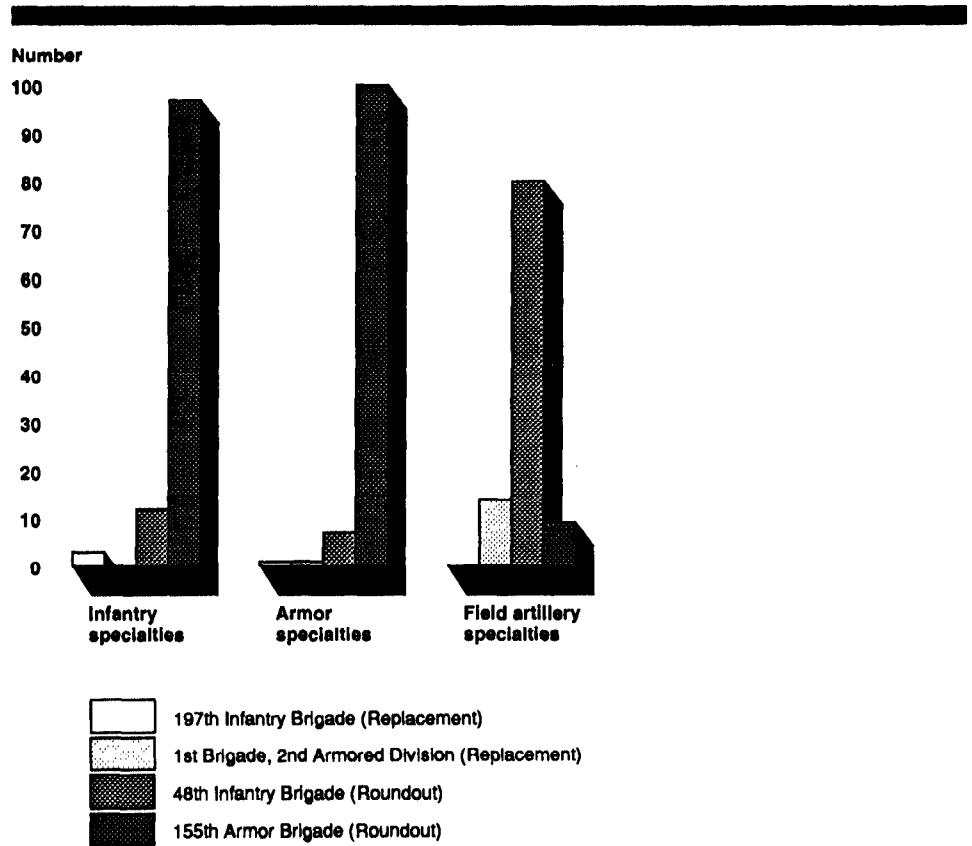
## Personnel Shortages

The available strength reported by the replacement brigades in July 1990 was at least 13 percentage points higher than that reported by the roundout brigades. Army Regulation 220-1 defines available strength as that portion of a unit's assigned strength that is available for deployment and/or employment. In July 1990, the last reporting period before the active brigades were alerted for deployment, the 197th Infantry Brigade and the 1st Brigade, 2nd Armored Division, reported 97 and 98 percent, respectively, of their authorized strength as available for deployment. The 48th Infantry Brigade and the 155th Armor Brigade reported 84 and 82 percent, respectively, during the same period. By October 1990, the status of the roundout brigades had improved by 2 percentage points each but still fell below that reported by the replacement brigades.

For the combat arms specialties of infantry, armor, and artillery, the roundout brigades reported shortages 25 and 14 times greater than their replacement brigades. For example, for all of the combat arms specialties combined, the 197th Infantry Brigade and the 1st Brigade of the 2nd Armored Division were short 4 and 15 soldiers, respectively, while the 48th and 155th were short 99 and 206 soldiers, respectively. Figure II.1 shows the shortages for each combat arms specialty.

**Appendix II  
Active Brigade Soldiers Were More Ready for  
Deployment and Better Trained in Individual  
Job Skills**

**Figure II.1: Soldier Shortages in Combat  
Arms Specialties**



Shortages in some key combat arms MOSs reduced manning levels to below 80 percent. For example, the 155th Infantry Brigade had shortages ranging from 26 to 35 percent in the Bradley Fighting Vehicle infantryman specialty from October to December 1990.

Overall, combat arms MOS shortages translated into incomplete manning of armor, artillery, and infantry weapons systems and squads during the post-mobilization collective training phase. Manning of these systems fluctuated during collective training, with data reflecting approximately 10 to 15 percent of the M1 tank crews, and 25 to 50 percent of the infantry squads not fully manned during January and February 1991. According to the Inspector General, personnel shortages in key combat arms specialties represented a significant impediment to the development and conduct of effective team/collective training.

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**Appendix II  
Active Brigade Soldiers Were More Ready for  
Deployment and Better Trained in Individual  
Job Skills**

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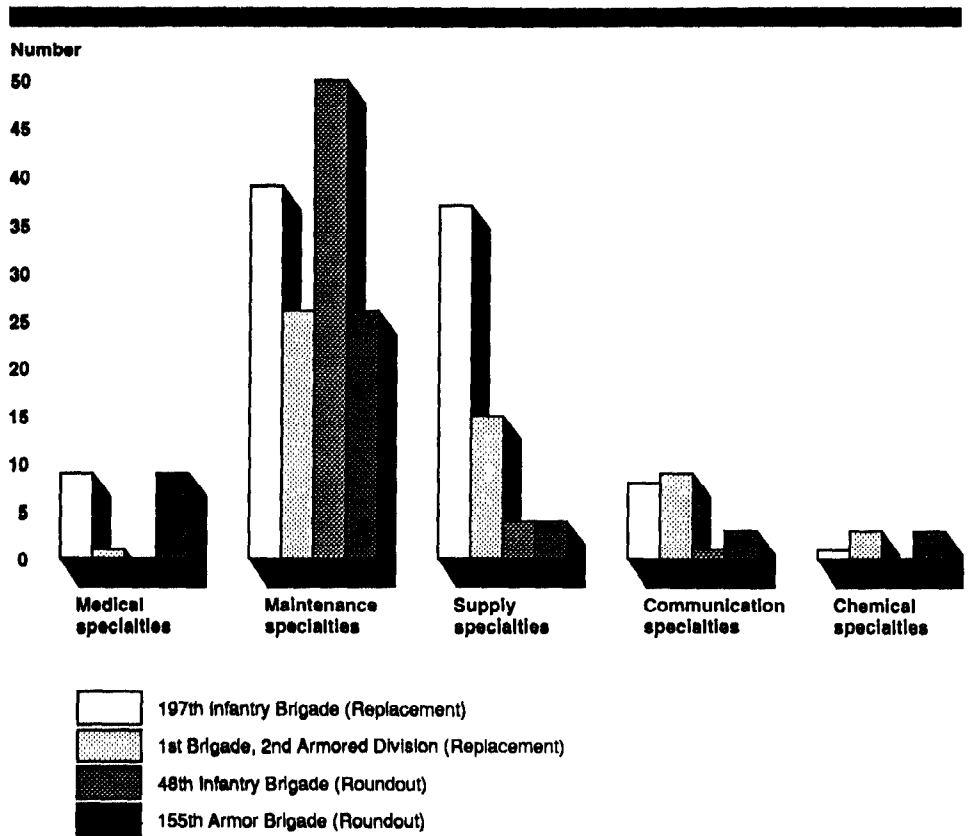
For critical low density specialties, such as medical, maintenance, supply, communications, and chemical operations, the overall difference between the roundout brigades and the replacement brigades was reversed, with the roundout brigades reporting fewer shortages overall than their replacement brigades. Of the critical low density specialties, the maintenance field<sup>1</sup> comprised 91 and 58 percent of the shortages for the 48th and 155th brigades, respectively. Figure II.2 shows the shortages for critical low density MOS fields. According to the Inspector General, shortages in these specialties, especially direct support and organizational maintenance functions, coupled with the fact that many soldiers were not fully trained, adversely affected the brigades' self-sustainment capabilities. This problem, in turn, impeded their collective training effort.

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<sup>1</sup>Examples of the maintenance specialties include self-propelled field artillery system and turret mechanics, M1 ABRAMS tank system and turret mechanics, wheel vehicle mechanic, Bradley Fighting Vehicle system mechanic, and track vehicle mechanic.

**Appendix II  
Active Brigade Soldiers Were More Ready for  
Deployment and Better Trained in Individual  
Job Skills**

**Figure II.2: Soldier Shortages in Critical  
Low Density Specialties**



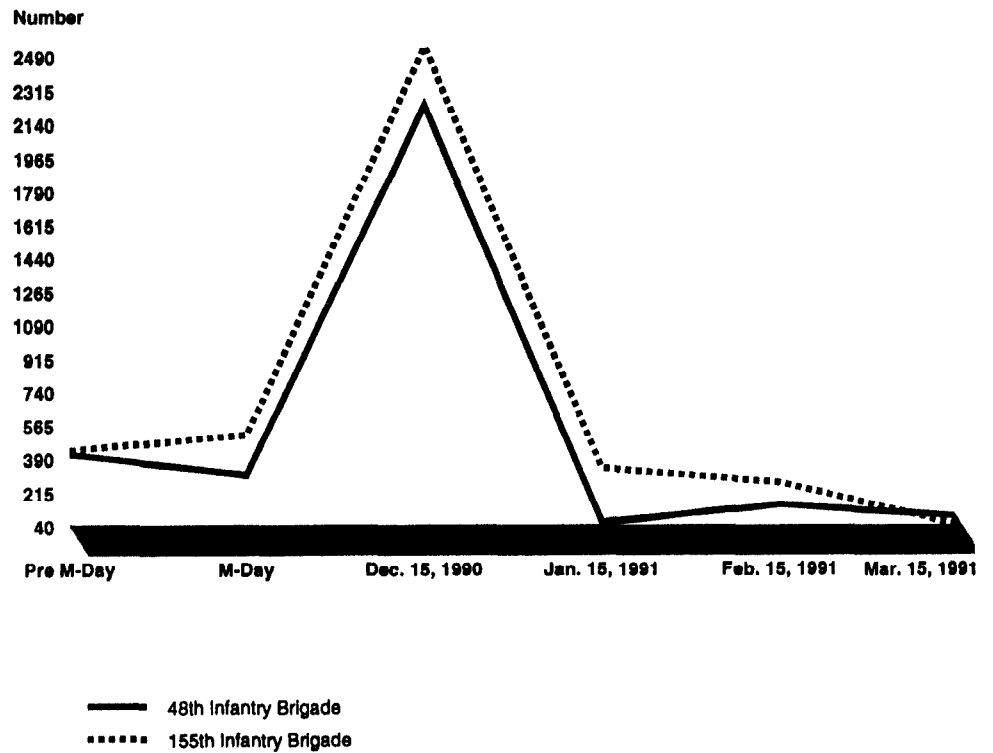
Note: This analysis includes only those MOSs having a 30-percent shortage or greater. According to AR 220-1, a shortage of this magnitude precludes a unit from undertaking its wartime mission.

Although available and deployable strength are technically synonymous, upon mobilization the roundout brigades began to report significantly higher levels of nondeployable personnel than their pre-mobilization unit status reports indicated. In fact, as of December 15, 1990, 34 percent of the 48th Brigade and 50 percent of the 155th Brigade were nondeployable for medical reasons. Figure II.3 shows a breakdown of nondeployable personnel by unit from prior to mobilization (M-day) through March 15, 1991.



**Appendix II  
Active Brigade Soldiers Were More Ready for  
Deployment and Better Trained in Individual  
Job Skills**

**Figure II.3: Nondeployable Personnel in the Roundout Brigades During the Post-Mobilization Training Period**



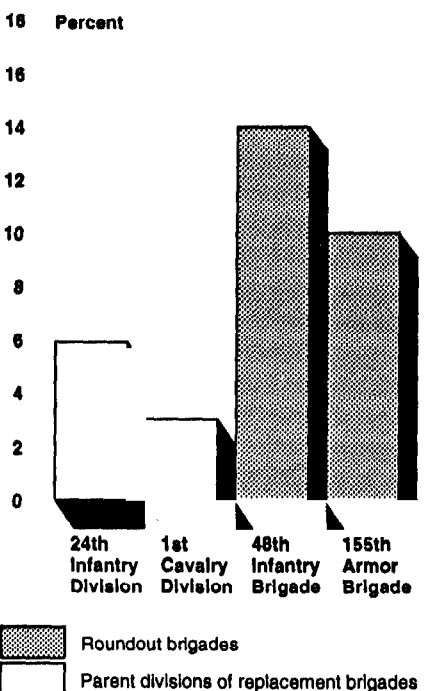
Note: Separate battalions are included in brigade totals.

Within about 4 weeks, the brigades were able to address the factors that caused high rates of temporary nondeployability. However, the rate of soldiers who were permanently nondeployable was still significantly higher than that experienced by the replacement brigades' parent divisions.<sup>2</sup> Figure II.4 shows the rate of permanent nondeployable personnel.

<sup>2</sup>Data on permanently nondeployable personnel in the replacement brigades was not available.

**Appendix II  
Active Brigade Soldiers Were More Ready for  
Deployment and Better Trained in Individual  
Job Skills**

**Figure II.4: Soldiers Permanently  
Nondeployable in the Replacement  
Brigades' Parent Divisions and the  
Roundout Brigades**



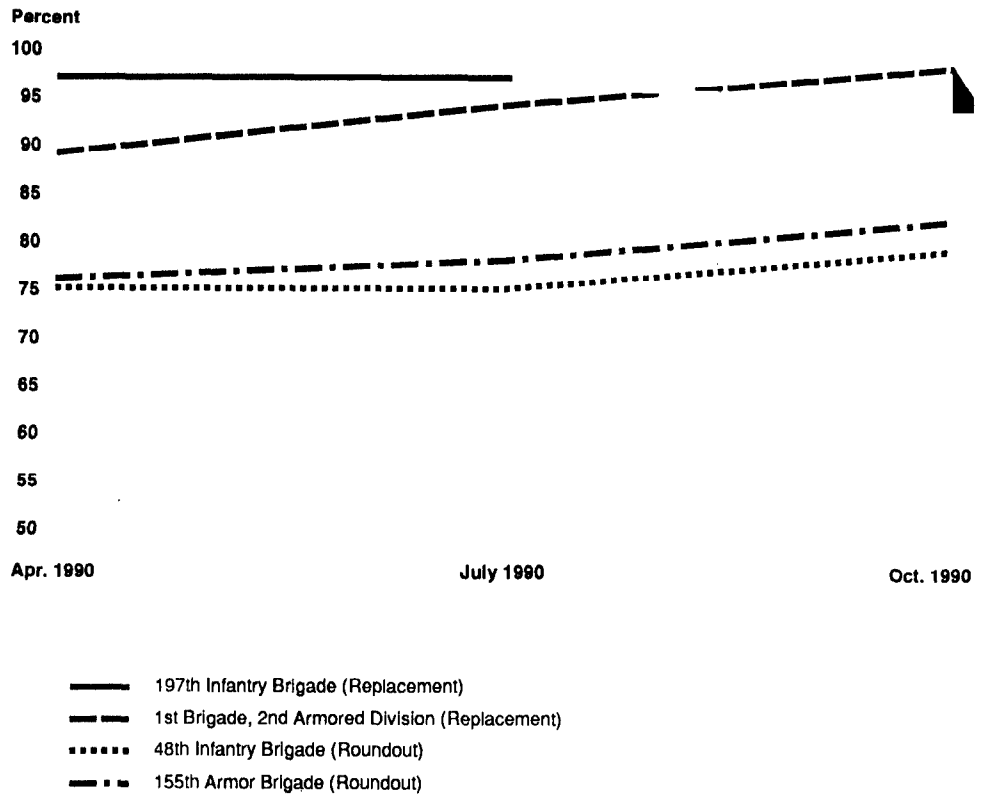
Notes: Roundout brigade percentages were as of March 6, 1991.  
The 24th Infantry Division's percentage was as of August 1990.  
The 1st Cavalry Division's percentage was as of September 1990.

**Individual Soldier  
Qualifications**

The percentage of soldiers who were fully trained in their MOS was significantly higher in the replacement brigades than in the roundout brigades. In July 1990, the 197th Infantry Brigade reported a MOS-trained rate 22 percentage points higher than that of the 48th Infantry Brigade. Figure II.5 shows MOS-trained statistics for the two roundout brigades and their active component replacements during the year before deployment.

**Appendix II  
Active Brigade Soldiers Were More Ready for  
Deployment and Better Trained in Individual  
Job Skills**

**Figure II.5: Soldiers Trained in Their  
Military Occupational Specialty**



Note: The percentages shown for the 1st Brigade, 2nd Armored Division and the 155th Armor Brigade are the unweighted averages of the individual battalion percentages. Overall brigade averages were not reported on Unit Status Reports.

Non-MOS qualified soldiers are those who have not completed either Initial Entry Training or Advanced Individual Training and those whose duty MOS does not match either their primary or secondary MOS. As expected, all of the roundout units' MOS-qualified rates improved during their post-mobilization train-up period to levels higher than those on October 15, 1990. However, even after the extensive effort to increase the number of soldiers who were MOS trained, the 48th Brigade and the 155th Brigade never matched the levels attained by the replacement brigades.

The number of soldiers who prior to mobilization had not completed training ranged from 673 (15 percent) in the 155th Armor Brigade to 834 (19 percent) in the 48th Infantry Brigade. In two of the brigades, nearly 600 soldiers had to attend formal schooling to become qualified in

42 different specialties, including such positions as Bradley Fighting Vehicle turret repairer, infantryman, M-1 armor crewman, and petroleum supply specialist.

The fact that some soldiers were not fully trained created particularly severe problems in certain jobs. For example, because some turret mechanics were not fully trained, armored vehicles were frequently out of service, creating one of the more significant problems units encountered during their training at the National Training Center.

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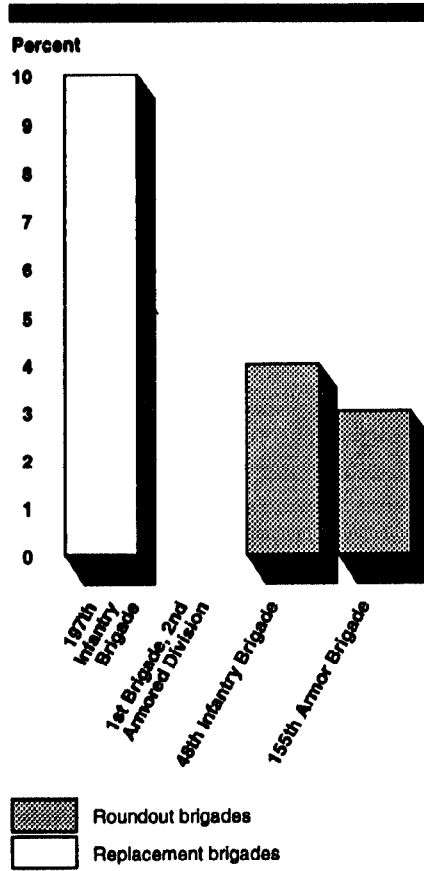
## **Other Personnel Factors**

The National Guard roundout brigades reported a higher percentage of senior grade personnel assigned and lower personnel turnover than their replacement brigade counterparts, both of which are favorable readiness indicators. The available senior grade percentage represents the number of assigned commissioned officers, warrant officers, and NCOs (grades E-5 to E-9), in relation to the number required for the unit. It measures the extent to which the unit is manned with the people who are to provide the leadership and guidance to the unit. The roundout brigades consistently had higher levels of senior grade personnel assigned to their units than the replacement brigades. In July 1990, the active component units' manning for senior grade personnel was about 10 percentage points lower than the roundout brigades they replaced. However, even though more senior grade personnel were assigned to the units, many of them lacked the skills necessary to lead and train the units' soldiers.

In general, the roundout brigades also reported lower turnover rates than the replacement brigades. The personnel turnover percentage provides an indicator of stability by comparing the number of personnel reassigned or separated during the 3 months (6 months for the reserve component units) preceding the "as of" date of the report to assigned strength on the "as of" date. The higher turnover in the replacement brigades is attributable to the Army's system of transferring soldiers on a periodic basis. The lower turnover in the National Guard units is attributed to the fact that many reserve soldiers tend to stay in one unit close to their home after enlistment. Figure II.6 shows the personnel turnover rates reported by the roundout and replacement brigades in July 1990.

**Appendix II  
Active Brigade Soldiers Were More Ready for  
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**Figure II.6: Personnel Turnover As  
Reported in July 1990 Unit Status  
Reports**



Note: 1st Brigade, 2nd Armored Division did not report the personnel turnover for the overall brigade.

# More Collective Training Opportunities Resulted in Active Brigades That Were More Combat Ready

## Greater Collective Training Opportunities Assisted Replacement Brigades

The year before Desert Storm, the 197th and 1st brigades conducted significantly more FTXs, CPXs, and LFXs than the 48th and 155th brigades at the combined brigade, battalion, and company/battery levels. For example, although the 197th Brigade conducted a total of 36 FTXs between October 1989 and July 1991, the 48th Brigade conducted only 13, or about one-third as many as the active units. In addition, the 197th Brigade conducted 33 LFXs compared to 21 for the 48th Brigade. The 1st Brigade conducted 13 CPXs during this time, compared to only 6 for the 155th Brigade.

The more frequent field training opportunities available to the active Army units better prepares them to take advantage of the large-scale maneuver exercises at the National Training Center, the most realistic environment available for unit training during peacetime and the most comprehensive objective evaluation of unit proficiency. One of the key functions of the Center is to challenge brigade and battalion staffs in a realistic wartime environment. Successful commanders must be able to synchronize all resources and operating systems to maximize available combat capability. Likewise, commanders must thoroughly understand Army doctrine and system capabilities and be able to make rapid decisions under the stress of battle. Each of the 197th Brigade's five battalions trained at the Center from October 1989 to July 1990, compared to only three battalions for the 48th Brigade and one battalion and two companies for the 155th Brigade. The 1st Brigade was involved in a massive 6-month FTX/CPX train-up to prepare for rotation to the Center in September 1990. However, the brigade deployed to the Persian Gulf prior to its scheduled rotation.

National Guard units train only about 39 days each year, of which about one-half may be spent on administrative matters. Available training days include a 2-week period during which units spend at least 7 days in a tactical field environment to approximate wartime conditions. This training affords the National Guard the best—and for many units the only—opportunity to accomplish sustained mission training under realistic conditions as envisioned by Army doctrine. Also, the entire battalion or brigade seldom trains as one unit due to the geographic location of Guard units. Therefore, when Guard units rotate to the National Training Center, it is generally the only opportunity they have to practice synchronizing all the resources needed to achieve maximum combat capability. Post-mobilization training for the 48th Infantry and 155th Armor brigades included rotations to the Center. According to Center officials, during the 48th Brigade's force-on-force engagement with the opposition at the Center, the staffs' proficiency improved significantly. However, Army

trainers identified a number of serious systemic and recurring weaknesses, including (1) the failure to identify key and decisive terrain and (2) the inability to effectively integrate direct and indirect fire.

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## **Replacement Brigades Were More Qualified in Gunnery Skills**

The ability of armor and mechanized infantry units to achieve mission objectives is dependent upon the gunnery and maneuver skills of its tank and Bradley Fighting Vehicle crews, platoons, and companies. These skills can only be obtained by providing sufficient opportunities to train at each of these echelons. Gunnery qualification data showed that more replacement brigade crews and platoons were qualified in gunnery skills than those of the roundout brigades. For example, as shown in figure III. 1, the qualification rates for tank gunnery tables VIII (crew proficiency) and XII (platoon proficiency) were significantly higher for the 197th than for the 48th.<sup>1</sup> Also, the 1st brigade of the 2nd Armored Division's qualification rates for tank table XII were significantly higher than the 155th's. Two factors affecting these difference were (1) the number of opportunities available for the replacement brigades versus the National Guard to train at the crew and platoon level and (2) the use of the Unit Conduct of Fire Trainer (UCOFT) simulator.<sup>2</sup>

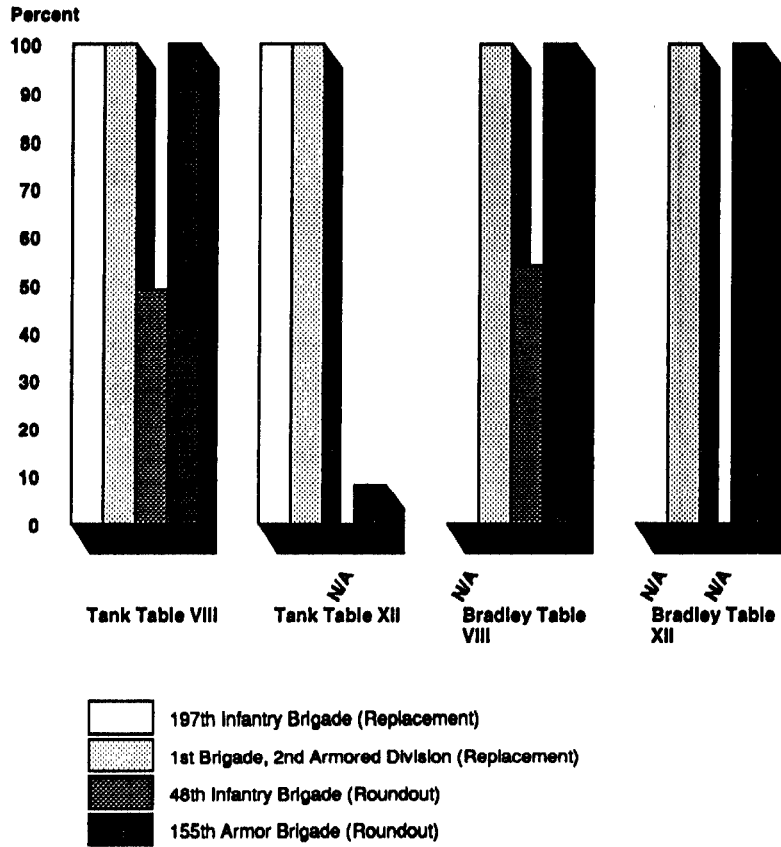
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<sup>1</sup>Twelve gunnery tables are structured to develop and test crew proficiency in a progressive manner. For example, table I requires individual crews to engage stationary targets with a stationary tank or fighting vehicle. Table VIII requires individual crews to demonstrate proficiency against single, multiple, and simultaneous targets while stationary and moving. Table XII requires entire platoons to engage stationary and moving targets while maneuvering. Army regulations do not prescribe the number of crews per unit who must qualify on each table. However, Army training doctrine expects commanders to ensure that all crews are qualified.

<sup>2</sup>The unit conduct-of-fire trainer is a programmable computer-driven simulator that duplicates the tank commander's and gunner's stations. Most fire control components and controls are functional and respond like an M1 tank. UCOFT provides a wide variety of simulations and tactical engagements to train or maintain gunnery skills of the tank commander and gunner. It can teach a range of gunnery skills from basic to advanced.

**Appendix III  
More Collective Training Opportunities  
Resulted in Active Brigades That Were More  
Combat Ready**

**Figure III.1: Gunnery Tables VIII and XII  
Qualification Results**



Notes: N/A equals not applicable.

The 197th Infantry Brigade was not equipped with Bradley Fighting Vehicles.

The 48th Infantry Brigade's crews were required to qualify only on table VIII. However, the National Training Center integrated live fire into its post-mobilization exercises at all levels, from crew to battalion.

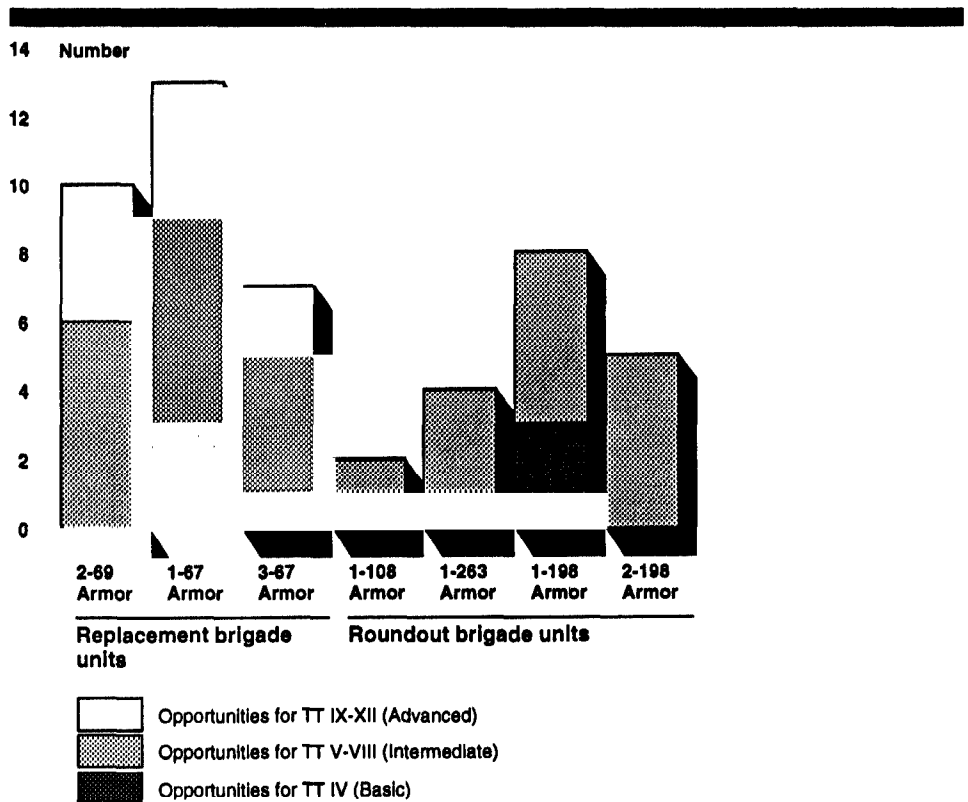
Although the 155th Brigade achieved qualification rates equal to the replacement brigades in some cases, the training period for all roundout brigades was extended to enable crews to achieve gunnery proficiency. In addition, while all crews from the 155th qualified on table VIII, Army trainers judged that the amount of time it took to qualify them was excessive. For example, although an active Army battalion normally requires a week to qualify all its crews on table VIII, the two armored battalions in the 155th required 17 and 24 days. According to the Inspector General, many Guard crews required as many as eight attempts to qualify, while active Army crews normally qualify in one or two attempts.



**Appendix III  
More Collective Training Opportunities  
Resulted in Active Brigades That Were More  
Combat Ready**

During the year prior to Desert Storm, the replacement brigades had more opportunities to conduct gunnery training than did the roundout brigades. Significant differences were apparent at the platoon level, particularly in the number of times tank tables IX to XII were fired. For example, the aggregate number of opportunities to fire tank tables IX to XII for the replacement brigades was 10, whereas the roundout brigades documented zero opportunities. Tank gunnery opportunities for the roundout and replacement brigades for the training year prior to Desert Storm are shown in figure III.2.

**Figure III.2: Opportunities the Replacement and Roundout Brigades Had to Train on Tank Tables I-IV, V-VIII, and IX-XII in the Fiscal Year Prior to Desert Storm**



Notes: Tank Table is abbreviated TT.

Basic gunnery techniques and engagements are trained on TT I to III and tested on TT IV (individual/crew).

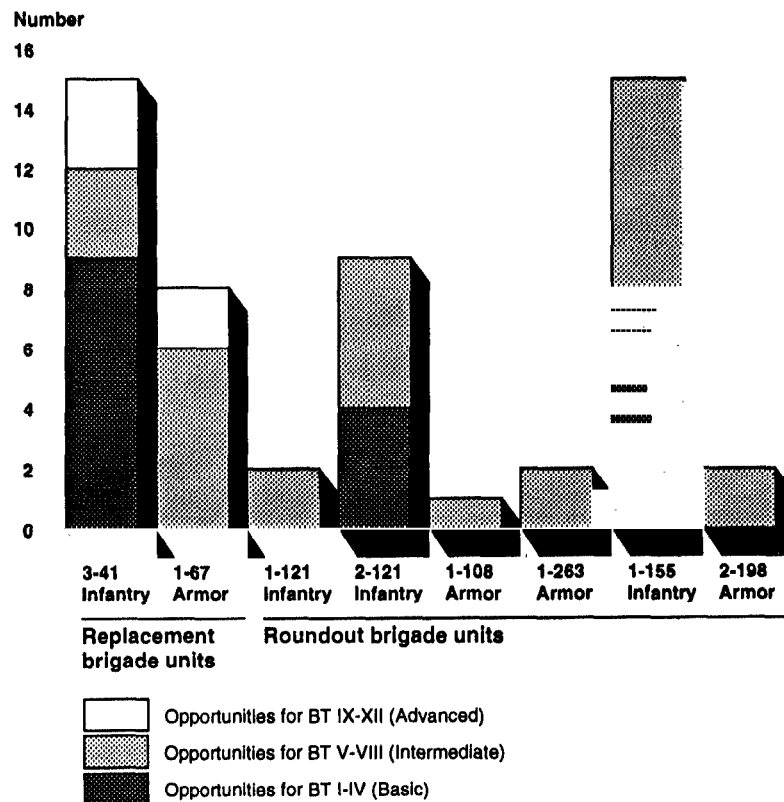
Intermediate engagements are trained on TT V to VII and tested on TT VIII.

Advanced gunnery engagements are trained on TT IX and XI and tested on TT X and XII (section/platoon).

**Appendix III  
More Collective Training Opportunities  
Resulted in Active Brigades That Were More  
Combat Ready**

In those instances where the roundout brigades achieved results equal to the replacement brigades, the number of opportunities they had to train to develop proficiency was more comparable to the replacement brigades. For example, during the year prior to Desert Storm, the 155th had 15 opportunities to train on Bradley tables I to VIII, the tables that progressively train up to crew-level qualifications. Figure III.3 shows the Bradley Fighting Vehicle gunnery opportunities available to both the replacement and roundout brigades during the fiscal year prior to Desert Storm.

**Figure III.3: Opportunities the Replacement and Roundout Brigades Had to Train on Bradley Tables I-IV, V-VIII, and IX-XII In the Fiscal Year Prior to Desert Storm**



Notes: Bradley Table is abbreviated BT.

Advanced gunnery engagements are trained on BT IX and XI and tested on BT X and XII (section/platoon).

Intermediate engagements are trained on BT V to VII and tested on BT VIII.

Basic gunnery techniques and engagements are trained on BT I to III and tested on BT IV (individual/crew).

The 197th Infantry Brigade was not equipped with Bradley Fighting Vehicles.

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**Appendix III  
More Collective Training Opportunities  
Resulted in Active Brigades That Were More  
Combat Ready**

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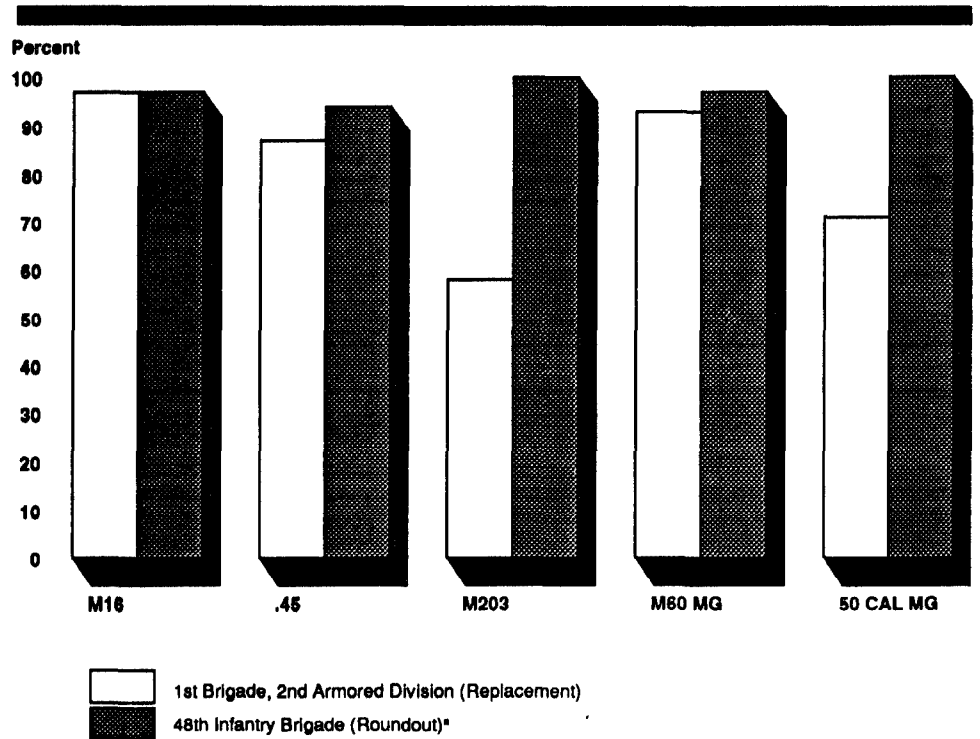
Another reason for the higher gunnery proficiency rates for the replacement brigades is their more extensive use of UCFT. According to a 197th armor battalion commander, UCFT remains the most valuable training device for maintaining tank crew proficiency short of actual live fire. For the year prior to Desert Storm, the armor battalion of the 197th was required to use the simulator no less than 4 hours per crew per month. The roundout brigades' use of UCFT was more limited. When given the chance to train with the UCFT during post-mobilization training, the 48th Brigade only partially exercised this opportunity.

All soldiers in the active Army, National Guard, and Army Reserve are required to qualify on their personal weapon annually. For the individual soldier this weapon could be the M-16 rifle, .45 caliber pistol, 9 millimeter pistol, M203 grenade launcher, or M249 Squad Automatic Weapon. Crews assigned to the M-60 machine gun and the .50 caliber machine gun are also required to fire for familiarization and qualify annually.

After extensive post-mobilization training, the marksmanship skills of roundout brigade soldiers with individual and crew-served weapons were comparable or higher than the predeployment skills of the one replacement brigade for which we have data. As shown in figure III.4, soldiers in the 48th Brigade were generally able to develop marksmanship skills that exceeded those of 1st Brigade soldiers. While comparable data was not available for the 155th Armor Brigade, the Inspector General reported that 99 percent of the 155th soldiers qualified on their individual and crew served weapons at their mobilization station. Also, the National Guard Bureau reported that all personnel in the 155th Brigade qualified on personal weapons during the brigade's annual training, just prior to mobilization.

**Appendix III  
More Collective Training Opportunities  
Resulted in Active Brigades That Were More  
Combat Ready**

**Figure III.4: Individual and Crew Served  
Weapons Qualification Results**



\*Qualification results for the 48th Infantry Brigade were after extensive post-mobilization training.

Note: Comparable data not available for the 197th Infantry Brigade because records were lost or destroyed while the brigade was in Southwest Asia.

# Active and Guard Brigade Equipment Shortages

Both the roundout brigades and the replacement brigades were short authorized equipment items when they were alerted for Operation Desert Storm. Reported shortages were primarily in the areas of nuclear/biological/chemical equipment, communications equipment, and night vision equipment.

Nuclear/biological/chemical equipment shortages were significant in both the replacement and roundout brigades. To a large extent, the shortages were a reflection of Army-wide shortages for these items. As shown in table IV.1, all types of units in the brigades reported significant shortages of nuclear/biological/chemical equipment.

**Table IV.1: Nuclear, Biological, and Chemical Equipment Shortages Just Prior to Alert**

Equipment Item	Replacement brigade units (Oct. 1990)				Roundout brigade units (July 1990)			
	IN	AR	FA	CS	IN	AR	FA	CS
Radiacmeter IM-93A-UD	293	254	35	51	362	262	81	44
Radiacmeter IM-174-PD	44	87	31	22	21	142	15	17
Radiac Set AN/PDR-27Q	4	8	8	9	2	97	5	5
Decontamination equipment	2	0	2	0	4	4	2	4
Chemical agent alarm	57	39	9	0	9	0	0	0

IN = Infantry

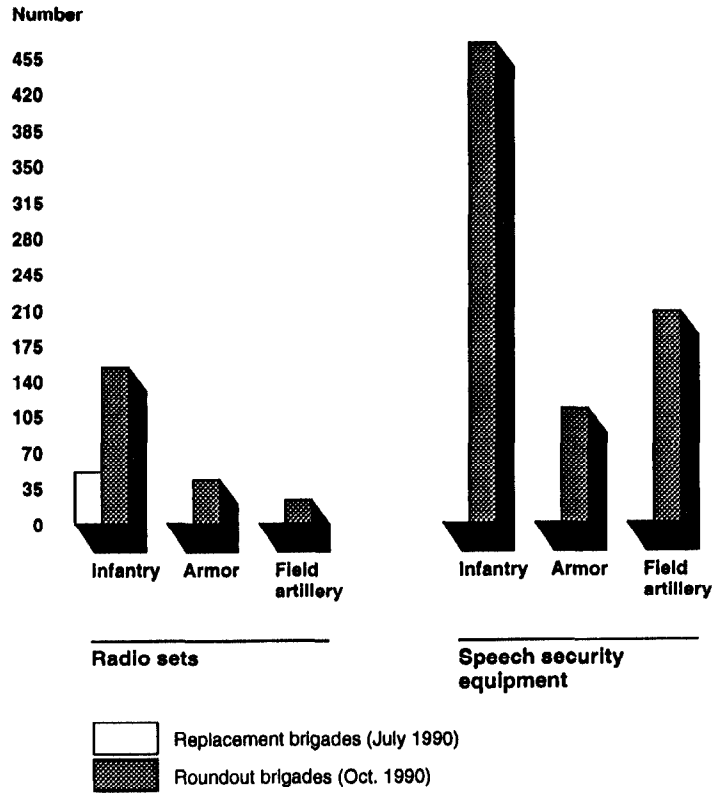
AR = Artillery

FA = Field artillery

CS = Combat support

Although the replacement brigades had some reported shortages of radios, the roundout brigades reported significant shortages of communications items, particularly radios and secure speech equipment as figure IV.1 shows.

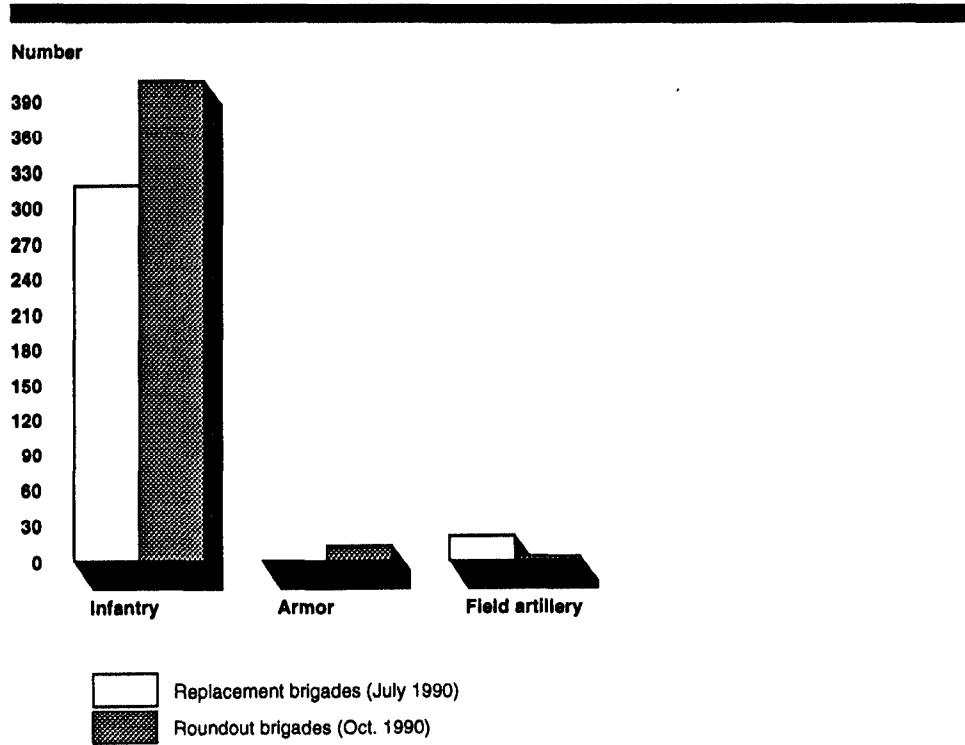
Figure IV.1: Communication Equipment Shortages Just Prior to Alert



Both the replacement and roundout brigades also reported shortages in night vision equipment as figure IV.2 shows. In some instances, the units had none of the items authorized by their table of organization and equipment .

Appendix IV  
Active and Guard Brigade Equipment  
Shortages

Figure IV.2: Night Vision Equipment  
Shortages Just Prior to Alert



# Comments From the Department of Defense



**FORCE MANAGEMENT  
AND PERSONNEL**

**ASSISTANT SECRETARY OF DEFENSE**

WASHINGTON, D.C. 20301-4000

**SEP 9 1992**

Mr. Frank C. Conahan  
Assistant Comptroller General  
National Security and International  
Affairs Division  
U.S. General Accounting Office  
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "ARMY TRAINING: Replacement Brigades Were More Proficient Than Guard Roundout Brigades," dated August 17, 1992 (GAO Code 393483/OSD Case 9155).

The DoD has reviewed the report and concurs without further comment. Needed technical corrections have been provided separately. The Department appreciates the opportunity to review the report in draft form.

Sincerely,



Christopher Jenn



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# Major Contributors to This Report

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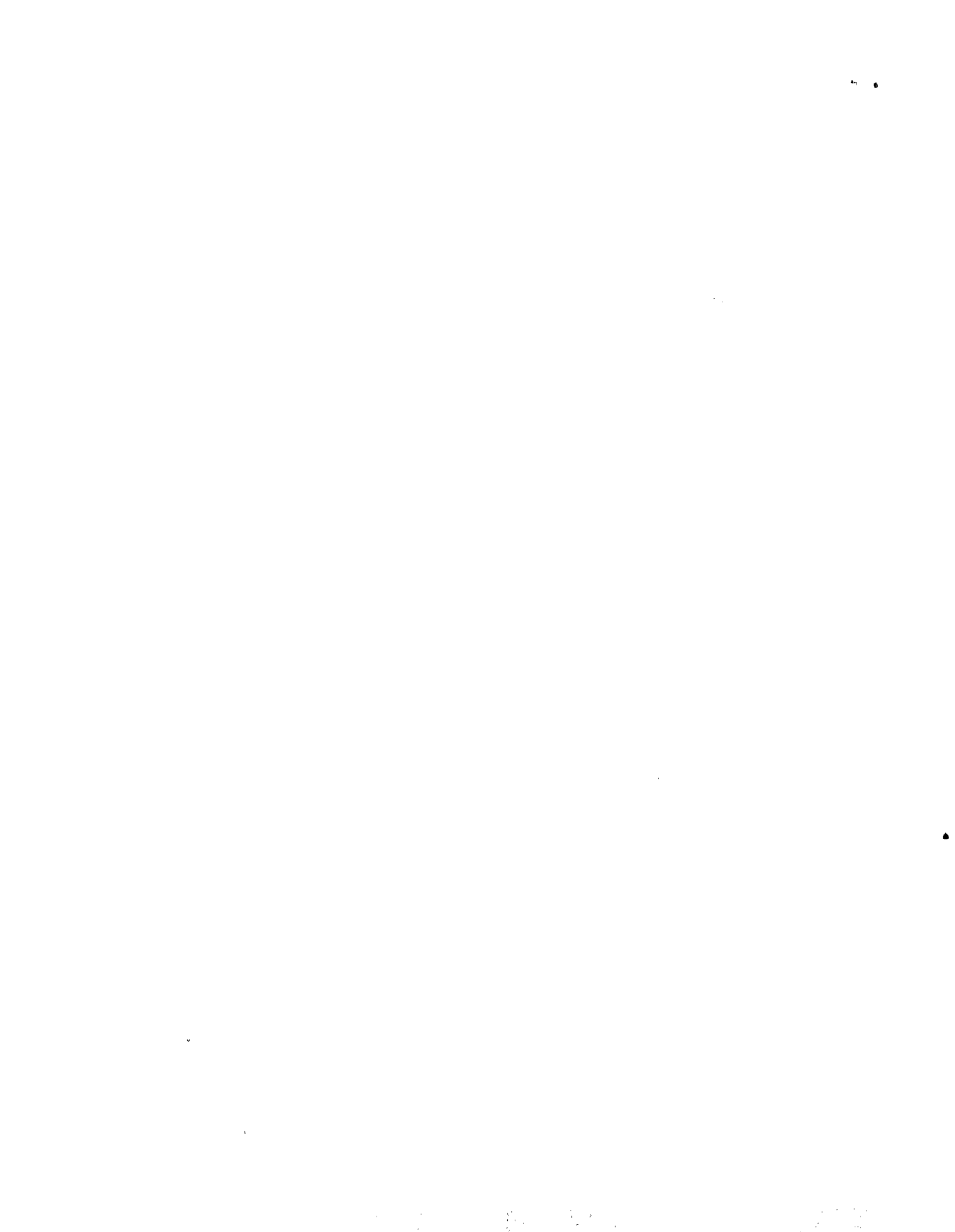
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