

Chapter 1

Introduction

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Introduction. The success of amphibious operations and subsequent operations ashore require the coordinated employment of all MAGTF resources: reconnaissance, infantry, aviation, tanks, artillery, engineers, assault amphibious vehicles and other combat support and combat service support units. All elements of the MAGTF are employed to achieve the effects of combined arms against enemy forces.

Combined arms is the full integration of combat arms in such a way that to counteract one, the enemy must become more vulnerable to another. The strengths of arms complement and reinforce each other. At the same time, the weaknesses and vulnerabilities of each arm are protected or offset by the capabilities of the other. Tank units provide the MAGTF commander the ability to attack, disrupt, and destroy enemy forces through firepower, shock effect, and maneuver in coordination with other elements of the MAGTF.

Section 1. Roles of Tank Units.

The tank is designed to be employed primarily as an offensive weapon, and regardless of the type of operation conducted (defensive or offensive). Tank units are employed throughout the range of military operations. The three major roles of tank units are:

- **Maneuver Element.** Tank units are organized to provide combat power to the division as a maneuver element or as a part of a maneuver element.
- **Antiarmor Protection.** Tank units participate as a part of the overall counter-mechanized effort of the landing force.
- **Mechanized Operations.** Tank units can be task organized to form the nucleus of a mechanized force or furnish units to provide support for a mechanized force.

Section 2. Characteristics of Tank Units.

To win in battle, leaders must have a clear understanding of the capabilities and limitations of their equipment. Appendix A provides a list of the specifications, characteristics, and significant features of the M1A1 main battle tank and supporting equipment. This appendix is a quick reference that will assist the Marine tanker and the MAGTF commander (with an attachment of tanks) in evaluating transportability, sustainment, and mobility considerations. The following are some of the capabilities and limitations for consideration prior to employing tank units into combat.

1201. Capabilities.

Tanks offer the MAGTF a vast array of capabilities: excellent cross-country mobility, sophisticated communications, enhanced target acquisition, lethal firepower, and effective armor protection. All of these characteristics are interrelated.

Armor-Protected Firepower. The armored vehicle is an integrated weapons system capable of defeating most targets on the battlefield. The tank main gun is a high velocity, direct fire weapon used primarily against enemy tanks and hard targets. The amount of

ammunition carried aboard the vehicle and the types available permit armored vehicles to engage a wide variety of targets for sustained periods of combat. Its armor affords protection to the components of the armored vehicle, including its crew, from the effects of small arms fire, shell fragments, and some direct hits, depending on the type and range of the enemy weapon. Its armor also allows the tank to close with the enemy and maneuver while under enemy fire or friendly close supporting fires with a degree of survivability that other weapons systems do not possess. The platform also provides a significant degree of protection for the crew while operating in an environment contaminated with chemical weapons.

Mobility. Tank units are capable of conducting mobile ground combat over a broad area of operations. Tank units can remain dispersed, yet quickly mass for employment at a decisive time and place. Tanks, by virtue of their full track, possess a high degree of cross-country mobility. In addition, global positioning systems (GPS) allow today's tanks to move to virtually any designated location with greater speed and accuracy than ever before. Tanks can quickly mass the effects of their weapon systems while remaining physically dispersed to limit effective enemy counteraction. When properly utilized, the tank's mobility allows it to deliver firepower against several enemy locations within a short period of time.

Shock Effect. The shock effect on the enemy that tank units can create is both physical and psychological. This shock effect is increased in proportion to the number of vehicles employed. Shock effect, in a properly executed assault, has a devastating effect on enemy morale and a favorable effect on friendly morale. To exploit tanks shock effect, aggressive employment of the combined arms team is essential.

Extensive communications. Radio is the primary means of communication for tank units. Each tank is capable of transmitting/receiving on one frequency while simultaneously receiving on another frequency. The use of visual signals and the single channel ground/airborne radio system (SINCGARS) facilitates rapid and secure communication of orders and instructions.

Flexibility. Tank units are capable of responding rapidly to the ever-changing environment of the battlefield. Units engaged with the enemy can, with the proper use of supporting arms, disengage and be given a new mission. Tanks can group, disperse, and quickly regroup again in response to changing tactical situations.

1202. Limitations

A clear understanding of the tank employment limitations enables commanders to both plan effectively and fully exploit the capabilities of tank units. Limitations fall into three general categories – those inherent to the vehicle, existing obstacles, and reinforcing obstacles.

Size. The size of a tank makes it difficult to conceal in some terrain. This limitation is substantially overcome by positioning tanks in areas that minimize their exposure to enemy observation until they are ready to be employed.

Weight. The weight of tanks prevents use of low capacity bridges and requires the use of special equipment and techniques for recovery of immobilized vehicles. Planning for the necessary support, as well as the careful selection of routes and areas of operation reduces this limitation.

Noise. The noise created from the operation of tanks will give warning of their presence. Surprise, however, may be achieved by moving tanks forward just prior to their commitment, and by advancing rapidly under the cover of supporting arms.

Visibility. Tank crews enhance visibility with vision devices. However, peripheral vision is limited. Unless a member of the crew is observing the sector in which hostile actions occur, it may go unseen. The tank is susceptible to ambush by tank-killer teams when operating in close terrain. It is also vulnerable to mechanical damage caused by terrain or obstacles hidden from view e.g. brush covered gullies. Conducting a detailed terrain analysis can reduce these limitations. Also, infantry should accompany tanks operating in close or broken terrain to protect them from ambush. There is a more detailed discussion of deadspace considerations in Chapter 9, Military Operations in Urbanized Terrain.

Fuel Consumption. The fuel consumption of a tank is high in comparison to wheeled vehicles. The tank crew can use the external auxiliary power unit (EAPU) during operational pauses to reduce the amount of fuel consumed. Careful planning and a coordinated logistics effort are required to insure that armored vehicles' fuel requirements do not impose an insurmountable logistics burden.

Maintenance. Tanks are complex and require time dedicated to maintenance. Tank vehicle crews accomplish preventive maintenance during halt, rest periods and periods of resupply without interrupting support functions. However, systematic relief of individual tanks or units is required to permit thorough maintenance. Failure of commanders to recognize or plan for this will result in unnecessary and excessive tank non-availability due to mechanical failure.

Existing Obstacles. Of all the limiting factors that inhibit tank vehicle operations, none has a more decisive effect than terrain. Terrain may dictate the number of tanks that can be employed, but it will seldom prohibit their employment entirely. The full striking power of tanks is best achieved over rolling terrain that permits massing and exploitation of their cross-country mobility. Nevertheless, between the extremes of terrain – rolling terrain as opposed to impassable terrain – there is considerable ground that can be negotiated by tanks. Heavy rainfall usually reduces the trafficability of an area and imposes restrictions on tank movements. Extremes in weather reduce the efficiency of tank crews. Although tanks have little difficulty in snow less than 24 inches deep, they tend to skid or slide off embankments and are unable to negotiate slopes when the snow becomes packed or icy. The limiting effects of terrain and weather can be reduced by

prior reconnaissance of tank routes, proper planning, and by providing for the reduction of existing obstacle that cannot be bypassed.

Reinforcing Obstacles. In past operations, the most effective reinforcing obstacle and the one most frequently employed, was the antitank minefield. Mines, whether arranged as a barrier or planted at random, can temporarily stop the forward movement of tanks. Other reinforcing obstacles frequently encountered that tend to restrict the movement of tanks are tank ditches, tank traps, and roadblocks. Normally, many of these obstacles are temporary deterrents that can be overcome by proper employment of organic weapons, equipment and personnel. Given time and resources, engineers can generally reduce even difficult obstacles.

Communications. The heavy reliance upon radio communications for command, control and coordination of tank units makes them vulnerable to enemy electronic warfare (EW) and/or signals intelligence efforts. Tank unit commander and tank crews must be able to operate in a hostile EW environment and employ communication security procedures to overcome this limitation.