

UNITED STATES  
GENERAL ACCOUNTING OFFICE

76-412  
098232

JUL 26 1976



UNITED STATES  
GENERAL ACCOUNTING OFFICE



LM098232

Readiness Of First Line U.S.  
Combat Armored Units In Europe

Department of Defense

This report is an unclassified version of GAO's report LCD-76-412 (Revised), dated June 30, 1976. This report points out that limitations in personnel, equipment, and ammunition exist but units report they are substantially ready with minor deficiencies.

LCD-76-452

JULY 23, 1976

~~703471~~ 098232



UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

LOGISTICS AND COMMUNICATIONS  
DIVISION

B-146896

The Honorable  
The Secretary of Defense

Dear Mr. Secretary:

This report discusses the readiness of key armored and mechanized units in Europe and the problems concerning these high priority units. We offer recommendations which could improve their readiness and which could provide better information to higher headquarters about their combat capabilities.

This report was reviewed by Headquarters, United States Army, Europe (USAREUR), and Headquarters, Seventh Army. We have revised the report, where appropriate, according to their comments and proposed revisions. Several actions have been taken or were being taken by USAREUR to correct some of the problems discussed in this report, but additional actions are necessary at Headquarters, Department of the Army.

Please note that this report supersedes our June 3, 1976, report of the same title. This report was reissued because of changes required in the security classification applied by USAREUR. Twelve copies (control numbers 1-12) and 40 copies (control numbers 13-52) of the June 3, 1976, report were distributed to your office and to the Office of the Secretary of the Army, respectively. With the exception of copy number 28, which was returned to the General Accounting Office, all copies of the June 3, 1976, report should be destroyed upon receipt of this report.

In accordance with approval from your office, we are sending copies of this report to the House and Senate Committees on Government Operations, Appropriations, Armed Services and to the Joint Economic Committee.

This report contains recommendations which are set forth on pages 24, 36, 43, and 47. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House and Senate Committees on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with agency's first request for appropriations made more than 60 days after the date of the report.

01500  
01500  
7NF 01200

B-146896

If you or your representatives wish to obtain further details concerning any of the matters contained in this report, please contact Mr. Werner Grosshans, Associate Director, at 275-5897.

Sincerely yours,

*R. G. Rothwell*

*for* F. J. Shafer  
Director

C o n t e n t s

		<u>Page</u>
DIGEST		i
CHAPTER		
1	INTRODUCTION	1
	Warsaw Pact threat	2
	Move, shoot, and communicate	3
	Unit readiness reporting system	5
2	MISSION	7
3	OBSERVATIONS	10
4	PERSONNEL	11
	Combat units not assigned authorized crewmen	12
	Assigned crewmen do not have Army-desired skill levels	16
	Importance of well-trained crews	20
	Why personnel readiness problems were not shown in unit readiness reports	22
	Recommendations to the Secretary of Defense	24
5	EQUIPMENT	26
	Serviceability and reporting	26
	Example of conditions which limit combat performance	29
	Problems with Army serviceability checklists	33
	Impact on readiness reporting	35
	War reserve materiel	35
	Recommendations to the Secretary of Defense	36
6	AMMUNITION	37
	Shortages of basic load	37
	Shortages of serviceable ammunition to resupply VII Corps units	39
	Availability of stored ammunition	41
	Recommendations to the Secretary of Defense	43
7	UNIT READINESS REPORTING SYSTEM	44
	Recommendations to the Secretary of Defense	47

CHAPTER

Page

8 SCOPE OF REVIEW

48

ABBREVIATIONS

ALO authorized level of organization  
APDS-T Armor-Piercing, Discarding Sabot-Tracer  
ASP ammunition stock point  
ESC equipment serviceability criteria  
GAO General Accounting Office  
HEAT High Explosive Anti-Tank  
MOS military occupational specialty  
MTOE Modified Table of Organization and  
Equipment  
NATO North Atlantic Treaty Organization  
OJT on-the-job training  
USAREUR U.S. Army, Europe

## D I G E S T

The U.S. Army in Europe is expected to maintain a combat ready force to assist NATO allies in the defense of Europe should it be necessary. Tracked vehicles provide the mobility and much of the firepower for these Army units. GAO wanted to find out whether the tracked vehicles assigned to these units together with the people who operate them and the ammunition they use are ready to perform assigned missions. Units of one mechanized regiment and one armored division were selected for study.

### READINESS

Personnel, equipment, and ammunition problems existed but units continued to report they were substantially ready with minor deficiencies. Some of these conditions, such as equipment deficiencies, could have been remedied in a matter of days, possibly hours, through intensive maintenance actions, but many other conditions could not have been improved. (See pp. 11, 26, 31, and 37.)

### REPORTING PROBLEMS

Units are not required to report on the readiness condition of their ammunition. (See p. 37.)

The standards for computing and reporting personnel readiness in Army Regulation 220-1 have been relaxed to the point where units could almost always be reported as combat ready. (See p. 22.)

The Army reporting system provides for combining key combat personnel and equipment with other less critical, more numerous, and more ready unit resources and for applying judgmental factors by various levels of command. As a result, readiness ratings

at the regimental or divisional level are not always a reliable indicator of combat readiness. (See p. 44.)

#### RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

Recognizing that the Army is striving continuously to improve the management of equipment and logistics support for U.S. Forces in Europe, GAO recommends that the Army:

- Insure that combat units have full crews assigned for all tracked combat vehicles.
- Review, in conjunction with the Training and Doctrine Command and the U.S. Army in Europe, training programs conducted in the United States for crew members to assure that needed basic skills are acquired before assignment to Europe. This is especially important in view of general shortages of combat qualified E-5 to E-8 noncommissioned officers.
- Have the the U.S. Army in Europe aggressively follow up its training program as defined in its Training Directive, USAREUR Regulation 350-1. Training should be geared individually to those crew members that need it to make them fully combat qualified.
- Have the U.S. Army in Europe weigh unit access priorities to training areas according to identified needs and the units' importance to the general defense plans. Units should have the opportunity to continue the training until an acceptable number of crews meet minimum requirements.
- Pursue vigorously, with input from field units, the development and use of simplified equipment checklists to determine and report the serviceability and combat readiness of equipment. Areas should be

identified where maintenance personnel would be better qualified than crewmen to conduct tests and checks, and maintenance personnel should be directed to conduct these tests periodically.

- Have the U.S. Army in Europe identify unserviceable basic load ammunition at storage points in Europe and take the necessary action to rehabilitate or replace the defective ammunition.
- Have the U.S. Army in Europe, in conjunction with field commanders, develop procedures to insure that combat units have all their basic load ammunition readily available at all times.
- Have the U.S. Army in Europe and subordinate commands identify the need for materiel handling equipment as well as position this equipment where needed to speed the uploading of ammunition.

In view of problems not shown by the unit readiness reporting system, GAO recommends that the Army:

- Require that European divisions forward battalion level readiness reports to the U.S. Army in Europe along with the divisional consolidated report. This would give managers at higher levels more specific information on critical situations which are not now shown because of the averaging provision.
- Redesign the readiness reporting format so combat and support assets (personnel and equipment) are rated separately.
- Permit regimental and divisional commanders to make narrative comments on the ratings, as is done now, but require that overall ratings be strictly a compilation of those submitted by subordinate units.



--Require units to report the number of tracked combat vehicles which cannot be fully crewed to the U.S. Army in Europe level that can best deal with the problem.

--Incorporate basic load ammunition in unit readiness reporting. Readiness should measure or consider factors, such as:

1. Serviceable quantities on hand versus those required for initial combat operations.
2. Accessibility of ammunition areas measured in terms of (a) materiel handling and transportation resources available to meet mission uploading time frame and (b) success in achieving uploading exercises within mission time frames. Such exercises should be conducted periodically and be designed to create the minimum disruption of materiel and other resources. Where several units are to have access to the storage facilities, joint uploading exercises should be conducted to test coordination of unit planning.

We also recommend that the Secretary of Defense aggressively pursue the opportunities for greater use of cost effective simulators for combat tracked vehicle crews.

#### AGENCY ACTIONS AND COMMENTS

Discussions were held in January 1976 at U.S. Army in Europe headquarters with the Chief of Staff and various representatives regarding the contents of this report. Army officials indicated the following actions had been or were being taken for readiness and readiness reporting.

--The Commander in Chief of the U.S. Army in Europe sent a notice to field units indicating concern about proper assignments and full crews. He gave instructions emphasizing the need for full crews on all combat vehicles. Personnel from the Military Personnel Center, Europe, have been to

field units reviewing personnel problems and indications are that the situation noted in this report is improving.

--Command has also emphasized (1) maintenance and operability of equipment, (2) capability to move, shoot, and communicate, (3) ability to upload basic load ammunition, and (4) cross-training of the individual soldier.

--Command has continually increased the amount of readiness information available to the Commander in Chief. Currently, battalion unit readiness is reported directly to U.S. Army in Europe headquarters and is used to more effectively control readiness problems.

--The U.S. Army in Europe's major goal for 1976 is to sustain and improve combat readiness. Emphasis is to be on system discipline and dealing with personnel and equipment problems.

--A U.S. Army in Europe Training Directive has been published outlining training goals. New training aids have been received in theater which should aid the program. Formalized on-the-job training is being emphasized.

--The Department of Army is developing a "hands-on" testing program for combat arms to supplement other testing programs.

--The U.S. Army in Europe will incorporate actual uploading of basic load ammunition as part of its readiness testing program.

--Access to training areas is improving at both major training areas. For the first time there will be a brigade level training exercise this year.

--The U.S. Army in Europe is emphasizing budgeting of funds and materiel management to get the most value from each training dollar spent.

--The U.S. Army in Europe is actively pursuing the construction of new ammunition storage areas to meet recognized needs. Land constraints and NATO funding are the biggest problems.

--Followup work done at the units in November 1975 showed significant improvement towards attaining manning requirements.

Discussions with these officials convinced GAO that the U.S. Army in Europe is actively and positively pursuing many of the problems highlighted in this review.

CHAPTER 1

INTRODUCTION

Agc 01494

1 The U.S. Army, Europe (USAREUR), is expected to maintain a combat ready force to carry out operational tasks as assigned by higher headquarters and as warranted under our commitment to the North Atlantic Treaty Organization (NATO). To accomplish this mission the Army recognizes it must have trained personnel, equipment in top condition, fuel, ammunition, spare parts, and constant vigilance.

2 About 183,000 U.S. Army troops are assigned to the U.S. Army in Europe, with an annual operating budget of around \$1.3 billion. The troops are assigned under the Seventh Army in two Army corps--V and VII--and to various other smaller commands. The corps are made up of four and two-thirds divisions and two armored cavalry regiments.

The Seventh Army is essentially an armored, mechanized, nuclear-supported force which relies extensively on mobility through the use of tracked vehicles for reconnaissance, armor, and troop transportation. In case of war these units would be deployed across rivers and rolling hills and forested terrain toward the West German eastern border. They would provide the first line of defense in assigned sectors until reinforcements from other nations or from the United States are available.

As of December 1974 the fleet of Seventh Army mechanized tracked vehicles included:

	<u>Number of vehicles on hand</u>
Main battle tank M-60	DELETED
Sheridan M-551	
Armored personnel carrier M-113	
Reconnaissance vehicles M-114	
Self-propelled artillery M-107, M-109, M-110	
Total	

Tracked combat vehicles, such as the M-60 battle tank, M-551 armored reconnaissance vehicle, M-106A1 and M-125A1 self-propelled mortar carriers, M-109A1 and M-110 self-propelled howitzers, and M-113A1 TOWs (antitank weapon mounted on an armored personnel carrier chassis) provide the heavy ground firepower. Trucks generally transport spare parts, food, petroleum, lubricants, and ammunition necessary to support combat operations.

WARSAW PACT THREAT

The communist forces in Central and East Europe are organized under the Warsaw Pact. In addition to air and sea forces, the ground forces of the Warsaw Pact members total over 200 divisions, of which about 160 are Soviet. The Soviet Union has 31 divisions, armored and mechanized, permanently stationed in East Europe, with nearly 300,000 troops in East Germany and contingents of lesser size in Poland, Hungary, and Czechoslovakia. The U.S. Army believes Soviet ground forces are well trained and well equipped and are maintained in an advanced state of readiness.

[REDACTED]

DELETED

Under the latter, hostilities could begin in a matter of hours.

Facing the sector currently held by the U.S. Forces, the ground threat is estimated by USAREUR at [REDACTED]

DELETED

<u>Warsaw Pact member</u>	<u>Number of divisions</u>	<u>Type</u>
Soviet Union	[REDACTED]	DELETED
East Germany		
Czechoslovakia		
Total		

USAREUR believes that at the start of hostilities its units could be attacked by about [REDACTED] tanks, many of which are Soviet T-62 tanks supported by infantry and self-propelled artillery. In the sector to be defended by U.S. ground forces, the ratio of main battle tanks of the Warsaw Pact to U.S. tanks is about [REDACTED]

The Commander, U.S. Army Training and Doctrine Command, indicated in October 1974 that tank units can successfully engage the enemy against these odds by:

1. Recognizing the significance of increased firepower lethality.
2. Maximizing protective use of terrain.
3. Utilizing fire suppression.
4. Greatly improving combined arms teamwork.

Also the Army has drawn on facts obtained from recent battles in the deserts of the Middle East. Currently, the Army believes that:

--Long-range, high-velocity tank cannon and long-range, antiarmor missile systems dominate the modern battlefield. Anything they can see can be taken under fire and hit. Anything they can hit can be killed.

--Long-range, air defense cannon and missile systems dominate the air above the battlefield. They can effectively prevent forward fighting elements from receiving close air support; they severely limit operations of Army aircraft.

--The U.S. Army must learn to fight outnumbered and win. The tank ratios on the Golan Heights in October 1973 were not at all unlike those to be expected in a war in Central Europe.

#### MOVE, SHOOT, AND COMMUNICATE

Armored combat vehicles must be able to move, shoot, and communicate to perform their assigned missions.

Today's battlefields require extensive movement and maneuvering by combined armed forces. Such forces consist of tanks, armored personnel carriers, and supporting mobile artillery, mortars, antitank, and air defense weapons.

These forces must operate over wide areas in varying terrain. Movements of over 100 miles in short periods of time are not considered excessive. Once into an operating area, movement does not cease but becomes critical to the maneuvering of forces to enable them to engage the enemy

under the best possible conditions. This is essential for successful operations and for team survival.

Combat teams must be able to shoot fast first in a tank-antitank battle, particularly at antiarmor capable targets. Control and distribution of fire to destroy targets rapidly and save ammunition for the next engagement is essential.

Teams must communicate in controlling and reporting the battle as well as in maneuvering forces with precision, discipline, speed, and security if they are to defeat opposing forces in modern environments. Communications are done by hand and arm signals when possible, but teams rely heavily on radio communications when unit personnel are not in visual contact and when movement, fire control, and coordination are essential.

Armored forces are expected to capitalize on their mobility and firepower to force the enemy to fight at a time and place not of his choice. Enemy weapons which the force may encounter are not only present in larger numbers but are also highly effective. To overcome this disadvantage as much as possible, armored forces must utilize all natural cover and concealment afforded by the terrain. The team must make every effort to operate unseen.

While proper use of terrain affords protection from enemy weapons, the team must also actively counter them if it is to accomplish its mission. Due to the density, range, and effectiveness of present antiarmor weapons, operations cannot be effective unless these fires are suppressed. To do so when contact is expected, a team commander must insure that moving unit personnel are covered by other team personnel and that reinforcing fire from mortars, artillery, attack helicopters, and tactical air is provided as necessary and as available.

Each of the basic elements of the armored force should be assigned the job it does best. For example, tanks are best used to destroy enemy armored vehicles and other hard targets. Also, in support of mechanized infantry maneuvers, tanks suppress enemy fires. The mechanized infantry suppresses antiarmor fire for maneuvering tanks or may dismount to clear antiarmor defenses or to secure areas where they may be located. Tanks and armored personnel carriers can move together close to supporting fires and under carefully planned mortar and artillery fire to gain an objective.

Communications become increasingly important as contact with an enemy becomes more likely. Contact should be by the smallest unit element possible. This element must report the contact concisely and rapidly to give the force commander the best information possible. In turn, the commander must be able to communicate his plan for defeating the enemy force and to coordinate the operation until the objective is secured.

#### UNIT READINESS REPORTING SYSTEM

The U.S. Army constantly monitors the ability of its combat and other field units to perform the mission they are assigned.

This ability is measured quantitatively by comparing personnel, equipment and supplies, operational equipment, and training against standards assigned to various categories of units. Additionally, unit commanders are required to provide judgmental appraisals of the overall quality of these resources.

Data for each type of resource is submitted monthly by field units into a unit readiness reporting system. Differences between actual conditions and Army standards are noted by percentage of standards achieved and reported in terms of

- C-1: fully combat ready;
- C-2: substantially combat ready with minor deficiencies;
- C-3: marginally combat ready with major deficiencies severely limiting combat performance; and
- C-4: not combat ready, incapable of performing assigned mission.

Unit commanders compile this information into an overall unit readiness rating and can increase or decrease it somewhat as a result of their judgmental appraisal of unit quality; however, reasons for such change must be documented in the remarks section of their report. Divisions and armored cavalry regiments consolidate readiness ratings prepared at battalions or squadrons into one readiness rating for each of the elements and assign an overall readiness rating. Units not assigned to divisions or regiments generally report directly to higher headquarters. The divisions, regiments, and nondivisional units submit their readiness reports



3 to USAREUR which in turn submits them to the Department of  
4 the Army and the Joint Chiefs of Staff. The commanders use  
the readiness report data to monitor Army and command readi-  
ness, to identify readiness problems, and to analyze trends  
which may require a shifting of or additional resources.

20  
01470

5 Field units also submit equipment readiness data quar-  
terly to the U.S. Army Materiel Development and Readiness  
Command. The data is used to evaluate trends in equipment  
condition and related maintenance programs.

84

## CHAPTER 2

### MISSION

The readiness of Army units closest to a potential enemy is imperative because these units must delay or prevent a successful attack until other units or reinforcements can be brought in.

USAREUR has assigned the mission of delaying an enemy ground attack in the U.S. sector to [REDACTED] located about 1 hour from the international borders of Czechoslovakia and East Germany. The mission of

[REDACTED]

[REDACTED] These units, based upon their relative geographical positions, have to be ready for combat deployment anywhere from [REDACTED]. As warning time increases, so does the deployment time available to these units.

To evaluate the readiness of tracked vehicles, we selected units of the 2nd Armored Cavalry Regiment and the 1st Armored Division in the VII Corps. We evaluated personnel, equipment serviceability, and ammunition. These items are crucial to immediate deployment capability and combat performance.

[REDACTED]

[REDACTED] The regiment has three squadrons which have [REDACTED] tracked combat vehicles, including M-551 Sheridans and M-60 series main battle tanks.

The squadron visited during the review is located about 35 miles from the Czechoslovakian border and is responsible [REDACTED]

[REDACTED] This unit also has a peacetime mission of patrolling part of the Czechoslovakian border. [REDACTED]

[REDACTED]

[REDACTED] in the event of hostilities. This includes time to gather crews, issue rations, and other implements. If there is [REDACTED]

[REDACTED]

DELETED

DELETED

to its wartime position. From this position combat crews are to maintain sight of the enemy and radio information about the enemy and his location to the rear area. Besides keeping command channels apprised of the advance, combat crews in the unit are to delay the advance of enemy tracked vehicles.

DELETED

DELETED

CHAPTER 3

OBSERVATIONS

The units reviewed could have deployed for combat within the time frame allotted under the current USAREUR mission

DELETED

Some of the conditions, such as inoperational equipment, could have been remedied in a matter of days, possibly hours, through intensive maintenance action. While it may have been possible to obtain personnel working in other jobs to crew some of the equipment in an emergency, they would lack desired proficiency because they would not have practiced their skills.

DELETED

would have to be filled from other storage facilities. How long this would have taken is difficult to evaluate

DELETED

Commanders of these units plan to go into combat with the resources available at the time. Also, they believe that by coupling high morale and expediency to solve the above problems the units will give a good account of themselves. We believe these comments are creditable. However, we believe that any identifiable limitation which could be corrected would lessen the burden on the units in a crisis and thereby greatly improve their chances of achieving assigned missions.

The unit readiness reporting system which could best attract the attention of higher headquarters to these limitations failed to do it adequately.

CHAPTER 4

PERSONNEL

The unit's Modified Table of Organization and Equipment (MTOE) specifies the number of personnel authorized for each job and the skills each person should have to perform the job. Units are instructed to report their personnel readiness monthly by comparing numbers and skills of personnel in the unit to those stipulated in the MTOE.

Units within the 2nd Armored Cavalry Regiment and the 2nd Brigade of the 1st Armored Division did not have all the personnel they were authorized, and many of these shortages were in skills (Military Occupational Specialty (MOS)) stipulated for tracked combat vehicles.

DELETED

as stipulated in the MTOE and necessary for these vehicles to be effective fighting systems. These shortages also adversely affected the crewing of other tracked vehicles, such as the M-109A1, M-113A1, M-106A1, and M-125A1 because they did not have the correct number of personnel assigned to the crews. To make up for lack of experienced personnel, commanders said they were conducting extensive training. However, some of the training has been constrained by lack of funds and insufficient training grounds. Despite significant personnel shortages, unit commanders did not have available at that time established programs to train personnel who were available for making the transition from peacetime jobs to crewing a tracked vehicle for combat.

In addition to personnel shortages, DELETED DELETED of those personnel actually assigned to crews lacked the experience and skill levels stipulated by the MTOE for their crew positions. This was due to the Army-wide shortage of noncommissioned officers with combat MOSs. While some of the young, less experienced crew members may be more aggressive and perhaps capable of performing effectively in these crew positions, it is important that they receive training necessary so that they can handle these responsibilities. However, many of the crews failed to demonstrate an adequate level of proficiency during training tests, and these frontline crews did not have an opportunity to retake training tests because of the lack of training areas.

DELETED

DELETED

COMBAT UNITS NOT ASSIGNED AUTHORIZED CREWMEN

Units visited had an authorized level of organization (ALO) of 2, which indicated that they should have about 90 percent of all personnel required under the full MTOE. The level of organization was being increased to ALO 1, or the full MTOE during our review.

At ALO 2, the MTOE authorizes full crews (four men) to be assigned to each M-60A1 tank and each M-551 Sheridan. Personnel spaces not authorized at ALO 2 usually are support position or less important combat positions. For example, less than full crews are authorized for other tracked combat vehicles, such as M-125A1 mortar carriers, M-109A1 howitzers, and M-113A1 armored personnel carriers. Shortages of one or two crew members generally would not keep these vehicles from combat, but these shortages could affect performance. The degree to which effectiveness would be degraded would depend on the mission and the capability of available crew members.

DELETED

While less than full crews were authorized for other tracked combat vehicles, these were not crewed to the authorized level. The extent of authorized members of personnel assigned to crews is shown in the chart on page 14 for each type of vehicle reviewed at each organization.

Tracked vehicles were not crewed to authorized levels for several reasons. First, units had not received the total number of personnel authorized. Second, units were not provided sufficient numbers of personnel with the proper MOSS; therefore, units were not able to assign sufficient numbers of personnel to tracked vehicles on a full-time basis and at the same time perform other unit tasks requiring the same basic skills or knowledge.

Third, although units were confronted with overall personnel shortages and shortages of personnel with tracked vehicle MOSs, unit commanders did not have available at that time established programs to provide essential training on tracked vehicles to personnel filling other positions deemed to be less essential in time of combat.

At ALO 2, the 2nd Armored Cavalry Regiment's squadrons were authorized

DELETED

personnel assigned in February 1975.

Units of both the 2nd Armored Cavalry Regiment and the 2nd Brigade were experiencing shortages of personnel with MOS skills for operating many of their vehicles.

The chart below illustrates the personnel situation with MOSs required for M-551s and M-60A1s by one unit within the regiment.

Basic MOS	Personnel authorized for the entire unit at ALO2	Personnel authorized for M-551 and M-60A1 crews	Personnel assigned to unit	Personnel under(-) or over total unit needs (note a)
Armor crewman	DELETED			
Armored reconnaissance specialist				
Total				

a/Personnel assigned to unit less personnel authorized for the entire unit at ALO2.

Units within the 2nd Brigade also had shortages in the same MOSs. Throughout the entire 1st Armored Division they had DELETED percent of their armor crewmen and DELETED percent of their armored reconnaissance specialists.

Recognizing that units may be faced with personnel shortages, the Department of the Army suggests the use of available personnel to fill key positions in Department



<u>Unit and type of vehicle</u>	<u>Personnel authorized at AL02</u>	<u>Personnel assigned to crews regardless of MOS</u>	<u>Percent of authorized personnel assigned to crews (note a)</u>
-------------------------------------	---	--	---

DELETED			
---------	--	--	--

of the Army Pamphlet 525-10 entitled "Combat Readiness." This can be achieved through dual qualification and cross-training where personnel or skill shortages exist. Furthermore, commanders are encouraged to always have a designated understudy for each key position. Crewmen for tracked combat vehicles hold key positions.

At the time of our visit unit commanders did not have established programs to provide this training so that all vacant crew positions could be filled. Units generally treated each position in the organization as a full-time assignment and generally had not taken action suggested in the pamphlet.

Unit commanders should have identified personnel filling positions deemed less essential in time of combat so that they can be used as additional crews. These personnel should have been assigned to a crew position within a tracked vehicle for training and combat. It may be necessary for these personnel to perform their normal administrative or support duties in peacetime, but they would participate in combat-related training with fellow crew members. This approach may place an additional burden on unit personnel, but in view of personnel shortages and the critical combat missions of these units there are few other options except to cross-train their personnel to insure mission performance.

The units were revisited in November 1975. The Army had provided these units additional personnel. These additional personnel have made it possible for units to assign full crews to tracked combat vehicles on a full-time basis. However, because of the Army-wide shortage of personnel with the armored reconnaissance specialist MOS, units have received personnel with other MOSSs, primarily infantry MOSSs. Units have been instructed to provide on-the-job training to these personnel.

Additionally, USAREUR has developed and is implementing an improved training program for all combat units. The program is built around USAREUR Regulation 350-1 and for fiscal year 1976 is to sustain current levels and to improve and perfect what has already been accomplished.

The shortage of armored reconnaissance specialists is not expected to be rectified during fiscal year 1976. As of November 11, 1975, the Army expected to train only 3,268

of the 3,511 required armored reconnaissance specialists during fiscal year 1976. At the same time, the Army is overtraining in other skills as discussed in our report to the Secretary of the Army (FPCD-76-28, February 10, 1976). In our opinion, the Army should continue to strive to balance its training program with its manpower requirements.

ASSIGNED CREWMEN DO NOT HAVE  
ARMY-DESIRED SKILL LEVELS

The MTOE stipulates the skill--military occupational specialty--and the skill level, which is indicative of a soldier's rank and his years of experience, desired for each crew member of a tracked vehicle. For example, the MTOE states that M-551 and M-60A1 crew members are to have ranks ranging from 1st lieutenant to private first class. A typical M-551 or M-60 crew would be manned as follows.

Rank 1/

Commander	Staff sergeant, E-6
Gunner	Sergeant, E-5
Loader	Private 1st Class, E-3
Driver	Sergeant, E-5

All crew members in M-60 tanks are to have an armor MOS while only the gunner and driver are to have an armor MOS in M-551 Sheridans. Sheridan tank commanders and loaders are to have an armor reconnaissance specialist MOS. The MTOE requires greater MOS proficiency for the commander, gunner, and driver and a lower level for the loader.

Analysis of assigned combat crews within the 2nd Armored Cavalry Regiment and the 2nd Brigade and one field artillery battalion of the 1st Armored Division

DELETED

The following graph shows the number of vehicles of those included in our analysis which would not be fully crewed according to MTOE standards. The

1/Since the time of our review, MTOE requirements have been changed Army-wide to:

Commander	Staff Sergeant, E-6
Gunner	Sergeant, E-5
Loader	Specialist, Fourth Class, E-4
Driver	Private First Class, E-3

DELETED

predominant reason for the number of crews not meeting MTOE standard was that crew members were lower in rank and thereby lacked the experience stipulated by the MTOE. The Army has recognized a major shortage of noncommissioned officers, especially in the E-5 to E-8 categories.

Lack of experience does not necessarily mean the soldier cannot do the job, and furthermore it can be overcome through training.

DELETED

During annual tank gunnery training in the spring of 1975, DELETED M-551 and M-60A1 crews attempting qualification successfully met minimum requirements as shown below.

<u>Tracked vehicle</u>	<u>Vehicles in regiment</u>	<u>Vehicles fully crewed (note a)</u>	<u>Vehicles completing firing run</u>	<u>Crews meeting minimum scores</u>	<u>Percent of crews demonstrating qualifications (note b)</u>
M-551	DELETED				
M-60A1					
Total					

a/One additional M-551 and four M-60A1 combat crews were assigned to these vehicles after our visit and before the 2nd Armored Cavalry Regiment's tank gunnery training.

b/Number of crews meeting minimum scores divided by number of vehicles fully crewed.

An analysis of the experience of participating crew members indicated that

DELETED

Information was not available to explain the reason for the

DELETED

M-551 crewmen had the same MOS as crewmen for the M-114A1E1, command and reconnaissance tracked

vehicle, and have received their training in this vehicle. These vehicles are completely different, especially the armament systems. This situation has placed unit commanders in the predicament of teaching new arrivals fundamentals necessary for operating the M-551 before they can take their crews to tank gunnery. Currently, the Army is providing training on the M-551 to selected personnel as part of advanced individual training for armored reconnaissance specialists.

Although tank gunnery is only one portion of training, it is one of the most important. Getting first round hits in minimum time after target identification is a key to survival. Tank gunnery training is designed with this in mind. Yet these crews did not get a chance to rerun the qualification course until acceptable scores were attained because other units had been granted access to the training area.

The Army is adversely affecting the readiness of its front line units by sending replacements to Europe that have not been adequately trained as M-551 crewmen. This places unit commanders in the position of attempting to train crewmen to use their equipment, perform their peacetime surveillance missions, and be ready to enter combat at a moment's notice. Crewmen should be taught fundamentals before assignment to Europe. This should increase readiness. Part of the problem seems to be matching Sheridan-trained personnel with experience. Recently, an additional skill indicator has been awarded to Sheridan qualified crewmen which is intended to identify Sheridan-trained personnel for reassignment purposes. This should help provide additional Sheridan-qualified crewmen to Europe.

Another factor affecting readiness is

DELETED

In a letter to the Secretary of Defense dated February 26, 1976, we suggested that the Department of Defense investigate opportunities for greater use of simulator for tracked vehicles, including a crew simulator for tanks which could be used to qualify crew members. A cost effective simulator could be put to good use in Europe.

DELETED

on the ranges to develop their proficiency. These opportunities should be available immediately after qualification runs until an acceptable number of crews meet minimum requirements.

DELETED

USAREUR officials said that the skill levels of combat crews have improved considerably in recent months due to increased management emphasis. However, fund constraints still have an impact on what units can and cannot do to provide needed training and practice.

#### IMPORTANCE OF WELL-TRAINED CREWS

Long-range, high-velocity tank cannons and long-range, antiarmor missile systems dominate the modern battlefield. Today, anything that can be hit can be destroyed.

The 2nd Armored Cavalry Regiment has

DELETED

More specifically, a typical troop<sup>1/</sup> within the 2nd Armored Cavalry Regiment has the wartime mission of providing

DELETED

The troop's sector is a

DELETED

This

<sup>1/</sup>Generally a troop is equivalent to a company.

DELETED

troop, which is authorized [REDACTED] M-551 Sheridans and 4 crew members for each, would have had the necessary 4-man crews for [REDACTED] [REDACTED] crews had the desired MOS, skill level, and rank. The remaining crew members had the basic MOS but lacked the desired skill level and rank.

To perform this mission successfully, crews are expected to possess basic skills, such as

- thorough knowledge of vehicle;
- ability to perform routine maintenance;
- ability to transmit messages within and between tanks, aircraft, command posts, and artillery support;
- knowledge of enemy equipment for identification purposes;
- camouflage techniques;
- demolition techniques;
- ability to fire armament systems successfully; and
- knowledge of terrain.

Crews are expected to use these skills in conducting delay operations.

Squadron artillery, located behind the M-551 Sheridan, is to fire on the approaching enemy at maximum range. As the enemy approaches, Sheridan crews, located on the tops of wooded hills for good visibility but with avenues of escape, engage him with all available direct fire. Artillery fire is to continue during the bombardment. Intensity of the firing is to increase until the enemy is forced to deploy from his approach formation and defend or prepare a deliberate assault. When the enemy concentrates superior forces and threatens to close, Sheridan crews are to begin delaying to new positions in the rear. Crews are to maintain contact with the enemy and to move by bounds. Usually, contact with the enemy is maintained by crews covering the withdrawal of other crews. When new positions are established, the enemy is to be stalled and delayed again by forcing him to deploy and plan a deliberate



attack.

DELETED

As can be seen by the above, it is extremely important today for crews to possess skills essential to performing missions, surviving combat, and winning. We were unable to assess the ability of crews to perform most of the above skills because records of these skills did not exist for assigned crew members. Detailed records such as these are not required to be kept on each crewman or on the entire crew for a vehicle. We were able to obtain the results of tank gunnery, as discussed earlier.

WHY PERSONNEL READINESS PROBLEMS  
WERE NOT SHOWN IN UNIT READINESS REPORTS

Various Army echelons monitor and evaluate the readiness of subordinate units to determine which are fully combat ready and what is needed to improve the readiness of units below the desired state of preparedness. The desired state of preparedness is the authorized level of organization. Thus, units reviewed were expected to attain a C-2 readiness state. As long as units reported that they were meeting their level of organization, there seems to be little incentive for managers at headquarters level to look at the comment section of reports.

The fact that units did not have full combat crews for all tracked vehicles and had many crewmen who could not demonstrate minimum tank gunnery skills was not shown in the personnel readiness portion of readiness reports. This was due to the instructions in Army Regulation 220-1 which do not specifically require unit commanders to consider the above facts in determining personnel readiness ratings or to report these facts to higher headquarters.

We believe these problems should be indicated in readiness reports so managers at all levels can take corrective action or at least know of the relative risks they are forced to take by not providing the resources. These problems have a direct bearing on the units' ability to perform important missions, if needed. If a unit cannot perform planned tasks, units behind them must change or alter their war planning until such problems are corrected.

Units report personnel readiness to higher headquarters through readiness rating codes which range from C-1 to C-4,

with C-1 representing the highest state of readiness. For example, according to Army Regulation 220-1, a personnel readiness condition of C-1 indicates that the reporting unit has at least 95 percent of its required people and that at least 86 percent of these people are qualified to perform the duties of the position to which assigned. According to this regulation, personnel are to be considered qualified if the first three characters of any of their MOSs match the first three characters of the position in the MTOE. Further, individuals are to be considered qualified if they possess a substitutable MOS as outlined in Army Regulation 611-201. For individuals in an on-the-job training (OJT) status, unit commanders are required to judge the individuals' capability to perform satisfactorily. If the judgment is positive, the individual is considered qualified for the readiness computation. When unit readiness is affected by personnel shortages, units are to report these shortages by grade/skill level within MOS in the comment section of the report.

If units were instructed to compute the percentage of qualified personnel assigned to those vehicles reviewed by us (see p. 14) by comparing ranks and skills (MOS) possessed by crewmen to those stipulated in the MTOE, the 2nd Armored Cavalry Regiment would have derived about [REDACTED]

DELETED

personnel in crews possess the desired rank and skills to perform the duties to which assigned. Shortages of non-commissioned officers was the prime cause for these low percentages as well as shortages of personnel trained on the M-551 Sheridan.

If the 2nd Armored Cavalry Regiment would have computed the personnel readiness of their M-551 and M-60 combat crewmen on the basis of their qualifications as demonstrated at tank gunnery, they would have [REDACTED]

DELETED

The personnel readiness condition is computed by considering all the personnel in the unit. While this may indicate that personnel readiness is a problem, the

readiness rating does not indicate whether the problem is related to combat or support personnel. Both combat personnel and support personnel are necessary for accomplishing the mission, but without combat personnel there is little or no chance of mission accomplishment.

For these reasons we believe personnel readiness should be computed and reported separately for combat and support personnel. Furthermore, to highlight major combat readiness problems, provisions should be made for reporting the number of tracked combat vehicles that can be fully crewed by units. Proficiency of assigned crew members should be recorded and maintained so efforts can be concentrated on those who need training. Crew member proficiency also should be considered in readiness reporting.

Because of the massive forces facing European units, their readiness is essential for mission accomplishment. Tracked combat vehicles should be available to thwart the enemy. Crew members should be proficient to fight, although outnumbered, and win. If crews lack proficiency, they should be given an opportunity to improve their abilities through further practice on gunnery ranges depending on their relative importance in the general defense plan.

We believe the number of tracked combat vehicles that can be fully crewed along with crew member proficiency should be reported on readiness reports. This would enable Army planners to obtain a more accurate picture of the readiness state so corrective action can be taken or planned during peacetime.

#### RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

We recommend that the Army:

- Insure that combat units have full crews assigned for all tracked combat vehicles.
- Review, in conjunction with the Training and Doctrine Command and USAREUR, training programs in the United States for crew members to insure that needed basic skills are acquired before assignment to Europe. This is especially important in view of general shortages of E-5 to E-8 noncommissioned officers with combat MOSS.

- Have USAREUR aggressively follow up its training program as defined in its Training Directive, USAREUR Regulation 350-1. Training should be geared individually to those crew members that need to become fully combat qualified.
- Have USAREUR weigh unit access priorities to training areas according to identified needs and the units' importance to the general defense plans. Units should have the opportunity to continue the training until an acceptable number of crews meet minimum requirements.
- Require units to report the number of tracked combat vehicles which cannot be fully crewed to the USAREUR level that can best deal with the problem.

We also recommend that the Secretary of Defense aggressively pursue the opportunities for greater use of cost effective simulators for combat tracked vehicle crews.

## CHAPTER 5

### EQUIPMENT

Units are required to report the readiness condition of tracked vehicles, trucks, and communication and other types of equipment. Generally, unit readiness reports indicated to USAREUR and higher command levels that

DELETED

Most tracked vehicles inspected were

DELETED

We also noticed during our inspections of tracked vehicles that Army personnel at all levels were critical of the standards for checking vehicles. The Department of the Army has established equipment serviceability criteria (ESC) for each type of vehicle. This was established to measure the vehicles capability to operate for 90 days. Field personnel were displeased because some of the items included in the ESC do not affect the combat performance of the tracked vehicle. As discussed later in this chapter, these checklists were modified for our inspections to insure that critical items, which would affect vehicles' ability to move, shoot, and communicate, would be evaluated.

### SERVICEABILITY AND REPORTING

At each unit, vehicles were selected that were considered combat ready by the unit. Vehicles which were deemed not combat ready by the unit were not inspected. Furthermore, we included in our selection platoon sergeants, platoon leaders, and company commanders' vehicles if they were operational. These vehicles are important to the unit, because combat

operations are generally directed from them. These vehicles have additional communications equipment which enable command personnel to monitor two frequencies simultaneously and to transmit on different frequencies at the flick of a switch. This equipment is used mostly for command and control of battlefield operations.

Because of the past problems Army personnel had with the ESC standards, we discussed each item listed with senior level personnel, especially those in charge of maintenance, at each unit visited. We wanted to determine what they considered to be critical checks to uncover deficiencies which would directly affect combat operations.

The Command Maintenance and Evaluation Team, 1st Armored Division, inspected the vehicles. The team is staffed with specialized senior maintenance personnel who periodically evaluate combat equipment and counsel unit personnel. The inspection team used the established ESC for each vehicle. We observed the inspections and recorded and tabulated the results. We also measured the results using those items which were considered by Army personnel as directly affecting combat operations.

At the time of review, the 2nd Armored Cavalry Regiment, composed of 3 squadrons, was authorized [REDACTED] tracked combat vehicles. Each squadron was authorized 17 [REDACTED] M-60 series main battle tanks, [REDACTED] M-551 Sheridans, [REDACTED] M-113A1 armored personnel carriers, [REDACTED] M-106A1 mortar carriers, and [REDACTED] M-109A1 medium self-propelled howitzers.

To test the readiness of the 2nd Armored Cavalry Regiment, we selected one of the three squadrons.

The following table shows the number of tracked combat vehicles available to the unit to perform the mission and the number which we found were combat ready after checking the readiness of those mechanical, hydraulic, and electric items which could directly affect combat operations.

	<u>Vehicles available at unit</u>	<u>Vehicles combat ready</u>	<u>Percent combat ready</u>
M-60			
M-551			
M-113A1			
M-106A1			
M-109A1			
Total			

The Army's ESC would rate a much lower percentage of tracked combat vehicles as combat ready. For example, only DELETED of the M-551s would be rated combat ready as opposed to DELETED (Problems with ESC are discussed in detail on pp. 33 to 35.)

The communications problem was the greatest reason for vehicles being classified as not combat ready. We do not know whether the high percentage of communication problems are indicative of chronic equipment problems or of a lack of proper testing. We found that, in many cases, the problems were not known and hence were not being reported.

To work effectively, radios should be able to transmit from specific distances, usually several miles, depending upon the radio's capabilities and specifications. The unit had adequate resources to check the required distance. The checks require positioning a vehicle or a remote station several miles away with communication gear to test other systems against it. We suspect this was not always done. The unit commander indicated that he would reemphasize communications testing and maintenance in the future.

The 1st Armored Division has DELETED tracked combat vehicles distributed throughout its 3 brigades, a divisional artillery element, an armored cavalry squadron, and an air defense artillery element.

Inspection results are shown below for the brigade which will defend the terrain behind the unit visited in the 2nd Armored Cavalry Regiment.

Again, we checked the readiness of only those items on the vehicles which could directly impair combat operations.

	<u>Vehicles available within brigade</u>	<u>Vehicles combat ready</u>	<u>Percent combat ready</u>
M-60	DELETED		
M-113A1			
M-113A1 (TOW)			
M-114A1E1			
M-106A1			
M-125A1			
Total			

Defective communication systems again accounted for the greatest percentage of problems noted.

EXAMPLE OF CONDITIONS WHICH LIMIT COMBAT PERFORMANCE

On March 21, 1975, we inspected [DELETED] assigned M-60 series tanks at a tank company of the 2nd Brigade. These [DELETED] were considered to be combat ready by the company commander. [DELETED] of these vehicles could not meet ESC standards. Of these, [DELETED] were considered not combat ready for the following reasons.

<u>Vehicle number</u>	<u>Type</u>	<u>Problem(s)</u>
DELETED		



Vehicle  
number

Type

Problem(s)

DELETED

a/Vehicle not combat ready.

b/Item which directly affects combat performance.

c/Platoon sergeant's vehicle.

d/Platoon leader's vehicle.

Of the [REDACTED] found not combat ready, all had defective communication systems. One tank commander could not communicate with the driver of the tank because the intercom was inoperative. The intercom was used by commanders to give instructions to the tank driver and other crew members.

[REDACTED] vehicles had radios that could not transmit as required. [REDACTED] vehicles could not receive instructions from company and battalion commanders on the auxiliary receiver especially provided for that purpose. These receivers are in addition to the standard receiver-transmitter (radio) on a tank. They are mounted in company commander, executive officer, platoon leader, and platoon sergeant tanks to enable them to monitor two radio networks simultaneously.

The importance of the auxiliary receiver was demonstrated when we observed company tests conducted by the brigade. One of the tests was to assault and destroy a simulated enemy position. A tank platoon leader's auxiliary receiver was not functioning. He could not monitor the company network and simultaneously use his communication equipment to maneuver his platoon. The company commander ordered the platoon not to leave a wooded area where it was positioned at the time. The platoon leader did not receive the order because he was on the other network. The platoon leader moved his unit from the woods into an open area in accordance with a prearranged line of advance, while other platoons held their positions.

We were told that if this had been a real situation, the platoon which advanced would have been destroyed. "Aggressor" tank forces were in the area and had a clear shot at the platoon from concealed positions less than 1,000 meters away.

Some problems would take several days to correct

While some of the problems uncovered during our inspections could have been corrected immediately or within a day or two, others would have required longer. Using the units' daily deadline reports, we estimated the work days to repair; that is, how quickly vehicles could be made combat ready.

DELETED

As shown, within [REDACTED] DELETED of M-60s on hand would be operational, barring any new failures and assuming available spare parts.

A similar study for the M-551 showed that about [REDACTED]

[REDACTED] DELETED

We recognize that in an emergency the unit would attempt to repair all vehicles by shifting maximum effort to maintenance.

### PROBLEMS WITH ARMY SERVICEABILITY CHECKLISTS

Checklists are used to determine equipment serviceability and the results are put into the readiness reports. Even if the crew members followed required testing and checking, the combat readiness of these vehicles still would not be reported accurately. Army checklists include items that can result in vehicles being reported not combat ready which, although of importance, do not immediately affect combat readiness. [REDACTED]

[REDACTED] DELETED

[REDACTED] tanks in the 1st Armored Division's Brigade were not combat ready. Only 35 items directly related to immediate combat performance are considered combat ready. The Army checklists are complicated, difficult to understand, and can cause the readiness condition of these vehicles to be reported improperly, as discussed below.

Department of the Army Technical Manual TM 9-2350 215-ESC, March 15, 1973, lists the items to be checked for automotive, armament, and fire control of the M-60 and M-60A1 tanks. Other technical manuals are used for the communication checks, depending upon the type of radio installed. There are 49 checks to be made by crew members for automotive, armament, and fire control items. Of these 23 are critical checks which directly relate to the vehicle's ability to move and shoot.

Some checks could result in an M-60 tank being reported not ready when in fact it is combat ready. For example, a vehicle is rated not ready if the engine oil temperature or pressure gauge or transmission oil temperature or pressure gauge are missing or not functioning properly as shown by [REDACTED] DELETED on page 30. Army officials recognize the importance of gauges to monitor various functions; however, they believe the fact that these gauges are inoperative or missing would not hinder their ability to take the vehicle into combat.

Some required checks are complicated; for example, the serviceability of the track on the tanks. A tank is to be judged not ready if there are three or more dead shoes (sections of track out of normal position) or any broken shoe or pin, 25 percent chunking on one-half of the vehicle track, one or more shoes worn to the point where the metal tube is showing, one or more missing wedges, or missing center guide or end connector. While these checks may be proper from a maintenance viewpoint, they require the ability to relate a number of conditions and from them derive a conclusion. Army personnel believed that a criterion to report a tank not combat ready if it had three dead shoes in a row or any broken shoe or pin would be much simpler and more realistic.

Department of the Army Technical Manual TM 9-2350-230-ESC, May 23, 1969, contained 57 items to be checked on the M-551 Sheridan. Like the checklist for the M-60 and other tracked vehicles, the checklist excludes communications. Twenty-five of the 57 items to be checked in the automotive and armament-fire control areas were considered critical to combat readiness.

Army officials pointed out that several of the required checks in the manual are not critical but can cause a vehicle to be reported not ready. For example, a vehicle is to be rated not ready if one item is missing or if there is evidence of leaking or deterioration in the exhaust system. Again unit officials recognize the importance of this check. However, they point out that in a decision to deploy, this would have no bearing. While these items may be good guides for maintenance purposes, their impact on readiness is questionable.

Commanders generally do not rely on the results of ESC reports. Instead the commanding officers at the units we visited carried a notebook listing the number of vehicles that were combat ready and not combat ready, generally based on "deadlined" vehicles in shop for maintenance.

We understand that field units have been dissatisfied with the ESC for many years, and this is shown in a U.S. Army Armor School Study on Army Maintenance System Simplification conducted between August 1971 and August 1972. The study recommended eliminating the ESC and replacing it with a more simple and meaningful system keyed to the operator's manual for the particular piece of equipment. At the time of our field work, the study's recommendations were still under review by the Department of the Army.

In our opinion adoption of the recommendations in the study would alleviate many of the problems in equipment reporting, assuming field personnel would perform required tests and checks. These recommended actions would also make it easier for the crew members to understand what they are supposed to do when checking the readiness of their vehicles. That the ESC is not currently doing the job is in part illustrated by the fact that commanders in the field do not rely on it.

#### IMPACT ON READINESS REPORTING

Because of the problems noted with the ESC checklists, we believe the probability of an error in reporting combat readiness is considerably increased. As a result, maintenance problems may go unreported or may be understated. Should a crisis arise, this may result in a large demand for maintenance services.

DELETED

#### WAR RESERVE MATERIEL

War reserve tracked vehicles in Europe were reduced substantially from 1973 through 1975 to meet foreign military sales commitments. Below is the status of tracked vehicles in reserve as of March 31, 1975.

<u>Type</u>	<u>Required</u>	<u>Theater on hand</u>	<u>Percent filled</u>
<u>Theater reserves</u>			

DELETED

As shown,

DELETED

DELETED

These organizations have DELETED M-60s and DELETED M-551s. This shortage in war reserves is in addition to the unit readiness problems discussed earlier.

DELETED

We recognize that the U.S. Army and the Congress are aware of the shortages of theater reserves. We do not know the extent to which the impact of these shortages on unit readiness has been evaluated and what solutions have been proposed.

In any event, these shortages place an ever greater premium on the adequate and full use of those resources available to active units in peacetime and on quality of personnel, equipment, and training these units should have if they are to minimize potential losses.

#### RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

We recommend that the Army pursue vigorously, with input from field units, the development and use of simplified equipment checklists to determine and report serviceability and combat readiness of equipment. Areas should be identified where maintenance personnel would be better qualified than crewmen to conduct tests and checks, and maintenance personnel should be directed to conduct these tests periodically.

CHAPTER 6

AMMUNITION

The Army in Europe requires that a complete basic load of conventional (nonnuclear) ammunition be available to units at all times. The basic load is to enable units to engage the enemy and to sustain operations until additional amounts of ammunition can be supplied from war reserve stocks prepositioned within corps sectors. Basic load and reserve main gun rounds for combat vehicles are to be stored at prepositioned stock points.

Units visited during our review

DELETED

SHORTAGES OF BASIC LOAD

The

DELETED

The table below shows the types and amounts of these rounds not available.

DELETED



The M-551 is one of the key tracked combat vehicles available to the 2nd Armored Cavalry Regiment. Any reduction in ammunition directly affects the units' ability to sustain combat. The M-551 Sheridan is armed with two types of ammunition, one of which is the Shillelagh missile. The Shillelagh is accurate and with good visibility gives the Sheridan a range advantage over enemy tanks.

At the time of our visit to the armored cavalry unit, inspectors were performing annual serviceability inspections of the Shillelaghs. The inspections were about 50 percent completed. The inspectors said that they had been finding about DELETED of the missiles unserviceable. A unit official said that after the inspection was completed, the unit would request an exchange of their unserviceables. Officials said this process takes about 60 days on the basis of past requisitions to fill shortages in their basic load. USAREUR officials, however, pointed out that basic load ammunition has priority in Europe, and the unit should be able to obtain serviceable rounds in DELETED. DELETED Apparently, unit officials were not aware of this.

USAREUR logistics personnel were concerned with this situation and indicated they would immediately determine how widespread the problem was. They agreed such situations directly affected readiness and should be corrected.

The M-109A1, 155 mm. self-propelled howitzer, provides direct fire support and reinforcing fire. The howitzer is to set up behind the battle lines and is to fire artillery shells, smoke, or illuminating rounds at designated targets in the battle area. Percussion primers and fuzes are necessary to fire these rounds.

DELETED

DELETED Smoke rounds for the howitzer also are necessary. Smoke is used to camouflage offensive and defensive operations.

Among the key weapons an armored division has to deploy, if need be, against the Warsaw Pact forces are the M-60 and M-60A1 battle tanks. The U.S. Army teaches that the most effective antitank round carried in the tank is the Armor-Piercing, Discarding Sabot-Tracer (APDS-T). At the divisional unit visited, DELETED of these rounds on hand were unserviceable--they could not be fired. The unit had excess High Explosive Anti-Tank (HEAT) rounds

available to fill this shortage. These rounds are part of the prepositioned war reserves. [REDACTED]

[REDACTED]

DELETED

SHORTAGES OF SERVICEABLE AMMUNITION  
TO RESUPPLY VII CORPS UNITS

Each Corps is supposed to have ammunition supplies (basic load plus prepositioned war reserves) within its sector that will sustain them through at least [REDACTED] DELETED [REDACTED] of combat. This ammunition is to be stored at prepositioned stock points.

[REDACTED]

DELETED

USAREUR is well aware of problems in the ammunition area. One of the biggest problems it faces is a lack of available land space to construct new storage areas. Current stock points are not capable of storing total requirements for corps elements. Consequently, corps elements will have to rely more on wartime ammunition stock points (ASPs), which will have to be established at the earliest possible time in an emergency. ASPs are to receive ammunition from depots located behind the Corps areas. [REDACTED]

[REDACTED]

DELETED

The table on the following page shows the extent of shortages and unserviceable ammunition in VII Corps Pre-Stock Points as of April 1975.

Rounds at Prepositioned  
Stock Points for VII Corps

<u>Type of vehicle and ammunition</u>	<u>Rounds re- quired for basic load and war reserves</u>	<u>Service- able rounds on hand</u>	<u>Unservice- able rounds on hand (note a)</u>	<u>Percent of required service- able rounds on hand</u>
---	--	---	--	---

DELETED

Officials at the 1st Armored Division and VII Corps could not readily tell us whether there was sufficient serviceable ammunition at designated storage locations for all their tracked vehicles. They depend upon the 84th Ordnance Battalion, who manages such stocks, to have sufficient serviceable ammunition in place to meet their needs. An official at VII Corps said that availability data could be compiled from monthly reports provided by the 84th Ordnance Battalion but that they do not do this because of the extensive time required to do it manually. He also stated that action had been taken at VII Corps to develop an automated report showing the number of rounds required and on hand at designated locations. However, this report is not intended to indicate the serviceability of rounds on hand. The more detailed monthly reports from the 84th Ordnance Battalion do indicate serviceability. In any case, both serviceable and unserviceable ammunition are stored at the same locations. We believe, and Army officials agree, that unserviceable ammunition could therefore inadvertently be issued as serviceable during an actual uploading.

#### AVAILABILITY OF STORED AMMUNITION

The 60th Ordnance Group's 84th Ordnance Battalion is responsible for managing ammunition stored at prepositioned stock points. The ordnance battalion is to insure that the right quantities of serviceable ammunition are stored where each corps wants it within allowable explosive and storage limitations.

Basic load ammunition for several units is usually stored at the same prepositioned stock point. Access roads leading to stock points are usually few and narrow, making two-way traffic impossible. This makes it a necessity that the priorities of access to the site be agreed on in advance for a unit to obtain its ammunition expeditiously. Furthermore, units must develop an uploading plan to be able to get their ammunition in the least amount of time.

Officials who had monitored several ammunition uploading exercises said that many units did not have a good uploading plan developed at the time of the exercises as evidenced by problems and confusion. Units, however, took corrective action, according to USAREUR officials. The brigade we visited in the 1st Armored Division had the same problems as other units with their ammunition uploading plans.

DELETED

Because of the limited access to the storage site, the units cannot drive their tanks into the storage site, but instead they use trucks to haul the ammunition from the storage site to an assembly area. Loading priorities had been established within the subordinate units. There were agreements on the number of men each unit would provide for ammunition uploading and the number of trucks that each unit would furnish.

Not enough banding cutters were available for each bunker crew to cut the banding around the boxes of ammunition. The brigade was authorized only three sets, even though there were nine ammunition bunkers. Another item to expedite ammunition loading was conveyors. None of the bunkers at the site had conveyors.

The brigade does not have a set of keys to the ammunition bunkers. This is standard practice throughout Germany. Since the 84th Ordnance Battalion is responsible for the ammunition in the bunkers, it wants to maintain control over access. To get the keys as close as possible, the battalion designated its 2041st Labor Service Company as control for access to all the bunkers. The personnel with the key for the site we visited were about 1 hour away. This system could delay entry into the bunkers.

Brigade officials said that it would take them DELETED DELETED to upload their basic load ammunition, but we believe this was questionable at the time of our visit.

Many ammunition storage locations for VII Corps units are DELETED

DELETED

expect this situation to improve with the NATO-funded ammunition storage locations to be built in the near future.

Many of the problems related to ammunition have already been recognized by higher headquarters and action has been taken or is planned to correct the deficiencies in this area.

#### RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

We recommend that the Secretary of the Army be directed to pursue the following suggestions which should improve readiness of ammunition for units under the command of USAREUR.

--Identify unserviceable basic load ammunition at storage points in Europe and take the necessary action to rehabilitate or replace the defective ammunition.

--In conjunction with field commanders, develop procedures to insure that combat units have all their basic load ammunition readily available at all times.

--Subordinate commands should identify the need for materiel handling equipment as well as position this equipment where needed to speed the uploading of ammunition.

We also recommend that the Secretary of the Army be instructed to incorporate basic load ammunition in unit readiness reporting. Readiness to be reported should measure or consider factors, such as:

--Serviceable quantities on hand versus those required for initial combat operations.

--Accessibility of ammunition areas measured in terms of  
(a) materiel handling and transportation resources available to meet mission uploading time frame and  
(b) success in achieving uploading exercises within mission time frames. Such exercises should be conducted periodically and be designed to create the minimum of disruption of materiel and other resources. Where several units are to have access to the storage facilities, joint uploading exercises should be conducted to test coordination of unit planning.

## CHAPTER 7

### UNIT READINESS REPORTING SYSTEM

The Army recognizes that unit readiness reports should accurately show the readiness condition of reporting units. In fact, the Army stresses accuracy in the instructions in Army Regulation 220-1 for preparing the report.

As pointed out earlier on pages 22 to 24 and 33 to 35, the input data to the report is not always accurate because of the lack of firm standards by which to measure personnel and equipment readiness. Even if the input data were accurate and adequately reported, the true readiness position of subordinate units is not revealed to higher headquarters. This is caused by flaws inherent in the reporting system as directed by Army Regulation 220-1.

--At unit level, combat assets, such as tanks, without which missions cannot be performed, and support assets, such as trucks, without which missions are impaired, are consolidated or averaged to prepare the units' overall equipment readiness rating. Thus a situation could occur where many of the critical vehicles in a unit are not combat ready; and yet because of an abundance of other types of vehicles which are combat ready, the unit is classified as ready.

--At regimental and divisional level, the reports of subordinate units are consolidated into a single readiness rating for the regiment or division, and the unit readiness reports are not forwarded to USAREUR. Further, the consolidated readiness rating does not necessarily represent a mathematical averaging of units' ratings but rather reflects the regimental or divisional commander's exercise of judgment as to the organization's overall readiness.

Reports of the 1st Armored Division and the 2nd Armored Cavalry Regiment serve to illustrate

DELETED

As shown below, [DELETED] of [DELETED] armor, infantry, field artillery, air defense artillery, and cavalry units reported to the 1st Armored Division in March 1975 that their overall readiness posture was [DELETED]. The other [DELETED] units rated their readiness as [DELETED]. The 1st Armored Division submitted an overall readiness evaluation of [DELETED] to USAREUR and the Department of the Army. As indicated, this situation prevailed for several months.

Reporting unit	Reported overall readiness condition		
	January 1975	February 1975	March 1975

[DELETED]			
-----------	--	--	--



This should not be construed to mean that field commanders are not reporting properly. The real problem is the constraints placed on the reporting system by Army Regulation 220-1. Commanders are reporting themselves in accordance with the regulation, but because of deficiencies in the system, their readiness problems are not highlighted.

A USAREUR headquarters official said that headquarters are well aware of the distortions created by the division's consolidated readiness report. In fact, there was a discussion at the headquarters concerning USAREUR's recommending to Headquarters, Department of the Army, that individual unit readiness reports be submitted directly through reporting channels. USAREUR officials decided, however, not to make this recommendation. USAREUR's position was that the commanding officer's judgment plays an important role in evaluating the state of readiness.

Army Regulation 220-1 instructs units to determine and report the readiness condition of all their personnel and all of their equipment in a consolidated fashion. Units, however, are composed of combat assets (i.e., tracked combat vehicles and their crew members) and support assets to provide cargo hauling capability, maintenance, and administration to unit personnel. One of the 2nd Brigade units had [REDACTED] DELETED [REDACTED] or almost as many trucks as tracked vehicles. It is possible to have all [REDACTED] DELETED [REDACTED] trucks ready and only [REDACTED] DELETED [REDACTED] tracked vehicles ready, but the unit could still report C-1. The equipment status readiness condition (C-rating) is computed by determining the percentage of reportable MTOE required equipment that is ready according to equipment serviceability checks. Therefore, if [REDACTED] DELETED [REDACTED] trucks and tracked vehicles are determined ready and the unit is required to have [REDACTED] DELETED [REDACTED] according to their MTOE, 90 percent of the equipment being evaluated would be considered combat ready and C-1 would be reported. Actually, it would be possible for this unit to have fewer than [REDACTED] DELETED [REDACTED] tracked vehicles ready and still report C-1 if the other items included in the computation of equipment status readiness rating were judged combat ready. Conversely, this unit could also be rated C-1 with all of its combat tracked vehicles ready and many of its support trucks inoperative. If the inoperative support trucks affect the ability of the unit to resupply its combat tracked vehicles with additional ammunition, for example, this condition could also impair mission performance, but

usually after contact has been made with the aggressor. It is obvious that consolidated reporting does not disclose imbalances of the type just described. Similarly, the consolidation of subordinate units when reporting readiness of divisions does not disclose possible significant deviations of individual units from the overall division ratings.

In our opinion, separate reporting of combat and subordinate units and of combat and support assets would provide commanders at higher echelons vital information. It would, for example, disclose problems occurring at units and would pinpoint the unit having the problem. By identifying the problem and the unit affected, the Army could better evaluate the risks of mission performance.

In June 1975 the Army issued a revised Army Regulation 220-1. The Army cautioned commanders to exercise judgment in applying unit readiness ratings across the board for personnel and equipment. The Army further cautioned against showing a high degree of readiness when lacking key personnel or critical equipment. While the Army recognizes this possibility under the current system, we believe that the system should be changed to show the extent of these very problems so corrective action can be taken.

#### RECOMMENDATIONS TO THE SECRETARY OF DEFENSE

We recommend that:

- Divisions forward battalion level readiness reports to USAREUR along with the divisional consolidated report. This would give managers at higher levels more specific information on critical situations which are not now shown because of the averaging provision.
- The Secretary of the Army redesign the readiness reporting format so combat and support assets (personnel and equipment) are rated separately.
- The Secretary of the Army permit regimental and divisional commanders to make narrative comments on the ratings, as is done now, but require that overall ratings be strictly a compilation of those submitted by subordinate units.

## CHAPTER 8

### SCOPE OF REVIEW

We focused our audit on the readiness of tracked combat vehicles because of their importance to unit mission performance. We evaluated the number and qualifications of combat crews, condition of equipment systems, and the amount of serviceable ammunition available for these vehicles at selected units within VII Corps in Europe.

Discussions were held with appropriate Army officials in theater, and relevant records were reviewed, analyzed, and scheduled. Further, we observed several training exercises involving units selected for review.

Principal organizations and locations visited in Germany were:

- Headquarters, U.S. Army in Europe (USAREUR) and Seventh Army, Heidelberg.
- Headquarters, V Corps, Frankfurt.
- Headquarters, VII Corps, Stuttgart.
  1. Headquarters, 2nd Armored Cavalry Regiment, Nuremberg.
  2. Headquarters, 1st Armored Division, Ansbach.
- U.S. Army Training Center, Grafenwoehr.
- Headquarters, 84th Ordnance Battalion, Kaiserslautern.

Copies of GAO reports are available to the general public at a cost of \$1.00 a copy. There is no charge for reports furnished to Members of Congress and congressional committee staff members. Officials of Federal, State, and local governments may receive up to 10 copies free of charge. Members of the press; college libraries, faculty members, and students; and non-profit organizations may receive up to 2 copies free of charge. Requests for larger quantities should be accompanied by payment.

Requesters entitled to reports without charge should address their requests to:

U.S. General Accounting Office  
Distribution Section, Room 4522  
441 G Street, NW.  
Washington, D.C. 20548

Requesters who are required to pay for reports should send their requests with checks or money orders to:

U.S. General Accounting Office  
Distribution Section  
P.O. Box 1020  
Washington, D.C. 20013

Checks or money orders should be made payable to the U.S. General Accounting Office. Stamps or Superintendent of Documents coupons will not be accepted. Please do not send cash.

To expedite filling your order, use the report number in the lower left corner and the date in the lower right corner of the front cover.

**AN EQUAL OPPORTUNITY EMPLOYER**

UNITED STATES  
GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300

POSTAGE AND FEES PAID  
U. S. GENERAL ACCOUNTING OFFICE



**THIRD CLASS**