

CHAPTER 1

Mobility on the Battlefield

THE AIRLAND BATTLE CHALLENGE

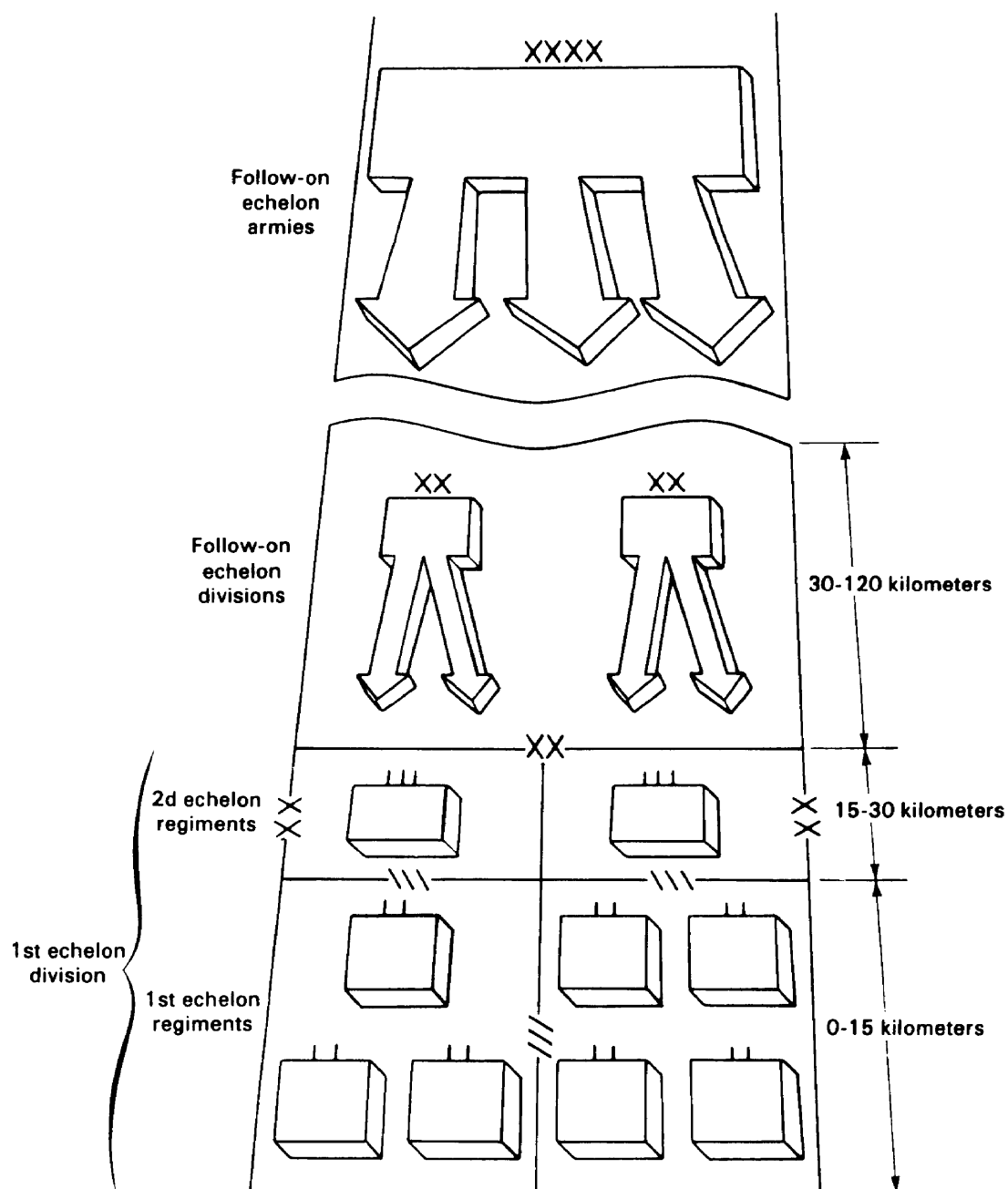
AIRLAND BATTLE DOCTRINE

AirLand battle doctrine, described in FM 100-5, is the Army's "how to fight" doctrine. It applies to deployment and operation of US forces at and between two battlefield extremes—combat areas without existing support bases and lines of communication (LOC) to combat areas where these features exist.

The US forces must be prepared to fight under the most severe of these environments as well as under conditions created by terrorism, unconventional warfare, or minor conventional conflicts. To win the next war, US forces must be able to move decisively in

all directions without loss of momentum. They must also analyze and acquire targets quickly and precisely to maintain this momentum. To do this, proper mobility planning is essential. This need for planning becomes evident when comparing the expected strength of Threat to friendly forces. If Warsaw Pact or Soviet-type forces are involved, Threat strength may be superior in terms of personnel and equipment. This superiority would permit the enemy to keep a significant portion of its combat elements out of the battle and provide a large degree of flexibility (figure 1-1 on page 1-2).

The AirLand Battle Challenge	1-1
Threat Countermobility Activities	1-4
Mobility Requirements	1-9

FIGURE 1-1. THE FOLLOW-ON ECHELON THREAT

THE AIRLAND BATTLEFIELD

AirLand battle doctrine is based on tactical planning for the use of conventional as well as chemical and nuclear weapons. Massive concentrations of troops and equipment will allow penetrations by both forces. Combat can be expected across the entire depth of the air and land battlefields (figure 1-2). The distinction between rear and forward combat zones will be blurred. Success will depend on the coordinated efforts of personnel and equipment in combined arms teams as well as a close and effective relationship between air and land forces. Winning or losing battles will be based on how well the combat power of our forces, including combat support and combat service support elements, is synchronized. In particular, commanders must know how to best use support units to enhance the combat power of their maneuver units.

TACTICS

The battle in depth should delay, disrupt, or destroy the enemy's uncommitted forces and isolate the enemy's committed forces so they

may be destroyed. The deep battle is closely linked with the close-in fight. The battle in depth will give friendly forces additional time to win the close-in conflict before follow-on Threat forces enter the battle. The deep battle attack is made by using long-range weapons, to include electronic warfare (EW) systems, in combination with counterattacks, raids, and ambushes. The three types of combat offensive actions may be used at the same time:

- Army aviation and Air Force missions will locate, harass, and destroy follow-on echelon enemy forces.
- Artillery-delivered munitions and mine-field will delay and disrupt enemy movement.
- Counterattacks will be executed into the enemy's follow-on echelons (figure 1-3 on page 1-4). Thus, mobility of friendly forces takes on additional importance.

FIGURE 1-2. AIRLAND BATTLEFIELD CHARACTERISTICS

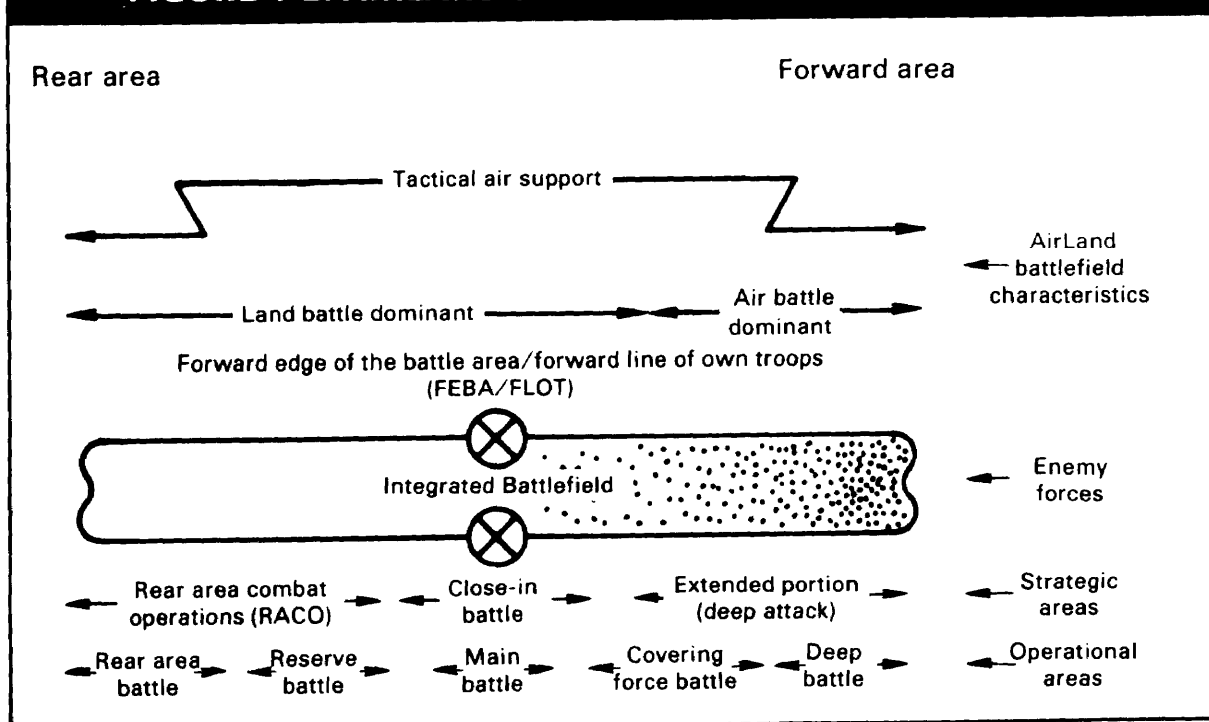
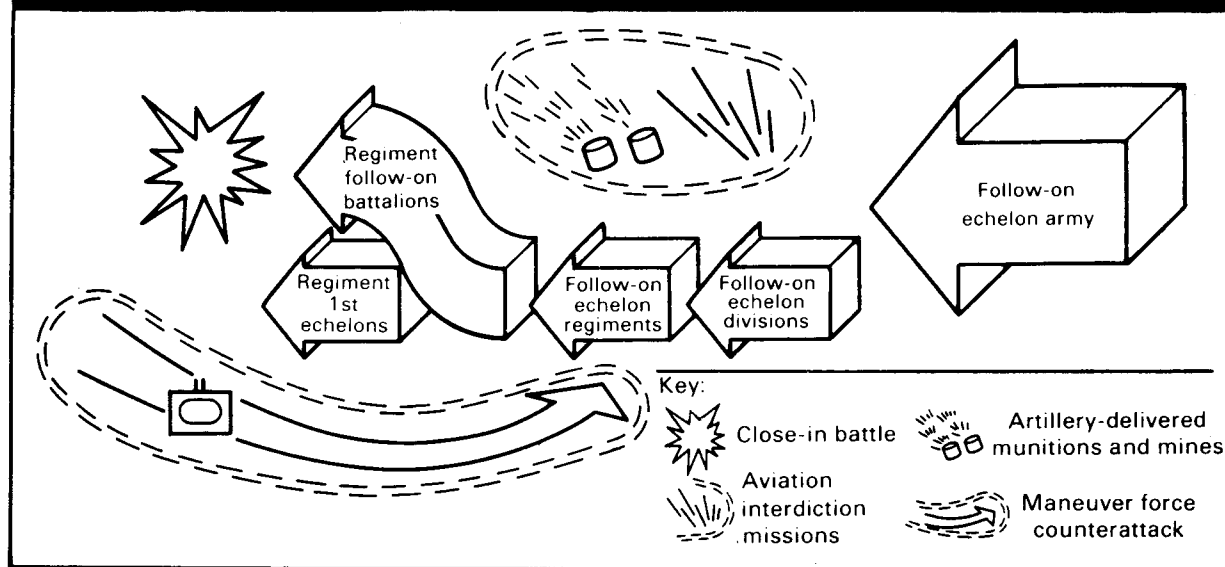


FIGURE 1-3. AIRLAND BATTLE TACTICS

MOBILITY SUPPORT

Mobility support is essential for units, equipment, and supplies to be positioned where and when they are needed on the battlefield. Integral to these tasks is effective topographic support which provides up-to-date maps and terrain information. Maneuver is the movement of combat forces, combined with fire support, to achieve a position of advantage from which to destroy or threaten destruction of the enemy. Missions depend on knowledge of the terrain and cultural features, as well as early detection and effective response to obstacles. Engineer

support is needed when an organization can not overcome an obstacle without affecting forward momentum. AirLand battle doctrine requires that units move quickly and at will anywhere on the battlefield. This agility is a key factor for success. The increased use of aviation and mechanized forces, by both the US and the Threat, will permit rapid concentration of combat power. Contact with enemy forces, obstacles, or both, must be expected in any place at any time. The force that can maintain its momentum and agility, under these conditions, has the best chance of winning.

THREAT COUNTERMOBILITY ACTIVITIES

FOCUS

The United States has global interests that could be threatened by a number of military powers. These nations differ in their governments, economies, and cultures. However, most of these potential adversaries model their military after Warsaw Pact-type forces. These countries generally possess well-equipped armed forces that use Warsaw Pact-type weapons and doctrine. Therefore, this section will focus on Soviet counter-mobility activities as a guide for understanding the threat to US battlefield mobility.

More information on Threat engineer organizations and their capability to counter friendly mobility can be found in FM 100-2-3.

STRATEGY AND TACTICS

Threat forces will use obstacles for counter-mobility designed to—

- Deny access along selected routes or terrain.
- Hold US forces within target range of Threat weapons systems.

- Economize Threat forces in defense of one area in order to provide forces in another area.
- Force the US to mass combat strength in the area.

Offensive strategy. The Threat plans to use antitank and mobile obstacle detachments to guard against counteroffensive action. They anticipate a fluid battlefield characterized by a series of meeting engagements and deep thrusts. The enemy hopes to advance 40-50 kilometers per day unless the war is escalated by the use of nuclear weapons. In that case, it would try to advance 50-80 kilometers per day.

Tactical defense. The Threat's strategy is to improve its defensive position, through the use of obstacles and minefield, until it can regain the initiative. It will employ obstacles when under fire and at night. Threat doctrine prescribes maximum use of existing rather than reinforcing obstacles to conserve personnel and equipment.

COMBINED ARMS RESPONSIBILITIES

Battlefield countermobility missions are not the exclusive responsibility of engineer units. With increased emphasis on countermobility, Threat combat arms units can now accomplish many of these engineering tasks. For example, tanks can be fitted with a number of "strap-on" items to avoid total dependence on specialized engineer equipment. These items include plows, rollers, and dozer blades. In addition to personnel trained in the use of strap-on components, each maneuver battalion contains soldiers trained to emplace obstacles. This practice insures a countermobility capability at the unit level and reduces the requirement for engineer support in general.

ENGINEER SUPPORT TO THREAT COUNTERMOBILITY

All Threat engineer soldiers are trained to master one of several military tasks. These tasks include demolition, field fortification

construction, or technical construction. They must also perform several engineer related tasks. Each engineer soldier is assigned to one of two job categories.

- **Special-technical engineer.** Units assigned special-technical personnel perform a specific task such as minelaying, bridging, road construction, reconnaissance, and assault crossing. These units are normally organic at all echelons.
- **Combat engineer.** Engineers, in general combat engineering units, are trained and organized to accomplish general combat engineering tasks requiring the use of handtools to supplement mechanical equipment. Combat engineer units are organic to Threat combined arms forces at regiment, division, combined arms army, and front levels.

Engineer countermobility equipment is frequently single-purpose, rugged, and technically simple. Appendix A provides a detailed discussion of Threat engineer organizations, equipment, and obstacles.

THREAT ORGANIZATION OF ENGINEER UNITS

Engineer troops are assigned down through the regiment level in all Soviet maneuver divisions. Platoons of engineers are sometimes detailed to maneuver battalions for specific missions.

Regiment level. The engineer company in a motorized rifle or tank regiment is organized into a mine warfare platoon, a technical (construction) platoon, and a bridge platoon. The company illustrated in figure 1-4 on page 1-6 has several armored personnel carriers (BTR or BMP), vehicle-launched bridges, and assorted pieces of mine warfare equipment. Table A-1 in appendix A contains further information on its equipment. The motorized rifle and tank regiments rely heavily on their organic engineer company for the following countermobility support:

- Engineer reconnaissance.

- Mine emplacement.
- Obstacles created mechanically or by hand.
- Construction of trenches or fortifications,
- Technical assistance for camouflage and deceptive measures.

Division level. Engineer battalions assigned to the three types of divisions—motorized rifle, tank, and airborne—serve as backup for the regimental engineers. The divisional engineer battalions are organized in much the same way as the regimental units with the addition of bridging units and combat service support elements (figure 1-5). The engineer battalions in tank divisions have a larger number of heavy amphibious ferries to support the division's armored vehicles. Airborne divisions have an engineer battalion of lesser strength and none of the heavy vehicle-launched bridging equipment, ferries, or ponton bridge sections. All of the engineer battalions at division level can

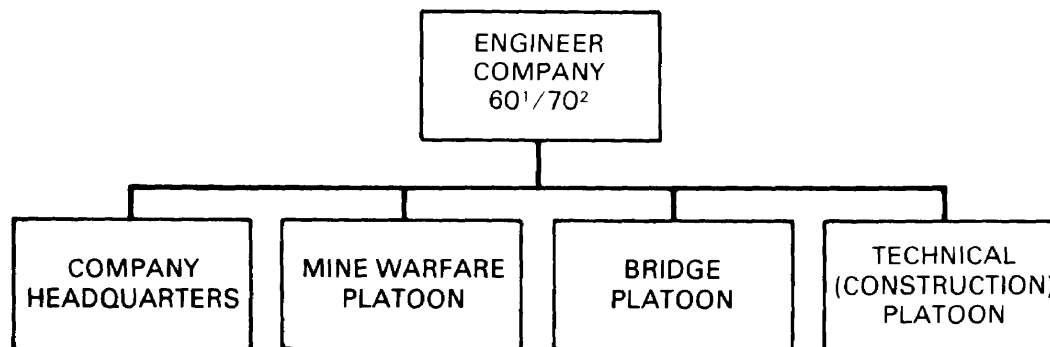
perform the following countermobility missions:

- Provide engineer staff for planning and coordinating organic or attached engineer unit missions.
- Assist in emplacement of obstacles and mines.
- Provide technical assistance in preparation of field fortification.
- Conduct engineer reconnaissance.
- Develop engineer intelligence for use in countermobility operations.

ENGINEER'S ROLE IN MISSION-TAILORED ORGANIZATIONS

With the exception of engineer assault-crossing and ponton bridge units, engineer employment does not always follow strict organizational lines. Tactical employment of sapper or engineer reconnaissance subunits

**FIGURE 1-4. THREAT ENGINEER COMPANY,
MOTORIZED RIFLE AND TANK REGIMENT**



Notes:

1. Personnel for the engineer company, motorized rifle regiment.
2. Personnel for the engineer company, tank regiment.

generally involves the formation of one or both of the following groupings:

- Mobile obstacle detachment: podvizhnoy otriad zagrazhdeniya (POZ).
- Engineer reconnaissance patrol: inzhenerny razvedyvatel'ny dozor (IRD).

The POZ and IRD are ad hoc organizations composed of engineer and combined arms elements task-organized according to the tactical situation. The makeup of these mission-tailored groupings depends on the countermobility tasks required. Attachments from the parent combined arms formation might include tanks, infantry, artillery, air support, and chemical detection units.

POZ mission. The mission of the POZ is generally to block armored counterattacks. The POZ is deployed in the forward security zone in the defense and along the flanks in the offense. It operates independently under the POZ commander, generally an engineer officer, who obtains operational guidance from the divisional engineer.

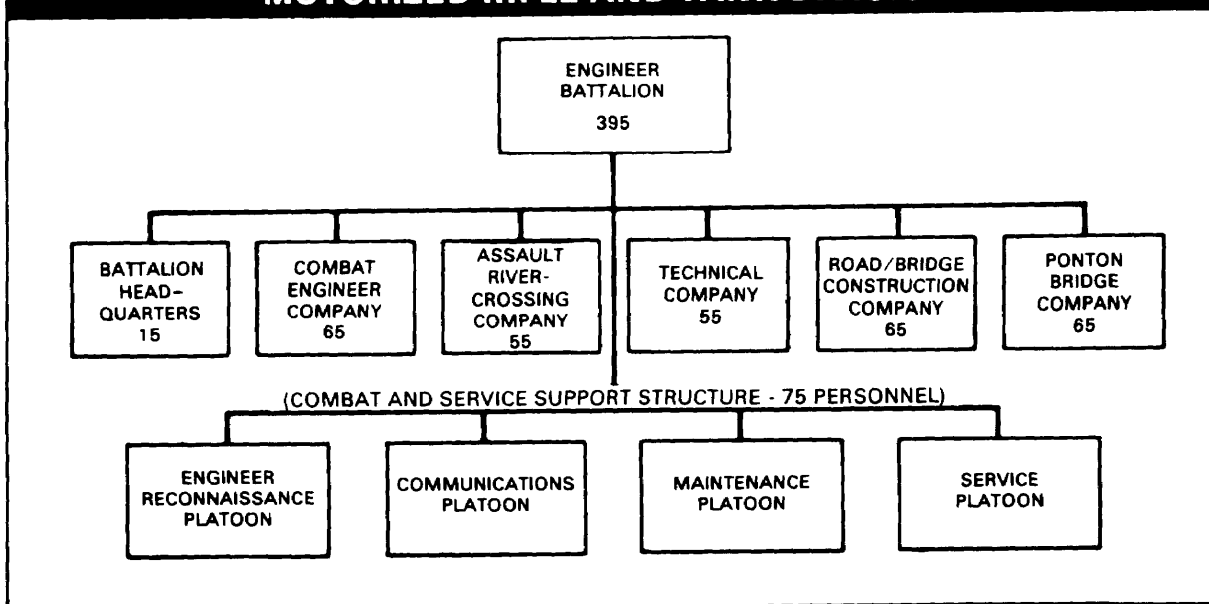
IRD mission. The IRD is formed and tasked with countermobility missions when the Threat must conduct defensive operations. Such missions include determining the protective and camouflage features of the terrain, selecting company strongpoint positions, and locating local materials for the construction of obstacles and fortifications. Finally, the IRDs will deploy into engineer observation posts along the front to detect enemy activities.

COUNTERMOBILITY SUPPORT TO THE DEFENSE

The two major forms of defense are the hasty defense and the deliberate defense.

- Hasty defense. This usually occurs when an offense is temporarily stopped. Units move off the route and deploy into strongpoints. Tanks move to the rear and anti-tank weapons move forward to protect gaps on the strongpoints. Normally, the area for a hasty defense will be smaller than the area involved in a deliberate defense. In a hasty defense, a motorized rifle battalion, for example, will have 3 to 5

FIGURE 1-5. THREAT ENGINEER BATTALION, MOTORIZED RIFLE AND TANK DIVISION



kilometers of frontage and a smaller security zone.

- **Deliberate defense.** This is organized in successive belts or areas to provide defense in depth. These areas normally will consist of a security zone, a main defense belt, and second and third defense belts. Defense belts are a series of mutually supported, defense areas (strongpoints). Echeloned in depth, they are designed to be manned by companies and battalions with artillery and tank support. Mobile reserves are held in assembly areas for each defense belt. Obstacles are constructed in front of each belt to impede, channelize, and force the attacker into kill zones.

Engineer reconnaissance is critical in defense planning. The IRD advises the commander on the best manner of using obstacles. The IRD will emphasize the use of lakes, rivers, marshes, densely forested areas, and difficult routes. They advise the Threat commander on the best use of barriers added to the terrain to stop or delay troop movement.

THE THREAT STRONGPOINT

A strongpoint is a fortified unit position designed to defend against heavy attack. Threat forces are required to start the construction of fighting positions immediately upon assuming a defensive posture. These positions are continuously upgraded until eventually a strongpoint is developed.

Arrangement. Company strongpoints are based on a three-platoon arrangement (figure 1-6), generally, two platoons forward and one back. Platoon positions are linked with each other through a series of trenches. These trenches connect all individual positions into an intricate defense system. They conceal communication, equipment, rapid troop movement, and resupply from observation.

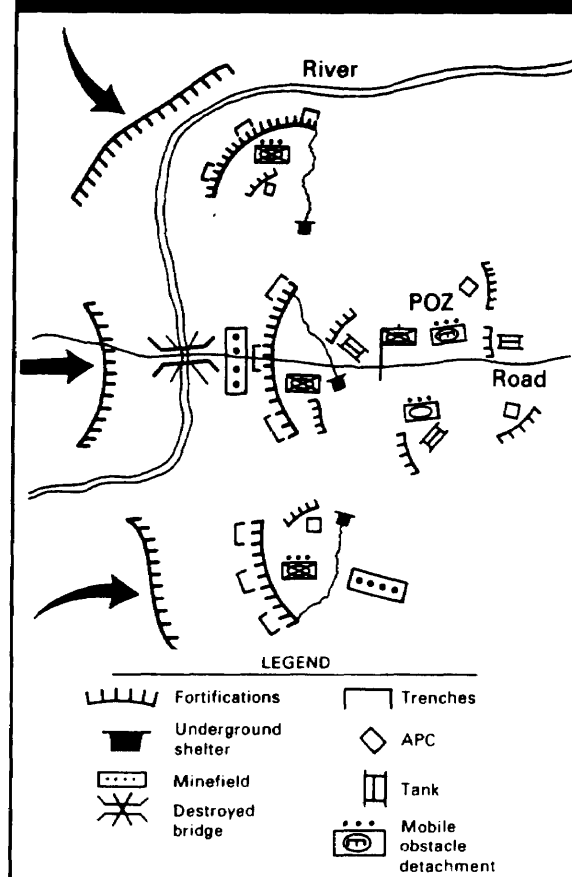
Obstacle plans. The platoon leader initiates defensive obstacle plans. Obstacles are located immediately to the front of platoon positions. This standard Threat defensive

zone of obstacles consists of three rows of antitank and antipersonnel mines and wire, when possible. In addition, an antitank ditch is placed to the rear of these obstacles. The obstacles are used to channelize, disrupt, and disorganize attacking forces.

COUNTERMOBILITY SUPPORT TO THE WITHDRAWAL

Threat forces may withdraw only on the order of the Army or front commander. Plans are made to defend gorges, bridges, stream crossings, and withdrawal routes. Sappers lay mines and perform demolitions on the flanks of withdrawing troops. They may also destroy roads, key facilities, bridges, and crossing sites following troop withdrawal to prevent enemy access in a pursuit.

FIGURE 1-6. ENGINEER DESIGN OF THREAT STRONGPOINT



COUNTERMOBILITY SUPPORT TO THE OFFENSE

Engineer support in the offense is primarily concerned with making the best possible use of available resources. Supply estimates for the course of an attack are made and arrangements for resupply set in motion before the attack begins. The engineers will be competing with artillery and tanks for logistical support. Because of these limitations, POZs are not likely to create elaborate obstacles or deliberate minefield. Such obstacles are labor-intensive and require large quantities of timber, wire, equipment or other supplies.

Obstacle activity. The Threat will limit obstacle activity to protective minefield and small demolition projects designed to enhance existing features. The most important engineer countermobility task in a Threat offensive operation is the creation of protective flank obstacles or minefield using mobile minelayers or helicopters, if necessary. Because of the possible need to recover mines and obstacles as the advance progresses, antipersonnel mines will rarely be used with obstacles.

Role of mobile obstacle detachment (POZ). A POZ can be expected to simultaneously lay up to three minefield and create nonexplosive obstacles at several

points on the flanks. Also, the POZ may reinforce key defensive positions at possible strongpoint locations. The POZ would then be supplemented by engineers with earth-moving equipment.

COUNTERMOBILITY SUPPORT TO THE MARCH AND MEETING ENGAGEMENT

Threat forces emphasize attacking directly from march formations. In the meeting engagement, they expect little time for engineer subunits to regroup. The IRDs will be forward of the march formation, with the POZs located just behind the first main body element. The POZ will cover exposed flanks of a maneuvering Threat force.

CAMOUFLAGE AND DECEPTIVE MEASURES

The Threat considers camouflage and deceptive measures equally appropriate in all operations. Camouflage is emphasized, however, in defensive situations. The intent is to confuse enemy intelligence through the use of concealment, deception, and demonstration activities. Obstacles and minefield will be well-camouflaged when the element of surprise might enhance their effectiveness. All soldiers are instructed in tactical camouflage techniques.

MOBILITY REQUIREMENTS

MOBILITY TASKS

US forces conduct mobility tasks to obtain and maintain the freedom of both tactical maneuver and operational movement. These battlefield tasks fall under the following five functional areas:

- Countermine. The detection, neutralization (by breach or bypass), marking, and proofing of mined areas.
- Counterobstacle. The employment of tactics and equipment systems to breach or bypass and reduce obstacles other than mined areas.
- Gap-crossing. The crossing of gaps in the terrain in order to pass equipment and personnel.
- Combat roads and trails. The expedient preparation or repair of routes of travel for equipment or personnel.
- Forward aviation combat engineering (FACE). The preparation or repair of landing zones, landing strips, or low altitude parachute extraction system (LAPES) sites to support aviation ground facility requirements in the forward battle area.

While the five functional areas of mobility are discussed separately in chapters 4-8, they are all used to support an operation and may be accomplished simultaneously. In the offense, the execution of mobility tasks allows forces to overcome known or unexpected obstacles and sustain the momentum necessary to retain the initiative. In the defense, mobility support tasks assist forces to move rapidly, mass, disperse, and be resupplied. Mobility tasks may be linked because of a mutual purpose and the nature of the battlefield. For instance, countermine tasks might be done concurrently with a gap-crossing operation. The preparation, maintenance, and repair of combat roads and trails and FACE activities enhance crossing and breaching missions by providing possible bypass options. The five functional areas of mobility support activities are also similar in the individual missions that they generate. These are shown in figure 1-7.

CRITERIA FOR MOBILITY TASKS

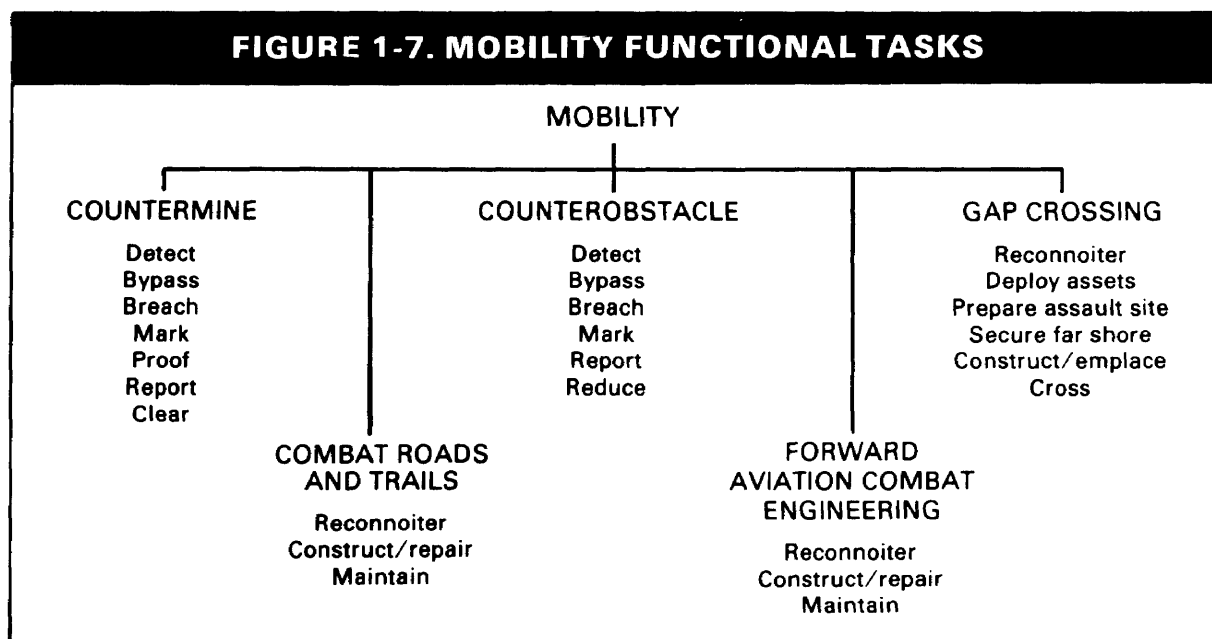
The planning, training, and preparation of mobility tasks must be done long before the battle begins. This advance preparation is important for these reasons:

- Forces that are stopped or delayed will likely be taken under fire.
- Combat units may operate at the end of long and vulnerable lines of supply and communication.
- The introduction of nuclear weapons, chemical contaminants, or biological contaminants may immediately alter troop combat capabilities and areas of tactical importance,

The combination of these factors sets the performance parameters for the conduct of mobility tasks. A highly skilled and organized unit capable of operating under intense combat conditions will be necessary. Training and exercises should aim at the performance of mobility tasks within the following criteria:

- Execute under fire. Troops must be trained to immediately suppress enemy fire and observation. Mobility activities are undertaken after enemy tank, antitank guided missile (ATGM), and artillery fire have been suppressed. They must not be deterred by enemy small arms fire.

FIGURE 1-7. MOBILITY FUNCTIONAL TASKS



- Overcome obstacles in stride. Maneuver forces overcome obstacles with minimum delay by planning operations thoroughly, deploying mobility equipment well forward, and executing standardized drills.
- Execute tasks during periods of darkness. Mobility tasks should be conducted at night whenever possible as the ability to operate during periods of limited visibility reduces the vulnerability of friendly forces.
- Execute mobility tasks in electronic warfare environments. The enemy will anticipate US intentions through electronic detection of mobility activities. All measures should be taken to deny the enemy this information.

