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TANK EMPLOYMENT/ ANTIMECHANIZED OPERATIONS



U.S. MARINE CORPS

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DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380

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FOREWORD

1. PURPOSE

FMFM 9-1, Tank Employment/Antimechanized Operations, sets forth doctrine, tactics, and techniques to be employed by Marine Corps tank units and in antimechanized operations and training within the Fleet Marine Forces.

2. SCOPE

This manual covers the missions, organization, and principles of employment of Marine Corps tank units and antimechanized resources in support of the Fleet Marine Forces during amphibious operations and subsequent operations ashore. Included are discussions concerning command and staff functioning, the role of tanks, and the role of units participating in antimechanized operations.

3. SUPERSESSION

This publication supersedes FMFM 9-1, Tank Employment/Antimechanized Operations, dated 31 January 1975.

4. CHANGES

Recommendations for improving this manual are invited from commands as well as directly from individuals. The attached User Suggestion Form should be utilized by individuals and forwarded to the Commanding General, Marine Corps Development and Education Command (Code D 03), Quantico, Virginia 22134.

5. CERTIFICATION

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

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TANK EMPLOYMENT/ANTIMECHANIZED OPERATIONS

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CHAPTER 1

TANK EMPLOYMENT

Section I. INTRODUCTION

1101. GENERAL

a. The devastating and decisive effect of tanks on the field of battle has been documented through many wars and recently in the deserts of the Middle East. Several important facts have come under careful scrutiny since the events of October 1973:

(1) Long range, high velocity tank cannon and long range anti-armor missile systems dominate the modern battlefield.

(2) Long range air defense cannon and missile systems dominate the air above the battlefield, and inhibit forward fighting units effective close air support.

(3) The Marine Corps must be trained and ready to fight an enemy who outnumbered it in men and armor.

b. Since the use of the tank in World War I, there has been a continuous improvement of the tanks' weapon, engine, and range finder capabilities. Today, the major powers possess very sophisticated tanks which are far more lethal than their predecessors. Thus, in order to achieve maximum success in the field against an adversary who is equally equipped with lethal tanks, it is essential that a close rapport be established between tank unit leaders and the supported commander. Both men must be equally knowledgeable in the employment of tanks. Close coordination between the two commanders from the planning stage to the completion of the assigned mission is essential.

Section II. TASKS AND CHARACTERISTICS

1201. THE ROLE OF TANK UNITS

The basic task of Marine Corps tank units is to attack, disrupt, and destroy enemy forces through firepower, shock power, and maneuver in coordination with other arms. The tank is an offensive weapon, and regardless of the type of operation conducted (defensive or offensive), an offensive mission should be assigned to it. The three major roles of tank units are:

- a. 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.
- b. Antitank Protection.--Tank units participate as a part of the overall antimechanized effort of the landing force.
- c. Mechanized Operations.--Tank units can task organize to form the nucleus of a mechanized force or furnish units to provide support for a mechanized force.

1202. CHARACTERISTICS OF TANKS

a. Capabilities.--Tanks are characterized by their armor-protected firepower, mobility, shock power, flexibility, extensive communications, and responsiveness to command. All of these characteristics are interrelated.

(1) Armor-Protected Firepower.--The tank is an integrated weapons system capable of defeating most targets on the battlefield. The tank 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 tanks to engage a wide variety of targets for sustained periods of combat. Its armor affords protection to the components of the tank, including its crew, from the effects of small arms fire, shell fragments, and some direct hits, depending on the type and range of the assaulting weapon. Its armor also allows the tank to close with the enemy and maneuver while under enemy fire or friendly supporting fires with a degree of immunity that other weapons systems do not possess. This armor protection also provides a significant degree of protection against the effects of nuclear and chemical weapons.

(2) Mobility.--Tank units are capable of conducting mobile ground combat over a broad area of operations. Tank units may remain dispersed to mass at a focal point of action at a decisive time. When properly utilized, the tank's mobility can increase the strength of a supported unit by applying their firepower against the enemy at several points within a short period of time. Tanks, by virtue of their full track, possess a high degree of cross-country mobility.

(3) Shock Power.--The shock power of tanks and mounted supporting troops causes a combined physical and psychological effect on the enemy. The shock power of tanks is increased in proportion to the number of tanks employed. Shock power, in a properly executed assault, has a devastating effect on enemy morale and a favorable effect on friendly morale. To exploit tank shock power, aggressive employment of the combat capability of combined arms teams is essential.

(4) Extensive Communications.--Radio is the primary means of communications for tank units. Tank units can communicate to higher and subordinate units as well as to individual tanks. Each tank radio is capable of transmitting/receiving on one frequency while simultaneously receiving on two other frequencies. A tank/infantry phone and crew intercom are integral to the tank's communication equipment.

(5) Flexibility.--Tank units are capable of responding rapidly to the ever-changing environment of the battlefield. Units engaged with the enemy can easily disengage and be given a new assignment. The battlefield mobility of tanks and the adaptability of their commanders permit rapid change in task assignments and organization for combat. Tanks can group, disperse, and regroup quickly to meet the needs of changing tactical situations.

b. Limitations.--The tank has limitations which affect the degree of success of any operation of which it is a part. A clear understanding of the tank's limitations enables commanders to fully exploit the capabilities of tank units. Careful consideration of the limitations during planning is essential. Limitations fall into three general categories: those inherent to the vehicle, existing obstacles, and reinforcing obstacles.

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

(2) Weight.--The weight of the tank prevents use of low capacity bridges and requires the use of special equipment and techniques for removal of immobilized vehicles. This limitation is reduced by planning for the necessary support, as well as the careful selection of routes and areas of operation.

(3) Noise.--The engine and track noise resulting 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 artillery preparation, air support, and/or naval gunfire.

(4) Visibility.--To maintain the armored integrity of the tank, vision devices are used by the crew for observation. Although these devices provide a means of observing in any direction, peripheral vision is lost. Unless a member of the crew is observing the sector in which hostile action occurs, it may go unseen. The tank is susceptible to ambush by tank-killer teams when operating in close terrain. It is also sensitive to accidents caused by terrain hidden from view, such as brush covered gullies. These limitations can be reduced by executing a detailed terrain reconnaissance and by assigning infantry to accompany tanks operating in close or broken terrain to guide and protect them from ambush.

(5) Fuel Consumption.--The fuel consumption of a tank is high in comparison to wheeled vehicles. Careful planning and a coordinated logistics effort are required in order that tanks' fuel requirements do not impose a logistics problem.

(6) Maintenance.--Tanks are complex and require considerable maintenance. Tank crews accomplish preventive maintenance during halts,

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 need will result in unnecessary and excessive tank nonavailability due to mechanical failure.

(7) Existing Obstacles.--Of all the limiting factors that inhibit tank operations, none has a more decisive effect than terrain. In most tactical situations, terrain dictates 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 which 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. Heavy rainfall usually reduces the trafficability of an area and imposes restrictions on tank movements. Periods of poor visibility caused by fog, rain, or snowfall reduce the mobility of the tank, and 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 generally 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, by proper planning, and by providing for the reduction of existing obstacles which cannot be bypassed.

(8) 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 which tend to restrict the movement of tanks are tank ditches, tank traps, and roadblocks. Normally, many of these obstacles are temporary deterrents which can be overcome by proper employment of organic weapons, equipment, and personnel. Difficult obstacles are generally reduced by engineer and other resources of the landing force.

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

Section III. MISSION AND ORGANIZATION OF FORCE TANK UNITS

1301. MISSION OF THE TANK BATTALION

The mission of the tank battalion is to provide combat power to the Marine division in the amphibious assault and subsequent operations ashore, utilizing fire and maneuver, mobility, armor protected firepower and shock action to close with and destroy the enemy, his material, and his fortifications.

1302. ADMINISTRATIVE ORGANIZATION OF THE TANK BATTALION

The organization of each tank battalion (see fig. 1) will be prescribed by the current Table of Manpower Requirements (T/MR) for that particular battalion. The basic composition consists of a headquarters and service (H&S) company, four tank companies, and an antitank (tube launched, optically tracked, wire command link guided missile system (TOW) company. The tank companies and the antitank (TOW) company are the primary tactical units with which the battalion accomplishes its mission.

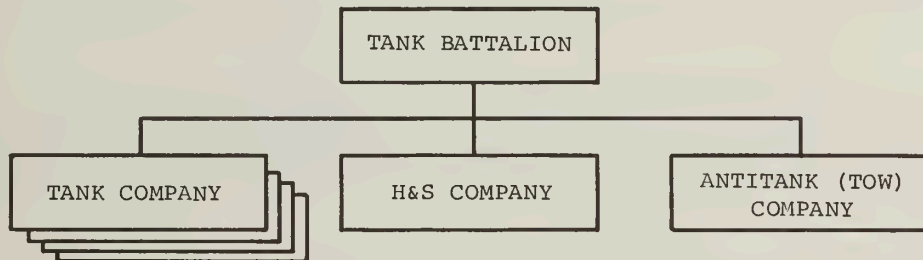


Figure 1.--Organization of the Tank Battalion.

a. Headquarters and Service Company.--The primary mission of the H&S company is to provide the battalion commander with the facilities for effective command and control and to provide service support for subordinate elements of the battalion. The company is organized into functional groupings as follows (see fig. 2):

(1) Battalion Headquarters.--The battalion headquarters provides the commander with the personnel to coordinate the action of the battalion. It contains the headquarters section with its command and staff element, the chaplain section, and the medical section. A gun tank section (two medium tanks) is included to provide the commander with a mobile command post.

(2) Motor Transport Platoon.--The motor transport platoon provides the motor transport equipment required by the H&S company and the technical assistance and cargo and special purpose vehicles required by the tank companies. The motor transport platoon provides its own first and second echelon maintenance support.

(3) Communication Platoon.--The communication platoon provides communication support for the battalion.

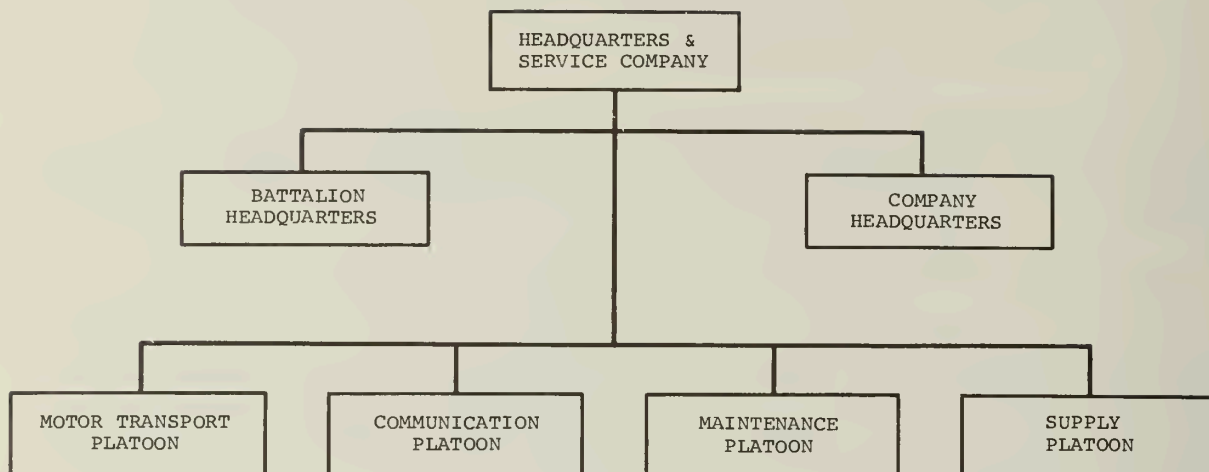


Figure 2.--Organization of the Headquarters and Service Company.

(4) Maintenance Platoon.--The maintenance platoon provides the maintenance support for tracked vehicles of the battalion. It is organized and equipped for centralized operations in support of the entire battalion. The quality and quantity of the battalion's maintenance capability is reduced when detachments of maintenance personnel and equipment accompany tank units supporting infantry.

(5) Supply Platoon.--The supply platoon provides the supply support for the battalion.

(6) Company Headquarters.--The company headquarters provides the administrative and logistics support for the various units of the company.

b. Tank Company.--The mission of the tank company is to provide combat support for Marine infantry units utilizing mobility, firepower, and shock power to close with and destroy enemy forces, fortifications, and material. The tank company is normally employed either by assignment of a tactical mission of direct support or by attachment. The tank company may also be employed separately or under the direct control of the tank battalion commander for independent tank operations. The company has a limited logistics capability. However, when transportation is augmented from assets of the tank battalion, it is capable of transporting a basic allowance of ammunition and can handle its own distribution of supplies. Medical support is provided either by attachment of medical personnel from the tank battalion or through utilization of medical facilities of the supported unit. Each company is composed of a headquarters and three tank platoons. (See fig. 3.)

(1) Company Headquarters.--The company headquarters is composed of a tank section (two tanks) and a headquarters section containing administrative, communication, logistics, reconnaissance, and liaison personnel. The logistics personnel and equipment include maintenance personnel for organizational maintenance and one tank recovery vehicle to assist in the recovery of disabled tanks.

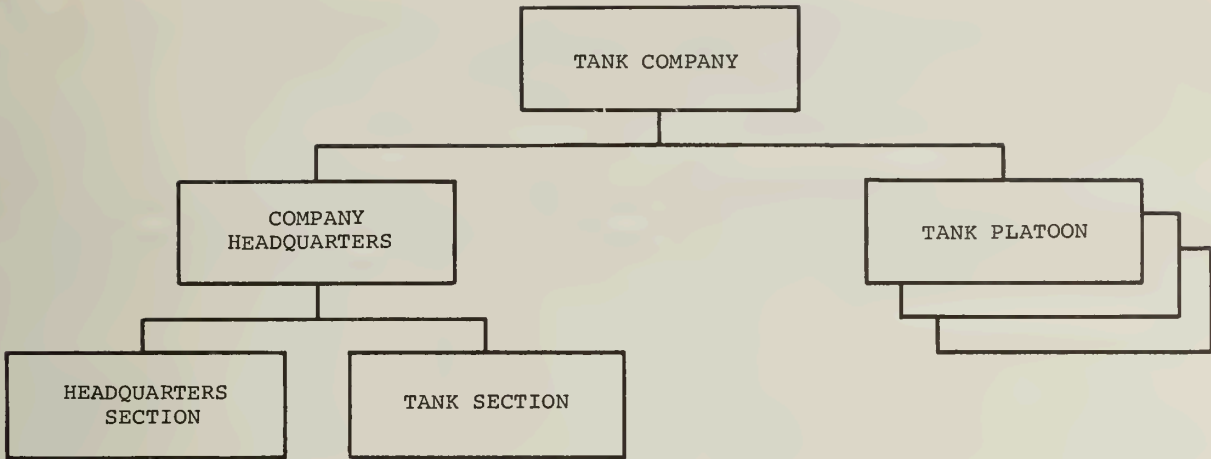


Figure 3.--Organization of the Tank Company.

(2) Tank Platoon.--The tank platoon is composed of five medium tanks. It is capable of being organized into sections dependent on mission assigned. Tanks are not employed singly.

c. Antitank (TOW) Company.--The primary mission of the antitank company of the tank battalion is to provide antimechanized support for the Marine division. This mission will be accomplished by using the TOW to engage and destroy enemy armored vehicles, particularly tanks. When not performing its primary mission of destroying armored vehicles, the antitank company may assume a secondary mission of engaging other point targets such as nonarmored vehicles, crew-served weapons, and bunkers. As required by the situation and scheme of maneuver, antitank elements may be placed in support of or attached to infantry regiments or battalions. Additionally, the company may be employed as an entity in the division's antimechanized defense systems or, in smaller or dispersed operations, in a supporting role with an infantry unit. The antitank company consists of a company headquarters and three antitank platoons. (See fig. 4.)

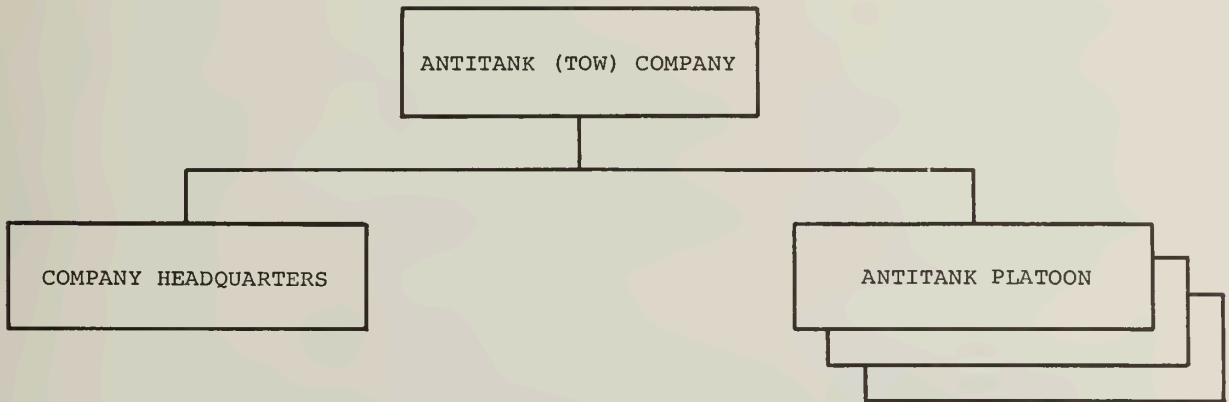


Figure 4.--Organization of Antitank (TOW) Company.

(1) Company Headquarters.--The company headquarters is composed of a motor transport section and a headquarters section containing the administrative, communication, and logistics personnel. Supply support of the company is by unit distribution with transportation, dining, and medical support provided by the battalion.

(2) Antitank Platoon.--Each of the three antitank platoons in the company contains 24 TOW weapons systems for a total of 72 in the company. A platoon is composed of three antitank sections, each having eight TOW weapons systems. An antitank section consists of four antitank squads of two TOW weapons systems each.

Section IV. BATTALION COMMANDER AND HIS STAFF

1401. BATTALION COMMANDER

The tank battalion commander is responsible for all that the battalion does or fails to do. He has the authority to employ the battalion's resources to ensure the accomplishment of the assigned mission. His responsibility includes training, supply, health and welfare of the personnel, and maintenance of the equipment of the battalion.

a. Staff Responsibility.--The tank battalion commander is normally the senior tank officer available to the unit which the tank battalion is supporting. When the battalion commander is the senior tank officer, he performs the general duties of a special staff officer under the staff cognizance of the G-3, with respect to tank matters. His staff responsibilities include:

- (1) Recommending the most effective method of employment of tanks and TOW's.
- (2) Recommending tank allocation to subordinate units.
- (3) Recommending the composition of mechanized task forces.
- (4) Assisting in the preparation of antimechanized plans.
- (5) Assisting in the analysis of information concerning enemy armored tactics, techniques, and material.
- (6) Conducting technical inspections of tank units, to include inspection of tank personnel and unit training programs.
- (7) Advising on matters pertaining to tank logistics requirements.
- (8) Preparing the tank portion of the annual budget.

b. Landing Force Tank Officer.--In a Marine amphibious force (MAF) size amphibious operation in which the landing force is supported by the tank battalion, the battalion commander may be the senior tank officer and assume the additional duty of landing force tank officer. The landing force tank officer is responsible for planning and recommending the organization and employment of tanks in support of the concept of the commander landing force (CLF). He and his staff prepare the tank estimate of supportability and the estimate of tank requirements. After the decision of the CLF, the tank officer assists in the preparation of the force operation plan.

1402. BATTALION EXECUTIVE STAFF

The battalion staff assists the battalion commander in the exercise of command. The staff is a close knit team that keeps the commander informed of the various aspects of the battalion, makes recommendations to assist him in making decisions, assists him in translating decisions into orders, and supervises the execution of these orders. Proper staff

functioning requires close and careful coordination among the various staff members and with the subordinate units and elements of the battalion.

a. Executive Officer.--The executive officer is the chief assistant and advisor to the battalion commander. He coordinates the various staff functions, ensures that the staff is working as a team, and ensures that the commander's instructions are being carried out. The executive officer directs his attention toward the detailed aspects of the operation and administration of the command to enable the commander to concern himself with broad aspects of command. Normally, the executive officer issues the instructions to members of the battalion staff and, in turn, receives their advice and recommendations. This does not preclude each staff officer from having direct access to the commander. During his commander's temporary absence, and when authorized, the executive officer represents him and directs actions in accordance with the commander's policies. He is prepared to assume command of the battalion at any time.

b. S-1/Adjutant.--The S-1/adjutant supervises the personnel and general administrative functions of the battalion. He advises the commander on matters pertaining to personnel. For a detailed discussion of duties, see FMFM 3-1, Command and Staff Action; for a discussion of personnel procedures and techniques, see FMFM 4-1, Combat Service Support for Marine Air-Ground Task Forces.

c. S-2, Intelligence Officer.--The S-2 is responsible for advising and assisting the commander in planning, implementing, and supervising the intelligence and counterintelligence effort of the battalion. He provides to the commander and the staff pertinent information regarding every tank/antitank employment. This information is obtained through collection, research, and extensive liaison. He provides information to the division staff regarding every tank/antitank operation and terrain trafficability reports on areas of responsibility, and he provides an initial evaluation of the information. He is responsible for ensuring that intelligence is expeditiously disseminated to higher, subordinate, adjacent, or affected tank supported units. For a detailed description of duties, see FMFM 3-1, Command and Staff Action; for a discussion of techniques, see FMFM 2-1, Intelligence.

d. S-3, Operations and Training Officer.--The S-3 is responsible for the supervision and coordination of matters pertaining to training, tactical organization, and combat operations of the battalion. He advises the commander on these matters. For a discussion of the duties of the S-3, see FMFM 3-1, Command and Staff Action.

e. S-4, Logistics Officer.--The S-4 is responsible for the coordination and supervision of all logistics matters within the battalion. He is responsible to the commander for recommending the logistics policies and for planning, coordinating, and supervising the logistics effort. As the battalion maintenance management officer, the S-4 will ensure the overall coordination of all maintenance (tracked vehicles, wheeled vehicles, communications-electronics, and engineer equipment) efforts within the battalion. For a detailed discussion of the duties of the S-4, see FMFM 3-1, Command and Staff Action; for a discussion of logistics procedures and techniques, see FMFM 4-1, Combat Service Support for Marine Air-Ground Task Forces.

1403. SPECIAL STAFF

The special staff consists of officers whose activities are directed toward technical fields. These officers advise the commander in their specific fields. They are responsible for the planning, coordination, and supervision of the technical areas as they pertain to their special staff duties. The number of special staff officers varies to accommodate the mission of the battalion and the desires of the commander. As other units are placed in support of the tank battalion or attached to it, their commanders or assigned liaison officers assume the role of special staff officers.

a. Maintenance Officer.--The battalion maintenance officer is the technical advisor to the battalion commander in all matters concerning maintenance of tracked vehicles. He supervises and coordinates all tracked vehicle maintenance within the battalion. The battalion maintenance officer also commands the battalion maintenance platoon. His specific duties include:

(1) Keeping the commander advised of the maintenance status of tracked vehicles.

(2) Ensuring the efficient operation of the battalion maintenance facilities in order to ensure maximum tracked vehicle availability.

(3) Recommending the assignment of maintenance personnel and equipment.

(4) Preparing a battalion vehicle evacuation and abandonment policy based on the tactical situation and the desires of the battalion commander.

(5) Coordinating with higher maintenance echelons.

(6) Assisting the organic and attached company commanders in supervising tracked vehicle maintenance.

(7) Conducting tactical and technical training of battalion maintenance personnel, to include company personnel, and assisting in the supervision of tank crew maintenance training.

b. Communication Officer.--The communication officer is responsible for ensuring that the battalion meets its own communication requirements and responsibilities, plus those assigned by higher headquarters. He advises the commander on all communications--electronics matters as they affect the battalion. Under the staff supervision of the executive officer, he prepares plans and makes recommendations for the employment of all battalion communications. See FMFM 3-1, Command and Staff Action, for the specific duties of the communication officer; for communication principles and techniques, see FMFM 10-1, Communications.

c. Motor Transport Officer.--The motor transport officer, under the staff cognizance of the S-4, is responsible for supervision of first and second echelon maintenance and supervision of the wheeled vehicles' operations. See FMFM 3-1, Command and Staff Action, for a listing of specific duties.

d. Supply Officer.--The supply officer is responsible for planning, coordinating, and supervising the acquisition, storage, control, security, issue, recovery, and redistribution of all supplies and equipment; furnishing advice and information relative to supply procedures, including property accounting, property responsibility, and standardization of material; and maintaining technical publications for the command, including procurement, allowances, and distribution as provided for in the Marine Corps technical publications system.

e. Other Special Staff Officers.--Also included in the special staff of the tank battalion are the medical officer, legal officer, and chaplain. The duties of these officers do not differ materially from their counterparts in other battalions. Their functions are covered in FMFM 3-1, Command and Staff Action.

f. Liaison Officers.--There are three reconnaissance/liaison officers authorized in the table of organization. These officers are assigned to the S-3 section. Their duties include exchanging information and providing coordination between the tank battalion and the unit to which they are sent. They must be familiar with the situation, mission, and capabilities of the tank battalion and the supported unit.

1404. COMMAND AND STAFF ACTION

a. General.--The tank battalion commander uses his staff in every phase of command and staff action. In the ideal situation, after receiving a mission, the sequence of events leading to the employment of a unit in a tactical operation would be that shown as the sequence of command and staff action in FMFM 3-1, Command and Staff Action. When time does not permit, commanders and staff officers may abbreviate the sequence of events. In any event, every effort should be made to allow subordinate commanders adequate time for their planning, issuance of orders, and movement.

b. Modifications.--In some instances, particularly fast moving operations, the sequence of command and staff action may be too time-consuming. Commanders and staff officers must be able to accomplish the necessary steps in minutes. Only commanders and staff officers who habitually make continuing estimates can hope to stay abreast of events. Decisions are based on rapid estimates. Recommendations must be sound and instantly available to the commander. Orders are oral and fragmentary. Warning orders are issued to subordinate commanders as early as possible to permit initial preparation even if the complete battalion plan has not been formulated. The manner in which orders are issued will vary according to the time available, the tactical situation, and the professional competence of the commander and his staff.

1405. COMMAND POST

a. General.--The tank battalion command post (CP) provides the facilities and the personnel for the battalion commander to control and support the operations of the unit. The CP is prepared for continuous operation in varied terrain and combat situations. The tactical operations of the tank battalion are centered in the S-2 and S-3 sections. Here plans are developed and kept current, and information received from tank units and liaison representatives with supported units is processed. Also of major importance to the successful operation of the tank battalion is the coordinated functioning of its logistics facilities. The commander, the executive officer,

and the S-4 must meet the vast maintenance and logistics requirements imposed on the command by tanks in order to ensure their continued operation. The CP maintains communications with higher, supported, lower, and adjacent units. The tank battalion CP is located sufficiently near subordinate tactical units to ensure positive control by the commander and to provide the necessary logistics support. Since the tank battalion CP usually displaces frequently, it is capable of operating two echelons for a limited period of time in order to ensure continuous fulfillment of control and support functions during displacements. FMFM 3-1, Command and Staff Action, contains general information which is applicable to location, internal arrangement, and security of command posts.

b. Location.--When selecting a CP for the tank battalion, various considerations are made. It must be situated close enough to frontlines to facilitate control, yet not so close that it becomes directly engaged in the action of tactical units. In addition, an area is selected to fulfill the requirements for communications, accessibility, cover and concealment, hardstand, and drainage, and to provide sufficient space for CP installations and tank units that will periodically join the CP for maintenance, resupply, or while in reserve.

1406. COMMUNICATIONS

a. Radio.--Radio is the primary means of communication within the tank battalion. Radios provide for command and control of the battalion and for communications with the unit being supported and with higher headquarters. The sophisticated electronic warfare assets of the enemy may deny the uninterrupted use of radios. In such instances, alternate means of communication such as flags, arm-and-hand signals, pyrotechnics, and messengers must be planned for.

(1) Communications With a Supported Unit.--The communication links with a supported unit will be prescribed by the supported unit. This will normally be by one of two methods:

(a) In the liaison method, the tank unit sends a liaison team to the supported unit headquarters. This team provides its own communication equipment and establishes a station on the tank unit command net. This is the preferred method.

(b) In the other method, the tank unit will establish a station on the supported unit's tactical net.

(2) Communications With Higher Headquarters.--The radio nets which the tank unit will be required to enter will be prescribed by the higher headquarters. The nets which the tank battalion may be required to enter when operating subordinate to a force or division headquarters are discussed in FMFM 10-1, Communications.

(3) Internal Radio Communications.--There are four primary nets required for internal command and control of the tank battalion--tank battalion command net, tank battalion tactical net, tank company tactical net (one per company), and tank platoon tactical net (one per platoon).

(a) Tank Battalion Command Net.--Traffic on this net includes administrative instructions, logistics requirements, and other nontactical traffic. Stations include those on the battalion tactical nets less the battalion liaison officers.

(b) Tank Battalion Tactical Net.--Traffic on this net includes tactical orders, coordination requirements, and intelligence information. Stations include the battalion headquarters, tank companies, and battalion liaison officers. The battalion tank recovery vehicle maintains a station on this net while not in support of a specific tank company or tank platoon.

(c) Tank Company Tactical Net.--Traffic on this net is the same as the battalion tactical net. Stations include the company command post, the platoons, and the liaison teams.

(d) Tank Platoon Tactical Net.--Traffic on this net is primarily concerned with the tactical direction of the platoon. Stations include the platoon commander and each tank in the platoon.

(e) Additional Nets.--In addition to the four primary nets, additional nets may be established on an as-required basis, when the tactical situation requires them.

b. Wire-Multichannel

(1) To Higher Headquarters.--When time and the location of tank battalion headquarters makes it practical, division or force will install wire-multichannel service to the battalion. Otherwise, the battalion will install trunks to the nearest unit which has wire-multichannel radio communications with force or division.

(2) Internal Requirements.--Local wire lines will be installed as prescribed in the tank battalion communication standing operating procedure (SOP).

c. Messenger.--Scheduled messenger service will normally be established by force or division. This will provide messenger communications with higher headquarters and normally with subordinate units which are in support of other force or division units. Internal messenger service to subordinate units will not normally be established except in the defense.

d. Tactical Applications

(1) Tank-Infantry Communications.--The primary means of tank-infantry communications is radio. Tank and infantry unit radios are completely compatible and present no special netting problems. However, with the utilization of secure voice equipments to pass classified information, coordination is required. Other means are the auxiliary interphone (tank-infantry telephone) and visual and sound communications. The auxiliary interphone allows personnel outside the tank to communicate with the tank crew by means of the tank's internal communication system. It also allows personnel outside the tank to use the radio equipment installed in the tank.

(2) Mechanized Operations Communications.--Mechanized operations are complex actions requiring close coordination and control of units with a communication system tailored to meet the requirements of a particular operation. The commander responsible must determine his specific requirements and establish communications to meet them.

(3) Communications During Displacement.--The battalion has sufficient radio equipment to maintain normal command and control functions during displacement of the battalion command post.

1407. LOGISTICS CONSIDERATIONS

Sustaining the tank battalion in combat requires a large and varied amount of logistics support. Logistics planning must be sound and compatible with tactical planning. Since organic tank elements are normally employed in support of infantry units, the tank battalion commander and his staff focus a great deal of attention on the logistics requirements of the unit. Considerations include the requirements for subordinate tank and antitank units to operate in dispersed and remote environments, thus achieving immediate tactical responsiveness to supported units. The overall principles and techniques employed in the Fleet Marine Force logistics system are covered in FMFM 4-1, Combat Service Support in Marine Air-Ground Task Forces. This paragraph covers those aspects of logistics which relate primarily to tank units.

a. Logistics Responsibility.--Each commander, regardless of the size of his command, is directly involved in the logistics support of his unit. The individual tank and antitank commander is just as involved with logistics as the battalion commander. Each commander must ascertain his logistics requirements, make sure his wants are known, ensure support received is adequate, and ensure that supplies are properly utilized. The battalion and company commanders have personnel to assist them in their logistics planning and requisition; however, the platoon commander and tank/antitank commander estimate their requirements and request fulfillment directly to the parent unit. The battalion commander uses his S-4 while the company commander uses his executive officer to supervise logistics requirements.

(1) Impetus of Logistics.--The overall impetus of logistics is from rear to front. Agencies providing logistics support to the tank battalion must be within reach of the battalion. Lower echelons normally receive their logistics support directly from the battalion.

(2) Logistics Planning.--Logistics plans, based on the tactical plan, should be simple, flexible, and complete.

(3) Reserve Supplies.--Certain reserve supplies including water, rations, ammunition, lubricants, and repair parts are carried by all echelons down to and including individual vehicles. Reserve fuels are seldom carried by units lower than companies. These supplies ensure that tank units can continue to operate even if supply lines are temporarily severed. As reserves are used, they are replenished when supplies become available.

b. Resupply.--The attachment of tank and antitank units to the infantry necessitates a requirement for additional service support and the prepositioning of certain supplies with the supported unit prior to attachment. Tank and antitank units placed in direct support of infantry units remain under the tank battalion's control and are provided their normal resupply through the tank unit's resources. Missions involving mechanized operations pose specific logistics problems. The size and complexity of the problems vary with the duration, distances involved, and size of the force.

c. Maintenance.--It is the responsibility of the commander, at all levels of command, to ensure that the equipment in his charge is properly maintained. In order to accomplish this, he requires that adequate materials and time are provided for maintenance and that preventive maintenance is given sufficient emphasis. He ensures that each individual unit is aware of the importance of maintenance.

(1) Supervisory Personnel.--It is the responsibility of the company commanders, special staff officers, platoon commanders, and battalion/company staff NCO's to ensure that the battalion commander's maintenance program is being carried out as well as those preventive maintenance requirements prescribed for each piece of equipment.

(2) Individual Crewmember.--The most important person in any maintenance program is the individual crewmember. He must be made to understand his responsibility for the care and handling of the equipment entrusted to him.

d. Inspections.--Intelligently spaced and organized inspections, properly conducted, are the best means available to a commander to ensure that his preventive maintenance system is effective. Reports alone will not suffice. Infrequent inspections result in neglect which may be covered up in a few frenzied days by paint and paper work. Too frequent, formal type inspections cause undue harassment and lower the value of the inspection system. The inspection system should be conducted on a consistent and systematic basis. All inspections must be followed up to ensure corrections are made. Without a followup, inspections serve a limited purpose.

1408. TRAINING

The scope of tank employment within the Fleet Marine Force necessitates a training program for the tank battalion which will develop and maintain its capability to function as an efficient member of a combined-arms team. Training for individuals and units of the tank battalion is based on the mission and on requirements prescribed by pertinent directives.

a. Tactical Exercises.--Tactical exercises are conducted to apply tactics and techniques to a given situation under simulated conditions of combat. Normally, tank units from platoon through battalion participate in team exercises with infantry units. This provides unit leaders the opportunity to rely on their own abilities. The tank battalion conducts tactical exercises in order to test the integration of its units and to ensure the ability of the battalion to successfully accomplish its mission. Battalion or company tactical exercises stress those aspects of tank employment that cannot be covered in tank-infantry exercises. Training exercises require the simultaneous employment of the unit, including its administrative and maintenance elements, in order to develop maximum teamwork.

b. Training During Exercises.--Training exercises should include as much of the following as time and circumstances will permit:

(1) Mechanized combined arms force training (day and night operations).

(2) Gunnery to include "suppressive fire."

(3) Command and control of mechanized combined arms task force and mobile assault companies.

(4) Mechanized raids and ambushes.

(5) Amphibious operations with mechanized combined arms task forces landed in the assault waves.

(6) River and water crossings under tactical conditions.

(7) Techniques of movement prior to contact.

(8) Active and passive measures against air, airborne, waterborne, and mechanized attack, as well as means of combating guerrillas and infiltrators.

(9) Tactical employment of mechanized combined arms task forces under nuclear conditions.

(10) Communications, including transmission security under conditions of electronic warfare, and alternate means of communication.

(11) Passage of minefield and the destruction of other obstacles.

(12) Relief of units and passage of lines.

(13) Intelligence, stressing the accurate, prompt, and complete reporting of information.

(14) Organizational maintenance in the field and on the march, including after-immersion preventive maintenance following amphibious operations.

(15) Combat service support procedures for mechanized combined arms task force.

(16) Tank crew proficiency course in accordance with FM 17-12, Tank Gunnery.

Section V. TANK PLANNING

1501. GENERAL

Except in detail, planning for the employment of tanks during an amphibious operation does not differ from planning tank operations ashore. The operation plan provides for a buildup of tanks ashore, for their initial employment, and for the logistics support necessary to sustain combat operations. Amphibious planning is conducted concurrently and in coordination with the planning of other units of the landing force. This section presents the steps taken in planning by the tank battalion commander and his staff.

1502. INITIATION OF TANK PLANNING

Planning guidance is a brief outline, either oral or written, presented by the commander to his staff and subordinate commanders which sets forth the scope of the operation and the manner in which he visualizes it will be conducted. It serves as a guide for the preparation of staff estimates and may take a wide variety of forms. It is derived from a consideration of the information contained in the initiating directive, planning guidance from higher headquarters, and other instructions that may have been received during the early phases of planning. As soon as the commander landing force provides initial guidance, subordinate commanders provide responsive guidance as the situation permits. Guidance in the form of planning directives, memorandums or draft plans, staff conferences, and informal briefings is provided throughout the planning phase. Upon notification by the commander landing force, the tank battalion establishes the necessary liaison to facilitate planning. Command and staff visits and representative liaison is effected with supported infantry units and with other units that are capable of supplementing tank support. Tank planning is based upon the requirements for the tank support necessary to complement the concept of operations stated by the commander landing force. The planning objective is to provide tank support that can best support the operations envisioned by the commander's concept. The tank battalion commander and his staff plan concurrently or through parallel chains of command. When planning discloses the need for special training, the tank battalion commander includes such requirements in his training orders submitted to subordinate units.

1503. TANK PLANNING TASKS

The tank officer of the landing force is responsible for contributing to the planning of the operation insofar as it relates to the employment of tanks. He is responsible for anticipating requirements and coordinating and recommending employment of landing force tanks. Since the senior tank officer, in a Marine amphibious force with a single division ground maneuver force, is normally the tank battalion commander assigned to the division, he may also serve as the landing force tank officer. His planning responsibilities require that he determine the capability of tanks to support the operation and the tank requirements necessary to ensure the accomplishment of the landing force mission. While the landing force tank officer prepares the required estimates to assist the commander in making his decisions, the tank battalion staff assists the landing force tank officer by preparing more detailed estimates. The senior tank officer in any size Marine air-ground task force (MAGTF) performs similar functions.

1504. ESTIMATE OF SUPPORTABILITY

An estimate of supportability is prepared by the landing force tank officer assisted by his staff. This estimate is part of the framework for the commander landing force's estimate and decision. The estimate analyzes the comparative capabilities of tanks to support each contemplated course of action. (See app. A.)

a. Influencing Factors.--In preparing the estimate, the landing force tank officer lists all information and necessary assumptions that pertain particularly to tanks. He considers all known factors which have an effect on the ability of tanks to support each course of action. He determines the advantages and disadvantages of each course of action by considering the following factors:

- (1) Landing force mission.
- (2) Enemy situation, to include the enemy antimechanized capability and electronic countermeasures capability.
- (3) Required tank support.
- (4) Hydrography.
- (5) Topography.
- (6) Weather.
- (7) Communication requirements.

b. Preparation.--Estimates of supportability are prepared from the tank viewpoint, reflecting analysis and comparison of courses of action and recommendations as to what courses of action tanks can best support. While no particular form for this estimate is prescribed, the five-paragraph form used for general staff estimates is easily adapted to its use. A sample format is contained in appendix A.

1505. ESTIMATE OF TANK REQUIREMENTS

An estimate of tank requirements is made by the landing force tank officer. This estimate is completed after the commander landing force has announced his decision. It is made to ensure that adequate tank support is provided for the operation. A sample format for an estimate of tank requirements is contained in appendix B.

1506. PLANS AND ORDERS

Plans and orders for mechanized forces conform to the applicable portions in FMFM 3-1, Command and Staff Action. Because of the speed of a mechanized force in a tactical situation, mission type orders are generally utilized. These orders state the mission clearly, but give each subordinate commander the latitude necessary in execution to enhance flexibility and ensure more rapid and aggressive accomplishment of tasks.

Section VI. LAND COMBAT

1601. GENERAL

This section describes methods and techniques employed by tanks in combat operations. It is emphasized that these procedures are not inflexible and are varied to meet the many situations that arise in combat. Successful tank employment depends on the ability of the commander to understand and evaluate the situation. To gain maximum shock effect, tanks are employed aggressively, violently, and in mass whenever possible. The mission of the tank battalion is to provide combat power to a Marine division. Tank units are employed as a portion of a combined-arms team organized to accomplish a specific mission. This team employs artillery, engineers, or any additional combat support or combat service support elements required and is formed around tank or infantry units. The forces are flexible and capable, even after being committed, of adjusting to a changing combat situation. The weapons or obstacles dangerous to any single element of the force are neutralized by the other elements of the combined-arms team. This mutual support does not require that all elements be in physical contact with each other, rather, it is the fire and observation of each element available to the other than enhances the team. The fundamentals of tank employment discussed in this section are considered by the planners when they organize tank units for combat and by commanders employing tanks.

1602. THREAT DEFENSIVE TACTICS

a. General.--The threat's defensive postures are based on the following fundamentals:

(1) Hold at all costs. First echelon regiments and below are required to stubbornly defend their positions even if bypassed.

(2) Destroy tanks. Threat doctrine stresses that the destruction of our tanks will cause an attack to collapse.

(3) Use obstacles and firepower. Threat doctrine emphasizes maximum use of terrain to strengthen his defenses. He defends in such a way that an attacker will be canalized into killing zones where the massed firepower of tanks, antiarmor weapons, and artillery can be used to destroy you.

(4) Retain reserves. Mobile antiarmor reserves are retained in the second echelon to block penetrations. At regimental level and above, tank reserves are retained to conduct counterattacks.

b. Forms of Defense.--Threat has two basic forms of defense--the hasty defense, normally adapted during offensive operations, and the deliberate defense. Several major distinctions can be drawn between these forms of defense; however, a hasty defense can quickly become a deliberate defense if the threat is given the time and applies the resources. Thus, this section will deal only with the deliberate defense. The threat's deliberate defense is organized in successive belts. These belts usually consist of the security zone and the first, second, and third defensive belts. Each defensive belt consists of a series of mutually supporting, self-sufficient platoon and company size strongpoints echeloned in depth.

Strong mobile reserves, normally tank heavy, are retained as a counterattack force. Obstacle belts are constituted both forward of and within each defensive belt in order to impede the advance of the enemy and to canalize him into preplanned firetraps.

c. Security Zone.--The purpose of the threat security zone is to deceive and to force us to deploy before we reach the first defensive belt. Normally, it is manned by reconnaissance elements from the division's second echelon and by elements of the forward deployed regiments. In this zone will be located light tanks, lightly armored wheeled and tracked reconnaissance vehicles, motorcycle elements, dismounted observers, main battle tanks, self-propelled artillery, and BMP targets. Company and platoon strongpoints are organized in forward positions behind the reconnaissance elements. These elements will offer stubborn resistance before delaying back to prepared positions in the main defensive belt.

d. Main Defensive Belt.--This belt, which may be 15 kilometers deep, is the bulwark of the defense. Its purpose is to stop and destroy the attacker. This is accomplished by the creation of platoon and company strongpoints arrayed laterally and in depth, planned "firetraps" where both direct and indirect fire units can be targeted, and the use of mounted mobile reserves with which counterattacks can be executed. Located here will be:

- (1) Remnants of the threat's security zone forces.
- (2) Hardened infantry fighting positions in each defensive echelon.
- (3) Hardened and unhardened antitank gun and antitank guided missile positions.
- (4) Field artillery assets in both the direct and indirect fire role.
- (5) Threat command, control, and communication (C³) centers.
- (6) Mobile tank/antitank reserves.
- (7) Direction finding (DF)/jamming sites.
- (8) Combat service support assets.
- (9) Numerous mobile and fixed air defense artillery assets.

1603. PRINCIPLES OF WAR

A successful commander applies the principles of war to all situations. The following discussion is intended to provide material for consideration when contemplating the employment of tanks:

a. Principle of the Objective.--Commanders must continually seek means to accomplish their mission in the most expeditious manner. Tanks possess the speed, mobility, and firepower to facilitate this principle.

b. Principle of the Offensive.--Tanks convey the spirit of the offensive and commanders should make every effort to employ them in this role. In situations which require a defensive posture, tanks should be

considered for employment as a counterattack force or as the spearhead of a mobile striking force.

c. Principle of Mass.--The mobility of the tank permits the commander to rapidly assemble them at the critical point and time, and in sufficient numbers to overwhelm the enemy and secure a decisive victory.

d. Principle of Economy of Force.--This principle is a corollary to the principle of mass. It requires the employment of a minimum of force in nondecisive areas in order that a maximum of force can be applied at the most effective time and place. Because tanks are highly mobile and possess excellent communication capabilities, they provide commanders with the means for the application of this principle.

e. Principle of Surprise.--Tanks are large, noisy and are difficult to hide, thus commanders frequently do not associate them with a capability for attaining surprise. Surprise can be obtained in the employment of tanks through the use of originality, deception, concealment, and imagination on the part of the commander. Some of the ways in which surprise may be attained are:

- (1) By the use of darkness and night observation devices.
- (2) By the use of terrain which appears impassable.
- (3) By the use of air cover and artillery support.
- (4) By the use of smoke.
- (5) By a change in the direction of the attack.
- (6) By changes in the method of attack.
- (7) By employing a normal volume of traffic and electronic counter-countermeasures.

f. Principle of Security.--Security is achieved by measures taken to prevent surprise, preserve freedom of action, and deny the enemy information. Security does not imply undue caution or concern for safety. It is through bold action that tanks can most often provide commanders with effective security by keeping the enemy off guard.

g. Principle of Maneuver.--Application of this principle is a function of command and it requires the positioning of men, equipment, and firepower to accomplish the mission. Tanks possess two attributes which are vital to maneuver--mobility and excellent communications.

h. Principle of Unity of Command.--It is particularly important for tank unit leaders to abide by this principle, because tanks are often employed in combat support roles where the chain of command can easily be clouded. At all times, it must be clearly understood who the single commander is for any assigned mission.

i. Principle of Simplicity.--There are no unique attributes of this principle as it pertains to employment of tanks. Clear, concise orders and a simple plan are virtually always the key to a successful operation.

1604. FUNDAMENTALS OF TANK COMBAT

In offensive operations, tank units must take full advantage of their firepower and maneuverability in order to dominate, overrun, or destroy enemy positions. Commanders who employ tanks must attack aggressively and make every effort to take full advantage of the shock power generated by tanks. The speed, violence, and shock effect created by the employment of tanks contributes materially to successful offensive operations.

1605. CONSIDERATIONS FOR EMPLOYMENT

a. Fire and Maneuver.--Tanks are designed to move by fire and maneuver; therefore, the tactics employed are based on this principle. The tank has no unique function as a static weapon. Artillery, air, tanks, and other supporting arms may be employed to provide the necessary base of fire to assist the maneuver element to move. Tanks, however, should be employed with the maneuver element. Regardless of how tanks are employed, they should maneuver to a point where they can concentrate direct fire at a key point.

b. Maximum Mobility.--Tank units should be allowed to exploit their mobility in order to achieve surprise, rapid concentration, and quick dispersal. Of primary importance is the fact that tank mobility gives the tank and supported commanders a flexible force which can be used to their advantage.

c. Maximum Flexibility.--Tank units assigned tactical missions plan for and accomplish the direct or general support mission at hand. As situations change, tanks have the capability to respond to the new situation. The ability to modify tactical missions and plans and to readjust task organizations is fundamental to the employment of tanks. Supported unit commanders respond to this flexibility and make use of it, just as they exploit the supporting fires of their own organic weapons or artillery fires. It is necessary that the unit commander be included in and made aware of the plans of the unit he is supporting from their inception to their conclusion.

d. Exploiting Enemy Weaknesses.--As with any other arm, tanks exploit the weakness of the enemy whether it is faulty disposition, poor morale, numerical weakness, or any other factor which gives the advantage.

e. Aggressiveness and Deliberate Planning.--Aggressive execution of the deliberately planned armored attack is the key to successful tank-infantry operations. Execution of mobile operations requires careful coordination and teamwork. The tank unit commander must know the plans of the unit he is supporting in order to direct his efforts toward the supported unit's objective. Coordination is accomplished by the use of radio, messenger, and other available communication aids. It is essential that the involved commanders maintain communications during the period the tanks are reacting to modified plans.

f. Cover and Concealment.--Maximum use must be made of covered and concealed avenues of approach to ensure the assaulting tanks minimum exposure to enemy antitank fires. Overwatching and supporting arms fires must be utilized to lessen defensive antitank effectiveness.

1606. FACTORS AFFECTING EMPLOYMENT

When employing tanks, the commander exploits the favorable characteristics of the vehicle and minimizes its limitations. His final judgment, however, is based on the considerations of the mission, the enemy, the terrain and weather, and the troops/forces and fire support available to him (METT). When considering the factors of METT, the commander is making a simplified estimate of the situation. When the situation warrants, a complete commander's estimate as prescribed in FMFM 3-1, Command and Staff Action, may be made.

a. Mission.--Normally, the units of the tank battalion derive their mission from the mission of the units they are supporting. They task organize and formulate a scheme of maneuver that assists in the accomplishment of the supported unit's mission.

b. Enemy.--Tank units gather or are provided with any intelligence information that may affect their use prior to any commitment; this includes information on terrain, enemy tanks, and antitank units. The sources available to the tank battalion and its subordinate units include information obtained by committed units (tank and infantry), from higher headquarters by aerial reconnaissance, and from intelligence reports. A source often neglected and possibly the most valuable is a tank unit in contact with the enemy. Contact reports should be submitted immediately. It is necessary for tank unit commanders to make their intelligence requirements known to the intelligence sections of the supported unit, the division, and the landing force. Tank personnel should accompany infantry patrols when possible, as this is the best means of obtaining the information required. The following enemy information is vital to the preparation of plans involving tanks and is a basis for determining the organization for combat:

(1) Obstacles.--Advance knowledge of antitank obstacles must be obtained. Consideration is also given to the possible creation of obstacles resulting from blown down objects in wooded or built-up areas resulting from nuclear blast and to areas contaminated by residual radioactivity following the employment of nuclear weapons.

(2) Armored or Mechanized Units.--Enemy armored or mechanized units do not preclude friendly tank operations; however, their presence has a definite effect on the accomplishment of the overall mission. It will be necessary to employ friendly tanks to contain any hostile armored threat.

(3) Air Support.--Hostile air does not prevent friendly tank activities; however, historical examples of tank units losing numerous vehicles to air attack indicate that it is not to be ignored. Tanks can be destroyed by direct hits from air attacks and their logistical facilities are vulnerable. Immediate action should be discussed in unit SOP's. For low, slow flying aircraft, button up and mass (interlock) fires from caliber .50 machineguns in front of attacking aircraft. For high performance aircraft, button up, disperse, use terrain for cover, and/or move into your own dust or cloud of white phosphorous.

(4) Antitank Capability.--Up-to-date information regarding the enemy's capability to counter friendly tank units is of vital concern and is considered in the preparation of operation plans and task organization. References pertaining to enemy capabilities include TC 6-4-2, DDI-1100-77-76, TRADOC Bulletin 1, and FM 30-40, Handbook on Soviet Ground Forces.

c. Terrain and Weather.--Operations conducted over unfavorable terrain or during adverse weather require detailed planning and more time. Unfavorable conditions can often be overcome by ingenuity, use of guides, or other methods which an imaginative officer can devise.

(1) Terrain is closely scrutinized prior to the employment of tanks. Tanks lose some of their effectiveness if confronted by unfavorable terrain without prior preparation. Dense woods or jungles, marshy and swampy areas, mountains, and extremely rough terrain restrict tank movement. Broad stretches of rolling ground provide the most favorable tank terrain for achieving maximum cross-country mobility. Caution is used when favorable tank terrain is available since it is normally mined or covered by the fire of antimechanized weapons. If less favorable terrain can be utilized, then surprise will normally be gained. Road nets are used extensively for movement of vehicles to the battle area and for logistics support. Most of the logistics vehicles are wheeled and require roads for maximum effectiveness. For a discussion of the use of terrain studies and the preparation of an analysis of an area of operations, see paragraphs 2401-2403; FM 30-5, Combat Intelligence; and FMFM 2-1, Intelligence.

(2) Effects of the weather on tanks do not have as broad an effect on their operations as terrain; however, weather must be considered. Rain can turn favorable terrain into quagmire, and extreme cold or heat has a tendency to reduce the effectiveness of tanks if preparations are not made to combat them. Rain, snow, and fog reduce visibility and, therefore, hamper tank operations. Poor weather is also used to an advantage. Attacking under adverse conditions or movement during periods of reduced visibility may gain a definite advantage.

d. Troops Available.--Realistic plans require consideration of the capabilities of the forces available to provide support. The capabilities of a force are dependent on:

- (1) Number of units.
- (2) Type of units.
- (3) State of training.
- (4) Morale.
- (5) Strength in men and equipment.
- (6) Previous, present, and contemplated employment.
- (7) Location and disposition.
- (8) Status of maintenance and supply.
- (9) Adequacy of combat and combat service support.
- (10) Personalities of commanders.

1607. ORGANIZATION FOR COMBAT

The organization for combat places the tank battalion and/or its subordinate units within a task organization. The organization for combat

is established to provide the means and capability for supporting the plan of operation of the landing force. It is generally designed to provide the required tank support for assault infantry forces. Proper task organization develops the tank battalion into a maneuver force in the combined arms concept. The combat forces of the Marine division are now increased to 10 maneuver battalions containing 40 assault companies. No permanent creation of a new organization is necessary or desired. However, where tanks can operate, mechanized combined arms forces can be employed. With the increase in mechanized assets, MAF's can task organize two or three battalion sized mechanized combined arms task forces.

a. Principles

(1) If the mission and area of operations can be supported by tanks, then mechanized combined arms task forces should be employed.

(2) If a combined arms concept is to be utilized, then sufficient landing vehicles tracked (LVT's) are provided to ensure that infantry and support elements of the assault companies and the battalion command group have mobility equal to the tanks.

b. Task Organization.--Forces are organized or tailored to accomplish specific missions by maximizing combat maneuver forces. Basically, a mechanized combined arms force is composed of a command and control headquarters and subordinate maneuver, combat support, and combat service support elements. All elements possess basically the same degree of mobility. Since the battalion is the basic tactical unit for ground combat, the mechanized combined arms task force is structured at that level. The principal forces of the mechanized combined arms task force are tanks and infantry mounted in LVT's (mobile assault infantry). Combat support and combat service support are then assigned based on the mission and area of operation.

(1) Mechanized Combined Arms Task Forces.--The mechanized combined arms task force concept utilizes both the tank and infantry battalion as a maneuver element; i.e., the Marine amphibious brigade (MAB) may be composed of two infantry battalions and the tank battalion, producing three mechanized combined arms task forces. This is accomplished by cross-attaching companies. Listed below are forces that typically compose a mechanized combined arms task force. The list is not all inclusive since the force is task organized based on mission and operating area.

(a) Command and Control Headquarters.--This element will be the tank and infantry battalion commanders and their staffs, since the tank battalion is employed as a maneuver element command and control headquarters. Fire support coordination for the tank battalion will be discussed in subparagraph (e).

(b) Tanks.--Tank companies will be attached to infantry battalions to provide the desired mix.

(c) Infantry.--Infantry companies will be attached to the tank battalion to provide the desired mix.

(d) LVT's.--The LVT's are provided in sufficient quantity to mount the infantry and support personnel of the force. Additionally, LVT-7's are assigned to provide commanders with mobile command posts. Generally, the mechanized combined arms task force will be commanded and

controlled from LVTC-7 vehicles. The task force is assigned LVTC-7's and LVTP's to provide the task force commander with the ability to mount his command element. While the organization of the command post is the prerogative of the commander, the below information provides a sample of how the vehicles may be utilized:

1 Command Group

- a Combat operations center (COC) (LVTC-7)
Commanding officer (CO)
S-3
Assistant S-3
S-2
S-2 radio operators
- b Fire support coordination center (FSCC) (LVTC-7)
Fire support coordinator (FSC)
Air liaison officer (ALO)
Naval gunfire officer (NGFO)
Communication officer (COMMO)
- c COC chase (LVTP-7)
COC watch personnel
- d FSCC chase (LVTP-7)
FSCC watch personnel

2 Displacement Element

- a Alternate FSCC (LVTC-7)
FSCC assistants during displacement
- b Alternate COC (LVTP-7)
Operations/intelligence assistants during displacement

(e) Fire Support

1 Artillery.--Mechanized forces require artillery support the same as any other tactical maneuver battalion. However, there are some unique factors which must be considered, mainly the speed and range of such a force. If the distance of the operation will not exceed the range of the artillery firing from its normal position, then the artillery fire support will be the same as in support of a dismounted infantry battalion. If the distance will exceed the range, detailed planning must be effected to ensure timely displacement of artillery to provide supporting fires throughout the range of mechanized operations. Self-propelled units possess inherent mobility. The towed unit achieves mobility through being transported by LVT's or by their own prime movers, depending on the terrain. Employment methods will be discussed in a subsequent paragraph.

2 Naval Gunfire.--The same support that is normally provided to the infantry battalion must be provided to the mechanized combined arms task force.

3 Close Air Support.--The same support that is normally provided to the infantry battalion must be provided to the mechanized combined arms task force.

4 Fire Support Coordination.--The same fire support coordination currently provided to the infantry battalion is provided to the mechanized combined arms task force. Fire support coordination for the tank battalion and company headquarters can be created from organic assets of the artillery regiment and from other organizations that are uncommitted or in reserve. In addition, tank commanders are capable of requesting and adjusting artillery and naval gunfire. The tank's AN/VRC-73 radio makes a radio change to the artillery frequency possible. Tank company and platoon commanders are capable of coordinating with the tactical air controller (airborne) (TAC(A)) in air support for the company teams.

(f) Antitank Weapons.--Antitank weapons for the mechanized combined arms task force include the full range of antitank resources. Currently, aircraft (depending on the antiair environment) and tanks represent the most readily available means when the force is on the move.

(g) Antiair Defense.--A means of antiair defense will be provided to the mechanized combined arms task force. This may take the form of Redeye teams; however, infantry, tank, and LVT personnel must be trained in the employment of crew-served weapons in antiair defense. For additional guidance in the employment of the Redeye, see FMFM 5-5C, Employment of Forward Area Air Defense Battery.

(h) Engineers.--Engineer support in the form of attached personnel are provided to clear minefields and obstacles.

(i) Reconnaissance.--Reconnaissance support may be provided by organic assets of the infantry and tank unit, or from the division/force reconnaissance units. Reconnaissance teams will experience some difficulty maintaining the speed equal to that of the mechanized combined arms task force.

(j) Helicopter Support.--Helicopters, armed and unarmed, are tasked to support the force, depending upon the antiair environment. Armed helicopters provide antitank and suppressive fires and perform escort functions. Unarmed helicopters perform reconnaissance, logistics, liaison, and troop lift functions.

(k) Combat Service Support.--Combat service support may be required to be provided from the force service support group (FSSG) and the assault amphibian battalion, H&S company, as well as the organic assets of the tank and infantry battalion, depending on the mission and length of the operation. A linkup operation is an example of one which would require CSS augmentation.

(2) Mobile Assault Companies.--Mobile assault companies are created by attaching tank platoons to infantry companies and infantry platoons to tank companies. This process is called cross-attachment. There is no cross-attachment beyond the platoon level. Infantry is mounted in LVTP's (mobile assault infantry). These teams are the basic combined arms fighting unit, designed to rapidly close with the enemy and destroy or bypass him. The company commander will achieve mobility through the utilization of the tank or LVTP-7.

(a) Command and control is exercised by the tank and infantry company commanders. The tank company headquarters is utilized as assault maneuver element control unit.

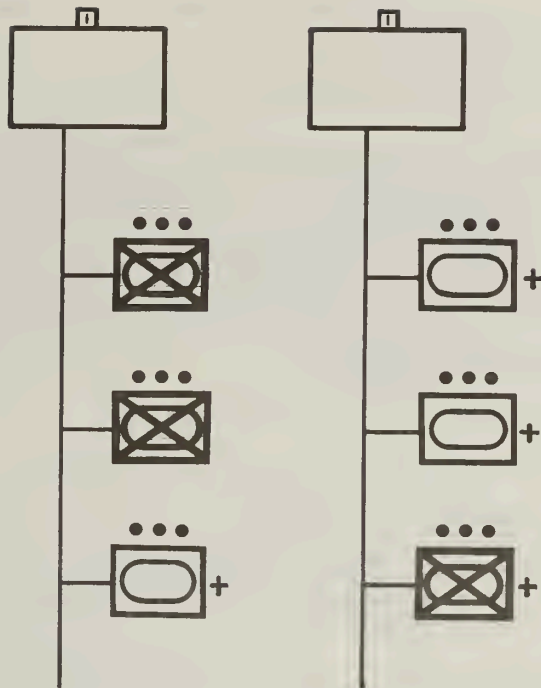


Figure 5.--Two examples of a Mobile Assault Company.

(b) A typical mobile assault company is outlined below:

headquarters.

1 Command and control--tank or infantry company

2 Tank platoon(s).

3 Infantry platoon(s).

4 Antiaircraft units.

5 Elements of the antitank company.

6 Combat support and combat service support as required from assets listed in (1)(b) above.

(c) Therefore, a mobile assault company can be task structured to accomplish a specific mission based on the threat. Two examples are shown in figure 5.

c. Tank companies and platoons may be utilized to reinforce infantry units by attachment or missions of direct or general support.

1608. ASSIGNMENT OF MARINE AIR-GROUND TASK FORCES

Possible assignments of tanks and LVT units to Marine air-ground task forces are as follows:

- a. Marine Amphibious Unit (MAU)
 - (1) Tank platoon to company.
 - (2) Assault amphibian platoon to company.
- b. Marine Amphibious Brigade
 - (1) Tank company to battalion.
 - (2) Assault amphibian company to battalion.
- c. Marine Amphibious Force
 - (1) Tank battalion--multibattalion.
 - (2) Assault amphibian battalion--multibattalion.

1609. METHODS OF EMPLOYMENT

By creating a force that is equal to the mobility of the tank, our methods of employment will be somewhat modified. Basically, the infantry remains mounted as long as possible.

a. Tanks and Mobile Assault Infantry Attack Together.--(See fig. 6.)

(1) The mobile assault companies move from the line of departure to the objective as a fighting unit. The intent is for the infantry to remain mounted in the LVT's until the forward defensive positions of the enemy have been breached.

(a) Tanks of the company team generally will lead the formation.

(b) Fire and maneuver with vehicles is employed as required by enemy resistance. Speed is essential and maintained to the highest degree possible.

(c) The infantry is dismounted after forward defensive positions have been breached. This should be accomplished in defilade locations on order of the team, platoon, and/or vehicle commanders. The infantry then moves through the objective mopping up resistance and consolidating the position. The tanks continue through the objective, constantly moving, engaging resistance, and pursuing by fire until the infantry has consolidated the position.

(2) TOW units may be used to accompany and support the assaulting forces.

(a) TOW units provide antitank/assault fires initially from the line of departure and are displaced forward as firing positions are uncovered or as lead elements become masked.

(b) TOW units will be employed in support of the lead assault elements where there is a significant amount of enemy armor in the defensive positions. TOW units will be employed to overwatch the maneuver of lead elements prepared to provide immediate antitank fire.

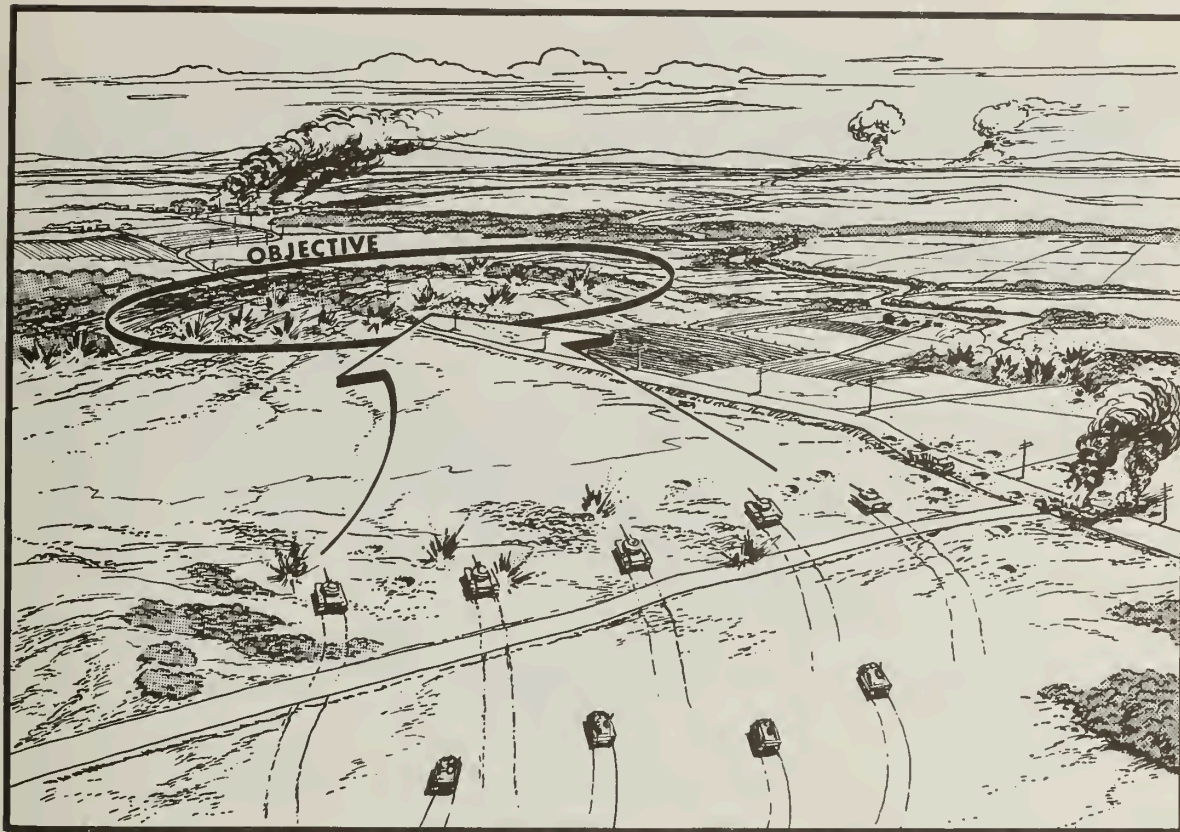


Figure 6.--Tanks and Mobile Assault Infantry Attack Together.

(c) When the terrain is not trafficable for wheeled vehicles, consideration should be given to transporting TOW launchers in their ground mount configuration inside LVTP-7's, since the time required to discharge a jeep mounted TOW launcher is prohibitive.

(3) After consolidation, the infantry remounts the LVT's if the attack is to be continued, or sets up a hasty defense. If a hasty defense is ordered, the tanks take up positions to engage a counterattack along likely avenues of approach until antitank weapons are positioned.

(4) During the assault, all direct fire weapons fire suppressive fires onto likely enemy antitank weapons positions. Fire support means deliver suppressive fires onto the objective, likely antitank weapons, artillery, communications, and control positions.

(5) This method of attack will:

(a) Fully capitalize on the mobility, speed, and shock action of a mobile assault team.

(b) Reduce the enemy's reaction time.

(c) Disorganize the enemy's defense, since his positions have been breached before the infantry dismounts.

(d) Deny the enemy full effective use of most of his direct fire weapons, since suppressive fires are delivered on the objective until the infantry dismounts.

(e) Conserve the energy of the infantry, since they are carried onto the objective.

(f) Reduce friendly casualties, since the infantry is protected against small arms, mortar, and most artillery fragments.

(6) Tanks and mobile assault infantry will attack together on single or multiaxis.

(7) The tank and mobile assault infantry "attack together" method will be employed at all times unless:

(a) Barriers (existing or reinforcing) are present that cannot be breached or bypassed.

(b) The volume of enemy antitank fire is so great that it cannot be reduced by suppressive fire.

(8) If, during the assault, surprise antitank fire is received in such volume that it cannot be suppressed by all immediately available fire support resources and to continue would result in unacceptable casualties, the infantry is dismounted in defilade locations, the LVT's fire suppressive fire, and the tanks assume the "support by fire" method.

(9) The local commander determines when to dismount the infantry during the assault, depending on the situation.

b. Tanks Support By Fire Only.--(See fig. 7.)

(1) This method is employed only when:

(a) Barriers, existing or reinforcing, exist that cannot be breached or bypassed by the tanks and LVT's.

(b) The volume of antitank fire is so extensive that it cannot be suppressed by available fire support means to permit effective fire and maneuver by the vehicles.

(2) When this method is employed, the infantry is dismounted at a predetermined position, as far forward as possible, and conducts a normal dismounted assault.

(3) Tanks support the infantry assault by direct, suppressive fire. The tanks constantly reposition themselves to preclude presenting a stationary target for an extended period of time.

(4) TOW's will employ overwatch and support the infantry assault by direct fire. TOW's will constantly reposition themselves to preclude presenting a target.

(5) LVT's, after discharging the infantry, will deliver suppressive fires onto the enemy position to the maximum extent possible.

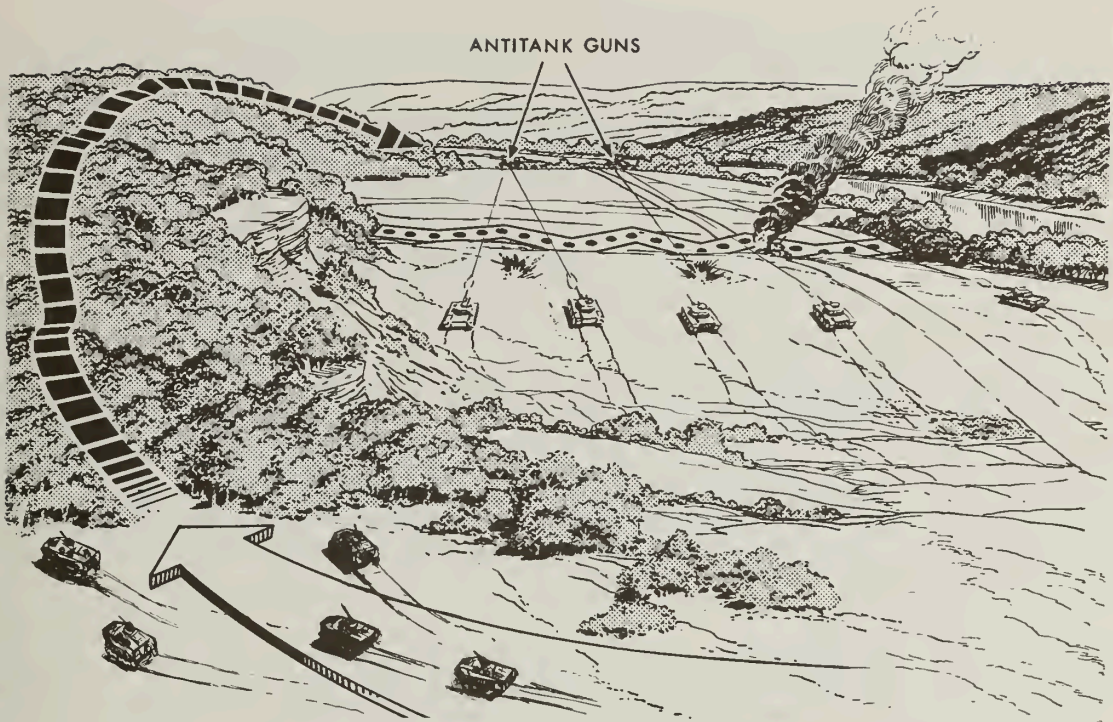


Figure 7.--Tanks Support By Fire Only.

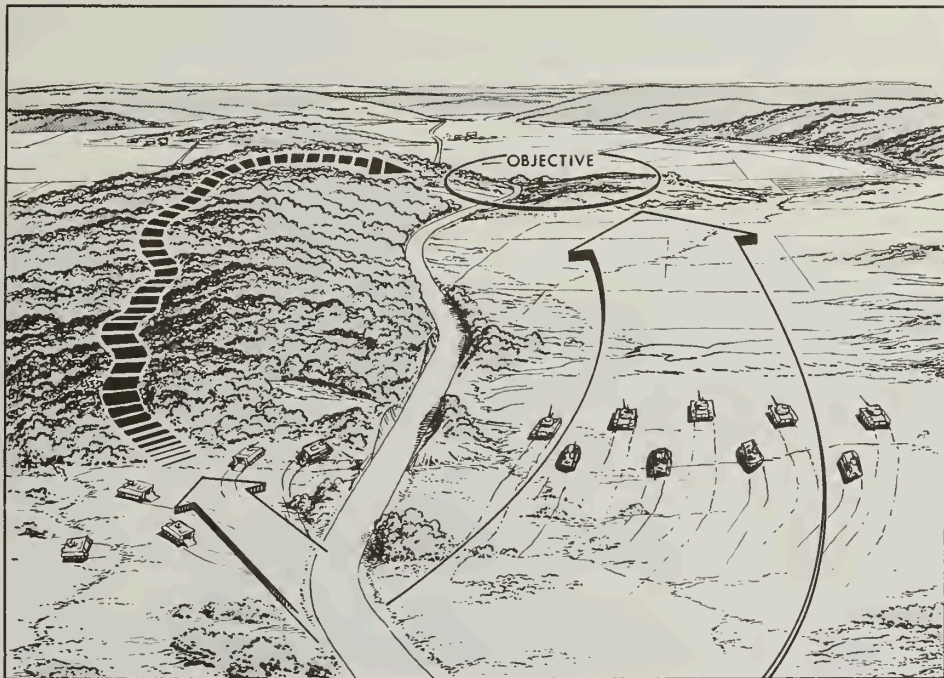


Figure 8.--Tanks and Mobile Assault Infantry Attack On One Axis While Dismounted Infantry Attacks On a Second Axis.

(6) Tanks and LVT's rejoin the infantry on the objective as soon as possible after the assault.

c. Tanks and Mobile Assault Infantry Attack On One Axis While Dismounted Infantry Attacks on a Second Axis.--(See fig. 8.) This variation is employed only when a single mechanized avenue is available. The assault requires close coordination if both assaulting forces are to arrive on the objective at the same time. The momentum along one axis is not held up if the other force is slowed or stopped once the assault has commenced.

1610. TECHNIQUE OF MOVEMENT

In a rapidly moving situation, which is the character of the mechanized combined arms task force, a technique for movement which considers a readiness posture is necessary. The U.S. Army's overwatch technique, as contained in FM 71-1, Tank and Mechanized Infantry Company Team, represents a valid concept and may be considered when moving amechanized force. The particular technique employed is keyed to likelihood of enemy contact. These techniques are applied to the platoon and company level.

a. Platoon Movement

(1) Tank Platoon.--When a tank platoon moves in two sections--a heavy and a light section--both sections use the same movement technique and there are visual signals for each technique.

(a) Traveling.--When speed is important and contact not likely, the platoon moves with one section trailing the other. The platoon leader is normally in the lead section to aid navigation, movement, and control. Terrain or administrative requirements may force sections to move closer together, but they spread out laterally as soon as possible. When traveling, the platoon moves as a unit. (See fig. 9.)



Figure 9.--Traveling.

(b) Traveling Overwatch.--When contact is possible but speed and massed movement are desirable, traveling overwatch is used. The lead section is continuously moving while the trailing section moves at variable speeds, sometimes pausing to overwatch movement of the lead section. The trailing section keys its movement to terrain, overwatching from a position where it can support the lead section if that section engages the enemy. (See fig. 10.)

(c) Bounding Overwatch.--When contact is expected, tank sections move by bounds; one section is always in a position to overwatch and provide supporting fire before the other section moves. The platoon leader decides which section will lead based on his visual reconnaissance of the terrain. The bounding section moves forward on a covered or concealed route whenever possible. Each tank in the moving section normally uses a separate route and keeps visual contact with its section leader. This is the slowest but most secure movement technique. (See fig. 11.)

(2) Mobile Assault Infantry Platoon.--Mobile assault infantry can move and fight mounted. This is especially true when enemy antiarmor weapons can be suppressed by fire and/or smoke or when there is good trafficability with no obstacles to mounted movement. When mounted, the mobile assault infantry platoon moves to contact by traveling, traveling overwatch, or bounding overwatch.

(a) Traveling.--When speed is important and enemy contact is not likely, the platoon moves on a column axis, leaving 50-500 meters between vehicles (terrain permitting). LVT's spread out laterally about 50 meters. The platoon leader usually leads the column, making control easier. The platoon sergeant normally rides in the second or third LVT where he can see his platoon leader and the trailing (last) carrier. From there he can best help the platoon leader control the platoon.

(b) Traveling Overwatch

1 When enemy contact is possible, use precautionary measures; but if speed is important, use traveling overwatch. Vertical distance between the platoon's lead and second LVT is 100-400 meters, and lateral distance between the overwatching carriers is about 100 meters; however, these distances may vary according to terrain visibility and the support need of the lead LVT. That LVT must be far enough from the rest of its platoon so that fire directed at it will not fall at the same time on its overwatching element.

2 The platoon moves continuously and uses all available cover and concealment; this is not a fixed formation. The platoon (minus (-)) moves along behind the lead squad and may change its speed to keep a proper distance. When visual contact is lost, the lead squad may slow down to let the overwatch element catch up.

(c) Bounding Overwatch

1 When enemy contact is expected, the platoon moves by bounds. The platoon (-) covers the bounding squad from covered and concealed overwatch positions that have good observation and fields of fire. It supports the bounding squad by suppressive fire and maneuver if the squad makes enemy contact. Part or all of the platoon (-) may dismount to support the bounding squad. The length of each bound is closely tied to terrain and



Figure 10.--Traveling Overwatch.



Figure 11.--Bounding Overwatch.

to the ability of the platoon (-) to cover the squad as it moves to a new position.

2 Any contact with the enemy will probably be made by the bounding squad as it moves to and secures a position from which the platoon (-) will overwatch the next bound. When it occupies a new position, this squad may dismount soldiers to provide security, better observation, or manning of weapons.

b. Mobile Assault Company Movement.--Normally, the mobile assault company team is organized for combat in one of these ways:

MECHANIZED-HEAVY TEAM

Mechanized Infantry Company Base



TANK-HEAVY TEAM

Tank Company Base



(1) Traveling

(a) When speed is important and contact not likely, the team moves on a column axis with a space between platoons. That interval is based on visibility, terrain, and weapon ranges. Trail platoons may move in parallel columns to shorten the column and the reaction time.

(b) Within platoons, vehicles are spread out or dispersed according to visual contact and terrain. The terrain may temporarily push elements together, but the platoon spreads out again as soon as possible.

(2) Traveling Overwatch

(a) When enemy contact is possible, the team uses precautionary measures, but if speed is important, the lead platoon moves by traveling overwatch. The command group and trail platoons normally use traveling and key their movement to the trail element of the lead platoon. The team (-) must be far enough behind that fires directed at its lead platoon will not hit the team (-), but it must always keep the lead platoon in sight.

(b) The team commander chooses a route which uses all natural cover and concealment. Individual vehicles use terrain to reduce exposure, so traveling overwatch is not a fixed formation. Actual positioning of vehicles and distances between them will vary considerably according to terrain and visibility.

(c) When the team has a weapon platoon or attached support elements, they are positioned to react quickly and effectively to the enemy. The antitank section usually moves directly behind the team commander; the mortar section can move within the column or follow by bounds. Mortars usually move with the team when there are firing positions along its axis of movement or when contact is not likely. Mortars normally follow by bounds when contact is expected or when good firing positions are limited. Placing the weapons section in these locations will ensure:

1 Immediate response to the team commander.

2 Quick fire support of lead elements engaging the enemy.

3 Ability of supporting weapons to suppress enemy fire directed at lead element.

(3) Bounding Overwatch.--When contact is expected, the team moves by bounds. The overwatch element covers the bounding element from covered, concealed positions with good observation and fields of fire against possible enemy positions. It can immediately support the bounding element by fire and maneuver if the bounding element makes contact. The bounding element, unless it makes contact en route, moves via covered and concealed routes into a good overwatching position; it should find the enemy. The length of its bound is based on terrain and the range of overwatching weapons. The uncommitted company team (-) is available for any employment the team commander directs. There are two variations of team bounding overwatch:

(a) Bounding by Platoon.--This is the more secure method, but it is slower and needs terrain with good fields of fire. The team commander has one platoon occupying a position that will overwatch a bound by a second platoon. Unless his bounding platoon's movement technique is specified by his team commander, the platoon leader may use either traveling overwatch or bounding overwatch.

(b) Bounding Within Lead Platoon

1 In this method, the lead platoon bounds by section or squad. The command group and team (-) key their movement to the trailing element of the lead platoon (-) and follow as in traveling overwatch. The other squad of the lead platoon overwatches this movement. This method is used when terrain is restrictive, fields of fire are limited, or when contact is expected but speed is needed.

2 In bounding overwatch, all movement is keyed to the next overwatch position; the overwatch position is thus a key element in offensive operations. It offers defensive advantages while keeping the initiative, including:

a Cover and concealment.

b Good observation and fields of fire.

c Stationary weapon platforms.

d Immediate and controlled reaction to any threat.

3 The overwatch element occupies the overwatch position using cover and concealment. Its vehicles are positioned hull-down, and its weapons cover routes of the advancing element. The leader of the overwatch element reports occupation and:

a Checks the security of the position.

b Assigns areas of responsibility for observation and fire.

c Locates possible enemy positions.

d Selects routes to his next position.

c. Contact Gained

(1) Fire and maneuver is employed to close with the enemy.

(2) Maneuver is supported by suppressive fires.

d. TOW Utilization.--In all the techniques, but particularly bounding overwatch, the TOW systems provide an ideal overwatch weapon. It is positioned with the overwatch element and must be positioned where its long range accuracy can be capitalized.

1611. SUPPRESSIVE FIRE

Fires, direct and indirect, are brought to bear on known or likely enemy locations to degrade the enemy's ability to place effective fires on friendly maneuver elements.

a. All weapons of mechanized combined arms task forces and their fire support must be able to deliver suppressive fire on an immediate response basis.

b. Direct suppressive fire is delivered at ranges up to 1,800 meters by direct fire and indirect fire weapons.

c. Indirect suppressive fire is generally delivered by indirect fire weapons and is categorized as planned and immediate.

1612. ACTION DURING HOSTILE AIR ATTACKS

Mechanized forces, like dismounted forces, are vulnerable to hostile air attacks. Air attack may occur while forces are moving or stationary and must be expected with little or no warning.

a. If the attack occurs while forces are moving:

(1) The force immediately disperses or extends normal interval to degrade the effect of cluster bomb units (CBU's).

(2) Vehicles turn in a direction perpendicular to the course of the attacking aircraft.

(3) When taking evasive action, vehicles seek cover in defilade or folds in the terrain.

(4) Vehicles with machineguns take attacking craft under fire as soon as they are in range.

b. If the attack occurs while forces are in stationary location:

(1) Vehicle remains stationary since it is extremely difficult to acquire individual vehicles from a tactical aircraft executing maneuvers in an anti-air environment.

(2) If detected, forces execute actions outlined in subparagraph 1612a.

c. Surface-to-air missiles engage hostile aircraft in accordance with the provisions of FMFM 5-5C, Employment of Forward Area Air Defense Battery.

Section VII. OFFENSIVE OPERATIONS

1701. GENERAL

A mechanized combined arms task force is the most effective employment of both tanks and infantry when the mission, situation, and area of operations will support the employment of mechanized forces. Mechanized combined arms task forces are offensive in nature; therefore, they are well suited to all types of offensive combat, as outlined in the FMFM 6-series.

a. Movement to Contact.--The speed of the force will permit it to rapidly establish contact.

b. Reconnaissance in Force.--The combined arms aspect of the force and its ability to engage and disengage rapidly makes reconnaissance in force an ideal phase in which to employ the mechanized combined arms task force.

c. Coordinated Attack.--The speed, mobility, shock action, and firepower of the mechanized combined arms task force make it ideal for deliberate attack designed to rupture the enemy's position and destroy his will to resist. Employment of a mechanized combined arms task force as the main attack may well disrupt the enemy and his antiaircraft artillery (AAA) capability to the point that exploitation can be directed and helicopter forces can be employed for mobility.

d. Exploitation.--The speed of the mechanized combined arms task force facilitates its utilization in bold action to seize deep objectives.

e. Pursuit.--The speed, flexibility, and mobility of mechanized combined arms task forces make them the ideal organization to employ as both direct pressure and encircling forces during the pursuit.

1702. CONTROL MEASURES

During planning, it is essential to outline detailed control measures. Control measures are not intended to restrict the movement of tanks, rather, they ensure their coordinated movement. (See fig. 12.)

a. Objectives.--Objectives are assigned by higher headquarters which designate the area for a subordinate unit to seize. An objective should be of suitable size for an assault force to seize and should be readily identifiable. The assignment of an objective indicates control over it is to be gained and maintained by the unit. Intermediate objectives are assigned by the unit to subordinate elements when their seizure is essential to the accomplishment of the mission.

b. Assembly Areas and Attack Positions.--Assembly areas are assigned so that a unit can assemble and prepare for action. An attack position is assigned to enable units to deploy into an attack formation. Units assigned assembly areas and attack positions adhere to their limits to prevent interfering with other units of the force.

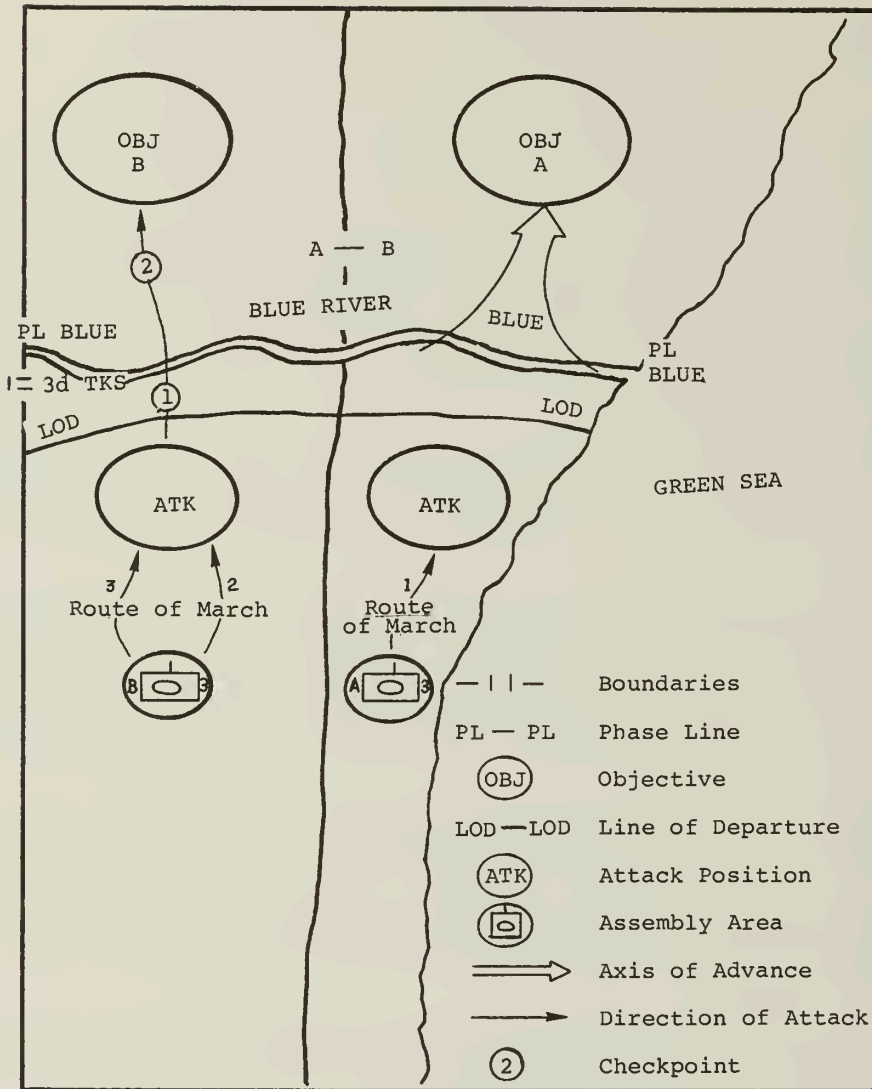


Figure 12.--Control Measures.

c. Line of Departure (LOD)

(1) An LOD is a line designated to coordinate the departure of the attack. When used, it must be supplemented by a time of attack. It should be controlled by friendly forces.

(2) It should be easy to recognize on the ground and on the map, and it should be generally perpendicular to the direction of attack. Approaches to the line of departure should provide cover and concealment from enemy observation and direct fire weapons.

(3) In fast-moving situations, the LOD can be the line of contact, particularly when the location of the line of contact cannot be pre-determined.

d. Boundaries.--Boundaries delineate a unit's area of responsibility; i.e., area within which the unit involved can control movement and fires. Other units desiring to maneuver or fire into the area defined by boundaries must coordinate their actions with the commander responsible for the defined area.

e. Axis of Advance.--The axis of advance indicates the general direction of movement of an attacking unit. Its designation as a control measure is intended to allow the subordinate commander latitude of operations. He is normally permitted freedom of maneuver along the axis of advance and has the option of bypassing enemy units not likely to endanger the accomplishment of the mission. The location and strength of bypassed enemy is reported in all cases. The higher commander may withdraw the option of bypass or may limit the size and type of units that may be bypassed. During movement along an axis of advance, deviations from it do not interfere with other units. Tank units can maximize their inherent capabilities when assigned an axis of advance.

f. Zone of Action.--A tactical subdivision of a larger area, the responsibility for which is assigned to a tactical unit. This is generally applied to offensive action. It is assigned by designating boundaries on one or both flanks of the battalions, a line of departure, and a final objective. A zone of action should include adequate approaches to objectives and be sufficiently large to allow for the necessary degree of maneuver or dispersion. If the zone is to be completely cleared of enemy, such directions must be issued.

g. Routes of March.--Provides for the control and coordination of the movement of units from one point to another during a tactical march. In tank operations, multiple routes of march are used to allow rapid clearing of the assembly area and rapid movement to the attack position.

h. Direction of Attack.--A specific direction or route which the main attack or center of mass of the unit will follow. The unit is restricted and required to attack as indicated and is not normally allowed to bypass the enemy. The direction of attack is used primarily in counter-attacks or to ensure that supporting attacks make a maximum contribution to the main attack.

1703. COMBAT FORMATIONS

Combat formations are not rigid. Variations to meet the situation are acceptable and necessary. Detailed discussion of combat formations are contained in FM 17-1, Armor Operations.

a. Mechanized combined arms task forces will generally employ the column or line formation, or some variation.

(1) The column formation provides depth since units are in position to move through or around the leading unit.

(2) The line formation provides for combat power on a wide front; however, the defender is presented with lucrative targets which require only a deflection change for him to engage.

(3) Variations may be employed based on local conditions.

b. Company teams also use the column and line formations or variations thereof. Company teams' formations do not necessarily conform to task force formations.

c. Standard platoon formations are column, wedge, line, echelon, and vee. The platoon commander will designate the formation and also specify the position of the individual vehicles within the designated formation.

1704. FORMS OF MANEUVER

a. Penetration.--The task force may be utilized to rupture the enemy position and then seize objectives to the rear. It is generally not employed to widen the gap since this step inhibits the mobility and speed of the force. (See fig. 13.)

b. Envelopment.--Because of their mobility, speed, shock action, and firepower, mechanized combined arms task forces are ideally suited to conduct any of the variations of the envelopment; i.e., double/single, encirclement, or turning movement. The characteristics and considerations remain the same except the speed of execution and direct firepower are greatly increased.

c. Frontal Attack.--The attack is conducted along the entire front and, therefore, will probably produce some degradation of mass in combat power. It should be employed only when facing a weak enemy in hastily prepared positions.

1705. PASSAGE OF LINES

One of the basic aspects of tank employment, that of leading the attack, often requires tank units to pass through units in contact with the enemy. Passage of lines requires close and careful coordination and

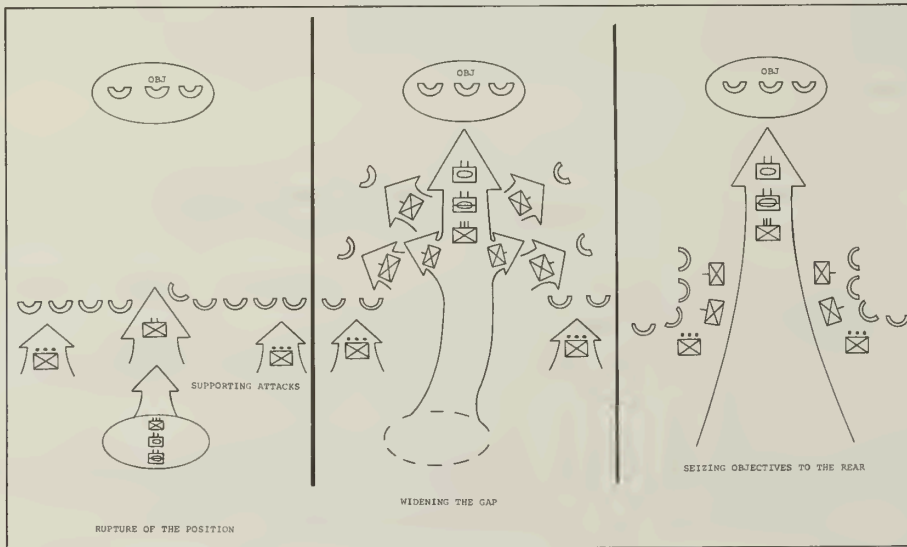


Figure 13.--Steps of Penetration.

detailed planning by both the unit in contact and the passing unit in order to ensure the success of the passage and to overcome the period of vulnerability to enemy action. The maintenance of momentum by the passing unit and the prevention of confusion are major considerations. Continuous liaison is essential. For a discussion of passage of lines, see FM 17-1, Armor Operations.

1706. EMPLOYMENT OF SUPPORTING FIRES

To be successful against a sophisticated enemy who possesses a combined arms force, the full spectrum of the MAGTF potential must be applied.

a. Fire Support Planning.--During the planning for the attack, the commander develops a plan for supporting fires. This plan must ensure continuous and constant support. Additionally, it must ensure coordination between air, naval gunfire, artillery, and organic weapons. The FSCC is responsible for ensuring that supporting fires are precisely timed and coordinated to provide sufficient flexible fire support to meet situations not foreseen. Forward air controllers, naval gunfire spotters, and artillery observers maintain stations with the forward elements of the supported commander. The tank and LVT can be adapted and should be utilized to carry these supporting arms representatives. Forward observers and FAC's can be transported in the P-7 or the loader hatch of the tank. Detailed discussion on fire support planning is contained in FMFM 7-1, Fire Support Coordination.

b. Artillery and Naval Gunfire Support During the Attack.--During the attack, artillery and naval gunfire fires are directed on the axis of advance, the objective, enemy antitank guns and artillery, observation posts, and targets of opportunity. Its fires are coordinated with the scheme of maneuver and task assignments of supporting tanks. During the movement toward the objective, fires are directed toward enemy positions which slow down or disrupt the advance. Artillery and naval gunfire also provide covering fires during minefield and obstacle breaching. During the attack of the objective, fires are employed to protect the assault echelon. Fires can be directed on the objective and any other target that may hinder the advance. Artillery firing proximity-fuzed ammunition can fire directly over the tanks and infantry mounted in assault amphibious vehicles as they move toward the objective. As forces consolidate on the objective, artillery assists by counterbattery fires and by interdiction of enemy counterattack routes. Artillery and naval gunfire are capable of massing fires on enemy forces threatening or conducting counterattacks. Consideration should be given to the addition of self-propelled artillery to the attacking force in a direct support or, if the situation requires, attached role when the objectives are out of effective range of artillery. Detailed discussion on artillery and naval gunfire support is contained in FMFM 7-2, Naval Gunfire Support, and FMFM 7-4, Field Artillery Support.

c. Close Air Support During the Attack.--During the attack, close air support is provided against mechanized targets, troop positions, hostile antitank systems, and hostile artillery sites. Coordination must be established to ensure recognition of hostile targets in a fast-moving situation. This coordination relies primarily on radio communications; however, visual means such as flags and air panels may be utilized for friendly recognition and artillery/mortar illumination rounds set with a maximum time setting on the fuze may be utilized for tactical aircraft operating in a hostile anti-air environment. A detailed discussion of close air support is contained in FMFM 5-4, Offensive Air Support.

1707. TANKS IN SUPPORT OF NIGHT OPERATIONS

The firepower and shockpower of the tank afford a potent means of support for infantry in night operations. The biggest advantages center around the benefits derived from the Xenon searchlight mounted on every tank and the increased firepower provided by the tank's integrated weapon system. Night attacks are characterized by detailed planning and reconnaissance, simple shallow objectives, and increased coordination and control measures. Detailed discussion on night attacks and night combat techniques is contained in FM 17-1, Armor Operations.

a. Xenon Searchlight.--A Xenon searchlight is mounted on every tank. It is capable of providing the attacking unit an instant and powerful source of white and infrared light. Employment of the searchlight is discussed in detail in FM 17-1, Armor Operations. Technique of target engagement and fire commands for controlling the searchlight are discussed in FM 17-12, Tank Gunnery.

b. Firepower.--All of the tank's weapons can be employed utilizing passive night sights. There is a decrease in effective range of the weapons when artificial light is used; however, the characteristics of night operations normally dictate engagement of targets within this reduced range.

c. Psychological Effect.--The psychological effect of tanks during darkness is considerably increased. The noise created by tank movement, normally a limitation, is deceptive at night and tends to confuse the enemy. Tank movements increase the enemy's fear adding to their psychological stress.

1708. ENGINEER SUPPORT

The primary role of engineers in offensive operations is to perform such construction and destruction operations as are necessary to facilitate movement of friendly forces and to impede enemy movement:

a. Provide assistance in breaching and clearing minefields and other obstacles.

b. Laying mines and creating other obstacles on flanks of the attack.

c. Provide assistance in river-crossing operations.

Section VIII. DEFENSIVE OPERATIONS

1801. GENERAL

Defensive action is the employment of all means available to prevent, resist, or destroy enemy attacks. The offensive nature of tanks make them vital weapons for the exploitation of situations in the area defense and for the successful conduct of a mobile defense. Every effort is made to employ tanks in an offensive tank role when in a defensive posture. This section covers the role of tanks in both area and mobile defenses. For a discussion of the broad aspects of defense see FMFM 6-1, Marine Division; FMFM 6-2, Marine Infantry Regiment; FMFM 6-3, Marine Infantry Battalion; and FM 17-1, Armor Operations.

1802. EMPLOYMENT OF TANKS IN THE AREA DEFENSE

The area defense requires holding of terrain for a period of time. It is employed when the mission requires that specific terrain be held when inadequate mobile forces are available, or when the terrain is not suited for a mobile defense. Mechanized forces (mechanized combined arms task force and mobile assault companies) will be employed as security and counterattack forces in the area defense. Where the terrain is favorable, tanks should be employed in mass with the reserve to exploit the situations arising in battle, to counterattack, or to react aggressively.

a. Preparation for the Area Defense.--Upon receipt of orders, tank unit commanders report to the infantry units they are to support during the conduct of the defense. When the tank unit is already in support of an infantry unit, the tank unit commander, after learning the situation and the general plan for tank employment, recommends a specific plan for tank employment. Details concerning specific employment are determined when the tank and supported infantry commanders make their reconnaissance(s).

b. Role of Tanks in the Area Defense.--Tanks may be employed in either the security or reserve echelon of the area defense. Regardless of whether tanks are security forces or reserve elements, they are employed and assigned missions where their mobility and shock effect are used to the maximum.

(1) Tanks With the Security Force.--The mission of the security force is to detect, destroy, delay, disorganize, and deceive the enemy. Tanks are employed with the security force when the terrain is favorable for long-range direct fire, there are numerous routes of egress for tanks, the infantry units of the forces are large enough to provide security for the tanks, and a mobile security force is desirable.

(2) Tanks in Support of the Reserve.--The primary mission of the reserve is to destroy enemy elements that have penetrated units along the forward edge of the battle area (FEBA). The reserve provides depth to the defensive position, is available for flank and rear protection, and provides a counterattack force. While in reserve, tanks may be employed to support frontline units by fires. This type employment is weighed against the possibility of disclosing the location of the reserve.

c. Tanks in Support of the Counterattack.--A counterattack is a limited objective attack aimed at the restoration of a lost portion of the

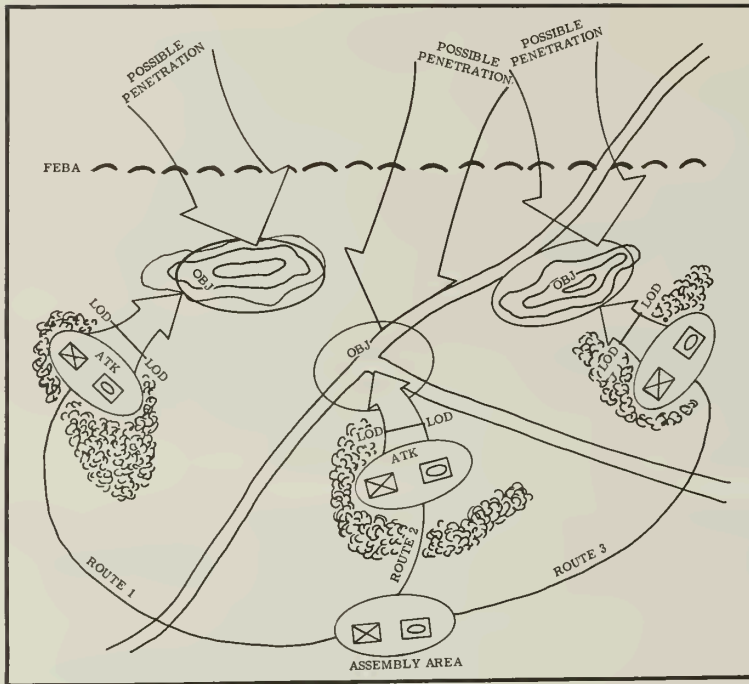


Figure 14.--Tanks Employed With a Counterattack Force.

battle area once an enemy penetration has been slowed or stopped. It is the aim of the counterattack to strike before the enemy has an opportunity to organize or reinforce the penetrating force. This is accomplished by developing detailed plans for each likely avenue of enemy approach, and selecting attack positions to complement counterattack plans. The tank unit commander and tank crews check the routes and terrain until they become thoroughly familiar with the terrain over which the counterattack is planned. Routes to attack positions should be designated and well marked. When possible, each counterattack plan is rehearsed. (See fig. 14.)

d. Blocking Positions.--Before making a decision to counterattack, the force commander must be satisfied that the enemy has been stopped or slowed down, that key terrain has been lost or threatened, and that his reserves are adequate to eject the enemy. If these considerations have not been met, the force commander employs his reserves in blocking positions to strengthen his defensive position, leaving the decision to counteract to higher authority. Tank blocking positions are planned mainly to strengthen antitank defenses and are located along likely avenues of approach for armor. Positions are normally preselected and prepared. Routes leading to blocking positions must be thoroughly reconnoitered to ensure speed of execution.

e. Defense Against Airborne or Waterborne Landings.--When planning for the defense, the force commander considers possible attack from the rear. Usually, forces available are insufficient to physically occupy all possible landing areas. The force commander therefore plans for the employment of his reserve as an attack force against such intrusions. Tank-infantry teams are formed and assigned areas of responsibility. One team is capable of covering more than one area; however, to ensure success against

multiple landings, several teams are organized. A warning system is devised employing patrols and observation posts with adequate communication equipment. Tanks of the force are on movement alert, fully armed, and have communication facilities checked. Crews are standing by in the vehicles or near them. Routes to possible landing sites are preselected and reconnoitered.

1803. EMPLOYMENT OF TANKS IN THE MOBILE DEFENSE

While the area defense is used to deny the enemy terrain, the mobile defense relinquishes terrain to the enemy in order to position the hostile force for destruction by an attack force. Maximum use is made of the unit's mobile power in this type of defense. Although sufficient tank assets for the conduct of a classic mobile defense are normally available only to a reinforced Marine division or larger unit, a mobile defense can be conducted by a regimental or battalion sized force. The area in which

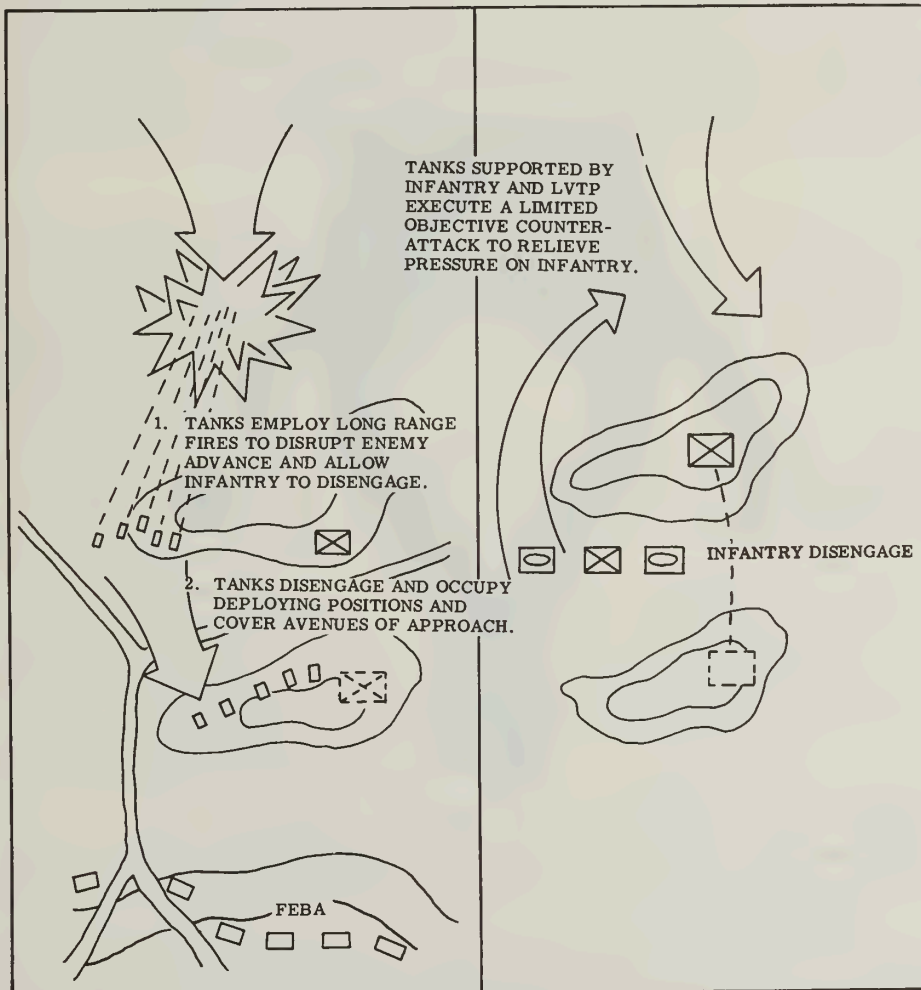


Figure 15.--Tanks Employed With the Security Force.

a regimental landing team (RLT) or battalion landing team (BLT) would conduct a mobile defense, and the size of the security, fixing, and attack forces, will be smaller; however, the principle remains the same. In fact, the very nature of operations in which Marine units are most often involved will dictate that RLT or BLT size units conduct such a defense. Further discussion on the mobile defense is contained in FM 17-1, Armor Operations, and FM 17-30, The Armored Brigade.

a. Organization.--The mobile defense is organized into three echelons: the security force, the fixing force, and the attack or counter-attack force.

(1) Security Force.--Security forces are employed in the mobile defense to provide early warning of the enemy approach, to develop the situation, and to prevent surprise. The farthest units of the security force operate as far as 15 miles in front of the FEBA. (See figs. 15 and 16.) The security force in the mobile defense must be highly mobile and capable of operating over a wide front. In addition, it needs the necessary communication facilities for rapid transmission of a large volume of traffic. The security forces consist of a covering force, observation posts, listening posts, patrols, and rear area security forces.

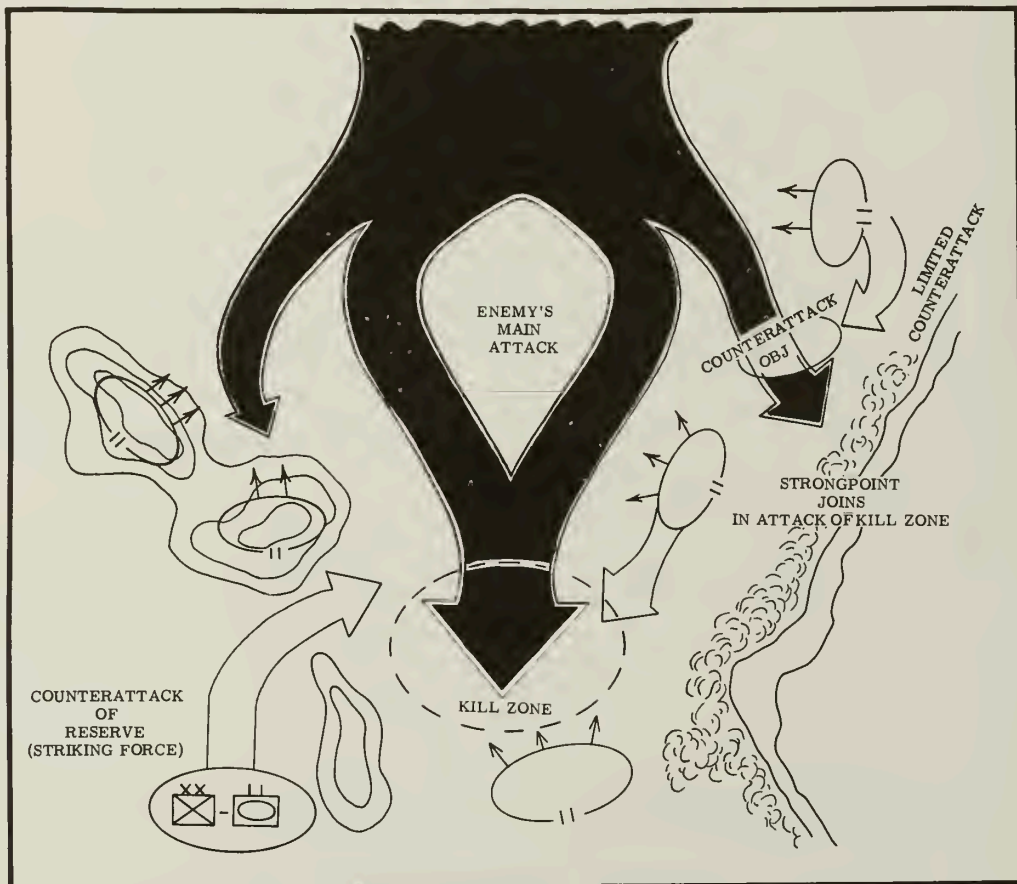


Figure 16.--Example of the Conduct of a Mobile Defense.

(2) Fixing Force.--The fixing force occupies key terrain using an area defense and employing strongpoints. The mission of the fixing force is to warn of impending attack; to delay, deceive, disorganize, and inflict maximum destruction on the enemy; canalize the enemy into an area suitable for attack by the attack force or nuclear fires; and to force the enemy to mass.

(3) Attack Force.--A typical organization for combat of the attack force/reserve generally includes the preponderance of tanks available, antitank heavy mechanized infantry, and mobile and flexible combat and combat service support elements.

(a) Mechanized combined arms task forces are the principal shock element of the attack force. They are employed to deliver the "knock-out" blow against hostile tanks contained in a killing zone by infantry blocking positions, supporting arms fires, and barriers. They are supported by appropriate infantry, antitank elements, and supporting arms. Other combat support is provided as required.

(b) Helicopterborne infantry elements and mobile antitank weapons may be used in containing missions by the attack force. They are employed to move rapidly to designated killing zones where they organize the area to block and contain the penetration of hostile mechanized forces.

(c) When a contained hostile force is in a killing zone which is within the range of emplaced artillery, fire support is normally provided by external artillery assigned a tactical mission of direct support of the attack force rather than to form an attached fire support group for the attack force. This ensures immediate availability of fires and reduces logistic requirements of the attack force. If the killing zone is outside the range of artillery fire, self-propelled artillery is generally attached to the attack force.

(d) Engineer support is required to breach minefields and obstacles that impede the advance of mechanized elements of the attack force. Engineer support also organizes and constructs antitank barriers within designated killing zones. They also construct covered positions for the attack force's heavy antitank weapons.

(e) Close air support locates and attacks hostile mechanized elements well forward of friendly advance elements in order to ensure the uninterrupted advance of the attack force and supports the attack of the attack force. Aerial observation is provided the attack force to search in depth to the front and to the flanks in order to locate and provide early warning of hostile mechanized forces and to report location of barriers that will impede the advance of the attack force.

(f) All elements attached to or supporting the attack force must be capable of a high degree of mobility. This mobility, particularly for the service support and combat support groups, is attained by the use of organic or attached motor transport and amphibious vehicles.

b. Role of Tanks With the Security Force.--Tanks, when employed with security forces, are best suited for employment with the covering force. The covering force should be a self-contained organization employing the combined arms concept. Tanks provide the mobility and flexibility

required. Tanks operating with the covering force must be prepared to conduct limited objective tank-infantry attacks, take the enemy under long range fire, and conduct delaying actions. Tank unit commanders with the covering force ensure that coordination measures have been established for their unit's return through the FEBA. Tanks employed with the covering force, upon passing through the FEBA, normally revert to the control of the tank battalion. Normally, in RLT or BLT size operations, tanks will not be used in the security force.

c. Role of Tanks With the Attack Force.--The attack force is the decisive element in the mobile defense and must possess the bulk of the combat power of the command. Since the mission of the attack force is accomplished by offensive tank action, the major portion of the tank unit, if not all of it, is employed as part of this force. While the counterattack plan may include terrain objectives for control purposes, the main goal is the destruction of the enemy, not seizure of terrain to restore positions. The attack force, therefore, must use many of the techniques of the meeting engagement in seizing the initiative from the enemy. Terrain is studied to determine the axis of advance to kill zones and what are most suitable for tank maneuver. The attack force commander must be prepared to modify quickly any attack plan to ensure success, regardless of what course of action the enemy chooses. Plans must, however, adhere to doctrine which will involve terrain favorable to the attacker, will counterattack at the flanks or rear of the enemy, and which will pin him against an obstacle. The tank unit commander must further ensure that the fire support plan is fully integrated into the counterattack plan with considerations given toward sealing off the killing zone and thereby degrading the enemy's reinforcement capability. The attack force is given priority of supporting fires and close air support during the conduct of the attack.

Section IX. RETROGRADE MOVEMENT

1901. GENERAL

A retrograde movement is a planned movement away from the enemy. During a retrograde movement, units avoid decisive combat and trade space for time. Tank units normally participate in retrograde movements as part of a larger force, employing offensive action at every opportunity.

a. Types of Retrograde Movements.--There are three types of retrograde movements:

(1) A delaying action, where forces delay the enemy to gain maximum time without becoming involved in decisive combat.

(2) A withdrawal, where all or a part of a unit disengages from the enemy.

(3) A retirement, where a unit avoids combat under existing conditions by conducting an orderly withdrawal without pressure by enemy forces.

b. Basic Considerations

(1) Control.--When the terrain is suitable, it is best to use tanks under centralized battalion control as part of a tank-mechanized-infantry attack force consisting of tanks, infantry, and LVT units. However, when infantry units are withdrawing over a wide front, subordinate tank units are normally deployed in support of the dispersed infantry units thus requiring decentralized control.

(2) Coordination.--In order to prevent confusion, which can easily develop during retrograde operations, close and constant coordination is mandatory between tanks and other combat supporting arms. Throughout the operation, tank movements are covered by air and artillery and supported by engineers. Engineer units are placed in direct support of tanks especially if tank units are covering the retrograde. Engineers assist in developing obstacles and destroying bridges to further slow down the enemy and help maintain routes of withdrawal. Routes are closed by installing barriers and obstacles after withdrawal of friendly delaying units. Means for calling artillery fire and airstrikes should be readily available to tank unit commanders.

(3) Weather and Terrain.--Unfavorable weather hinders tank movement and limits the tank's firing capability. Terrain is selected which permits tanks to engage enemy targets at maximum range and facilitates their movement to subsequent blocking positions or counterattack. Tank unit commanders use all available cover and concealment to conceal their movements, and the maximum number of routes to maintain dispersion, particularly when the enemy has air superiority.

(4) Barrier Plan.--Although tank units may not be directly engaged in laying minefields or the erection of obstacles with the blade tank, they are required to keep obstacles under observation and cover them with fire. During the planning for barriers, the tank unit commander

ensures that terrain that will allow the massing of enemy armor is given top priority.

1902. DELAYING ACTION

In delaying action, a force occupies a series of positions which enable it to take an enemy under direct fire at long ranges and to displace prior to becoming decisively engaged or outflanked. Tanks normally are given the mission of delaying on successive positions. Tanks are supported by mobile infantry and adequate engineers and artillery. The composition of the force depends on the situation, the force available, and the terrain.

a. Types of Delaying Actions.--Delaying actions can be conducted in the following manner:

(1) Delay on Successive Positions.--In the delay on successive positions, the initial delaying position is organized and occupied by the delaying force. (See fig. 17.) When withdrawal becomes necessary, the unit displaces rearward to the next delaying position leaving only a small

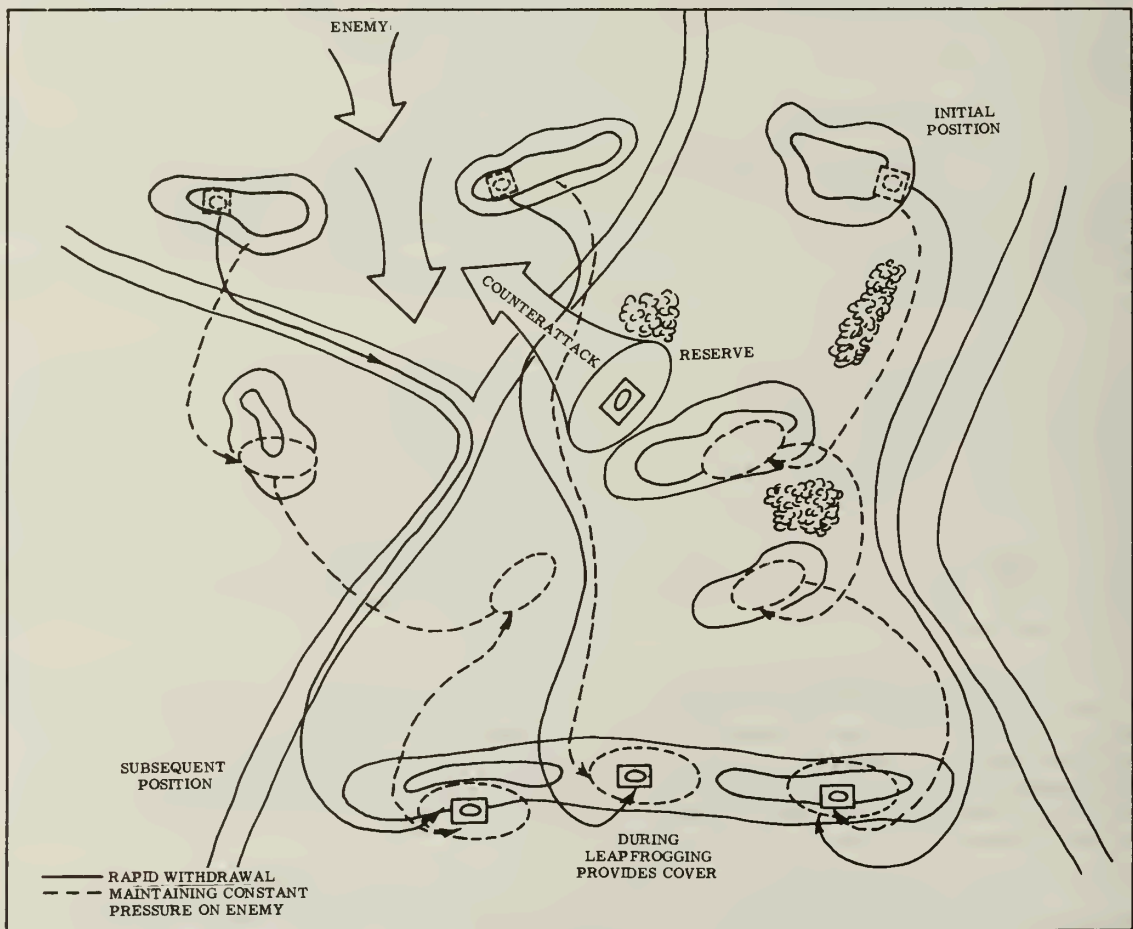


Figure 17.--Tank Employment in a Delaying Action.

security force behind to maintain contact with the enemy. This procedure is repeated through successive delaying positions. This method of delay is employed when units involved in the delaying action are extended over a large front.

(2) Delaying on Alternate Positions.--When delaying on alternate positions, the delaying force is divided into elements. The first element occupies the initial delaying position while the second element occupies and improves the next rearward position. When the first element is forced to withdraw, it displaces through or around the second element and moves to occupy and improve the subsequent delaying position to the rear. Before displacing, the first element provides certain forces to remain in contact with the enemy. This procedure is repeated throughout the delaying operation. This type of delaying action is employed when the delaying force can delay along a narrow front. Air, naval gunfire, and field artillery representatives divide their parties into two teams if necessary to ensure continuous fire support.

(3) Additional Means.--In coordination with successive or alternate delaying, the delaying force can employ limited offensive action such as feints or ambushes to throw the enemy off-balance.

b. Selection of Delaying Positions and Routes of Withdrawal.--A reconnaissance to select delaying positions and routes of withdrawal is made as early as possible.

(1) Delaying Positions.--Delaying positions are selected which afford the greatest opportunity to delay the enemy and cause him to deploy for the attack or to mass his forces, thereby presenting a good nuclear target. Tanks seek positions which provide long-range fields of direct fire and good routes of egress. Individual tank positions are mutually supporting and permit tanks to occupy them in hull defilade. If possible, positions are selected which have natural obstacles to both flanks in order that the enemy is canalized. Primary, alternate, and supplementary positions are selected.

(2) Routes of Withdrawal.--Routes of withdrawal are selected to provide good trafficability and cover and concealment. Although withdrawals during delaying actions are usually decentralized, specific routes, together with priorities, may be assigned.

c. Conduct of the Delaying Action.--As the enemy approaches the initial delaying positions, tanks engage their forward elements by long-range direct fire. Prior to decisive engagement, tanks normally withdraw; however, withdrawal is never executed except on order of higher authority. Prior to the withdrawal of the tanks, logistics and administrative personnel withdraw to positions designated by the commander. Tank units are normally the last units to withdraw with their withdrawal covered by infantry and supporting arms fires. When tanks have been ordered to remain in contact with the enemy during the withdrawal, additional tank delaying positions between the force and the delaying position are selected that provide cover and concealment. Tanks may move to the new positions in one bound when continued contact is not required. Movement by single bounds is normally executed at night or when no cover and concealment is available between delaying positions.

1903. TANK DEPLOYMENT IN WITHDRAWAL ACTIONS

Tank units are often required to withdraw from action, either as part of a larger force or alone, for employment elsewhere. A withdrawal may be conducted during daylight or at night. Generally, withdrawal is accomplished in two phases: a disengagement from action followed by the formation of march columns for movement to the rear or new position.

a. Night Withdrawal.--Tanks conduct a night withdrawal whenever possible because of the advantages gained by the cover of darkness. Tanks engaged with the enemy withdraw under the cover of security forces. As tanks withdraw, artillery and other supporting arms are employed to cover the noise and movement of the tanks. During the withdrawal, deceptive measures are employed. Tank radio traffic is kept constant. Tanks may also move about, creating the impression that units are moving toward enemy lines. As the tanks leave the lines, they withdraw along designated roads and form into march columns. Security forces withdraw on order of higher headquarters. If the withdrawal is illuminated, daylight techniques may be used with tanks using night firing techniques. Because of the difficulties imposed by darkness, the withdrawal will be slower and more difficult to control. Effective movement control measures and the simultaneous withdrawal of units will offset, to some degree, this difficulty. Tank company commanders assign platoon routes of withdrawal and designate an initial point (IP) where platoons form into a company march column.

b. Daylight Withdrawal.--Tanks can conduct successful daylight withdrawals because of their high degree of armor protection, mobility, and firepower. During a daylight withdrawal, tanks are predominantly employed with the security force making maximum use of their firepower. After the main force has withdrawn, the tank units least engaged withdraw and occupy delaying positions to cover the withdrawal of the remainder of the engaged forces. Whenever contact is broken, all units withdraw rapidly over carefully selected routes of withdrawal. If sufficient routes are available, units down to platoon size are assigned separate routes in order to speed up the withdrawal. Assembly areas may be utilized to form march columns.

c. Withdrawal Through a Rearward Position.--If the withdrawal includes passage through friendly frontline units, tank units work in close coordination with these units to prevent exposure of positions, provide safety to troops and equipment, and to preclude unnecessary delays. Plans are made to include provisions for guides from units being passed through, liaison, and recognition signals. Designated routes are reconnoitered by the tank unit commander to ensure that they are adequate and well marked.

1904. TANK EMPLOYMENT IN RETIREMENT OPERATIONS

In a retirement, the force is organized into a main force, and a security force to include a cover group, flank guards, and a rear guard similar to a mechanized march. Normally, a retirement is made after a withdrawal to allow future combat operations to be conducted under more favorable conditions or at a more decisive time. During a retirement, the rear guard may remain in contact with the enemy.

Section X. TANK/MECHANIZED FORCE EMPLOYMENT
IN SPECIAL OPERATIONS

11001. GENERAL

Tank employment in changing operational conditions and environments present special problems and situations. The planners consider the capabilities and limitations of tanks, the principles of tank employment, and the conditions of the special situation. Each special situation may require modification in tactics and augmentation in equipment. For a detailed discussion of operations under varying conditions and situations, see FMFM 8-1, Special Operations, and FM 17-1, Armor Operations.

11002. JUNGLE OPERATIONS

Jungle combat involves operations with such impediments as swamps, deep valleys, steep ridges, and areas largely overgrown with dense vegetation. High humidity and heavy rainfall are often confronted. The conduct of combat operations in jungles requires a high degree of leadership and individual initiative to meet the problems imposed by climatic conditions, land forms, and vegetation. Particular attention is given to the prevention of deterioration of material, especially radio equipment, which may result from prolonged exposure to humidity. Problems confronted may be overcome by proper acclimation, training, and careful planning.

11003. DESERT OPERATIONS

Certain environmental characteristics such as extreme temperature ranges, lack of water, absence of vegetation, and dust/sand storms are common to all deserts, and their adverse effect must be considered during planning. However, properly employed and maintained, the tank can be the most decisive supporting arm available to the commander in desert operations. High mobility and long-range direct fire capability make it an ideal weapon in desert terrain.

11004. MOUNTAIN OPERATIONS

Mountain combat may involve operations in areas of high altitudes subject to extreme changes in weather; snow-covered slopes; few roads, most of which are narrow and twisting; and few, if any, communication centers. In general, operations in mountainous terrain retard and restrict maneuver, reduce the rate of effective fire, and make communications and resupply of tanks difficult. Mountain terrain and weather can be either a dangerous obstacle to operations or a valuable aid, according to how well it is understood and to what extent the tank commander takes advantage of its peculiar characteristics.

11005. OPERATIONS IN DEEP SNOW AND EXTREME COLD

Deep snow and extreme cold weather present employment problems in operations involving tanks. Aggressive leadership and special training minimize many of these employment problems. The tactical and combat mission assigned to tanks are the same as those assigned in normal operations, and the tactics and techniques employed in offensive and defensive operations are similar. Tactical employment is modified to offset the characteristics of the area and its weather.

11006. OPERATIONS AGAINST IRREGULAR FORCES

a. General

(1) The characteristics of tanks make them unsuitable for employment in support of friendly guerrilla operations. Their size, noise, limited visibility, and large logistic requirements are not compatible with operations conducted by irregular forces who employ stealth and are devoid of logistic support. Tank units, however, are able to employ offensive techniques against such forces. Their extensive means of communication, mobility and firepower provide the commander with a means of reacting rapidly against irregular forces. It must be realized that tanks have the following general disadvantages in counter guerrilla operations:

- (a) Susceptible to ambush.
- (b) Movement is restricted in difficult terrain.
- (c) Compromise the secrecy of operations.

(2) If tanks are used against guerrilla forces, they must be closely supported by infantry. Even though guerrilla forces habitually lack sophisticated antitank weapons in great quantity, they are normally quite skilled at improvising means to destroy or disable tanks. The development of recoilless weapons and light rockets has increased the guerrilla antitank potential.

b. Action in Support of Infantry.--Infantry unit commanders are normally assigned an area of responsibility when given the mission of combatting irregular forces. Within the area of responsibility, the unit establishes one or more combat bases which is the focal point for all tactical operations conducted within the area of responsibility.

(1) When tanks are placed in direct support of, or attached to, a unit in control of an area of responsibility, they are employed as part of an attack force. After the enemy is located, this force is employed to isolate, surround, and destroy the enemy force. Tanks are normally assigned the mission of rapidly sealing off enemy escape routes. Since encirclement requires speed and exact timing and may be accomplished at night, routes that tanks are expected to use are reconnoitered and tentative blocking positions established. In areas containing rivers or canals, tanks can be used by embarking them in LCM(8) or other suitable craft. This will increase the capability of tank support in river and delta areas.

(2) Once the encirclement has been accomplished, the encircling force drives wedges into the enemy force or reduces the size of the circle, destroying the enemy in the process. When attacks are conducted into the circle, tanks should be employed in the assault as part of a tank-infantry team while infantry and supporting arms establish a holding force. Speed is essential in such an attack against irregular forces since the enemy has little or no interest in terrain and can be expected to vacate the area when he cannot be ensured a victory. This is also true when attacks are conducted without encirclement. Tanks are also suited to the pursuit of defeated guerrilla remnants.

c. Action Against Guerrilla Forces.--Terrain permitting, tank operations can be effectively utilized on counter guerrilla operations to:

(1) Impress the guerrilla force and the civilian population as a "show of force" weapon.

(2) Patrol lines of communication, thereby releasing infantry units for offensive operations against guerrilla forces.

(3) Provide increased firepower and shock effect to convoy security detachments.

(4) Reconnoiter extensive areas.

(5) Conduct demonstrations and feints.

d. Principles of Tank Employment.--When tanks are employed in counter guerrilla operations, they must act with speed and aggressiveness. Emphasis is placed on:

(1) Advanced planning.

(2) Rapid movement to contact.

(3) Maximum use of surprise and shock effect.

11007. OPERATIONS AT A RIVER LINE

Unfordable rivers have a decisive effect on tank operations because of the restrictions they impose on mobility. Plans for crossing rivers are prepared well in advance by appropriate command echelons. Prior planning affords the commander a greater opportunity to execute a crossing with speed and surprise and, therefore, be less vulnerable to nuclear attack and usually less vulnerable to conventional attack.

a. Offensive Employment at River Crossing.--The two types of river crossings are the hasty and the deliberate.

(1) Hasty Crossing.--The hasty crossing is characterized by speed and surprise. This is the type of crossing that tank units should attempt, rather than the more time-consuming deliberate crossing. Because of its speed and surprise, this type crossing is normally less likely to encounter a concentrated enemy defense. It requires less concentration of personnel and equipment. Although the crossing is termed hasty, the situation that makes the crossing possible is the result of detailed planning by landing forces. This type crossing is feasible when the crossing areas are undefended or held lightly by the enemy, and when the landing force possesses mobile forces readily available to advance rapidly to the river line.

(a) Whenever possible, tanks should take advantage of their speed and mobility to make a hasty river crossing; therefore, these crossings generally can be divided into three groups:

1 Seizing crossing means (primarily bridges) intact.

2 Crossing at fords against lightly or poorly organized defenses.

3 Crossing of lightly defended streams with the assistance of infantry and engineers.

(b) Mobile infantry and engineers closely follow the tanks; the engineers remove or neutralize any demolitions found on bridges while the infantry assists in seizing and defending it. When a ford needs to be improved in order for tanks to cross, infantry has to establish a beachhead on the far bank while engineers perform the required pioneer tasks. Dozer tanks can assist in the preparation of crossing sites.

(2) Deliberate Crossing.--The deliberate crossing, in contrast to the hasty crossing, is characterized by more detailed planning at all levels of the landing force, deliberate preparations, the employment of more extensive crossing means, and a buildup of the landing on the opposite shore. (See fig. 18.) The deliberate type of crossing is used when: the area is strongly defended, because of the river's characteristics the water obstacle is technically difficult to cross, a hasty crossing has been unsuccessful, or the offensive is to be resumed at the river line. Detailed planning, extensive logistics preparation, and air and ground superiority are required. Overall planning and coordination is performed at landing force level.

(a) Phase I.--During a deliberate crossing, tanks may be held in general support until a satisfactory bridgehead has been established and means are available for their crossing. Tanks can also be employed in a direct fire role in support of the crossing or with forces performing feints. When performing direct fire missions, a reconnaissance is made to determine the best positions from which tanks can deliver supporting fires. Tanks are brought forward by covered routes to defilade or dug-in positions. Alternate positions are prepared as required. Positive arrangements for control of the fire are made with the units being supported, so that the tank fire may be lifted, shifted, or stopped in a manner similar to that of artillery or mortar fires. Liaison personnel should be capable of performing this function. When employed in a direct fire role, tanks are supplied with ammunition in excess of their basic loads so that all tanks, when later employed across the river, will have full loads of ammunition.

(b) Phase II.--Tanks move rapidly across the river as soon as means are available for their crossing and the bridgehead is large enough to accommodate their reorganization. Their crossing should be effected early in order to stem enemy counterattacks or armored assaults.

(c) Phase III.--Tanks are assigned missions of rapidly seizing deep objectives which widen or deepen the bridgehead.

b. Defense of a River Line.--The primary mission of tanks in defense of a river line is to assist in the counterattack of any hostile units which have succeeded in crossing. To accomplish this, the majority of tanks are held in reserve at a central position that will provide an easy access to any point where hostile river crossing is feasible. The counterattack force is most effective if it comes as a surprise when the enemy is caught in the midst of crossing and before he has had time to develop his antimechanized defenses. The method of conducting a counterattack is the same as in an area defense. Tanks may also furnish direct fire support to infantry defending the line. Tank firing positions are selected which permit them to move to assembly areas as an enemy river crossing develops.

11008. ATTACK OF A FORTIFIED POSITION

Fortifications are assaulted by combined-arms teams composed of infantry, artillery, engineers, air, tanks, and LVT's. The organization of

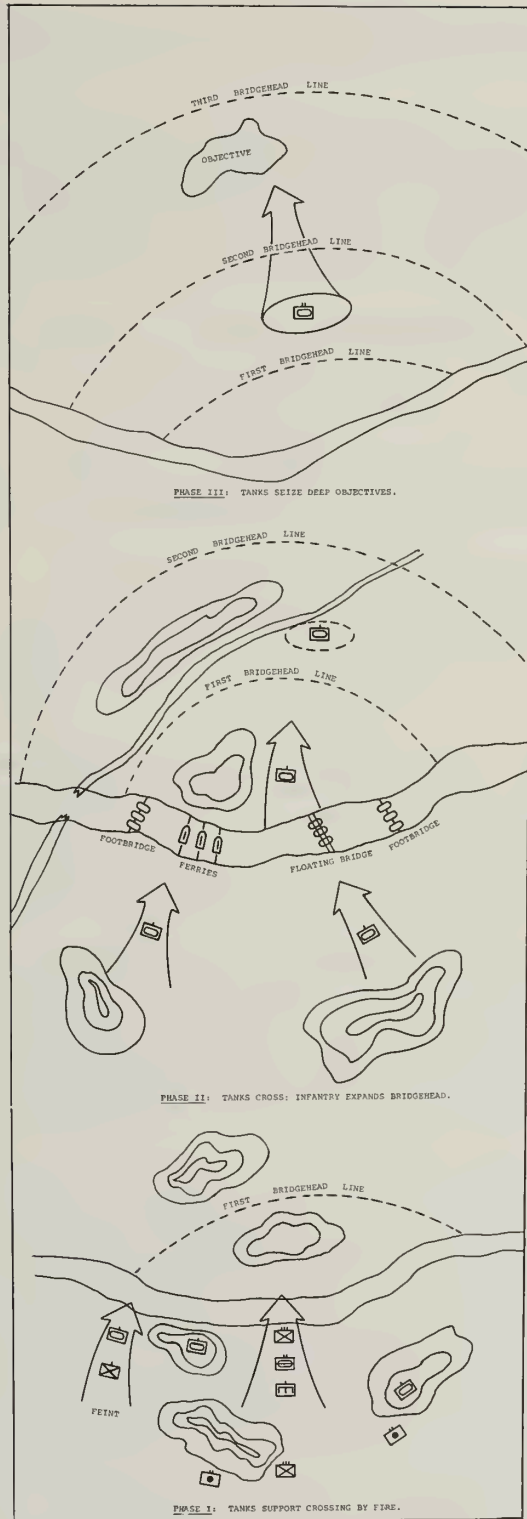


Figure 18.--Phases of a Deliberate River Crossing.

the assault team is normally based on the number and type of fortifications to be destroyed. Medium tanks are capable of destroying virtually all fortifications.

a. Reconnaissance of Fortified Positions.--A thorough estimate of the situation and detailed plans and orders are essential in an attack against a fortified position. The estimate is based on a thorough reconnaissance. Observation posts, patrols, interrogation of civilians, and air observers are used to gain information. The reconnaissance seeks the following information:

- (1) Location of fortifications to include their fields of fire.
- (2) Location of tank obstacles, minefields, barbed wire, and trenches.
- (3) Details of fortifications to include positions of embrasures, entrances, and exits; thickness and types of material; and the underground organization.
- (4) Location and type of enemy weapons.
- (5) Defiladed approaches to the positions.
- (6) Positions from which direct fire support can be furnished to the assaulting force.

b. Rehearsals.--After teams have been organized and plans formulated, reconnaissance parties comprised of team members should be allowed to make a detailed visual reconnaissance of the specific position they are to assault. When time permits, combined arms teams conduct rehearsals against simulated positions to ensure complete coordination, test adequacy of communications, check timing, and make sure each man is aware of his duties.

c. Role of Tanks and LVT's.--Tanks and LVT's normally provide direct fire support to the assault teams. This support can be rendered by tanks moving with, but normally behind, the assaulting infantry, from hull defilade positions to the flanks of the assault teams, or by emplacement in positions on high ground to the rear. Tanks fire at embrasure openings and attempt to destroy the fortification. LVT's fire on embrasures and connecting trenches between emplacements.

d. Conduct of the Attack.--(See fig. 19.) The attack usually starts with intense artillery fire and by covering the fortifications with smoke. Tanks, in position, fire on preselected targets. When targets are obscured by smoke, range cards are employed for placing fire on targets. Under the cover of these fires and smoke, engineers effect gaps through protective obstacles such as tank traps, minefields, and barbed wire. When gaps have been blasted through the obstacles, assault teams move forward under cover of the fire. As teams get close to their assigned objectives, fires are directed on deeper and flank targets. Tanks accompanying assault teams also move through the gaps and provide close direct fire with their main gun and machineguns.

11009. ATTACK OF A BUILT-UP AREA

a. General.--Whenever possible, tanks avoid combat in built-up areas. The characteristics of combat in built-up areas, house-to-house

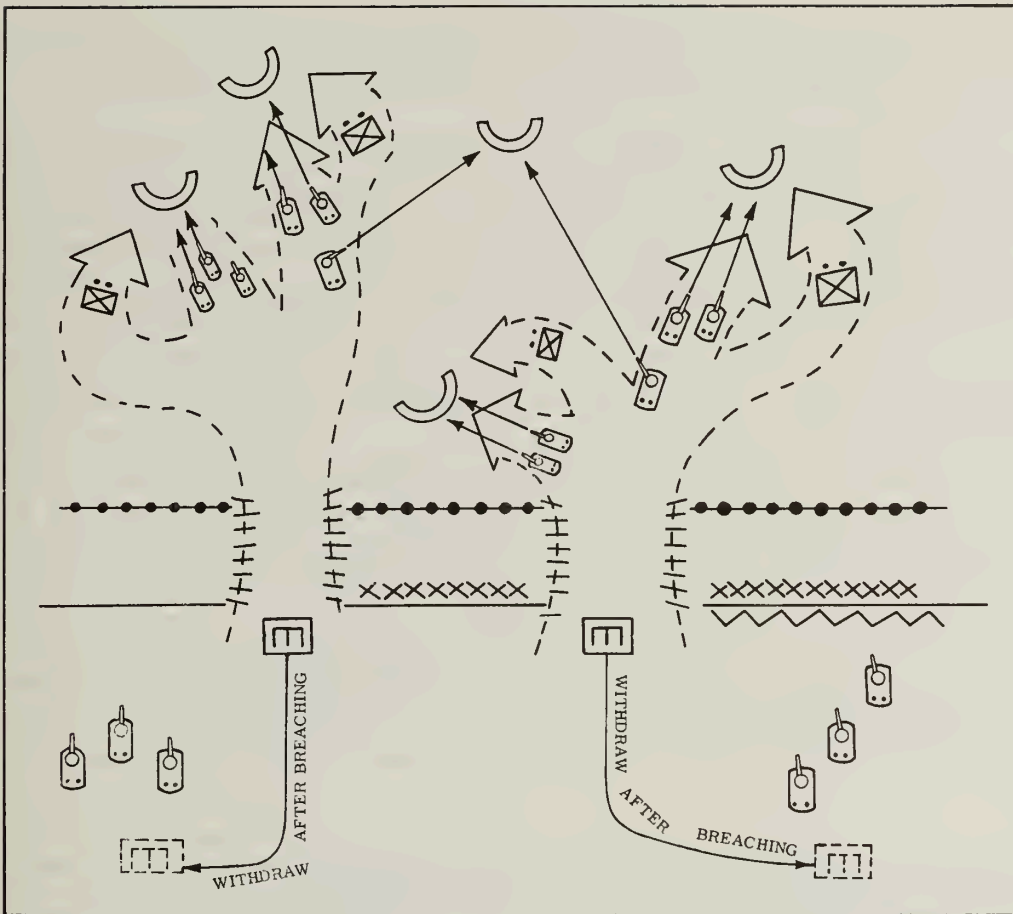


Figure 19.--Assault of a Fortified Position.

fighting, and combat in close quarters is more suited for infantry units. Judicious planning is required prior to utilizing tanks inside larger cities. Their armor-protected firepower makes them a most effective weapon when properly employed. Mechanized combined arms task forces are best employed as an enveloping force to:

- (1) Prevent the escape of the enemy.
- (2) Prevent reinforcements from entering the area.
- (3) Provide direct fire support for the assaulting troops.
- (4) Protect the assaulting troops from counterattack.

b. Conduct of the Attack.--The attack of a built-up area is normally divided into three phases:

(1) Phase I.--Phase I is the isolation of the town by an enveloping force and the seizure of the terrain features which dominate the approaches into the town. The attacker secures positions outside the

built-up area from which to support the entrance into the city itself. The tactics and techniques for this phase of operations do not differ from those utilized in an attack against other well organized enemy positions.

(2) Phase II.--Phase II is the advance of an attacking force to the edge of the built-up area and seizure of a foothold. Sufficient portions of the built-up area must be seized to prevent the enemy from employing direct fire on the approaches to the area and to limit his ground observation. The attacker uses the foothold area to reorganize, decentralize control, and displace weapons to firing positions from which the continuation of the attack can be supported. The key to initial penetration is concentrating all available supporting fires on one point followed by the assault over a narrow front. Numerous simultaneous attacks are usually conducted at this time. The formation used should permit a concentration of fires. When assaulting forces expect to encounter barricades, antitank guns, mines, and obstacles, a balanced force is employed. Tanks generally lead, followed closely by infantry and engineers. Artillery airbursts are placed over the point selected for entry to prevent the enemy from manning crew-served or individual antitank weapons. During the assault, designated fire teams or squads may be assigned to work with a particular tank. Direct communications between the rifle squad leader or fire team leader and the tank commander are maintained by visual signals and the tank-infantry telephone. Infantry should remain to the rear of their assigned tank to avoid masking their fires and to protect themselves from fires directed at the tanks. When tanks are unable to advance, the infantry, covered by tank fires, maneuvers and destroys the resistance holding up the advance. When buildings on the periphery of a town are heavily fortified, the techniques for the attack of a fortified position may have to be employed.

(3) Phase III.--Phase III varies from a systematic block-by-block, house-to-house reduction of the built-up area to a rapid advance through the town with only specific critical areas and strategic buildings cleared. Phase III commences after the completion of Phase II. Every attempt is made to move through the town as fast as possible; however, when confronted with an exceedingly large and heavily fortified area, or when the mission requires the complete clearance of the enemy, it cannot be done quickly. Generally, two tanks lead the attack up the normal width street closely followed by infantry. The remaining tanks of the platoon assigned to support the maneuver element will be close behind or used for clearing nearby side streets. Care must be taken to prevent tanks from being trapped in dead end streets.

(a) During their movement, tanks accomplish the following:

- 1 Neutralize enemy positions on rooftops and windows to allow the infantry to close with and destroy the enemy.
- 2 Destroy barricades across streets.
- 3 Force entry for infantry into buildings when doorways are blocked by obstacles or enemy fire.
- 4 Dozer tanks may be used to clear streets.

(b) Infantrymen move alongside or just behind tanks to protect them from surprise attacks or to destroy weapons located in basements which cannot be reached by tank fire. Depending on the resistance

being encountered, infantry may challenge each doorway or ground floor window by throwing in hand grenades or spraying the interior with small arms fire. Accompanying infantry must be assigned the mission of covering buildings on the opposite side of the street. When resistance is heavy, side streets and alleys are crossed with caution. These streets present ideal fire lanes for enemy tanks or antitank guns. Infantry observe down the streets and alleys before the tanks cross. During the advance, care is taken that tanks do not move too far ahead of infantrymen clearing buildings. Tank crewmen must be on the alert to detect signals from infantry.

c. Special Considerations in Employing Tanks in Built-Up Areas.--When employing tanks in built-up areas, the commander employing them considers the following:

(1) Tanks are canalized by streets and are subject to ambush and close range fire.

(2) The main tank gun is unable to depress or elevate enough to fire in basements or upper floors of buildings at close range.

(3) Tanks are best employed in two's or more to cover their own movement.

(4) Street fighting by tanks requires a high percentage of high explosive and white phosphorous ammunition.

(5) Radio communications may be limited when operating in a built-up area by the requirement for line-of-sight transmission.

11010. LINKUP OPERATIONS

Mechanized task forces are well suited for employment in linkup operations since time is often a critical factor. A linkup operation entails the linkup of a fast-moving relief force with an isolated or helicopterborne stationary force on a deep objective. The initial phase of a linkup operation is conducted as a normal mechanized task force operation. As the linkup between the two forces becomes imminent, coordination and control are intensified, placing definite restrictions on the attacking force. Planning for linkup measures to control tactical and support elements is effected and disseminated well in advance. Provisions are made for positive command relations and the continuous and prompt exchange of information between the two forces. Considerations covered in planning include:

a. Command Relationships and Responsibilities.--The headquarters ordering the linkup designates a single commander for the linkup and subsequent operations. The command may be retained by a higher headquarters. A predetermined time is established for the assumption of command by one commander of both forces. It is normally effected when the actions of the linkup force require coordination with a stationary force.

b. Command and Staff Liaison.--Command and staff liaison is essential both during planning and the conduct of the linkup. As the linkup of the forces becomes imminent, additional exchange of information vital to the linkup is made by liaison personnel.

c. Coordination of Schemes of Maneuver.--Control measures are carefully established and implemented with sufficient warning to ensure proper execution. Linkup points are established where the linkup force will join the security elements of the stationary force. Linkup points are mutually agreed upon and easily recognizable to both forces. The number of linkup points established depends on the number of routes the linkup force is using, the nature of the terrain, the enemy situation, and the capability of the stationary force to hold the points. Troops manning linkup points must be prepared to remove obstacles which might hamper the movement of the linkup forces and to provide guides.

d. Fire Coordination Measures.--Fire coordination measures are established by the common commander of the forces performing the linkup based on recommendations of the two forces. Both of the subordinate units may establish coordinated fire lines (CFL's) to coordinate the fires of artillery and naval gunfire. A restrictive fire line (RFL) will be designated as an on-order measure for the coordination of fires between the linkup force and the stationary force as the linkup becomes more imminent. Only when the two forces are separated by great distances should there be two fire support coordination lines (FSCL's) established. Under normal circumstances, both forces should be located within the trace of the FSCL as established by the senior ground commander at the highest headquarters. This FSCL is related to the control measures for the delivery of close airstrikes. All of these control measures should be located along terrain features such as roads, streams, and hill lines for ease of identification by all forces

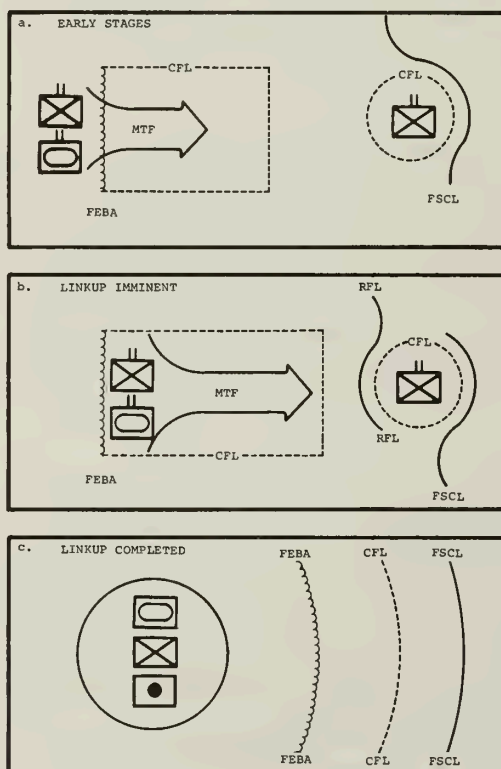


Figure 20.--Fire Coordination Measures in Linkup Operations.

involved. When the RFL is put into effect, all fires across it must be cleared by the other force. At this time, it is well to move flat trajectory weapons such as the tanks to the flanks for safety purposes. During this same period, a subsequent common CFL will be designated as an on-order measure for both forces. All such fire coordination measures must be given the widest possible dissemination to all forces involved to ensure continuous troop safety. Figure 20 depicts the measures discussed.

e. Coordination of Communication.--Communications must be established between the headquarters of both forces during the early stages of the operation. As the operation progresses, other units such as the covering force and units of the linkup force's main group moving over diverse routes, all establish radio contact with the stationary force. Since communication facilities of the mechanized force are already taxed, signals, to include the use of pyrotechnics, smoke, lights, and passwords, should be used when possible. Frontline elements of the linkup group and the stationary force must be in continuous communications when within range of each other's weapons.

f. Action Following Linkup.--Once the linkup has been made, the linkup force continues the attack, maintains its position on the objective, or withdraws with the stationary force. Regardless of the course taken, planning in advance ensures that confusion is kept to a minimum.

(1) When the linkup force is to continue the attack, plans are normally made for it to move around the stationary force. The linkup force moves into assembly areas, reorganizes, and resumes the assault.

(2) When assuming a defensive role, positions for units of the linkup forces are predesignated to ensure rapid reorganization.

(3) If a withdrawal is to take place, the plans for a change in the direction of attack and any reorganization are made in advance.

(4) Plans for the stationary force to provide initial security are made.

(5) Plans for absorbing the stationary force into the mechanized force are made in advance.

11011. TANK EMPLOYMENT IN NUCLEAR WARFARE

Basic tank doctrine is applicable under conditions of nuclear warfare. Emphasis is placed on dispersion of units, mobility, and full use of the shielding effect afforded tank crewmen by the armor. FM 17-1, Armor Operations, provides information on tactics and protective measures for operations in a nuclear environment. Unit SOP's will provide specific guidance on procedures to be followed in the event of friendly or enemy employment of nuclear weapons.

a. Offensive Employment.--Missions assigned to tank units should be ones which take advantage of their mobility--penetrations, envelopments, pursuit, and turning movements. It is essential that tanks remain dispersed to the maximum extent and avoid canalized routes. Because of the protection afforded crew members by the armor and their speed, tanks are capable of passing through radiation contaminated areas inaccessible to the infantry.

b. Defensive Employment.--The preferred use of tanks in the defense is as a mobile counterattack force. Organization in the mobile defense stresses a reserve heavily weighted with tanks. Because the defensive force must be dispersed to protect against nuclear attack, constant surveillance must be maintained between dispersed units to prevent infiltration.

c. Preparation for Nuclear Warfare.--A transition is made from a nonnuclear to a nuclear posture prior to initiating nuclear warfare. If the enemy initiates a nuclear attack, the transition must be swift. However, there will normally be sufficient indicators of the enemy's intent to use nuclear weapons to allow time for friendly forces to disperse and take protective measures, if they are thoroughly trained and react in accordance with the unit's SOP for nuclear warfare.

d. Tank Unit Protective Procedures Against Nuclear Weapons.--The protective procedures listed below should be routine within tank units during periods of nuclear warfare. When these procedures are employed to protect tanks against the possible effects of friendly nuclear attack, care is taken not to make them so obvious that the enemy is warned.

(1) Whenever it is possible to determine the direction from the tank unit's position to the point where the nuclear explosion will occur, as would be possible in the use of friendly nuclear weapons, tanks should be placed to take advantage of the cover offered by the terrain.

(2) Whenever possible, just prior to the friendly employment of nuclear weapons, tank turrets are rotated so the main gun is facing away from the blast. This will prevent damage to tank gun sights.

(3) When the tank unit is under threat of nuclear attack or is in the vicinity of a friendly supporting attack, vehicle radio antennas should be tied down when not actually in use to prevent their being broken off by blast.

(4) Special instruments which are provided to determine the intensity of residual radioactivity should be maintained in an operative condition with sufficient personnel trained in their use. During periods when the unit is subject to radioactive fallout, dose-rate meters should be used to take periodic readings of intensities and determine the presence of radioactivity.

(5) Administrative procedures, such as feeding, resupply, and maintenance, should be staggered so that a minimum number of troops are out of cover at any given time.

11012. TANK EMPLOYMENT IN CHEMICAL WARFARE

Tank tactics are not affected by the use of chemical weapons. The tank's inherent characteristics of mobility and armor protection, combined with the protection afforded crewmembers by the gas particulate filter unit, allow operations in a chemical environment. The requirement to decontaminate the vehicle and restrictions imposed on movement by crewmembers outside the tank may hinder tactical operations. Due to the mobility of the tank, consideration should always be given to bypassing contaminated areas when feasible.

11013. MINES AND OBSTACLES

a. Mines

(1) A minefield is both a weapon and an obstacle. Mines are considered active obstacles because they are capable of inflicting casualties, although this is not their primary purpose. Minefields are employed to strengthen a series of existing and reinforcing obstacles across a likely avenue of hostile mechanized approach. A minefield is the most practical device to close gaps between such obstacles. Mines are invaluable to the landing force in antimechanized operations, because they are the principal reinforcing obstacle that can be employed readily in the early stages of the amphibious assault.

(2) In the antimechanized operation, mines are laid to accomplish at least one of the following:

- (a) Block all probable avenues of hostile mechanized approach.
- (b) Delay hostile mechanized forces.
- (c) Protect the front, flanks, and rear of security forces and facilitate their withdrawal.
- (d) Establish barriers forward of and to the rear of the FEBA to slow down the hostile mechanized attack and/or limit the scope of a penetration.
- (e) Canalize or divert the hostile mechanized forces into selected killing zones.
- (f) Establish containing barriers within designated killing zones.
- (g) Provide additional protection to elements defending the logistics support area.
- (h) Harass and/or demoralize the enemy.
- (i) Supplement other obstacles or weapons.

(3) All troops of the landing force are trained to lay and remove mines and breach enemy minefields. They breach or clear mines only to the extent necessary for their continued movement and operation.

(4) For a discussion of landmine warfare, see FM 5-34, Engineer Field Data, and FM 20-32, Mine/Countermine Operations at the Company Level.

b. Minefield Breaching

(1) General.--A minefield breaching operation must be well planned and coordinated in order for it to be successful. When confronting minefields, it must be remembered that their main purpose is generally not to destroy large numbers of men and equipment, but rather to delay and canalize movement. When minefields are encountered, they are normally covered by hostile antitank guns and prepared enemy positions. Therefore, it is

necessary to counter these obstacles as well as breach the minefield. Minefields are usually employed by enemy defenders in the following places:

- (a) Probable landing beaches.
- (b) Avenues of approach to enemy positions.
- (c) Along the shoulders, turnoffs, and under the edge of road surfaces.
- (d) Along logical bypasses around an existing obstacle and just beyond an obstacle that is not difficult to overcome.
- (e) In narrow defiles and other places where it is natural to drive a vehicle.
- (f) Nuisance mines may be expected on roads, in parking areas, and in areas just vacated by the enemy.

(2) Bypassing.--When attempting to bypass a minefield, caution must be taken not to move over routes along which the enemy usually will employ intense concentrated fire or a counterattacking force.

(3) Hasty Breaching.--When minefields cannot be bypassed, hasty breaching may be necessary to maintain the momentum of the attack. Leading elements accomplish breaching by any means available to rapidly create a mine-free lane. This can be accomplished by use of explosives, tank and artillery fire, or such impromptu means as are available to the commander. Antipersonnel mines can safely be detonated by tanks; however, keep in mind that antitank mines will normally be interspersed in most minefields.

(4) Deliberate Breaching.--When a minefield cannot be bypassed or hastily breached, deliberate breaching operations are conducted. Even though tank personnel are trained in breaching operations, infantry and engineers are normally employed in the physical breaching of the minefield. Tanks are normally employed in covering the reconnaissance and probing operations of the engineers and infantry.

(5) Passage of Minefields.--Under cover of darkness, smoke, or heavy fire, the troops first clear antipersonnel mines from a lane allowing infantry to establish a bridgehead on the opposite side of the field. Antitank mines are then removed, allowing tanks to pass through the gap to render assistance to the forces in the bridgehead. Tanks in covered positions render direct fire support during these breaching operations. As more lanes are cleared, tanks move through the minefield and continue the attack. For a detailed discussion of methods used for minefield clearances, see FM 20-32, Mine/Countermine Operations at the Company Level.

c. Obstacles.--Obstacles play an important role in antimechanized operations by restricting the movement of hostile mechanized forces, by delaying them, and by forcing them to concentrate or regroup. In addition, the landing force may employ obstacles offensively to screen its attack and/or to anchor flank(s) of advancing units in the amphibious assault. For a detailed description and discussion of antimechanized obstacles and their employment, see FM 5-15, Field Fortifications, and FM 5-34, Engineer Field Data.

Section XI. AMPHIBIOUS OPERATION PLANNING

11101. GENERAL

Except for the amount of detail, planning for the employment of tanks during an amphibious operation does not differ from planning for tank operations ashore. The operation plan provides basic information for a buildup of tanks ashore, for their initial employment, and for their logistics support during the conduct of combat operations. Amphibious planning is conducted concurrently and in coordination with the planning of other units of the landing force. This section presents the steps which are taken by the tank battalion commander and his staff as they plan for tank employment in an amphibious operation.

11102. TANK BATTALION PLANNING

a. Planning for amphibious operations is conducted in inverse order. This means that the first step is a determination of the physical objectives which must be secured in order to accomplish the mission. The second step is the development of a scheme of maneuver that will secure those objectives. The scheme determines the plan for landing which, in turn, determines the plan for debarkation. Finally, the plan for debarkation provides the basis for the embarkation plan. Planning guidance from the commander landing force provides the information described as steps one and two. After receipt of planning guidance, the landing force tank officer prepares estimates of supportability. These are based on:

- (1) Mission and concept of operations of the landing force.
- (2) Enemy situation with particular attention to the enemy antitank defenses.
- (3) Terrain, weather, and beach conditions.
- (4) Shipping and landing craft availability.
- (5) Tank strength available to the landing force.

b. Tank units prepare their own plans based on the guidance and decisions made at the landing force level. During the preparation of these plans, tank officers assist supported unit staffs in preparing their plans. All the factors which were considered at the landing force level are re-evaluated and are reflected in the detailed operation plan.

11103. EMBARKATION AND ADMINISTRATIVE PLANS

Upon receipt of the shipping allocation, the tank battalion can commence embarkation planning. Necessary forms and the instructions for completing them are contained in FMFM 4-2, Amphibious Embarkation. These forms provide a means for listing the personnel and equipment to be assigned to each ship. Final embarkation plans can be developed after studying the assigned ships' characteristics pamphlets and direct liaison with the ships' officers. The S-1 and S-4 prepare the administrative/logistics plan to complement the tank battalion operation plan. The S-4 is responsible for its preparation.

11104. LANDING PLANS

The landing plan is the basis on which an orderly ship-to-shore movement can be conducted by the landing force. It is concerned with establishing relative priorities for landing units of the landing force. The various documents prepared by the tank battalion are found in FMFM 3-1, Command and Staff Action. The battalion prepares only those forms which are required based on the method of landing. When subordinate units of the tank battalion are attached to infantry units, their plan for landing will be reflected in the landing document of the units they are supporting. Plans for the landing of tactical units are found in the landing plan appendix to the amphibious operations annex of the operation plan. The plan for landing of supplies is found in the combat service support annex to the administrative/logistics plan.

11105. INTELLIGENCE REQUIREMENTS

The timely and continuous receipt of intelligence is a basic factor in the employment of tanks. During amphibious planning, as during combat planning, every effort is made to gain extensive information and intelligence relative to terrain, weather, and the enemy situation. However, included within each of these categories are items of special emphasis as discussed below.

a. Terrain.--Tank intelligence requirements relative to terrain places emphasis on information about beaches and terrain inland from the beaches. Required information about the beaches includes:

- (1) Location, length, width, gradient, composition of the beach and land adjacent to the beach, and trafficability of the land.
- (2) Existing and reinforcing tank obstacles on and adjacent to the beach.
- (3) Suitable exits.
- (4) Sea approaches including underwater gradient and offshore obstacles.
- (5) Surf, tide, and current conditions.

b. Weather.--Weather conditions assume special importance to tank units in amphibious operations. Weather affects the surf conditions and conditions of the sea which are critical to the use of landing craft and landing ships. Winds and visibility influence control and coordination of tank units during landing. Rough seas have an adverse effect on the off-loading of tanks. Precipitation affects not only visibility, but also trafficability. Extremes in temperatures give added importance to logistics requirements. Detailed weather information is required to include predicted:

- (1) Visibility as affected by weather.
- (2) Winds.
- (3) Precipitation.
- (4) Surf and sea conditions including the height of breaking surf.

(5) Temperature.

c. Enemy Situation.--There is a requirement for current intelligence on the enemy situation at all stages of amphibious planning. Initial tank planning is based on available intelligence supplemented by assumptions. However, the relative inability to materially alter plans once the assault has begun, and the need of the tank battalion and its subordinate units to be well informed, are reasons for seeking accurate and detailed intelligence on the enemy. Specific intelligence of importance to the tank battalion regarding the enemy situation includes:

- (1) Beach antitank defenses.
- (2) The enemy overall antimechanized capability, to include the location of enemy armored units and reaction time against the landing force.
- (3) Enemy air capability.
- (4) Enemy electronic warfare capability.

Section XII. AMPHIBIOUS MOVEMENT

11201. EMBARKATION

Prior to the arrival of assault shipping at the embarkation point, detailed loading and embarkation plans are prepared by the battalion embarkation officer in conjunction with the ship's combat cargo officer or, in the case of LST's and LSD's, the ship's first lieutenant. All plans and changes to them are approved by the ship's commanding officer prior to loading. Disagreements are referred to the next level of command for resolution. Plans include provisions for the assignment of tanks, tank units, equipment, and supplies to specific ships. Tanks, their crews, and appropriate maintenance equipment for the initial phase of operations ashore are embarked together. Every effort is made to maintain tactical integrity. When the contemplated movement will be over a period of long duration, additional maintenance support is included within tank units. For a detailed discussion of embarkation, refer to FMFM 4-2, Amphibious Embarkation.

11202. PREPARATION FOR EMBARKATION

a. Troop Commander Functions.--Arrangements for troop welfare and vehicle maintenance cannot always be fully covered in the embarkation plan. Certain aspects of these arrangements are resolved between the commanding officer of troops or his embarkation officer and the ship's commanding officer or his combat cargo officer/first lieutenant prior to loading. This information is disseminated orally or in a fragmentary order and includes the following:

(1) Stowage of fuel, lubricants, and maintenance material so they are available when needed while servicing embarked tanks.

(2) Use of the ship's equipment and personnel to assist in the maintenance of the tanks; i.e., hoist, lathes, technicians, etc.

(3) Organization of security details and messing procedures.

(4) Arrangement for any special equipment required for the stowage of tanks.

(5) Arrangement for any religious services, liberty, and ship's service privileges.

b. Establishing the Embarkation Point.--Prior to the movement of the tank battalion to the embarkation point, the embarkation team commander ensures:

(1) That the cargo assembly area, vehicle staging area, and troop billeting areas are adequate or needed improvements are accomplished. Improvements include construction of tank and heavy equipment loading ramps, if required.

(2) That adequate communications are available to facilitate control during the loading of tank equipment and supplies.

(3) That an embarkation team control office has been established to function as a center for controlling tank embarkation during marshalling and embarkation.

c. Movement of Tanks

(1) Concurrent with the development of the loading and embarkation plans, the battalion S-4 and the various embarkation team leaders with their unit commanders prepare for the movement of the tank battalion and its organic units to the embarkation area.

(2) Of major concern initially is the manner in which tanks and other heavy equipment will be transported to the embarkation area.

(3) For short distances, tanks normally rely on their own power for movement.

(4) Tractors are generally moved by "low-boy" trailers. For long moves, rail transportation provides the fastest means. For instructions on movement of tanks by rail, see FM 17-1, Armor Operations.

d. Movement Order.--A complete movement order is issued by the tank commander of the moving unit. If the tank unit is part of an embarkation team, the embarkation team commander issues the movement order. The order includes:

(1) Commander and composition of each serial.

(2) The time, date, and location each serial departs for embarkation points.

(3) The routes to be used and control measures to be taken during movement; fueling and rest stops and feeding arrangements for the personnel of the convoys.

(4) Communication matters and location of each command post at the embarkation point.

(5) Details for moving supporting tank personnel and equipment for embarkation in ships loaded by other than tank unit personnel.

11203. LOADING OF THE TANK UNIT

a. Tanks.--Tanks are normally loaded on ramp type shipping: LST, LCU, or LCM. Loading is done over a dry ramp whenever possible. Ships, unless tied to a pier, may not have sufficient fresh water available for rinsing down tanks. Therefore, other arrangements for adequate water are made. Bulldozers should be spotted at ramps for ramp maintenance unless this assistance is provided by the shore party. LST's are fitted with turntables which allow the tanks to drive aboard, be turned around, and backed into place. Training in directing vehicles and drivers in backing techniques to move their vehicles through narrow openings prior to loading reduces the possibility of damage to the vehicle, ship, or craft. When shipping requirements necessitate dry loading tanks on LSD's, it is accomplished by transfer from LCU's or LCM's. If facilities are available, LSD's can be loaded over a dock ramp at pier sites. The capacities of various ships capable of loading tanks are discussed in FMFM 4-2, Amphibious Embarkation.

b. Wheeled Vehicles.--Wheeled vehicles are loaded and stowed in accordance with normal practices. The requirement for tank logistics support may require the early landing of some wheeled vehicles.

c. Equipment and Supplies.--The greater portion of the equipment and supplies required by the battalion early in the operation is loaded in organic trucks or on the tanks themselves. All other cargo is loaded in accordance with the loading plan to ensure its availability when required.

d. Personnel.--It is important to retain maximum unit integrity during embarkation. Tanks and other tracked or wheeled vehicle drivers and crews normally embark when their vehicles are loaded. Other tank unit personnel embark after the completion of cargo loading. Tank personnel may be required for working parties for the loading of cargo and supplies. These working parties are normally assigned their tasks on the ships in which they will embark.

11204. REHEARSAL

a. Purpose.--The rehearsal of an amphibious operation is designed to accomplish the following purposes:

- (1) Test the adequacy of plans.
- (2) Ensure that all echelons are familiar with the plans.
- (3) Check the timing and refine the precision required in detailed operations.
- (4) Gauge the combat readiness of participating forces.
- (5) Test communications.
- (6) Correct planning errors and equipment and personnel inadequacies before undertaking the contemplated operation.

b. Tank Participation in Rehearsals

- (1) Tanks participate in all rehearsals to the degree possible.
- (2) During rehearsals in which an actual ship-to-shore movement is conducted, tank units normally participate without major items of equipment being involved.
- (3) The tank battalion headquarters and subordinate unit headquarters may land and establish communications.
- (4) Liaison personnel embarked with supported units will land with the supported unit headquarters.
- (5) If the tank battalion headquarters or subordinate headquarters do not land, communications are activated and tested aboard ship.
- (6) Time permitting, the landing craft transporting tanks beach; however, the tanks normally do not off-load.
- (7) The time and preparation required for reloading and the necessity for rewaterproofing normally precludes tank landing; however, tanks may land during the final integrated rehearsal. If tanks are landed, provisions are made for preventive maintenance and rewaterproofing of the vehicles involved.

11205. MOVEMENT TO THE OBJECTIVE AREA

During the movement to the objective area, the tank unit commander's first responsibility is to see that his tanks are efficiently maintained. Neglect combined with the salt spray or salt air will cause rapid deterioration of tanks that are left unattended. In addition to maintenance requirements, troop life aboard ship should be organized and carried out to maintain physical fitness, accomplish the necessary training, and take those steps necessary to further prepare for the accomplishment of the unit's mission.

a. Shipboard Routine.--During the movement, all matters pertaining to shipboard routine are taken up through the troop commander with the commanding officer of the ship or his representatives. All troops, while embarked aboard ship are subject to the orders of the ship's commander. It is incumbent on the commanding officer of troops to make his requirements for vehicle maintenance, training facilities, and other matters concerning troop welfare known to the ship's commander. It is also his responsibility to see that troops obey the ship's regulations, maintain troop spaces as prescribed, and provide the necessary security. Facilities for training are limited on most ships on which tanks are embarked. Time is utilized to the fullest extent possible by organized maintenance periods, physical fitness programs, inspections as required, and using the available formal training facilities. For detailed information related to shipboard routine and training, see FMFM 4-2, Amphibious Embarkation.

b. Preparation of Vehicles.--Arrangements should be made with the ship and other appropriate agencies prior to embarking for special shoring materials or dunnage which the tank unit requires to provide for securing and stowing equipment and supplies. Ships are equipped with securing eyes, chains, and turnbuckles. The manner in which tanks are chained to the deck is prescribed by the ship's commanding officer and/or the first lieutenant. The tank unit commander satisfies himself that sufficient precautions are taken to prevent damage to his vehicles. Care should be taken to continually check and tighten chains, ensuring that the tanks will not make sudden movements and snap chains. During extremely heavy seas, chains alone will not prevent tanks from slipping on the deck. To prevent this, heavy shoring timbers are placed between the tank tracks and/or the ship's bulkhead. Additional chains should be used, and dunnage should be placed under the tracks. During the movement, especially during heavy seas, a continuous watch is maintained to ensure that securing chains and shoring remain in place.

c. Maintenance of Tanks.--During embarkation planning, care is taken to ensure that tanks are spotted so that they are accessible for servicing during the voyage. The preventive maintenance effort is directed toward the prevention of salt deterioration. Daily preventive maintenance servicing of equipment is planned, scheduled, and carried out in detail. Frequent inspections are conducted. Engines are run for 30 minutes at least 4 days a week. Constant preventive maintenance of armament is accomplished. Batteries are checked to prevent corrosion and to ensure that they are fully charged.

d. Precautions.--During movement, the following precautions are observed apart from normal precautions:

(1) Engines are run or refueled only after receiving permission from the ship's captain or his representative.

(2) Tanks and other vehicles aboard ships are neither started nor refueled unless sufficient blowers are operating.

(3) The tanks and other vehicles' shift levers are placed in park position and brakes are set while the ship is underway.

(4) All equipment must be safeguarded from salt spray.

(5) Radio transmitters are not tested until radio silence is lifted.

(6) Security watches are used to prevent pilferage and to ensure that the tank unit equipment is not endangered.

e. Briefing.--Security regulations usually preclude detailed briefing of all personnel prior to embarkation. After embarkation, however, all personnel, particularly subordinate tank unit commanders are carefully briefed on pertinent details of the operation and their function in the overall plan. Each commander should understand the relationship of his mission to the plan of the supported unit and the landing force. Briefing is a continuous process. As new information is received, it is disseminated. Briefings normally emphasize the following:

(1) Mission of the tank and supported unit(s).

(2) Scheme(s) of maneuver of the supported unit(s).

(3) Procedures for the ship-to-shore movement.

(4) Detailed coverage of the initial situation and any immediate action ashore.

(5) Location of and methods of communications with higher and supported command posts, liaison personnel, and naval and logistics control organizations.

(6) Condition of beaches, nature of obstacles, projected off-loading depths, beach exits, terrain inland, and terrain trafficability.

(7) Coordinated plans for breaching any beach obstacles.

(8) Tentative location of initial assembly areas.

(9) Plans for evacuation of disabled vehicles.

(10) Plans for location of maintenance and supply facilities ashore.

(11) Enemy situation, with particular attention to antimechanized defenses.

f. Final Preparations Aboard Ship.--Final preparations for unloading and operations ashore are started in sufficient time prior to landing to allow tank personnel to:

(1) Fuel and lubricate tanks.

- (2) Secure all gear to be carried on the vehicle.
- (3) Load ammunition not loaded in tanks prior to embarkation.
- (4) Check fire control mechanisms.
- (5) Mount and check all weapons.
- (6) Check oil reservoir, power traverse, and elevation system.
- (7) Install final waterproofing sealing, if required.
- (8) Test communication equipment, including radios, crew helmets, intercom, and tank/infantry phone after radio silence is lifted.

11206. SHIP-TO-SHORE MOVEMENT

The ship-to-shore movement is the timely deployment of troops and their equipment from assault shipping to designated shore positions in the landing area. The movement is divided into two time periods--the selective and the general unloading periods. The selective unloading period is primarily tactical in nature and needs to be instantly responsive to landing force requirements ashore. General unloading is primarily logistic in character and emphasizes speed and volume of unloading operations.

a. Landing Categories.--The ship-to-shore movement is divided into five categories--scheduled waves, on call waves, nonscheduled units, floating dumps, and landing force supplies. The categories primarily affecting mechanized units are:

(1) Scheduled Waves.--Scheduled waves are composed predominantly of elements of assault BLT's. Tank units may be included in a task organized BLT and land in the assault wave. Tank units may also land in scheduled waves as a basic task organization or with units attached for early landing for link-up operations. In this case, a tank company may constitute a single scheduled wave. Additionally, the tank battalion or battalion (-) may be assigned the mission of seizing deep objectives in the beachhead area early in the landing. Therefore, the tank battalion or battalion (-) may constitute two or more scheduled waves.

(2) On Call Waves.--On call waves are launched near H-hour and maintained ready for landing on order from ashore. On call waves are dispatched ashore at the request of the appropriate troop commander through his tactical-logistical (TAC-LOG) group aboard the primary control ship.

(3) Nonscheduled Units.--Nonscheduled units are the remaining units of the landing force not included in scheduled or on call waves, which are expected to land prior to the commencement of general unloading. Tank units may land in nonscheduled units if the time of landing cannot be anticipated or when units of the battalion are held in division reserve.

(4) Floating Dumps.--Tank units landed early in the assault normally rely on floating dumps for fuel and ammunition resupply.

b. Methods of Landing Tanks.--The methods for landing tanks are based on the initial scheme of maneuver ashore, the missions assigned tanks, the expected enemy situation ashore, beach characteristics and offshore

obstacles, and the availability of landing craft and ships. Shipping may limit the number of tanks in the initial phase of the landing; however, every effort is made for their early landing.

(1) Defended Beaches.--When the required assault shipping is available and when tank units are to be landed over defended beaches, the tanks are preloaded in LCU's or LCM's and transported to the objective area aboard LSD's or LPD's. When debarked from the LSD/LPD, the landing craft with tanks aboard assemble and proceed as a group to the line of departure. Here they either deploy and cross in scheduled waves or lay off in a designated area awaiting the order to land in on call waves. Landing craft are disembarked from the LSD/LPD in time to reach the LOD at the time designated in the landing plan (assault schedule). Upon crossing the LOD, they continue to the beach. Because of the shallow draft of the LCU and LCM, tanks should be able to make a relatively dry landing. However, if tanks off-load in uncertain waters, they are provided guides, markers, or buoys to ensure that they reach shore safely. Probable landing dangers include the possibility of striking mines or other obstacles or vehicles being drowned out as the result of submersion in deep water.

(2) Lightly Defended or undefended Beaches.--When landing beaches are lightly defended or undefended, tank units are landed from LCU, LCM, or LST type craft with primary consideration being given to the sequence of landing. When hydrographic conditions and the tactical situation permit, the LST's are beached and the tanks not already landed in on call or scheduled waves are disembarked. When hydrographic conditions prevent the beaching of LST's, pontoon causeways might be used to off-load these tanks. When it is not feasible to preload all tanks in LCU's or LCM's, the tanks are loaded in other ships; i.e., LST's, LPD's, or beyond the water barrier on LSD's. After the preloaded tanks are landed or after LCU's and LCM's become available from other sources, they are used to land the remaining tanks.

Section XIII. CONDUCT OF THE ASSAULT

11301. GENERAL

The amphibious assault commences with the arrival of the major assault forces in the objective area. The assault of the beach commences when the first scheduled waves cross the line of departure. There is no hard and fast rule for the employment of tanks in the assault of a hostile beach. The considerations for tank employment remain the same as for operations ashore, including consideration of the mission, scheme of maneuver, terrain, enemy defenses, and additionally, the landing craft available for employing tanks in the assault. Where feasible, planning includes early employment of tanks in the amphibious assault to aid the infantry's rapid passage of the beach and seizure of initial objectives ashore. This section discusses the manner in which tanks are employed in the assault of a beach and how the tactical considerations affect tank employment.

11302. TIME AND PLACE OF LANDING

Since it is desirable that tanks land early during an assault of the beach, the time of landing and place of their landing should be accurately determined. This information is necessary in order to accomplish the detailed coordination required between supporting tank elements and other assault units. Continuous staff planning, including estimation and plans to meet contingencies, is accomplished in order to adjust to the changing situation ashore.

a. Time of Landing Tanks.--The best time to land the supporting tanks is dependent upon the time that beach and offshore obstacles can be reduced, tank mines can be neutralized, and antitank or antiboat guns can be destroyed to the degree that the landing of tanks is worth the risk.

b. Place of Landing Tanks.--Hydrographic conditions, beach trafficability, and routes of egress from the beach will directly influence the selection of the place for landing tanks. Beaches that do not provide favorable natural characteristics or lend themselves to installation of landing facilities for tanks delay tank employment. Hostile beaches defended by minefields, obstacles, and antitank guns are neutralized or avoided. Obstacles offshore or inland from landing sites are considered in the selection of landing beaches. If avoidance is impossible, a landing site is selected where the defenses can be breached. When selecting a landing site for tanks, particular attention is given to the trafficability of the hinterland, road nets, maneuver area, and degree of cover and concealment provided.

11303. ORGANIZATION FOR LANDING

Tanks are organized for landing with primary emphasis placed on tactical integrity so that they are immediately able to render maximum support to the scheme of maneuver. This is accomplished best when the organization for combat of the supporting tanks facilitates reaction to unforeseen situations, provides for mass, makes full use of the tank's inherent capabilities, and permits rapid exploitation. Tank units may be assigned the following tactical roles:

a. Maneuver Element.--In order to provide for the rapid seizure of deep objectives, the tank battalion may be designated as a maneuver element of the landing force to conduct a tank mechanized attack.

b. General Support.--In order to add depth to tank support on the beach, the tank battalion, with selected subordinate units, may be held in general support of the division or its subordinate infantry units. Units employed in this manner can more rapidly counter the losses of tank strength, shift tank support to meet the situation, or assist in an antimechanized role to repel enemy armored threats. Tanks may also be retained in general support when the beaches do not permit their early landing or when the tank unit's mission calls for them to land in mass.

c. Direct Support.--When assigned a tactical mission of direct support, tanks normally land under the control of their tank unit commander and report to the supported unit ashore for employment in tactical operations. Always strive for the earliest landing.

d. Attachment.--A tank unit is attached to an infantry unit when it is impractical for the tank battalion commander to fulfill tactical command, control, or supply responsibilities. This assignment is generally employed when the tanks are supporting units landing independently over widely separated beaches. Since centralized control by the tank battalion is not practicable, tanks are attached to infantry units for the landing to ensure rapid response to their needs. When the tank battalion is established ashore and capable of centralized control of its units, attached tank elements normally revert to a direct support role under their parent unit.

11304. RECONNAISSANCE AND LIAISON

a. Reconnaissance.--Much of the information received by the tank battalion prior to landing is acquired by preassault reconnaissance. However, tank unit commanders cannot rely solely on this source of information. In order to obtain accurate postlanding information, designated reconnaissance/liaison personnel accompany the initial waves ashore. When this cannot be accomplished, a list of essential elements of information (EEI) required is submitted to the supported unit intelligence section. Specific requests for information ensures quality of information received. Reconnaissance information obtained for tanks is concerned principally with:

- (1) Trafficability of the beaches and hinterland.
- (2) Beach landing points suitable for tanks.
- (3) Location and extent of antitank defenses, obstacles, and minefields.
- (4) Beach exits, assembly areas, and concealment.
- (5) Acquisition of probable targets and objectives for tanks ashore.
- (6) Location of cleared lanes over the beach.

b. Liaison.--Liaison teams are embarked and landed with the command groups of supported infantry units. During the early stages of the assault,

especially prior to the landing of the tanks, liaison teams remain in constant radio contact with their tank unit commanders. Prior to the landing of the tanks, the liaison teams assist supported unit staffs in formulating or modifying the task assignment of the supporting tanks and relaying this information to the tank unit commanders. This information enables the tank unit commanders to adjust plans and devise new schemes of maneuver to complement the supported unit if necessary. Reconnaissance and liaison personnel function together and in many instances are the same group.

11305. OBSTACLE CLEARANCE AND BREACHING

a. Obstacle Clearance.--The clearance of underwater obstacles is the responsibility of the Navy and is usually accomplished during preassault operations. Mines and obstacles inland from the high water mark are cleared by the landing force. In order to effect rapid movement over the beach, effective countermeasures are planned to offset obstacles. The tank unit commanders take a vital interest in ensuring that their needs for obstacle clearance are included in the landing force plans.

b. Underwater Obstacles.--Tanks can generally cross underwater obstacles such as barbed wire, light hedgehogs, and certain types of imbedded rails; however, their progress ashore is slowed. Underwater mines, heavy hedgehogs, heavy cribs, and other similar obstacles normally will halt tank movement ashore if they cannot be destroyed, bypassed, or neutralized. Instructions pertaining to the destruction of underwater obstacles are contained in NWP 22-4, Underwater Demolition Teams in Amphibious Operations (U). Lanes through obstacles must be between 18 and 24 feet wide. Buoys or guides are employed for marking the route of passage.

c. Beach Obstacles.--Both reinforcing and existing obstacles may be encountered by tanks and should be cleared prior to H-hour. Within their capabilities, the engineer unit plans the number, location, schedule, and method of clearing lanes through obstacles. During execution of the assault, the unit responsible for lane clearance informs the Navy control officer through the shore party or TAC-LOG groups of the number and location of lanes actually cleared. Landing craft and landing ships with tanks embarked are beached at or near these cleared lanes.

d. Selection of Lanes.--As it is seldom possible to clear an entire beach prior to the landing of tank units, it is necessary during planning to select primary and alternate sites for cleared lanes. Consideration for the selection of cleared lane sites is based on the scheme of maneuver, landing sites for tanks, the need for early landing of the tanks, and their passage through the beach area. Landing points leading to lanes are identifiable from seaward. The lanes selected should be located to ensure:

- (1) Sufficient breadth to allow tank passage.
- (2) Minimum lateral movement for tanks after landing.
- (3) Adequate exits to a road net or trafficable terrain.
- (4) A sufficient number of lanes to permit prompt egress from the beach.

e. Barrier Breaching Operations.--Tanks are utilized to cover breaching operations when they are required to land with assault waves.

Because the clearing of lanes is of prime importance to tank units, tank reconnaissance and liaison personnel are included in the breaching team. They can assist in preparing demolitions, marking lanes, and functioning as guides.

11306. GUIDING TANKS ASHORE

Normally, tanks require a means for guidance ashore. This is especially true when the landing areas are not thoroughly familiar to the tank crews or when the beaches are preceded by reefs, potholes, and reinforcing or existing obstacles. The following means are employed for guiding tanks ashore:

a. Tank Personnel.--The tank unit commander designates tank crewmen to precede vehicles ashore. This method of guiding is simple; however, it is slow and dangerous, especially in deep water or over rough bottom. Guides are exposed to enemy fire and antipersonnel mines.

b. Amphibious Vehicles.--Amphibious vehicles may be employed to guide tanks ashore. When this method is used, guide vehicles are designated well in advance of the landing to allow for briefing and communication planning.

c. Marking.--Lanes for the movement ashore are marked prior to or during early stages of the landing by the Navy underwater demolition or Marine reconnaissance teams. When marking the lanes, sufficient buoys should be employed to prevent the obliteration of the lane markers by enemy gunfire. The means for anchoring buoys must be designed to prevent their movement.

11307. PASSAGE OF THE BEACH AREA

a. Against Defended Beaches.--To avoid congestion and tank losses, passage of a defended beach must be well planned, coordinated, and aggressively executed. Upon landing, reconnaissance and liaison teams select suitable landing sites or ensure the suitability of those already selected. Changes in sites are made through the shore party or TAC-LOG group to the Navy control officer. Barrier breaching teams quickly clear lanes for tank passage. Since last-minute changes are inevitable, liaison personnel keep tank unit commanders informed about situations on the beach, targets that are to be attacked upon landing, and any other pertinent information necessary. When tanks land in the first wave, they commence laying down covering fire. Hard targets such as pillboxes, bunkers, or similar fortifications are engaged by individual tanks. As tanks in later waves reach the beach, they are met by guides who direct them through cleared lanes or to positions to support the infantry. When the beach obstacles are passed, tanks can be employed to move beyond the beach ahead of the infantry and take enemy pressure off the landing operations. Tactical formations employed by tanks during landing and beach passage are prescribed in operation orders. Flexibility is permitted to ensure that changes in formations, dictated by the current situation ashore and the beach conditions, can be made. During beach passage, dozer tanks are employed to clear obstacles, to cover entrances to emplacements, to construct antitank ditch crossings, and to aid in mine breaching operations inland. As soon as the tank unit commander is able, he contacts the supported infantry commander. When beaches are known to be free of mines or other antitank obstacles, tanks can land as the first wave. Tanks move inland as the infantry lands. Initial waves

of troop carrying craft are precisely timed to ensure infantry support of the movement of the tanks and for the infantry to be able to take advantage of the shock effect of the tank movement when crossing the beach.

b. Against undefended Beach.--Against undefended beaches, tanks can be landed as desired. Guides are used to bring the tanks ashore. Once ashore, tanks move directly off the beach and attack inland.

CHAPTER 2

ANTIMECHANIZED OPERATIONS

Section I. INTRODUCTION

2101. GENERAL

Mechanized forces play an important role in modern warfare. A landing force in an amphibious assault or in subsequent operations ashore must have the capability to contain and destroy an enemy mechanized force. This chapter outlines basic doctrines, standard procedures, and tactical concepts designed and employed to detect, counter, and destroy hostile mechanized forces. It is oriented principally toward the planning and execution of antimechanized operations in amphibious operations. Areas of common interest and detailed discussion on doctrine, tactics, and techniques are contained in the applicable FMFM's and FM's (see List of References).

2102. SCOPE OF ANTIMECHANIZED OPERATIONS

Antimechanized operations are the combat actions specifically directed towards destroying or neutralizing enemy tanks and mechanized units. It includes:

- a. Combat support units which are directly supporting the enemy mechanized forces.
- b. Service support units which are accompanying the enemy mechanized forces.
- c. Area or structures such as bridges which facilitate the movement of enemy mechanized forces.

2103. CHARACTERISTICS OF ANTIMECHANIZED OPERATIONS

Antimechanized operations may be either offensive or defensive in nature. They form an integral part of the landing force's overall tactical operations and cannot be isolated and treated separately. Characteristics of antimechanized operations which require special consideration in the development of landing force plans include:

- a. Absence of Clearly Defined Tactical Areas.--Mechanized forces seek out a battlefield which is extensive and porous with wide gaps between units. In such a situation, a landing force would be in continuing danger from a tank attack from any direction that provides good mechanized trafficability. Further, in the development of the operation, friendly and hostile mechanized elements tend to bypass or outflank one another and become intermingled, so that smaller scale antimechanized actions may take place throughout the battle area at any time.
- b. Key Importance of Terrain.--As in no other operation, terrain is a limiting factor. It dictates when and where friendly and hostile

mechanized forces can be used and is an important consideration in their employment. The successful conduct of an antimechanized operation depends, to a large degree, upon the capability of the landing force or its threatened elements to use terrain intelligently.

c. Rapid Massing of Combat Power.--The antimechanized operation imposes an increased requirement for mobility on elements of the landing force so that antimechanized resources can be massed rapidly against an attacking hostile mechanized force.

d. Minimal Reaction Time.--The capability of enemy mechanized forces to mass an attack rapidly allows the landing force a minimum of reaction time. There is no time for lengthy studies, plans, or staff elaboration. The assessment of the hostile mechanized threat and the response to it are accomplished quickly. Speed and simplicity are paramount. The most expeditious means of communication are employed to alert and maneuver the landing force's antimechanized resources.

e. Increased Organizational Flexibility.--The tactical arrangement and distribution of the landing force's antimechanized resources are continuously tailored to meet the specific hostile mechanized threats confronting the landing force. This arrangement remains dynamic throughout the conduct of the operation. Antimechanized means are shifted as required to counter shifts or changes in the mechanized threat. Indiscriminate attachment or the stereotyped distribution of supporting antimechanized means to assault elements is avoided.

f. Centralized Control and Coordination.--Antimechanized operations are controlled and coordinated centrally insofar as practicable. Prior to the determination of the enemy's time and place of attack, control and coordination are retained at division or higher level. After the location of the main threat has been determined, control and coordination are then passed to the commander of the threatened element of the landing force. The antimechanized operation is based upon massing the bulk of available antimechanized means in depth along the most probable avenues of approach for hostile armor and backing them up with a tank-heavy striking force capable of defeating any enemy mechanized units that penetrate the battle area.

g. Total Commitment of Antimechanized Resources.--Antimechanized means used piecemeal against a well organized enemy will fail to provide or support an adequate antimechanized offense or defense. The antimechanized operation is designed to provide for massing all available antimechanized resources in the critical area as rapidly as possible. It focuses all available antimechanized weapons at the point of decision.

h. Avoidance of Stereotyped Techniques.--The antimechanized response is varied to meet the hostile mechanized threat imposed. It requires daring and imaginative leadership. The variety of antimechanized situations that may confront the landing force generates a continuing evolution of new techniques on the battlefield. Employment of stereotyped procedures or predictable tactical patterns invites destruction.

2104. AMPHIBIOUS CONSIDERATIONS

Organizing and executing an effective antimechanized operation against an enemy capable of large-scale mechanized operations is a challenge

under the most ideal conditions. Antimechanized operations within the framework of an amphibious assault are particularly difficult because of inherent amphibious considerations which tend to increase the vulnerability of the landing force to a large-scale mechanized attack. Among these amphibious considerations are the following:

- a. Initial Absence of Depth on the Battlefield.--In the amphibious assault, the landing force initially has no land area to defend. The purely offensive nature of its operations makes the landing force particularly vulnerable to attack by hostile mechanized forces. This situation continues until the momentum of the initial assault carries the landing force far enough inland to provide the depth which is a prerequisite to the execution of a conventional antimechanized defense.
- b. Initial Absence of Antimechanized Means.--In the early stages of the amphibious/helicopterborne assault, assault elements depend on organic antitank/assault weapons and air and naval gunfire. Tanks may be landed in the first assault waves to support the assault or to counter an immediate enemy tank threat in the landing area. However, their landing may be delayed by beach and offshore obstacles and/or enemy antitank weapons in the landing area. Antimechanized resources lacking the armor protection, shockpower, and firepower of tanks are normally landed after the tanks. The landing force remains in a precarious position until it realizes its full anti-mechanized capability with the landing and integration of all available antimechanized means.
- c. Restrictions on Landing Force Maneuver.--In the initial stages of the amphibious assault, a landing force will normally present a good target to hostile mechanized forces. In addition, its maneuver may be restricted by manmade obstacles to its front and the sea at its back. Until the landing force breaches obstacles to its front and gains depth on the battlefield, its capability to introduce and maneuver its heavy antitank means on the battlefield is severely restricted.
- d. Lack of Battlefield Reconnaissance.--The employment of the landing force's mobile antimechanized resources is initially hampered by unfamiliarities with the landing area which can be resolved only by on-the-ground reconnaissance. These elements remain vulnerable to hostile mechanized forces until detailed battlefield reconnaissance is completed and adequate mechanized trafficability plans are developed.
- e. Absence of Artificial Barriers.--During the early stages of the amphibious operation, the landing force has no artificial barrier system to restrict, disrupt, or canalize the maneuver of hostile mechanized forces.
- f. Decentralization of Control.--During the ship-to-shore movement, antimechanized elements of the landing force are deployed and may become separated. Furthermore, control is, of necessity, decentralized. These elements are vulnerable to piecemeal destruction by hostile mechanized forces until centralized control and unity of command are reestablished.
- g. Vulnerability of Supporting Elements.--The landing force is composed of two elements: the mobile tactical elements and the relatively immobile support elements. The latter elements such as fuel farms, aviation installations, and logistics facilities are attractive targets for hostile mechanized forces and possess only limited numbers of infantry antitank weapons.

h. Vulnerability of Helicopterborne Troops.--Elements landed by helicopter in the initial stages of the amphibious operation are extremely vulnerable to hostile mechanized attack since they are isolated from major elements of the landing force and possess a limited antimechanized capability. Helicopterborne forces remain vulnerable until a linkup is effected with other elements of the landing force and they are reinforced with heavy antitank weapons.

i. Unit Separation During Nuclear Threat.--The threat of enemy nuclear weapons often dictates a significant degree of separation for the subordinate units of the landing force. Separation lessens the commander's capability to mass his antimechanized means rapidly in order to defeat a counterattack by a hostile mechanized force. The gaps resulting from such separation can be exploited by rapid thrusts of hostile mechanized forces.

Section II. FUNDAMENTALS OF ANTIMECHANIZED OPERATIONS

2201. GENERAL

Antimechanized operations encompass any action, large or small, taken by a landing force to counter hostile mechanized forces or elements. Such operations may be conducted on a large scale against a completely mechanized enemy, or they may be lesser included parts of a normal amphibious operation in which an element(s) of the landing force is threatened by hostile forces supported by tanks. The antimechanized operation has some of the aspects of both the offensive and the defensive. The attack of hostile tanks dictates that either the landing force as a whole or its threatened elements adopt a form of the defense to counter and destroy the threat. During early phases of the amphibious assault, antimechanized defensive measures are of an emergency nature. Once the landing force has developed sufficient depth on the battlefield, it can react to the threat of hostile tanks by adopting a normal mobile or area-type defense compatible with the terrain and the situation. This section discusses the objectives and concepts of antimechanized operations, the types of defensive measures adopted to counter and destroy a hostile mechanized threat, and the general tactical principles that apply in such situations.

2202. ANTIMECHANIZED OBJECTIVES

a. Basic Objectives.--The antimechanized operation is a defense against armor. It is primarily concerned with integrating all available antimechanized resources to destroy the enemy's armor. Tactically, it strives to provide a strong concentration of nuclear and/or conventional tank stopping power that can be applied immediately against hostile armor whenever they are located. Its basic objectives are to:

- (1) Locate and engage the enemy's armor as far forward of the landing force's positions as possible using air, naval gunfire, and artillery.
- (2) As a minimum, reduce the enemy armor strength prior to its engagement with assault units.
- (3) Disable or destroy, with all available weapons, surviving enemy armor elements assaulting the landing force.

b. Related Requirements.--To achieve these basic objectives, landing force antimechanized operations are designed to fulfill the following related requirements:

- (1) Establish an efficient long range antimechanized surveillance, warning, and attack system to facilitate the engagement and destruction of hostile armor as far forward of the landing force's position as possible.
- (2) Give consideration to existing barriers in selecting beaches for the landing. Such barriers provide protection to the landing force and restrict, disrupt, and canalize the maneuver of hostile mechanized forces.
- (3) Plan and execute the landing so that the landing force can achieve sufficient depth on the battlefield. This will permit the

organization of a strong antimechanized defense prior to contact with major hostile mechanized forces. Where this cannot be done, the landing force requires an overall fire support superiority that permits it to dominate operations to the extent that hostile mechanized forces are completely destroyed and/or neutralized in the area of the landing.

(4) As a part of the isolation of the battlefield, provide adequate long range antimechanized means to delay, destroy, damage, neutralize, or severely reduce hostile mechanized elements well forward of landing force positions.

(5) Provide adequate short range antimechanized means to ensure close-in protection of the landing force.

(6) Provide a tank-heavy reserve force with sufficient mobility to retake the initiative and deploy rapidly to contain and destroy any hostile mechanized penetration of the landing force.

2203. CONCEPTS OF ANTIMECHANIZED OPERATIONS

Basic antimechanized concepts provide for locating, engaging, and destroying hostile tanks as far forward of the landing force positions or objectives as possible. Hostile mechanized forces entering the landing force objective area are subjected to ever-increasing resistance as they approach friendly forward units. This resistance is designed to continuously disrupt, delay, and canalize the enemy attack and reduce its effectiveness. Landing force tactics are designed to force the enemy mechanized forces to deploy and maneuver in the terrain most suitable for the employment of friendly antimechanized means, and where the enemy forces are most susceptible to counterattack by the landing force's mobile reserve/attack force. Every effort is made to force enemy armor to fight on the terrain and terms dictated by the landing force.

2204. EMPLOYMENT OF ANTIMECHANIZED MEANS

Antimechanized means include all means, both active and passive, which can be employed effectively against hostile mechanized forces. This chapter discusses the antimechanized means normally available to a landing force in the amphibious assault. It delineates antimechanized means organic to the Marine division and those available from force and external sources. The approach to the subject is general in nature and comments are restricted to types of weapons rather than any one specific individual weapon. Principal emphasis is placed on the tactical employment and integrated control and employment of the various antimechanized means.

a. Active Antimechanized Means.--The active antimechanized means, those capable of killing or disabling tanks, which are available to the landing force include:

- (1) Individual antitank weapons.
- (2) Ground-mounted and self-propelled antitank/assault weapons.
- (3) Rocket launchers.
- (4) Mines.

- (5) Demolitions.
- (6) Tanks.
- (7) Artillery.
- (8) Naval gunfire.
- (9) Aircraft.
- (10) Nuclear and chemical weapons.

b. Passive Antimechanized Means.--Passive antimechanized means are those measures other than active designed to delay and disrupt hostile mechanized forces. They include the use of:

- (1) Obstacles and barriers.
- (2) Smoke.
- (3) Illumination.
- (4) Electronic warfare.

2205. CONCEPTS OF ANTIMECHNIZED FIRES

To effectively engage an enemy mechanized force requires the concentration of antimechanized resources at a decisive place and time. Due to the mass a mechanized force will present, and the rapidity of its movement, the force must be reduced at the farthest range possible.

a. Means

(1) Aviation.--Aviation plays a number of roles in an anti-mechanized operation. Aircraft are effective antitank weapons and play a vital role in the early stages of the amphibious assault and during the buildup of antimechanized means ashore. They constitute the primary means available to a landing force to fulfill its long-range antimechanized reconnaissance, surveillance, and attack requirements. In the antimechanized operation, the landing force is supported from the aviation resources of the amphibious task force, including the Marine aircraft wing and appropriate force units. The aviation element is an organic task organization of the air-ground task force (MAU, MAB, or MAF). Its composition is tailored to the conduct of tactical air operations against the mechanized enemy. It includes combat units, combat support units, and combat service support units. For a detailed discussion of the employment of aviation, see FMFM 5-1, Marine Aviation; FMFM 5-3, Assault Support; FMFM 5-4, Offensive Air Support; FMFM 5-5, Antiair Warfare; and FMFM 5-6, Air Reconnaissance.

(2) Artillery and Naval Gunfire.--Artillery and naval gunfire will cause a mechanized force to deploy early and, to some extent, produce some disorganization; however, it will not produce a great number of kills. Therefore, artillery and naval gunfire fills the gap when air is not available beyond the range of direct fire weapons.

(3) Effectiveness of Direct Fire Antitank Weapons.--The effectiveness of the landing force direct fire antitank weapons is evaluated and

measured in terms of hit probability; i.e., the percent probability that a single round fired from an individual antitank weapon at a given range will hit a hostile tank. As a result, the planning and coordination of anti-mechanized fires strive to integrate the fires of available antitank weapons so as to ensure that they open fire at ranges that provide reasonably good hit probabilities. Among the factors considered in determining when an antitank weapon should commence firing are the following:

(a) Range.--Hit probability varies inversely with the range to the target. As the range to a hostile tank decreases, the hit probability increases. This does not apply to antitank guided missile systems, since hit probability is generally the same regardless of range.

(b) Nature of the Terrain.--Hit probability is significantly greater against hostile tanks operating in open terrain. It drops sharply when engaging hostile tanks in well concealed and/or hull-defiladed positions.

(c) Position of the Antitank Weapon.--An antitank weapon in the open with little available cover or concealment may be compelled to adopt hit-and-run tactics; i.e., open fire at ranges with relatively low hit probability and then displace to ensure its survival.

(d) Mission of the Antitank Weapon.--Antitank weapons employed with security forces or in delaying actions normally open fire at greater ranges than when employed in blocking positions or the defense of strongpoints.

(e) Effect of Firing First.--In an antimechanized operation, the force which fires first; i.e., gets off massed, well aimed, and effective fires, normally gains a significant tactical advantage. Accordingly, the advantage of holding fire to gain increased hit probabilities is weighed against this factor.

(4) Nuclear Weapons.--A sizable portion of the potential combat power of the landing force lies in its organic nuclear support capability and in the additional nuclear support available from higher headquarters. The combat power of nuclear weapons and the great ranges at which they must be employed permit them to fulfill the basic criteria for antimechanized operations; i.e., to obliterate the enemy's tanks and mechanized forces before they can attack the landing force. For additional discussion of nuclear warfare, refer to FMFM 11-1, Nuclear, Chemical, and Defensive Biological Operations in the FMF, and other appropriate manuals in the FMFM 11 series.

(5) Chemical Agents

(a) Chemical agents may be employed effectively against hostile mechanized forces. For additional discussion, see FMFM 11-1, Nuclear, Chemical, and Defensive Biological Operations in the FMF, and other appropriate manuals in the FMFM 11 series.

(b) Persistent chemical attacks can be made against targets occupied or unoccupied by enemy troops. Under favorable weather conditions, a persistent chemical attack can produce delayed casualties among masked enemy troops.

1 Amphibious Assault.--Persistent chemical attacks may be made on target areas which the landing force does not intend to enter immediately because the resulting contamination restricts the maneuver of assault units. HD or VX may be used to help protect the flanks of the landing force. Persistent chemical attacks are especially effective against enemy reserves and may be conducted in depth inland along principal avenues of hostile mechanized approach, to delay hostile mechanized forces, deployed in depth, from reinforcing the landing area.

2 Antimechanized Defense.--Persistent chemical attacks may be made to contaminate terrain that is important to the hostile mechanized force's scheme of maneuver such as avenues of approach, assembly areas, attack positions, observation points, and positions for antitank guns. Persistent chemical attacks have special defensive value since contamination established before the enemy attack may remain effective throughout the attack. Persistent chemical attacks contaminate critical targets which have been damaged by high explosives or nuclear weapons, thereby delaying repairs. Persistent chemical attacks may be used to canalize hostile mechanized attacks along avenues of approach favorable to the landing force and to compel the enemy to move into areas that facilitate friendly counterattack. Persistent chemical attacks may also be used to cover gaps between landing force elements and to protect flanks, especially when the landing force is deployed over wide frontages.

(6) Smoke.--In an antimechanized operation, the landing force employs smoke to screen its own movements and to blind, confuse, and delay the enemy's mechanized forces. However, it should be kept in mind that the use of smoke generally favors the attacker. For more detailed information concerning the employment of smoke, see FM 3-50, Chemical Smoke Generator Units and Smoke Operations.

(7) Employment Considerations.--See appendix C for a discussion of the TOW weapon system employment considerations; FMFM 6-3, Marine Infantry Battalion, contains employment considerations for the Dragon weapon system; additional information on both systems may be found in FM 7-24, Antiarmor Tactics and Techniques for Mechanized Infantry.

b. Concept Methods.--There are two general concepts for antimechanized fires--concentric and ever-increasing volume of fires, and massed-surprise fires.

(1) Concentric and Ever-Increasing Volume of Fires.--This concept requires that direct weapons engage at the maximum range the specific weapon can be expected to achieve effective hits (see fig. 21). A technique for achieving depth in the defense is illustrated in figure 22. This is the preferred concept since it engages the enemy armor force earlier and at longer ranges from the friendly positions.

(2) Massed-Surprise Fires.--This technique visualizes all direct fire weapons engaging the enemy force simultaneously. This method will result in more initial kills on first engagement, but at a much closer range. However, the mass and momentum may still carry the force into friendly positions. It should be employed only when the terrain restricts fires to a shorter range. (See fig. 23.)

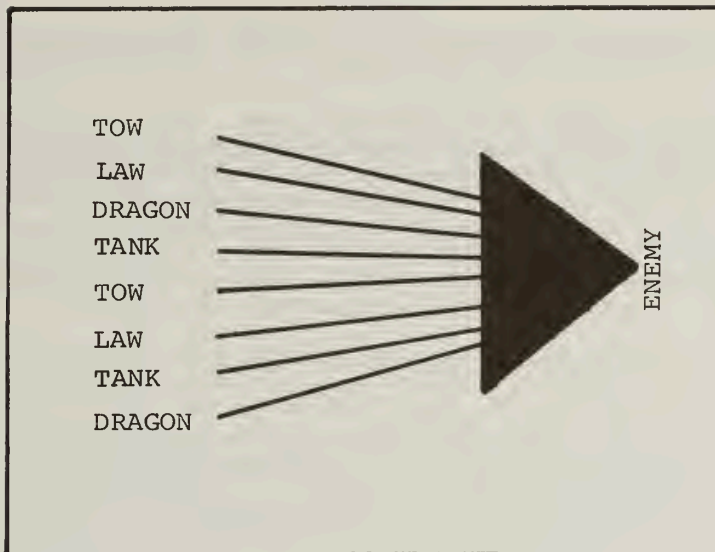


Figure 23.--Massed-Surprise Fires.

2206. ANTIMECHANIZED MEASURES IN THE AMPHIBIOUS ASSAULT

a. General.--During the amphibious assault, the primary means available to protect the landing force from the attack of hostile tanks are the offensive tactics of the combined-arms team of the amphibious task force. Antimechanized measures in the amphibious assault are predicated upon the following:

- (1) Destroying and/or neutralizing hostile mechanized forces in the area of the landing as part of isolation of the battle area prior to the assault.
- (2) Denying reinforcing hostile mechanized forces access to the area.
- (3) Accelerating the development of the landing force's anti-mechanized resources ashore.
- (4) Rapidly seizing inland objectives that facilitate the development of an effective antimechanized defense.
- (5) Maintaining the momentum of the amphibious assault by continuing development of the scheme of maneuver ashore.
- (6) Planning successive antimechanized phase lines which facilitate the rapid assumption of an effective antimechanized defense in case of a large-scale hostile mechanized attack.
- (7) Instituting an effective antimechanized reconnaissance/counterreconnaissance screen well forward of the landing force's positions.
- (8) Executing aggressive offensive actions against small-scale hostile mechanized threats.

(9) Adopting an area or mobile-type defense when a large-scale hostile mechanized attack becomes imminent.

b. Offensive Action.--The landing force cannot permit minor hostile mechanized threats to deter its rapid development of the situation ashore. Seizure of the landing force objectives remains paramount and provides the best basis for an antimechanized defense. Accordingly, the landing force exploits every opportunity to commit its antimechanized resources in aggressive offensive action. In such operations, principal reliance is placed upon supporting arms, mechanized reserves, and helicopterborne anti-mechanized forces. Such forces accomplish the following:

(1) Fix the hostile mechanized force with massed nuclear or conventional fires.

(2) Flank the hostile force by the vertical maneuver of helicopterborne antimechanized elements or the surface maneuver of mechanized task force elements which establish blocking positions to the enemy's rear. Where possible, they conduct route mining operations, to include mines sowed from aircraft, in order to contain the hostile mechanized elements and restrict their maneuver. Care is taken in such mining operations to ensure that the landing force's future offensive maneuvers are not unduly restricted.

(3) Fight the hostile tanks with the tank-heavy elements of the landing force supported by mobile antitank weapons and all available supporting arms. These elements strike at the flanks or rear of the enemy tanks and drive them into the fires of the antimechanized fixing force.

c. Emergency Measures.--The landing force, as a whole, permits nothing to deter it from the rapid seizure of its assigned objectives. An attack of elements of the landing force by hostile tanks in strength during the early stages of the amphibious assault requires that such landing force elements adopt the following emergency antimechanized measures:

(1) Landing force elements under attack establish strongpoints on the most defensible terrain and engage hostile tanks with their organic antitank weapons.

(2) The on-call landing of antitank weapons is expedited.

(3) Helicopterborne elements of the reserve/attack force are landed and positioned to counter the hostile threat.

(4) Massed air attacks and naval gunfire are directed against the hostile tanks to destroy and/or neutralize them and permit the landing force to regain the initiative and resume the offense.

2207. PRINCIPLES OF ANTIMECHANIZED OPERATIONS

Antimechanized operations are generally conducted in accordance with the following principles:

a. Selection of Objectives.--Terrain that presents the least advantage to attacking enemy mechanized forces is selected. Ideal terrain provides existing defensive barriers for protection of the landing force flanks, compels the enemy to attack frontally, and minimizes the number of hostile tanks that may be massed in critical areas.

b. Organization for Combat.--The landing force is task organized and provided antimechanized resources to the degree required for operations against the enemy.

c. Distribution and Allocation of Means.--Antimechanized means are distributed to landing force elements on the basis of the specific hostile mechanized threat confronting individual elements.

(1) The bulk of the landing force's antimechanized means are massed in selected areas to cover principal avenues of hostile mechanized approach.

(2) Control of the bulk of mechanized means is centralized. Initially, this control is exercised at the division level. As the hostile mechanized attack develops, it is passed to the commander of the threatened area. Planning for control of these forces is a continuous process and the threatened commander makes requests for assistance required in the normal manner. Training for an antimechanized operation includes extensive field exercises designed to standardize and expedite procedures for passing control of antimechanized means.

d. Security and Warning Plan.--A continuing estimate of hostile mechanized capabilities is maintained in order to keep all elements of the landing force apprised of the enemy capability to mount an armored attack. Security elements provide antimechanized security at all times. The basis for continuous antimechanized security is to provide for the early detection of hostile armor. Ideally, such forces should be detected at distances great enough to give warning to landing force units and to initiate orders to ensure their destruction or neutralization. An adequate security and warning plan ensures the following:

(1) A positive and effective antimechanized warning system is maintained.

(2) All target acquisition agencies and reporting means are utilized to detect and report hostile mechanized activity.

(3) The most rapid means possible are employed to transmit information of enemy mechanized activity, to expedite evaluation of the information, and to issue orders and warnings to affected units.

(4) All tank alerts are transmitted in the clear when there is a possibility that encryption and decryption will delay the required action.

(5) Tank alerts provide for automatic passage of control of centralized antimechanized means to the affected commander.

e. Scheme of Maneuver.--The scheme of maneuver is influenced by the hostile mechanized threat. Careful planning ensures that the landing force can accomplish its assigned amphibious assault mission in spite of the hostile mechanized force. In this respect, consideration is given to the following:

(1) Initial objectives ashore providing natural antimechanized defense features.

(2) Early landing and progressive buildup of antimechanized means.

(3) Emplacing antimechanized resources in depth on the battle-field as rapidly as possible.

(4) Phasing of objectives inland to provide for the rapid assumption of the antimechanized defenses at each phase line.

(5) Shifting the landing force emphasis from the amphibious assault role to the antimechanized defense role whenever the force as a whole or its major elements are threatened by a large-scale enemy tank attack.

f. Control and Coordination.--Normal control and coordination procedures for offensive and defensive combat are applicable to antimechanized tactics.

g. Passive Measures.--All elements of the landing force take maximum advantage of cover and concealment in order to mislead the enemy and to contribute to an effective antimechanized plan by ensuring that the following are accomplished:

(1) Direct fire weapons fire from covered and concealed positions.

(2) Sites for administrative installations take full advantage of terrain and protection afforded by the location of combat units.

(3) Maximum use is made of existing and reinforcing obstacles. An effective antimechanized barrier system is preplanned and its construction is executed on order when it is required.

h. Active Measures.--All active antimechanized means capable of attacking hostile mechanized elements are coordinated and controlled to the extent that:

(1) Fires of antitank weapons are under centralized control of the affected unit in order to provide for immediate massed fires and to gain the tactical advantage of firing first. Such fires are held in check until there is reasonable probability of attaining a disabling hit with the first shot fired.

(2) Fires are delivered on a priority basis to the hostile unit, element, or system that present the greatest danger; i.e., antitank guided missile at ranges in excess of 1,600 meters. They are engaged by all units and weapons capable of delivering fires. Direct fire antitank fires are directed against hostile tanks where they are most vulnerable; i.e., from the flanks and/or rear.

(3) The employment of friendly tanks is rigidly economized. They are held under centralized control while the hostile mechanized force is engaged by all available supporting arms and antitank weapons. When these weapons have disrupted, delayed, and canalized the hostile mechanized forces, friendly tanks strike the final blow as part of a mechanized attack force.

(4) Gaps created by hostile mechanized penetrations into the battle area are sealed by planned fires to separate hostile tanks from their supporting infantry, combat and service elements and to disrupt the continuity of the attack.

(5) Friendly units on the flanks of a hostile mechanized penetration "shoulder the gap" by adopting a perimeter type or strongpoint defense. They are "boxed in" by friendly supporting artillery fires.

(6) Fire support plans and barrier systems are designed to canalize advancing hostile mechanized forces into natural killing zones/ areas where they may be contained by massed surprise fires and obstacles to their maneuver and destroyed by a tank-heavy counterattack.

i. Counterattack.--Counterattack plans are prepared for possible hostile mechanized penetrations.

(1) Where possible, the counterattack is not launched until the hostile mechanized penetration has been contained.

(2) The counterattacking force strikes deep at the rear and flanks of the hostile mechanized penetration.

(3) Unity of command is essential and is maintained within the attack force.

(4) Where hostile forces effect more than one penetration of the landing force positions, priority for counterattack is given to the penetration which poses the greatest threat to the landing force.

2208. ANTIMECHANIZED RESOURCES

Weapons, systems, and devices that are designed or may be employed to destroy, disable, or disrupt hostile mechanized forces are antimechanized resources. There are two distinct categories:

a. Active Means.--Those weapons and systems designed or intended to destroy or disable mechanized weapons and vehicles. Included in this category are individual and crew-served antitank weapons, tanks, artillery, naval gunfire, certain aircraft ordnance, antitank mines, and nuclear/chemical weapons.

b. Passive Means.--Procedures, methods, and devices which delay, disrupt, or inhibit the enemy's advance an/or maneuver ability. Examples of passive means are terrain, obstacles (existing and reinforcing), smoke, and electronic warfare.

Section III. ANTIMECHANIZED INTELLIGENCE

2301. INTRODUCTION

Antimechanized intelligence is necessary for the preparation of the initial operation plan and its antimechanized annex, and for the execution of antimechanized operations ashore. The fulfillment of antimechanized intelligence requirements and the means for collection, evaluation, and dissemination are a part of the overall intelligence effort of the landing force. Detailed treatment of these aspects of intelligence are presented in FMFM 2-1, Intelligence; FMFM 2-3, Signals Intelligence/Electronic Warfare Operations (U); FM 30-5, Combat Intelligence; and FM 30-10, Military Geographic Intelligence (Terrain). This section discusses the specific aspects of intelligence planning and operations applicable to the antimechanized operation.

2302. ANTIMECHANIZED INTELLIGENCE REQUIREMENTS DURING THE PLANNING PHASE

Antimechanized intelligence provides factual information that may be used as a basis to estimate the enemy's mechanized capabilities and other information relative to terrain, weather, and hydrography in the objective area. After the basic decisions have been reached, increasingly detailed intelligence of hostile mechanized capabilities is required for subsequent detailed planning. The requirement is primarily for intelligence concerning enemy armored capabilities expected during early phases of the assault and for intelligence concerning the area of operation.

2303. ANTIMECHANIZED INTELLIGENCE PLANNING DURING MOVEMENT TO THE OBJECTIVE

Movement and concentration of enemy mechanized forces can be accomplished rapidly, changing the situation in the objective area immediately prior to landing. Intelligence collection plans are designed to provide dissemination of antimechanized intelligence during the movement to the objective area. Intelligence is obtained through advance force and amphibious task force surveillance resources. Dissemination is complicated by the fact that emission control is mandatory. Planning normally provides for circumventing this problem by employing helicopterborne messengers, airdrops, visual signals, etc., for dissemination of the information obtained.

2304. ANTIMECHANIZED INTELLIGENCE PLANNING DURING OPERATIONS

The nature of antimechanized operations is such that the acquisition of targets and the production of antimechanized intelligence is cyclical throughout the operation. Selection of a sound course of action is based, in part, on consideration of existing antimechanized intelligence. After selection of a course of action, the commander has a continuing requirement for revised and updated antimechanized intelligence.

a. Requirements.--During the assault and subsequent operations ashore, the landing force has a basic need for an antimechanized intelligence system which provides for early detection of enemy armor. It should be designed to operate at great distances from the landing force and furnish rapid reports to appropriate fire support agencies for action. This intelligence system is primarily concerned with the generation of target information that can be utilized by the fire support coordination center to

select appropriate means for a coordinated and integrated attack of approaching hostile armor.

b. Collection Planning.--The collection plan at each echelon of the landing force is designed to coordinate and integrate the acquisition agencies and sources available at a particular level. Complete planning for collection of hostile mechanized intelligence is not limited to armored forces but extends to hostile mechanized combat support and service elements and probable assembly areas and attack positions. Collection plans provide for terrain and weather intelligence for making deductions regarding the influence of these factors on hostile mechanized and friendly antimechanized capabilities.

c. Landing Force Level Collection.--The earliest possible destruction of the enemy's mechanized forces and their reinforcing elements requires distant antimechanized reconnaissance and surveillance. Before the landing, the continuing landing force requirement for this information from external sources is the subject of requests by the commander amphibious task force to the higher commands. After the landing, the following procedures apply:

(1) Plans for collection of information at the landing force level provide for reconnaissance and surveillance to the limit of the objective area (and by special arrangement, beyond) by appropriate units under landing force control or by requests to the amphibious task force (ATF).

(2) Distant reconnaissance is primarily a task for landing force aviation. Plans provide for aerial, visual, and electronic reconnaissance of possible avenues of approach for hostile mechanized forces. Such reconnaissance efforts are concentrated in areas where enemy tank activity is indicated or from which the enemy may launch a large-scale tank attack. While landing force aviation performs the major role in early detection of hostile mechanized forces, plans provide for the coordinated employment of aircraft and ground reconnaissance units and the introduction of small observation posts at considerable depths along more favorable avenues of approach. Such activities are particularly necessary in hours of darkness and reduced visibility when enemy mechanized forces are most likely to close for an attack.

(3) Signals intelligence unit(s) employing monitoring, intercept, and analysis techniques can provide a lucrative source of enemy mechanized information because of the dependence of armored forces on radio communications.

(4) Remote sensors can be employed throughout the entire battle field, primarily in lines of communication (LOC's) and potential assembly areas, to provide all-weather capability for both collecting intelligence on enemy mechanized activities and for target acquisition in executing antimechanized fires. The landing force must be capable of monitoring all sensors, and the FSCC's of all ground combat elements should be capable of monitoring those sensors located in their assigned area.

d. Division Level Collection.--The division collection plan provides for detection of hostile mechanized forces to the limit of reconnaissance and surveillance capabilities of those elements organic or available to the division. Collection efforts are directed toward avenues of approach, likely assembly areas, and defiles leading from the assembly areas. The division

collection plan provides guidance and direction for the information collecting efforts of air observers, ground observation elements, organic electronic means, and units.

e. Processing Antimechanized Intelligence.--The critical importance of time in the antimechanized operation dictates that information concerning hostile mechanized forces be handled expeditiously. Within a unit headquarters of the landing force, plans provide for transmitting information on hostile mechanized forces directly by flash procedures to the fire support coordination center and/or other designated command and control agencies. All such messages are transmitted in the clear if encryption and decryption might cause delay. Where information of immediate significance is concerned, normal security requirements are of lesser importance than warning affected units of the hostile mechanized threat. While target information is required primarily by fire support agencies, such information is also subjected to general intelligence processing in order to assist the intelligence officer in his determination of enemy capabilities. Accordingly, a continuing evaluation of enemy capabilities is made as new information and intelligence is received and processed. All intelligence or information regarding tank or antitank should be transmitted to the tank battalion headquarters to enable it to maintain its data in a current status in preparation for any mechanized contingency.

2305. ANTIMECHANIZED RECONNAISSANCE

Antimechanized operations require integrated long range reconnaissance, surveillance, and communication systems to detect hostile mechanized forces, alert landing force elements of their approach, and provide for bringing enemy tanks under attack as far forward of the landing area as possible. Distant reconnaissance and early warning generate a requirement for an aggressive air-ground reconnaissance and surveillance effort. For a detailed discussion of reconnaissance plans and operations, see FMFM 2-1, Intelligence; FMFM 2-2, Amphibious Reconnaissance; FMFM 2-3, Signals Intelligence/Electronic Warfare Operations (U); and FMFM 5-6, Air Reconnaissance.

2306. EMPLOYMENT OF GROUND SURVEILLANCE RADAR/ILLUMINATION

a. General.--Ground surveillance radar equipment provides the landing force with an all-weather capability for battlefield surveillance in the antimechanized operation. It is a principal means for the detection of hostile mechanized forces massing to launch a mechanized assault at night or in bad weather. This section delineates the capabilities and limitations of radar equipment and its limitations in antimechanized operations.

b. Equipment Capabilities and Limitations

(1) Radar energy produced by ground surveillance equipment can penetrate light camouflage, smoke, haze, light rain, light snow, darkness, and light foliage to detect mechanized targets. It does not penetrate dense undergrowth, trees, and heavy foliage. Heavy rain or snow seriously restricts radar detection capabilities. Other than as explained above, radar sets have a line of sight capability.

(2) Ground surveillance radar is generally ineffective against air targets unless the air target is flying close to the ground to permit background echoes. The radar is vulnerable to jamming, electronic, and other deception means. Noise of operation may give positions away.

c. Tactical Employment.--In the antimechanized operation, radars are employed to maintain surveillance over avenues of approach for enemy mechanized forces, possible enemy attack positions, and assembly areas. The surveillance effort is directed principally forward of the FEBA but is also used by ground units throughout the battle area. Particular attention is given to gaps between units and exposed flanks. To this end, alternate and supplementary positions are established to provide complete surveillance coverage of the battle area.

(1) Radars may support one echelon or any combination of the three echelons of defense. They may be employed with the security forces to extend their surveillance capability. Teams employed with the security force normally revert to their primary mission when the security force is withdrawn.

(2) The uses of radar in the antimechanized operation are limited only by the capabilities of the equipment and the imagination and ingenuity of the tactical commander. Radar teams may be employed in conjunction with final protective fires. They assist in determining when mechanized forces are approaching or when they are in specified areas. Radars may also be used in conjunction with emplaced antitank and antipersonnel weapons, and they may be used to determine the optimum time for detonation of explosives, chemicals, or nuclear demolition munitions.

d. Antimechanized Missions.--The principal tactical missions normally assigned to radar with the landing force to assist antimechanized operations include the following:

(1) Searching avenues of approach, possible attack positions, assembly areas, or other sectors or areas on a time schedule, at random, or continuously; to report location, size, compositions, and nature of enemy activity.

(2) Monitoring point targets such as bridges, defiles, or road junctions which canalize the movement of hostile mechanized forces.

(3) Monitoring and searching final protective fire areas to permit timely firing.

(4) Searching areas of nuclear and conventional fires to detect enemy activity immediately after firing as an indication of firing effect.

(5) Extending the observation capabilities of patrols by enabling them to survey distant points or areas of special interest.

(6) Assisting the visual observation of units during daylight hours by making initial detection of partially obscured targets at long ranges.

(7) Assisting in the control of units during limited visibility operations.

(8) Increasing the effectiveness of fire support.

(a) When targets have been detected with reasonable certainty by radar, the fire support means may immediately take the target under fire.

(b) When the type of target cannot be established definitely, the radar team can furnish location information of the target so that illumination may then be employed accurately to establish which type of fire can be best used.

(c) Since well trained radar operators can estimate the density of enemy activity in a given area and the rate of enemy movement, radar equipment may be used to assist in determining the optimum weapons system for employment.

(9) Determining the rate of movement of a target by plotting the location of the target at two known points and the time it took the target to move from one point to the other.

e. Positioning of Radar Equipment.--Radars are normally positioned on the forward slopes of dominating terrain (military crest). A radar site and an observation post may be located together; however, radar personnel are not employed as ground observers except in emergency. To take advantage of the maximum range of the sets, radars are employed as far forward as possible. As with a crew-served weapon, radar is dug in and camouflaged, consistent with the requirements for operating the equipment. It is positioned so that its employment is coordinated closely with the disposition and employment of other surveillance means. The specific location of the radar equipment is in the general location designated by the unit commander and meets the criteria of a position for a crew-served weapon. Main, alternate, and supplementary positions are selected and prepared if time permits. The radar sites should have as many of the following characteristics as possible:

- (1) Permit maximum radar coverage of the assigned area.
- (2) Provide concealment for the team and its equipment.
- (3) Facilitate communications.
- (4) Take advantage of routes for displacement.

(5) Be relatively free of close ground clutter objects such as trees, bushes, or buildings. If these objects are directly in the radar beam, the resulting clutter tends to distort the radar beam resulting in inaccurate range, azimuth, and elevation data.

(6) Take advantage of security provided by combat elements while avoiding interference with their operations. If possible, a position is located within a well-defended area; however, since the enemy may be capable of detecting radar signals and firing in that area, locating radar equipment in the vicinity of troop positions may be undesirable.

(7) Whenever possible, radar generators are placed in defiles and bunkered consistent with necessary air intake and exhaust requirements to minimize motor noises.

Section IV. TERRAIN STUDIES

2401. GENERAL

Antimechanized operations against an enemy with a significant mechanized potential may necessitate the preparation of a special terrain study as part of the analysis of the area of operations. This study analyzes the impact of terrain in the objective area on antimechanized/mechanized operations in more detail than normally described in the intelligence estimate. It is prepared by the antimechanized officer in conjunction with the G-2, tank officer, and engineer officer, provides backup data for the intelligence estimate and is used by commanders and staff officers for the planning and execution of antimechanized operation. The preparation of an analysis of an area of operations is discussed in detail in FM 30-5, Combat Intelligence.

2402. CONTENT OF TERRAIN STUDIES

a. The terrain study in the antimechanized operation is not a compilation of all the terrain intelligence available of some particular area, but only that information that will have a significant impact on the conduct of antimechanized/mechanized operations. It is principally concerned with military aspects of the terrain and the influence they exert upon the fire and maneuver of hostile and friendly mechanized and antimechanized resources.

b. The terrain study is best expressed through graphic or visual means; i.e., maps, overlays, and photographs. In the antimechanized operation, maneuver and trafficability maps of the area of operations are prepared. Such maps are shaded and/or tinted to indicate the areas in which hostile and friendly tanks may operate.

2403. FORMAT FOR TERRAIN STUDIES

FMFM 2-1, Intelligence, presents an outline form for a terrain study. The primary requirement for a terrain study is that it presents the intelligence in a form that can be easily used by landing force elements. The study should be concise, presenting only pertinent information. Written description is kept to a minimum, and intelligence is graphically represented wherever possible.

Section V. PLANNING AND EXECUTION OF ANTIMECHANIZED OPERATIONS

2501. INTRODUCTION

Marine Corps doctrine for the planning and execution of the amphibious assault is presented in LFM 01, Doctrine for Amphibious Operations; LFM 02, Doctrine for Landing Forces; FMFM 3-1, Command and Staff Action; and FMFM 6-1, Marine Division. The basic concepts and principles for the planning and execution of amphibious operations prescribed in these publications remain valid and are specifically applicable to planning and executing the antimechanized operation. Antimechanized operations within the framework of the amphibious assault rely heavily on offensive measures to eliminate any mechanized threat to the landing force. A defensive posture is assumed only to counter an imminent enemy tank attack. This section describes their planning and execution. It is principally concerned with the development of specific antimechanized plans, discussing other amphibious plans only to the extent that they relate to antimechanized operations.

2502. PLANNING OBJECTIVES IN ANTIMECHANIZED OPERATIONS

Throughout the amphibious planning cycle, planners are concerned with providing the prerequisite antimechanized measures and means required to counter the specific hostile mechanized threat confronting the landing force. Countermechanized planning by the landing force is essentially a problem of coordinating and integrating antimechanized resources. Concurrent and parallel planning ensures effective employment of antimechanized means by the commander amphibious task force and the commander landing force.

2503. PLANNING RESPONSIBILITIES IN ANTIMECHANIZED OPERATIONS

In the amphibious operation, normal command responsibilities apply to countermechanized planning. The commander amphibious task force is responsible for coordination of the planning of overall antimechanized means and the preparation of coordinated fire support plans for the initial phase of the operation. The commander landing force is responsible for clearly delineating the antimechanized responsibilities at each command level of the landing force. In addition, he is responsible for the following:

- a. Determining the landing force requirements for antimechanized means and ensuring that the resources are integrated within the planned scheme of maneuver.
- b. Presenting and coordinating requests for additional antimechanized means for the landing force with the commander amphibious task force and/or appropriate Fleet Marine Force agencies.
- c. Preparing the landing force overall countermechanized plan(s).

2504. STAFF RESPONSIBILITIES

Appropriate staff officers at all levels have specific responsibilities with respect to antimechanized operations. These antimechanized responsibilities are an inherent part of normal staff duties during the planning and execution of amphibious operations.

- a. Operations Officer.--The operations officer considers enemy mechanized tactics in the preparation of estimates, plans, and orders. He continually appraises the tactical situation and recommends and prepares orders for tactical employment of antimechanized means as appropriate.
- b. Antimechanized Officer.--A specific staff officer appointed for this purpose or the commanding officer of the organic, attached, or supporting tank unit may perform special duties as antimechanized officer. He assists in the preparation of staff estimates and orders by providing detailed technical information on antimechanized matters. He maintains a detailed current situation map as to the location and capabilities of all antimechanized means and recommends their use.
- c. Intelligence Officer.--The intelligence officer collects and disseminates information in intelligence estimates and annexes, and appraises interested staff officers of changes in the enemy mechanized situation.
- d. Engineer Officer.--The engineer officer is responsible for preparing a barrier plan under the direction of the assistant chief of staff, G-3 and in coordination with the antimechanized officer and the fire support coordinator. He gives technical advice on engineer employment in antimechanized actions and develops the detailed plans necessary for the construction and emplacement of antimechanized weapons, both active and passive.
- e. Air, Naval Gunfire, and Artillery Special Staff Officers.--Air, naval gunfire, and artillery officers develop detailed and coordinated recommendations for fires to support antimechanized operations. Individual antimechanized fire plans are developed to cover avenues of approach into the landing force battle areas and to mass antimechanized fires in designated killing zones.
- f. Fire Support Coordinator.--The fire support coordinator, advised and assisted by supporting arms special staff officers, the antimechanized officer, and the target information officer, is responsible for coordinating the fires of artillery, naval gunfire, and air support in antimechanized actions.
- g. Communication Officer.--The communication officer advises the commanding officer and all appropriate staff officers as to current status of communication support in antimechanized actions.

2505. COUNTERMECHANIZED PLANNING CONSIDERATIONS

Basic countermechanized planning considerations are derived from the commander's estimate of his antimechanized situation; i.e., mission, enemy, terrain and weather, and troops and fire support available. In making his estimate of the situation, the commander takes into consideration all factors that influence the employment of his antimechanized resources and affect the execution of antimechanized operations. The estimate of the situation is essentially a problem-solving process designed to select the antimechanized course of action which offers the greatest possibility of success. Consideration of the factors of METT begins prior to the operation and continues throughout.

Section VI. BASIC ANTIMECHANIZED DECISIONS

2601. GENERAL

The development of specific countermechanized plans in the amphibious planning cycle depends upon sound and timely decisions as to the landing force's objectives ashore and its subsequent scheme of maneuver, the determination of requirements for antimechanized resources, the assignment of tactical missions to these antimechanized resources, and the methods and means for rapidly developing antimechanized resources ashore. This section discusses the nature of these decisions and the planning factors that are considered.

2602. LANDING FORCE OBJECTIVES AND SCHEME OF MANEUVER IN THE ANTIMECHANIZED OPERATION

The need for defensible terrain is given careful consideration during each phase of an amphibious assault against an enemy possessing a significant mechanized potential. To compensate for the inherent scarcity of antimechanized resources in the initial stage of the amphibious assault, landing force planners select initial objectives and evolve a scheme of maneuver that exploits the terrain characteristics of the objective area and provides natural protection against attack by hostile tanks.

a. Selection of Objectives.--Wherever possible, landing force planning strives to avoid engaging a mechanized enemy on ground of his own choosing; i.e., terrain which permits the hostile force complete freedom of maneuver.

(1) Beach characteristics and exits in the landing area should facilitate the rapid development of the landing force's antimechanized resources ashore.

(2) Terrain in the area of the landing should provide natural obstacles to the flanks of the landing force which restrict the number of avenues of approach for hostile mechanized traffic into the landing area and limit the number of enemy tanks that can engage the landing force in any specific locality.

(3) Terrain at the force beachhead line (FBHL) should facilitate the establishment of a strong antimechanized defense by presenting an existing barrier system to the enemy's mechanized forces and compelling them to attack frontally.

(4) It is highly desirable that intervening terrain provide readily identifiable natural phase lines and antimechanized killing zones which provide antimechanized protection, expedite the rapid adoption of an effective antimechanized defense, and facilitate the massing of antimechanized fires.

b. Terrain Considerations.--In analyzing the operational area, planners consider the beachhead and the terrain to the flanks, paying special attention to obstacles and potential obstacles such as built-up areas. Terrain with existing obstacles that canalizes and/or forces hostile armor units to mass along routes of approach into the beachhead or defensive area

is highly desirable. Planning provides for maximum use of such terrain in order to provide a greater degree of antimechanized protection and more effective employment of antimechanized resources. When dispersion of landing force elements is necessary to provide protection against enemy nuclear weapons, the requirement for an extensive analysis of terrain is emphasized. Dispersed forces generally dictate a decentralization of the antimechanized resources available to the landing force. Accordingly, such landing force elements are compelled to rely more heavily upon the natural antimechanized protection provided by terrain than when they are concentrated and provided with highly mobile and centralized antimechanized resources.

c. Desirable Terrain Features.--The most attractive terrain feature for planning and executing antimechanized operations is dominating ground that offers natural cover and concealment, clearly defined antimechanized killing areas, and obstacles to hostile mechanized maneuver such as swamps, unfordable streams, steep ridges, and narrow defiles. Such terrain facilitates the integrated employment of the landing force's antimechanized resources without impeding the impetus of the landing force's assault. In this respect, the landing force's primary mission is to seize its assigned objectives. No terrain can be considered desirable which detracts from this purpose.

d. Antimechanized Scheme of Maneuver.--In the development of the landing force scheme of maneuver ashore, planners give continuing consideration to the selection of terrain which complements antimechanized plans and operations. Successive antimechanized phase lines may be used to break down the overall operation into a number of logical and manageable planning and operational parts. As such, they serve as ready reference points to orient planners as to the status of the landing force, and at the same time, indicate when prearranged plans for successive stages of the antimechanized operation should be executed. Such phase lines are selected to delineate natural antimechanized killing zones and to establish successive firm bases from which projected antimechanized operations may be conducted. These bases move inland as successive objectives and phase lines are seized. Countermechanized plans are developed and/or modified as necessary to provide for the execution of an effective full scale antimechanized defense at each succeeding antimechanized phase line. (See fig. 24.)

2603. DETERMINATION OF REQUIREMENTS FOR ANTIMECHANIZED RESOURCES

a. General.--The determination of the landing force's requirements for antimechanized resources, especially aircraft, tanks, and organic infantry antitank weapons, establishes the landing force's antimechanized capabilities. The final decision in the determination of requirements for antimechanized resources is based on a continuing evaluation of the hostile mechanized threat.

b. Scope of Antimechanized Requirements.--In the amphibious assault against an enemy possessing a significant mechanized potential, the evaluation, analysis, and determination of specific antimechanized requirements are designed to provide adequate resources, to include:

(1) A combined air and naval gunfire capability sufficient to destroy and/or neutralize any hostile mechanized forces in the area of the landing.

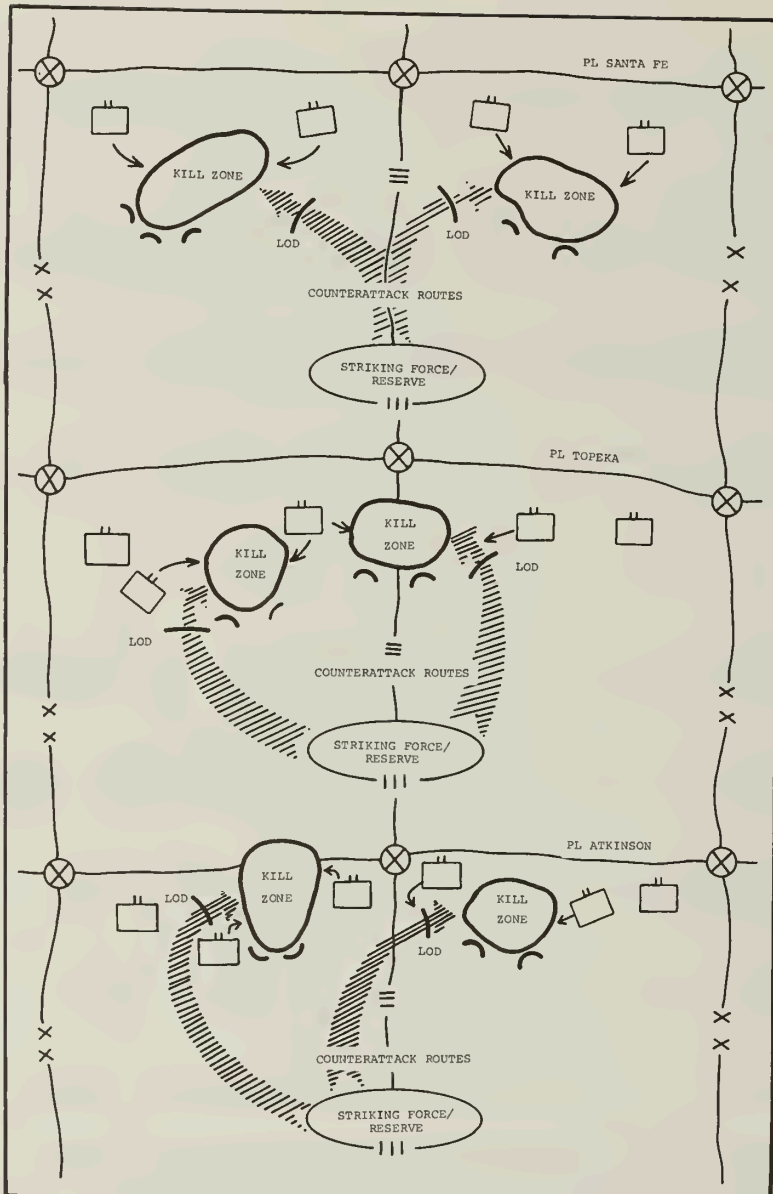


Figure 24.--Phasing Antimechanized Operations Within the Amphibious Operation.

(2) Sufficient aircraft to maintain a significant degree of air superiority in the objective area and to:

(a) Conduct long range reconnaissance, counterreconnaissance, and antimechanized missions.

(b) Restrict, delay, and canalize the movement of hostile mechanized reinforcing elements.

(c) Destroy such forces or reduce them by fire to the degree that the landing force is able to destroy surviving tanks with organic antitank weapons and other antimechanized resources.

(3) A combined artillery and naval gunfire capability sufficient to provide for massing of fires along principal avenues of hostile mechanized approach and into predesignated killing zones forward of and within the battle area.

(4) Light antitank assault weapons to all infantry units on an individual basis.

(5) Direct fire antitank weapons to provide direct support to landing force elements operating along principal avenues of hostile mechanized approach.

(6) A mobile, tank-heavy attack force of combined arms that can deploy rapidly to designated killing areas and which possesses sufficient combat power to contain and destroy any hostile mechanized penetration into the landing force's positions.

(7) Adequate antitank munitions for the landing force's weapons and the weapons of all supporting elements external to the landing force.

(8) Adequate nuclear delivery agencies and nuclear munitions in size and type to destroy hostile mechanized forces in depth and/or engage them forward of or within the battle area.

(9) Adequate chemical munitions to lay persistent toxic barriers in depth inland along probable avenues of approach and in hostile mechanized assembly areas to inhibit the maneuver of reinforcing hostile tanks and their supporting elements and to delay tanks and mechanized forces from reaching the landing area.

(10) Adequate engineer support, heavy equipment, and mines to facilitate the rapid construction of an effective barrier system and to construct defilade positions for the landing force's antitank weapons.

c. Interrelationship of Antimechanized Resources.--The availability and requirements for one antimechanized means affects the availability and requirements for all others. In this respect, the ability of the force commander to substitute one antimechanized means for another determines the degree of flexibility that may be incorporated into his antimechanized plans. All important in this matter is the balance that the commander strikes between his air antimechanized resources and ground antitank resources. The following are considered in determining this balance:

(1) Knowing the total number of hostile tanks opposing him and the kill capabilities of available air support, the commander can determine his requirements for antitank weapons in the antimechanized operation.

(2) Conversely, knowing the kill capabilities of his ground antitank weapons and other antimechanized resources, the commander can determine his requirements for air support.

d. Requirements Planning.--During the planning cycle, staff officers include in the preparation of estimates consideration of the adequacy of

the antimechanized means within their concern or under their cognizance. Specific requirements for countering hostile mechanized threats during all phases of the operation are determined on the basis of the antimechanized considerations applicable to the operation. Analysis of requirements is a continuing responsibility requiring careful screening and study to prevent the omission of any essential items or unnecessary inclusion of equipment, personnel, or materiel. Provision is made for loss of antimechanized means due to enemy action, the characteristics of the area, and any foreseen contingencies involved in the operation. When the overall antimechanized requirements have been determined, they are weighed against the antimechanized means available within the landing force to determine any additional landing force antimechanized requirements.

e. Availability of Antimechanized Resources.--As soon as the total antimechanized resources are known, countermechanized plans are developed to reflect the actual availability of those resources. When sufficient antimechanized resources are not available from higher authority for assignment to the ATF to enable it to ensure the landing force of the required preponderance of combat power to overcome the hostile mechanized force, one of the following actions is necessary:

- (1) Fleet theater air may reduce the hostile mechanized force to enable the ATF to achieve the required combat superiority in the objective area.
- (2) The landing may be changed to a different locality.
- (3) The operation may be cancelled.

2604. ASSIGNMENT OF TACTICAL MISSIONS AND ALLOCATION OF ANTIMECHANIZED RESOURCES

The assignment of tactical missions and/or attachment of antimechanized resources is reflected in the organization for combat of the landing force and its component elements. The principal problem in planning assignment of missions to these resources is to strike a balance between the requirements of the landing force as a whole and its subordinate elements. It is uneconomical and impracticable to provide all landing force units with all the antimechanized resources they might require to offset all possible antimechanized contingencies. Therefore, principal reliance is placed upon massing antimechanized resources along principal avenues of approach and maintaining a highly mobile and tank-heavy attack force/reserve capable of immediate deployment to any point in the landing force's area of operations. Planners seek to provide centralized control of antimechanized resources insofar as practicable to ensure their integrated and mass employment.

a. Forms of Support.--Antimechanized resources may be assigned missions of general support, direct support, or attachment. They may also be employed in combinations of these three types of support. General support and direct support are the preferred types of support in the antimechanized operation. Attachment is resorted to only in cases of extreme dispersion or to support independent operations.

b. Factors Influencing Employment of Resources.--The factors of METT are analyzed in planning the assignment of missions to antimechanized resources. In addition, particular attention is given to the following considerations:

(1) Duality of Function.--The dual functions of many antimechanized resources in initially supporting the amphibious assault and subsequently supporting antimechanized operations may dictate an initial decentralization of control. Tanks in direct support of a regiment in the initial assault of beach objectives may revert to a general support role or become an element of the attack force/reserve once the initial objectives are seized. Plans provide for rapid reversion of such units to central antimechanized control when a hostile mechanized threat is imminent.

(2) Intentions of the Enemy.--When no information of the time of attack or location of hostile armored elements or their intention can be obtained, the antimechanized means are held under centralized control. Consideration is given to the enemy's capability of massing his mechanized forces, and any assignment of tactical missions must complement a plan developed to counteract this capability.

(3) Unit Separation.--Separation between units as opposed to concentration of forces is a crucial factor in planning the assignment of tactical missions to antimechanized resources. The separation of one major groupment from another is often dictated as a tactical measure against the threat of nuclear attack or by the characteristics of the objective area. Separation affords the enemy the opportunity to attack any single groupment from any of several different directions. Separation also invites the enemy to attempt an attack between units into the rear area. Specific antimechanized precautions are necessary to counter this threat. Generally, dispersed operations generate a requirement for more antimechanized resources than the landing force requires in a conventional type amphibious operation. In such instances, it may be necessary to attach antimechanized resources and tank units to widely separated elements.

(4) Concentration of Antimechanized Resources.--Countermechanized plans provide for concentrating antimechanized resources to counter a large-scale mechanized attack. Such plans are designed to concentrate and centralize control of antimechanized units and reserve elements in the critical area. They are executed once the enemy has revealed his intentions as to where he will launch his tank attack. Concentration cannot be accomplished under threat of nuclear attack to the extent that the mass of units and means forms a lucrative nuclear target.

(5) Reinforcement of Forward Elements.--In situations involving wide frontages, numerous routes of tank approach, or when control is difficult, it may be necessary to assign tank missions in direct support of forward elements to prevent forward units being overrun. In such situations, time/space factors prolong the reaction time of mobile antimechanized reserves and delay their support of critical areas under attack. Accordingly, forward elements require additional antimechanized resources to contain the enemy until they can be reinforced.

(6) Defense in Depth.--Mechanized attack is characterized by deep penetrations and wide encirclements. Antimechanized defenses, to be effective, are organized in depth. Each echelon ensures that its prescribed antimechanized defensive depth has been achieved with organic weapons. The landing force provides supplementary means to subordinate elements.

(7) Mobile (Self-Propelled) Units.--To provide for the contingency that hostile armor may succeed in breaking through the battle position, sufficient antimechanized resources are retained in mobile

(self-propelled) units. These units are capable of effective employment against armor and are held in readiness for counterattack.

(8) Time/Space Factors.--Time/space factors affecting the employment of friendly and hostile mechanized forces are considered in positioning and placing antimechanized resources. Open terrain with good trafficability for the landing force's mobile antimechanized resources generally dictates centralized control. Terrain with poor mechanized trafficability generally dictates antimechanized resources in direct support of, or attached to, units in the most critical antimechanized areas of operation.

2605. PROGRESSIVE DEVELOPMENT OF ANTIMECHANIZED MEANS ASHORE

In the antimechanized operation, the need for antimechanized means ashore commences as soon as the initial wave of assault troops land. Plans provide for equipping assault units with increased allowances of light antitank assault weapons. Reserve elements equipped with increased allowances of antitank assault weapons are retained in an on call status for immediate deployment by helicopter to critical points in the landing area. Plans also provide for landing tanks at the earliest practicable time. When a beach is undefended by antitank weapons, minefields, and obstacles, they may be landed in advance of, or with, the assaulting infantry. A strongly defended beach with extensive antitank weapons and obstacles delays their landing.

a. Landing Considerations.--Among the basic considerations in planning given to the development of antimechanized means ashore during the assault phase are the following:

(1) Tanks may be required ashore early in the operation to assist the infantry with shock action and direct fire to overcome beach fortifications in rapid seizure of objectives.

(2) Tanks are particularly valuable weapons to counter an early attack by hostile mechanized forces and are landed in sufficient time to counter any hostile mechanized threat existing in the landing area.

(3) The maneuverability of hostile mechanized forces and the short duration of the critical phases of their attack may dictate that the landing force land helicopterborne antitank assault elements at critical points without delay.

(4) The early landing of antimechanized weapons tends to reduce casualties among the assaulting infantry and is a morale factor in the early stages of the amphibious assault.

(5) Antimechanized weapons must be landed without excessive losses.

b. Factors Influencing the Landing of Antimechanized Resources.--Planning the progressive buildup of antimechanized means ashore is based upon consideration of the following factors:

(1) Mission.--The mission of the landing force determines the general landing area for antimechanized means and the tank-heavy attack force/reserve. The determination of the general area for landing is based

on time and space factors involved in securing the initial objectives ashore and the time available to organize an effective antimechanized operation, as compared with the time and space factors involved in the movement of enemy armor to the landing area.

(2) Scheme of Maneuver.--The scheme of maneuver is designed to provide for rapid seizure of initial objectives and to counter the hostile mechanized threat in the landing area. Thereafter, it is developed to maintain the momentum of the amphibious assault while at the same time facilitating the adoption of effective antimechanized defense measures at successive antimechanized phase lines as the force moves inland. A time and place for landing tanks and the reserve/attack force is selected that most satisfactorily supports the scheme of maneuver.

(3) Shipping.--The type and number of ships and landing craft available to transport tanks have a major influence on the capability of landing them where and when they are required. Planning factors for available ships and craft and their beaching characteristics are presented in FMFM 4-2, Amphibious Embarkation.

(4) Landing Beach.--The beach and onshore gradient, offshore reefs or sandbars, the navigability of the approach lanes, and the waters of the objective area influence the choice of landing sites. A beach for landing tanks should be selected where the beach soil is trafficable and the beach gradient is not too steep. A good beach has an ample number of exits. It should be located so that it supports the overall scheme of maneuver of the landing force ashore. The landing of tanks is delayed when:

- (a) Offshore reefs bar passage of landing craft.
- (b) Onshore gradients do not permit dry ramp beaching.
- (c) Soil trafficability is poor.
- (d) It is necessary to emplace causeways.

(5) Obstacles.--Beach minefields and obstacles are normally breached or overcome before landing antimechanized weapons. Obstacles, offshore and on the beach, are avoided wherever possible. Where avoidance is impracticable, a landing site is selected where they can be most easily breached. Plans provide for landing obstacle breaching teams with the initial assault waves to ensure the early development of landing force heavy antimechanized means ashore.

c. Reconnaissance.--Plans provide for tank reconnaissance personnel to accompany the assault infantry ashore to amplify unknown aspects of hostile resistance, to note characteristics of the terrain that can be exploited, and to ensure earliest possible landing of antimechanized means. When such personnel cannot be landed, a list of information required for the decisions necessary to land and employ antimechanized units is submitted to assault units so as to secure the needed intelligence. Reconnaissance tasks accomplished for tank units are concerned principally with the below listed items:

- (1) Landing points and beach gradients.
- (2) Trafficability in the beach area.

(3) Beach exits and routes of egress.

(4) Location and extent of enemy antitank weapons, obstacles, and minefields.

d. Planned Obstacle Clearing and Breaching.--Plans provide for rapid clearance of beach and underwater mines and obstacles to permit the early landing and employment of the force's antimechanized means. Clearance of underwater obstacles seaward of the high water mark is the responsibility of the Navy and is usually accomplished during the preassault phase. Mines and obstacles inland of the high water mark are cleared by the landing force. Time seldom permits removal of all mines and obstacles.

(1) Only certain routes across the beach are cleared for passage early in the landing. Therefore, it is often necessary to alter the prescribed landing formation and submit to a degree of canalization in the beach passage. Information from reconnaissance parties is relayed immediately to commanders of LST's and appropriate control vessels to ensure that units can be landed as close as practicable to the cleared lanes. The location of lanes is determined primarily from operational requirements for the landing, beach passage, the mission, and the scheme of maneuver of tank units ashore. The lanes selected are located so as to ensure the accomplishment of the following:

(a) Sufficient breadth is provided to accommodate the width of a tank.

(b) Sufficient lanes are provided to permit rapid egress from the beach.

(c) Access is provided to a road net or area that is trafficable so as to facilitate immediate maneuver in support of assault troops or movement to predesignated assembly areas and blocking positions.

(d) Lanes correspond to the planned landing points of the tank units.

(e) A minimum of lateral movement is necessary after the units have landed.

(f) Landing points leading to cleared lanes are identifiable from seaward.

(2) Plans normally provide that personnel from tank units assist in the clearance of lanes. Such personnel are integrated with engineers in the formation of teams and assist in the tasks of demolition and removal of mines, the selection and marking of lanes, and the guidance of vehicles through the lanes. Plans are generally made to provide for supporting such teams with the tank-mounted dozers for obstacle removal as well as with gun tanks for obstacle destruction and team protection. When landed with the breaching teams, the tanks can serve as logistical vehicles for the team, carrying bulky items ashore. Organization of mine and obstacle breaching teams is based on an analysis of the situation to evolve specific tasks to be encountered.

(a) Breaching teams are organized to land with the leading scheduled waves, often with the first wave of assault troops.

(b) Each team clears at least one vehicle lane 18 to 24 feet wide.

(c) The scope of a breaching team's missions is clearly delineated in planning and provides for the reversion of its components to parent control as early as possible.

e. Guiding Vehicles Ashore.--Landing conditions may require units to cross reefs, tidal flats, or other areas covered by shallow water. In such cases vehicles are guided around obstacles and potholes that might cause trouble. An amphibious tractor may be employed for this purpose. If this method is used, guide vehicles are designated sufficiently far in advance of the landing to allow for briefing and communication planning.

(1) A crewman may dismount and act as a guide by wading ahead of the vehicles. However, this method is slow when the water is deep and the bottom is rough. Since guides are vulnerable to hostile fire, this method is only satisfactory in areas cleared of snipers and enemy defenders.

(2) Reconnaissance personnel may mark lanes on the beach and approaches thereto. However, marking devices such as buoys are easily destroyed by enemy action, landing force elements, or by accidental sinking by naval landing craft.

Section VII. COUNTERMECHANIZED PLAN

2701. GENERAL

Countermechanized planning within the larger framework of the amphibious operation culminates in the commander landing force's preparation of a specific countermechanized plan to counter the hostile mechanized threat existing in the objective area. The scope and significance of this plan varies directly with the degree of projected antimechanized operations. When the hostile mechanized threat is negligible, plans for the tactical employment of antimechanized means and measures may be contained in the operation plan. When the hostile mechanized threat is significant, the countermechanized plan is published as an appendix to the operations annex to the operation plan. This section discusses the characteristics of countermechanized plans, the steps in their development, and their content and format. For a more detailed discussion of planning, see FMFM 3-1, Command and Staff Action.

2702. SCOPE OF COUNTERMECHANIZED PLAN

The countermechanized plan encompasses both offensive and defensive operations. It delineates offensive measures to destroy and/or neutralize the hostile mechanized threat in the objective area. It also provides for the temporary assumption of a defensive position and the execution of a mobile or area-type antimechanized defense to counter any large-scale hostile mechanized attack.

a. Specific Nature of Operation Plan.--The tentative plan is prepared to defeat the hostile mechanized force at a predetermined time and place after landing. To prevent the landing force from being surprised while moving or to prevent it from remaining in a defensive position for a prolonged period of time, it may be necessary to prepare separate plans for defeating an enemy mechanized attack at several different points or antimechanized phase lines within the objective area. To be of any value, the countermechanized plan is prepared for a specific locality, and the landing force's scheme of maneuver places the force in position to execute the countermechanized plan at the appropriate time and place.

b. Requirements for Simplicity and Flexibility.--Tactical plans to defeat a hostile mechanized force are most effective when they are simple and flexible. Complex and formal countermechanized plans are usually inflexible and do not lend themselves to rapid adjustment in fast moving antimechanized situations. Seldom are detailed prearranged plans adaptable to the situations which develop. In most cases, commanders can react more decisively by intelligent appraisal of the current situation than by readjusting a detailed plan previously issued. Adequate provision for the hostile threat or mechanized capability in the plan being executed leads to the most effective action.

2703. BASIS FOR FORMULATING THE COUNTERMECHANIZED PLAN

The development of the landing force countermechanized plan is based upon a detailed analysis of the factors of METT. The commander's objective is to provide for the most effective use of his available antimechanized resources to destroy the hostile mechanized force. Principal staff assistance to the commander in formulating his countermechanized plans is provided

by the antimechanized officer. He provides information to the G-2 in regard to the hostile mechanized threat. This assistance may be presented either as a document or an oral estimate.

2704. FORM AND CONTENT OF THE COUNTERMECHANIZED PLAN

The countermechanized plan is prepared in five-paragraph form. Its format is depicted in appendix D.

a. Paragraph 1.--Paragraph 1 usually contains a reference to paragraph 1 of the operation plan. In addition, it lists the countermechanized force in detail. Specifically, it details those missions performed by the advance force, fire support groups, and supporting air forces. It also indicates the likely routes of armor approach into the area of operations.

b. Paragraph 2.--Paragraph 2 prescribes the overall mission. In the event there are multiple tasks involved, the priorities are stated here.

c. Paragraph 3.--Paragraph 3 states the commander's concept of the antimechanized operation and the tasks to be performed by subordinate elements. Comprehensive control and coordination measures are included. Paragraph 3 provides the following:

- (1) Sectors of responsibility.
- (2) Conditions of readiness.
- (3) Use of mines.
- (4) Identification of friendly arms.
- (5) Passage of control of active antimechanized means.

d. Paragraph 4.--Paragraph 4 contains the logistics and administrative instructions related to antimechanized defense. It also indicates road priorities for mobile antimechanized means.

e. Paragraph 5.--Paragraph 5 provides communications-electronics instructions, location of the command post, axis of communications, and relevant instructions pertaining to the employment of the antimechanized warning communication system.

f. Tabs.--The countermechanized overlay is normally included as a tab to the countermechanized plan.

g. Counterattack Plans.--Counterattack plans, as part of the countermechanized plan, are referred to only in general terms. Detailed counterattack plans are developed separately by the commander of the attack force/reserve.

2705. TESTING AND REHEARSAL OF COUNTERMECHANIZED PLAN

When the hostile mechanized threat is significant, it is mandatory that amphibious training for the landing force provide adequate time for the testing and rehearsal of countermechanized plans. Such training accentuates the need for flexibility in antimechanized operations and goes beyond the testing and rehearsal of any one specific countermechanized plan.

Exercises should emphasize the need for all landing force elements to be able to develop fragmentary (overlay-type) countermechanized plans rapidly in fast-moving situations; test the landing force's capabilities to maneuver and mass the fires of its antimechanized resources; and give all landing force elements experience in organizing and executing an antimechanized defense to include the organization and construction of effective barrier systems. See FMFM 3-2, Amphibious Training, for more detailed information.

Section VIII. ANTIMECHANIZED WARNING PROCEDURES

2801. GENERAL

Successful implementation of the antimechanized warning system provides for minimal reaction time in placing mass antimechanized fires on hostile mechanized targets. This dictates that antimechanized conditions of readiness, prearranged plans for passing control of antimechanized resources, and standardized reporting, warning, and communication procedures be established. This section discusses the planning and execution of these procedures in the antimechanized operation. For further details see NWP 16, Basic Operational Communication Doctrine (U).

2802. CONDITIONS OF ANTIMECHANIZED READINESS

Certain conditions of antimechanized readiness are normally established as SOP's. Upon the setting of any one of these conditions, prearranged countermechanized plans are put into effect to counter the hostile mechanized threat. These conditions of readiness are normally set by agencies at division or higher level. While their nature and format vary in different operations, it is important that they be agreed upon and disseminated to all landing force elements well in advance of the projected operation. Normally, they are published in the countermechanized appendix to the operation plan. The following examples represent typical antimechanized conditions of readiness:

a. Condition IV.--The hostile armored force is detected but contact is not imminent.

b. Condition III.--The hostile armored force is approaching the landing force and contact is imminent. The time and place of contact can be predicted with reasonable accuracy.

c. Condition II.--Friendly units are under attack by hostile armored forces.

d. Condition I.--The landing force is seriously endangered by the hostile armored attack in progress.

2803. PREARRANGED PLANS FOR PASSING CONTROL OF ANTIMECHANIZED MEANS

In order to expedite the execution of countermechanized plans, prearranged procedures for control of the landing force antimechanized resources are established. They may provide for activating an antimechanized attack force and for passing control of antimechanized resources to lower echelons. Normally, they are related to prescribed conditions of antimechanized readiness and provide for automatically shifting the control of antimechanized resources to meet the immediate threat. A typical example of such prearranged plans is illustrated in figure 25.

2804. CONTACT REPORTS

Upon sighting an enemy mechanized force, the agency or individual making the sighting transmits immediately to the next senior commander in the landing force chain of command, by the most rapid means available,

CONTROL SHIFTS FOR EACH CONDITION OF ANTIMECHANIZED READINESS

CONDITION IV. The hostile armored force is detected but contact is not imminent.

- a. Aircraft, naval gunfire general support ships, and artillery within range carry out long-range fire missions as requested by the landing force. Fires delivered at this time cause the attacking force to button up and slow down their speed of movement. Also, a part of the enemy force may be destroyed.
- b. Tanks are landed, if not already on the beach, and are alerted.

CONDITION III. The hostile armored force is approaching our force and contact is imminent. The time and place of attack can be predicted with reasonable accuracy.

- a. Aircraft and naval gunfire general support ships continue fire missions as requested by the landing force. Artillery continues support under the commander landing force.
- b. Force tanks are placed in direct support of the threatened division.

CONDITION II. Landing force units are under attack by hostile armored forces.

- a. Control of aircraft missions and naval gunfire general support ship fires are passed to the division under attack.
- b. The commander landing force may retain control of part of the general support means in order to counter any subsequent attacks.
- c. Division headquarters passes control of a suitable proportion of supporting arms to the commander of the threatened regiment and thereby shifts control of tanks, artillery, aircraft, and naval gunfire support ships to the echelon of command best suited to direct the support.

CONDITION I. The landing force is seriously endangered by the hostile armored attack in progress.

- a. Available direct support means of adjacent divisions may be assigned by the commander landing force to support the threatened division.
- b. The threatened division passes control of a suitable proportion of the foregoing supporting arms to the threatened regiment.
- c. Direct support tank elements of units not threatened are withdrawn and moved to the threatened area.
- d. The regimental commander may pass control of all supporting arms and tanks to the commander charged with executing the counterattack.

Figure 25.--Example of Prearranged Plans for Passing Control of Antimechanized Means.

information, as to what has been sighted--its location, distance, and speed--and the time the sighting was made. Flash precedence is used, and contact messages are relayed immediately to the landing force headquarters. Such messages normally are authenticated, but lack of authentication does not delay their retransmission or relay.

2805. AMPLIFYING REPORTS

Amplifying reports contain as much of the information specified for contact messages as may be required by the situation which exists at the time the amplifying message is prepared. If the responsible commander so desires, the full form of the contact message may be used for the amplifying reports, but flash precedence is used if, in the opinion of the originator, the development of the attack makes such precedence necessary.

2806. ANTIMECHANIZED WARNING (TANK ALERT)

a. General.--An antimechanized warning (tank alert) includes both intelligence on hostile mechanized activity and instructions to friendly units as to the actions to be taken to counter a mechanized attack. It is in the nature of a fragmentary operation order. When the situation warrants action, the commander issues orders as necessary to counter the threat. Such an order is called an antimechanized warning (tank alert). The intelligence officer is responsible only for those portions of the antimechanized warning (tank alert) messages which are of an intelligence nature. To compensate somewhat for the time lag inherent in the preparation of operational instructions and to permit units to take appropriate action, the intelligence officer disseminates intelligence regarding hostile armor separately as an armored advisory message with high precedence if the situation requires it.

b. Content.--Antimechanized warning messages contain the following information:

(1) The phrase "tank alert" to indicate that the message pertains to an imminent hostile mechanized attack.

(2) A designating letter (or other designator) to indicate the antimechanized condition of readiness or the antimechanized defense plan which is to be put into effect by the originator of the warning message, if any. Antimechanized warning messages are sent with flash precedence to all major commanders within the command of the originator and to adjacent and next higher commanders.

(3) Voice call(s) of the unit(s) against which it appears that the hostile mechanized forces will strike.

(4) Size or strength of the hostile mechanized force which is making the attack.

(5) Location of the hostile tanks and direction of travel.

(6) Time at which it is anticipated the hostile mechanized attack will strike.

2807. "TANKS CLEAR" MESSAGE

When the danger of hostile mechanized forces is no longer imminent because the hostile force has withdrawn or has been destroyed, a message is sent notifying all units which have been alerted that the imminent threat from hostile armor has passed.

a. The message contains the following information:

- (1) The phrase "tanks clear."
- (2) Immediate precedence (under normal circumstances).
- (3) Time.
- (4) Message authentication (when required).

b. Only the originator of the initial warning (tank alert) message pertaining to a specific hostile mechanized tank attack transmits a "tanks clear" message.

2808. DISSEMINATION OF ANTIMECHANIZED WARNINGS

Communications for the antimechanized warning system are generally provided through existing wire and radio nets established within the landing force plus such special nets as are required to provide direct communications with nonorganic antimechanized means. A suitable method of warning the individual Marine may be established and made part of the division SOP. A standard audible signal warning system such as three long blasts on a whistle, horn, or siren supplemented by pointing and passage of the alert by word of mouth is generally prescribed. The communication means selected for transmission of prescribed antimechanized warnings are standardized insofar as practicable.

a. Information obtained from contact and amplifying reports is immediately distributed prior to evaluation if the information is considered to be sufficiently reliable or the attack to be imminent. Normally, if the report indicates a safe margin of time, it is more desirable to process the information received from reporting agencies and to distribute the resulting intelligence by armor advisory messages.

b. Antimechanized warning (tank alert) messages are broadcast when the nature and extent of the threat indicate a need for action by subordinate commands. It includes action taken by the command and missions assigned the various components of the landing force and its supporting organization.

c. Tanks clear messages may be distributed either on a selective or broadcast basis in accordance with the desires of the commander and the distribution which has been made of armor advisory and antimechanized warning (tank alert) messages. All antimechanized warnings are transmitted in the clear if encryption and decryption delay use of information.

d. The tank battalion must receive all information on enemy tank/antitank units without delay to ensure its rapid reaction when the situation dictates.

Section IX. ORGANIZATION OF THE ANTIMECHANIZED DEFENSE

2901. GENERAL

The basic concept of the antimechanized operation provides for the mass offensive employment of antimechanized resources to kill the enemy's tanks and destroy his mechanized forces as far forward of the landing force's positions as possible. Ideally, these offensive operations would prevent any enemy tanks from directly engaging the landing force. Realistically, such results will rarely, if ever, be achieved on the battlefield, and the landing force must be prepared to execute defensive-type anti-mechanized operations to withstand, counter, and defeat the assault of hostile tanks. This section discusses defensive echelons in the anti-mechanized operation, the types of antimechanized defense; i.e., mobile and area, and the organization of the defense. For further discussion of defensive operations, see LFM 02, Doctrine for Landing Forces; FMFM 6-1, Marine Division; FMFM 6-2, Marine Infantry Regiment; and FMFM 6-3, Marine Infantry Battalion.

2902. DEFENSIVE ECHELONS IN THE ANTIMECHANIZED DEFENSE

Defensive echelons in the antimechanized defense include the security areas, the forward defense area, and the attack force/reserve area. (See fig. 26.) Each of these areas is allocated forces and fires as part of the overall antimechanized defense plan.

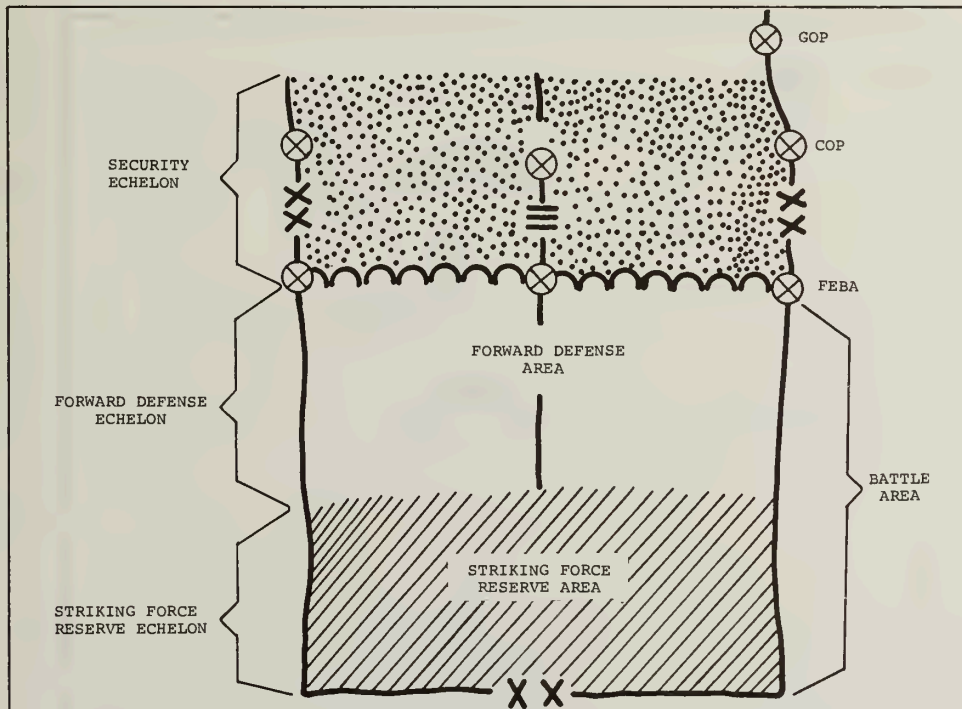


Figure 26.--Defensive Echelons (Schematic).

a. Security Area.--The security area begins at the forward edge of the battle area and extends to whatever distance to the front and flanks that security elements are employed. In addition, it includes any area to the rear of the force in which security forces are operating.

b. Forward Defense Area.--The forward defense area extends rearward from the forward edge of the battle area to include the area organized by the forward committed units. The composition of the force in the forward defense area depends on the nature of the enemy's mechanized forces and the form of defense employed against the attacker.

c. Attack Force/Reserve Area.--The attack force/reserve area consists of those uncommitted forces held under force or division control. It is the principal means by which the commander influences the antimechanized action and regains the initiative against an armored attacker. The combat power of the reserve may consist of nuclear weapons, conventional firepower, and maneuver elements.

2903. ANTIMECHANIZED ROLE IN THE MOBILE DEFENSE

The primary purpose of the antimechanized effort in the mobile defense is the destruction of the hostile mechanized force. It emphasizes maximum mobile combat power in preference to fixed defensive positions. In this type defense, minimum necessary forces occupy forward positions to canalize attacking mechanized forces into planned killing zones, while the bulk of the defending force is held in reserve as an attack force. (See fig. 27.) The objective of the mobile defense is to destroy enemy tanks by

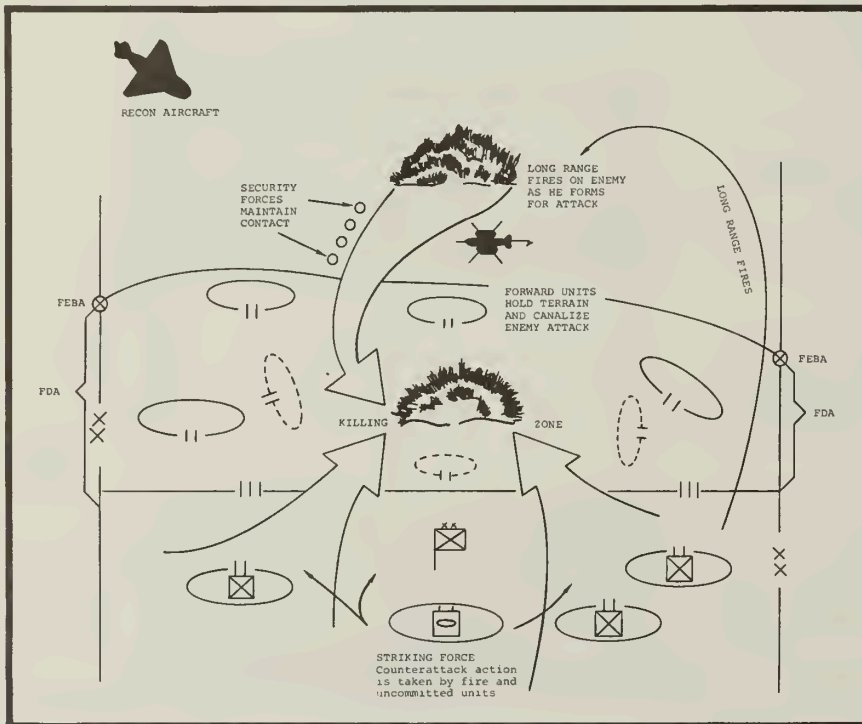


Figure 27.--Mobile Defense.

a combination of defensive and offensive actions. Principal reliance is placed on mobility and the capability of executing bold and vigorous action. The success of mobile defense depends upon commanders retaining freedom of action to commit a tank-heavy attack force at the time and place of their choosing.

a. Forward Defense Area.--The forward defense area is that portion of the defensive sector forward of the attack force area.

(1) Limits.--The forward edge of the forward defense area is determined by the line of contact and by coordinating points between divisions as established by the commander landing force. Its rearward limit is based on considerations of the area required by forward defense forces to accomplish their mission and on provisions for security against enemy infiltration, reconnaissance, and surveillance of the landing force defensive sector.

(2) Organization.--The forward defense area may consist of strongpoints and/or observation posts. Strongpoints may or may not be mutually supporting and may vary in size from a squad to a battalion. (See fig. 28.) They should not be of such size or so concentrated as to present the enemy a profitable nuclear target. They are organized to enable observation of all probable mechanized approaches to warn of impending attack, delay, disorganize, inflict maximum damage, canalize the enemy into less favorable terrain, and block or impede the advance of enemy tanks along principal avenues of approach. Landing force elements manning strongpoints are assigned missions to hold important tactical localities and are prepared to:

(a) Conduct an all-round defense.

(b) Conduct limited offensive actions that assist in canalizing the hostile tanks into the killing zone.

(c) Occupy blocking positions to prevent the widening of the penetration at its base.

(d) Warn the landing force of the attack of hostile tanks.

(3) Employment of Elements.--Within the overall plan for a mobile defense, elements of the forward defense forces employ some variation of the area defense in order to hold terrain essential to the establishment of a killing zone. Other landing force elements, when directed and in keeping with the defense plan, conduct tactical operations by moving forward, laterally, or withdrawing to previously selected and prepared positions to form the perimeter of the killing zone. The conduct of operations by units holding terrain and units effecting tactical movements is covered by supporting arms. They employ deception measures and offensive action designed to canalize the enemy into the killing zone.

b. Killing Zone.--A killing zone is an area within the forward defense area into which the commander plans to canalize the enemy mechanized force for destruction by a counterattack in strength. The selection of the killing zone(s) is based on assumed enemy penetration(s) along likely avenue(s) of approach that are trafficable to hostile armor within the defensive sector. The following factors are considered in the designation of killing zones:

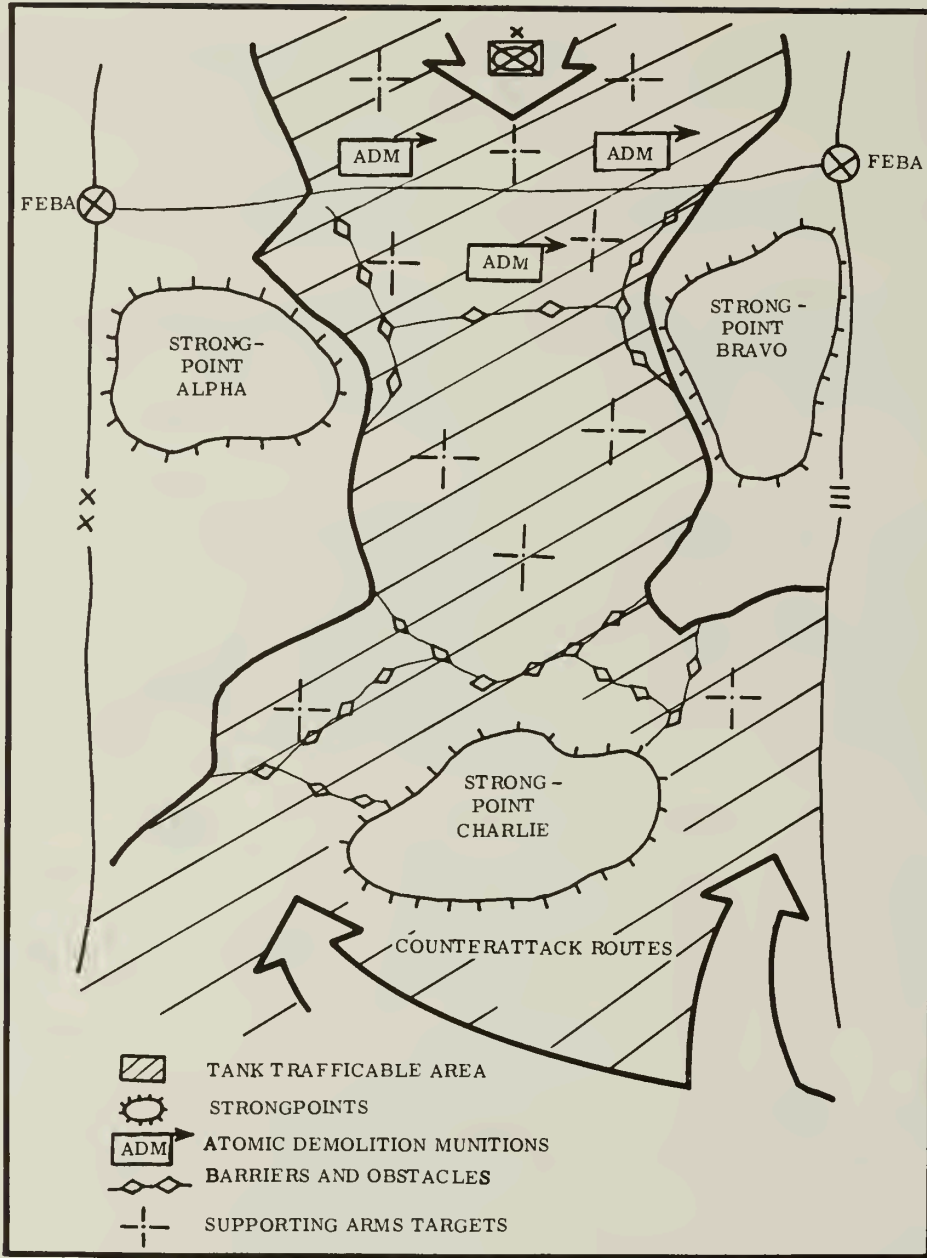


Figure 28.--Strongpoints in the Mobile Defense (Schematic).

- (1) Avenues of approach for mechanized forces.
- (2) Obstacles, both existing and reinforcing, which will assist in pocketing the hostile mechanized force.
- (3) Terrain within the killing zone of sufficient size to permit employment of all supporting fires including nuclear weapons.

(4) Adequate mobility and covered routes for use by the attack force in executing the counterattack.

(5) Helicopter landing zones within or on the periphery of the killing zone.

(6) Time-space factors for moving attack force and antimechanized elements into positions.

c. Attack Force.--The attack force is a large and highly mobile mechanized force having mobile infantry and tank units as a base. Provisions are made for highly integrated artillery and air support for the attack force during counterattack of the enemy penetration. The attack force is highly flexible and, in order to be responsive to changing situations, prepares counterattack plans to meet several contingencies. Success of the mobile defense is enhanced by thorough reconnaissance and rehearsals involving, at a minimum, the key personnel of the attack force.

(1) Preparation of the Counterattack.--The attack force may launch its counterattack beyond, within, or to the rear of the forward defense area. The point of impact is normally made at the base or shoulder of the hostile mechanized penetration to take advantage of an assailable flank of the penetration. This prevents enemy forces from exploiting the penetration and permits the destruction of enemy tanks within the killing zone. (See fig. 29.) Speed of execution is essential in order to permit the immediate withdrawal of the attack force for possible commitment in other areas. When employment of nuclear weapons is authorized, the point of impact is generally placed at the apex of the penetration for greater destruction of the enemy and to permit greater exploitation of the effects of nuclear weapons.

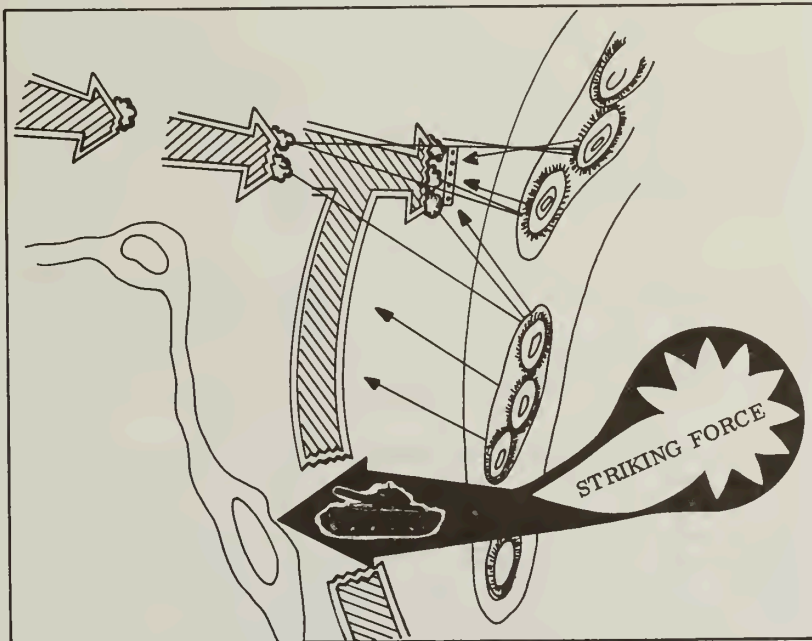


Figure 29.--Counterattack.

(2) Command and Control.--Unity of command is essential to the accomplishment of a mobile defense. When the attack force is committed, its command must have the facilities, freedom of action, and the requisite authority to make and implement decisions immediately. The attack force is prepared for immediate response to accomplish the attack force mission. For this reason, the attack force normally will not be assigned other missions while uncommitted. This does not preclude elements of the attack force being employed in limited offensive action. However, such employment should not be permitted to result in critically weakening the combat power of the attack force.

2904. AREA DEFENSE

Antimechanized operations generally rely on an area type defense in the early stages of the amphibious assault when inadequate mechanized forces are available for an attack force and insufficient terrain is available for a mobile defense. It may also be employed when the terrain is such that hostile mechanized forces are restricted to a single avenue of approach that facilitates the emplacement of antimechanized defenses in depth. Emphasis is placed on retaining control over specific terrain and reliance is placed on antimechanized forces deployed in position and in depth with planned supporting fires designed to stop and destroy hostile tanks at a designated kill line. Sufficient forces are disposed in the forward area to dominate the terrain being defended. (See fig. 30.) It may not be possible or advisable to physically occupy all key terrain in the defended area; however, sufficient combat power must be made available to

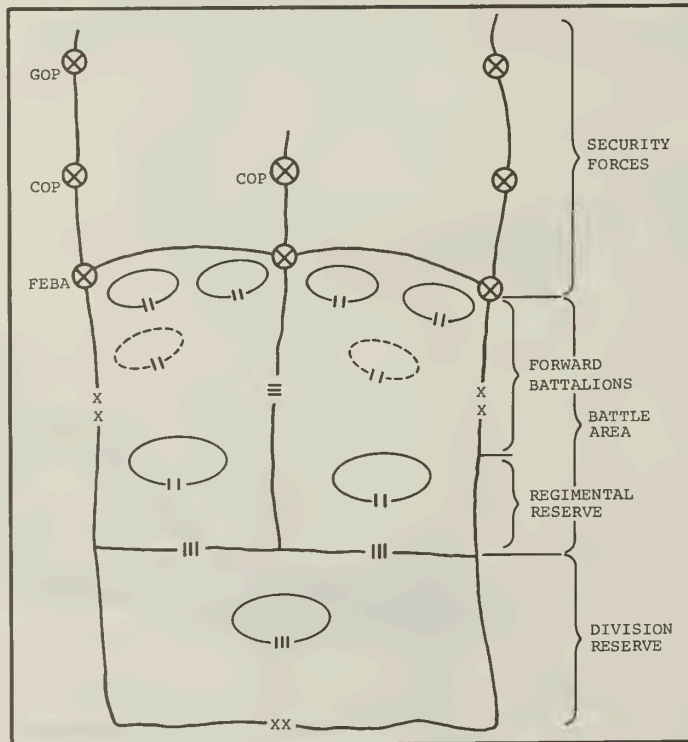


Figure 30.--Area Defense (Schematic).

ensure domination of the area. A reserve is employed to block and destroy hostile tanks, to eliminate mechanized penetrations if they occur, or to reinforce threatened elements of the landing force. Therefore, as contrasted with the mobile defense, the forward defense area normally is occupied by the bulk of the landing force's tactical elements with a limited but adequate reserve as compared to the assignment of the bulk of the forces to the attack force/reserve in the mobile defense.

a. Decision.--The Marine division commander's decision to organize and conduct an area defense is made when it is specified by the landing force headquarters or when the mission of the division requires the retention of specific terrain.

b. Organization.--The area defense is organized basically to provide security, to prevent surprise, and to stop and repel an enemy attack. Therefore, the commander provides for defensive echelons to include security forces, forward defense forces to occupy and organize the forward defense area, and a reserve force.

c. FEBA.--The forward edge of the battle area normally is controlled by higher headquarters through establishment of coordinating points. Coordinating points for the covering force or general outpost (GOP) line are also designated to ensure coordination with adjacent units. Based on the mission of the landing force and a detailed reconnaissance to determine avenues of approach and key terrain, the commander:

(1) Designates defensive positions.

(2) Establishes boundaries and coordinating points for major subordinate units.

(3) Designates the location of the reserve.

d. Covering Force/GOP.--The landing force uses a covering force or general outpost, as appropriate. The covering force or GOP is initially positioned to take advantage of existing obstacles that deny ground to the enemy. It is accompanied by artillery capable of engaging approaching enemy elements and is designed to mislead the enemy as to the true location of the defense area.

e. Combat Outpost.--The combat outpost is a security element of the infantry regiment in the forward defense area. It is located to provide timely warning of enemy approach, to deny the enemy close ground observation, and to limit direct fires into the forward defense area. The division commander prescribes the general location of combat outposts to the extent necessary to ensure the security of his overall force.

f. Forward Defense Area.--The forward defense area is organized into a series of defensive positions which provide good observation and natural terrain barriers which enhance defensive strength. Positions are selected and prepared to block avenues of approach at the FEBA and in depth to ensure control of the battle area. The bulk of the landing force's combat power is committed to defending the forward defense area. The natural defensive characteristics of the terrain are increased as time permits by the use of artificial obstacles, mines, fortifications, and barriers.

2905. SELECTION OF THE TYPE DEFENSE FOR ANTIMECHANIZED OPERATIONS

Selection of the type defense to be used when antimechanized operations are contemplated depends on the mission of the landing force; the size of beachhead; composition, relative strength, and combat power of the landing force and the hostile mechanized forces; the nature of the terrain and weather; the relative air situation; and the disposition and planned employment of all friendly forces. In some situations, the actual antimechanized measures adopted by the landing force will not be entirely a mobile or entirely an area defense, but are likely to produce a variation or combination of the two types of defense, dictated by requirements and the means available. The typical mobile defense generally requires a concentration of armor and mobility beyond the organic capabilities of the Marine division. However, units down to the battalion landing team with appropriate Fleet Marine Force augmentation can execute a modified form of the mobile defense.

a. Factors Influencing the Selection of the Mobile Defense.--The mobile defense is generally the preferred defense for employment against hostile mechanized forces. The employment of the mobile defense is generally dependent on the landing force's seizure of adequate terrain to conduct contemplated antimechanized operations ashore. Its adoption is considered when:

- (1) The landing force mission and the size and characteristics of the area of operations permit the defense to be organized and fought in sufficient depth.
- (2) There are numerous possible enemy avenues of approach into the objective area, and the overall trafficability for hostile armor is good or excellent.
- (3) There are insufficient antimechanized means to cover all possible avenues of approach on the ground in sufficient depth to block the attack of hostile mechanized forces at all possible points.
- (4) Terrain permits relatively free movement by landing force mechanized and antimechanized means.
- (5) The mobility of the landing force and, in particular, a task organized attack force compares favorably with that of the enemy.
- (6) The enemy has the capability of employing nuclear weapons, and the landing force is required to effect maximum dispersion and mobility to decrease its vulnerability to nuclear attack.
- (7) The air situation permits relatively free movement of elements of the landing force.
- (8) Minimum time is available for deployment of forces and organization of the ground and defensive positions.

b. Factors Influencing the Selection of the Area Defense.--The area defense may be employed by the landing force as an emergency measure to counter a mass tank attack in the early stages of the amphibious assault or to defend a force beachhead line or area inland when employment of this type defense best fits the overall scheme of planned antimechanized operations. It is generally dictated by the availability of antimechanized means, size of the beachhead, the terrain, and the situation. The area defense is

particularly suited to operations against a mechanized opponent when the characteristics of the area limit the hostile mechanized force to a single avenue of approach. Normally, the adoption of the area defense is considered when:

(1) The avenues of approach for hostile mechanized forces into the landing force's positions are limited, and the disposition of such avenues of approach facilitates a well organized defense in depth.

(2) Specific terrain features; i.e., landing area or force beachhead, must be held rather than to permit penetration into the battle area as in the mobile defense.

(3) The terrain complex to the rear of the FEBA restricts the ability of an attack force to maneuver freely, restricts rapid penetration by enemy mechanized forces, and permits defense of the FEBA.

(4) The enemy possesses local air superiority which would hinder the maneuver of an attack force.

(5) The enemy possesses no nuclear capability, or the terrain is such that the protection afforded reduces dispersion.

(6) The mobility of the landing force is markedly inferior to that of the enemy, and an attack force in the mobile defense could not be sufficiently augmented to ensure success.

(7) Adequate time and resources are available for deployment of sufficient forces and antimechanized resources, effective organization of the ground, and construction of a large-scale barrier system.

2906. COUNTERATTACK PLANS

The counterattack is a basic and essential part of planning in the antimechanized defense. Counterattack planning is begun early and developed concurrently. It is an integral part of other defensive planning. The conduct of the counterattack varies with the form of defense adopted; however, planning techniques in both the mobile and position defenses are essentially the same.

a. Counterattack plans are prepared as a minimum, to counter assumed major hostile mechanized penetrations along each principal avenue of approach into the battle area. The priority for the preparation of these plans is based on the threat presented by each penetration and the effect it may have on the landing force mission.

b. Basic counterattack plans are prepared by division and disseminated to lower echelons in sufficient time to permit detailed planning by subordinate commanders. Detailed counterattack planning is the responsibility of the attack force/reserve commander, to include reconnaissance, selection of routes, determination of time and space factors, and coordination with elements of the forward defense forces.

c. The counterattack plan normally includes:

(1) Assumptions.--The assumed enemy mechanized penetration, the strength of the enemy in the penetration, location and strength of the hostile mechanized reserve, and other necessary assumptions.

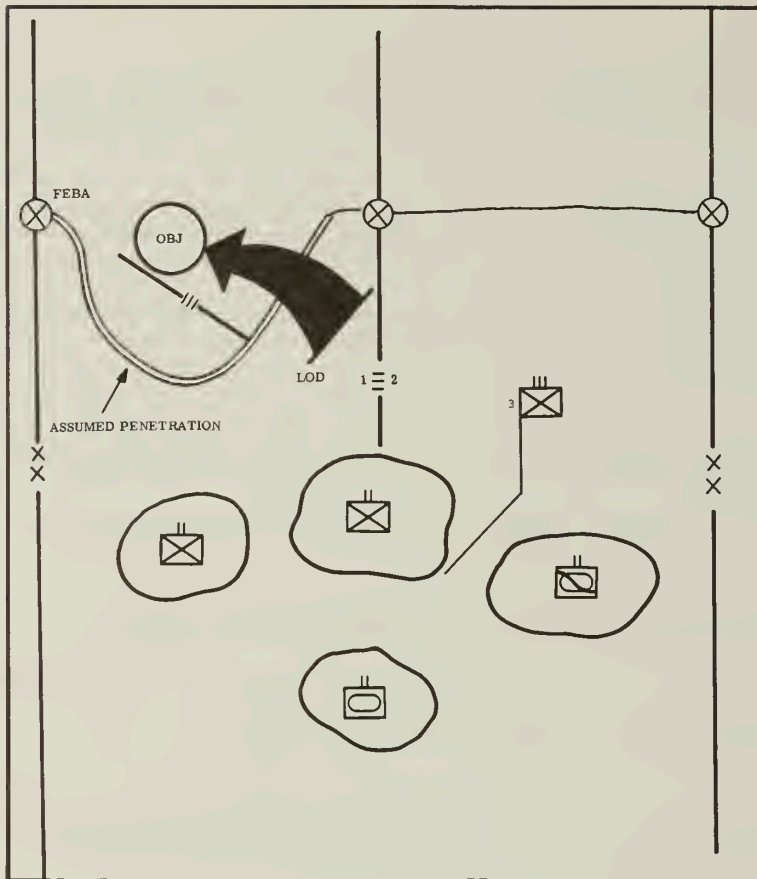


Figure 31.--Control Measures in the Counterattack (Mobile Defense).

(2) Control Measures.--Control measures normally employed in counterattacks are depicted in figures 31 and 32.

(a) Line of Departure.--For planning purposes, the LOD may be used when it will contribute to the success of the counterattack. However, a counterattack is generally planned to be madfrom an assembly area and is directed against the flank of the enemy contained in a killing zone/containing area by elements of the landing force in predesignated blocking positions. The LOD is usually along a recognizable terrain feature adjacent to the predesignated killing zone and close to a flank of the assumed penetration.

(b) Objective.--The objective is the hostile mechanized force and its combat and combat service support elements.

(c) Direction of Attack.--When required, a direction of attack is shown from the line of departure into the designated killing zone or containing area to indicate the direction in which the attack force/ reserve is to attack.

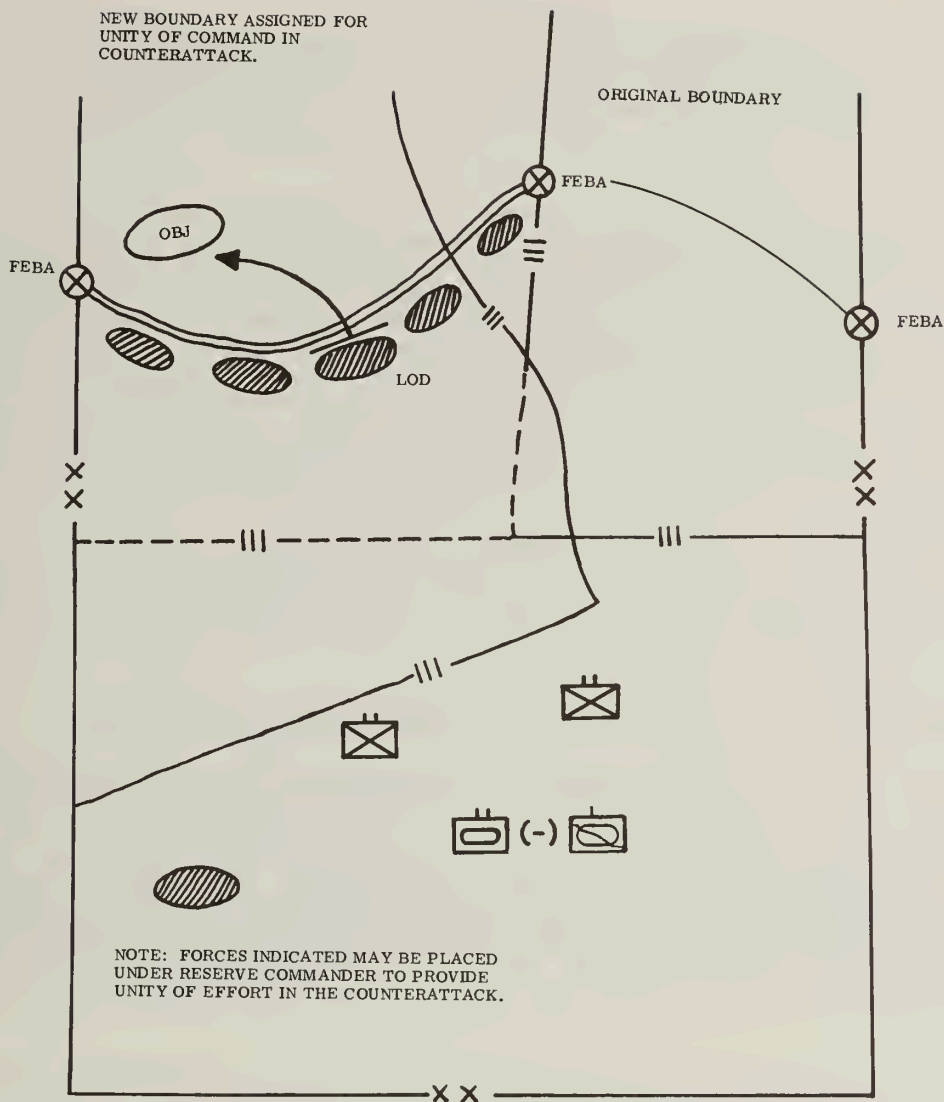


Figure 32.--Control Measures in the Counterattack (Position Defense).

(d) Boundaries.--Boundaries may be used in the counterattack when additional control is needed. Such boundaries assist in controlling the passage and maneuver of the attack force/reserve and in controlling fires during the counterattack. Combat support units within the boundaries of the counterattack force are often given tactical missions of direct support of the attack force/reserve as they pass through or, when required, may be attached to the counterattack force.

(3) Organization for Combat.--The attack force/reserve is task organized for each specific mission.

(4) Orders to Major Subordinate Units.--Missions and task assignments reflect each unit's responsibility.

(5) Fire Support.--Detailed fire support plans are prepared for each counterattack plan. Nuclear fires are planned for probable routes of hostile mechanized approach in front of and within the battle area. The number of nuclear weapons available to support each counterattack is normally specified in the plan.

d. The success of the counterattack against a hostile mechanized force depends upon the ability of the commander and staff to visualize all probable antimechanized situations that may exist and, if a hostile mechanized attack occurs, to select a suitable course of action to defeat it. Basic counterattack plans are highly flexible so that they can be modified to meet the demands of the actual antimechanized situation. The counterattack will normally be a variation of one of the counterattack plans. Particular attention is given to the possibility of multiple hostile mechanized penetrations. Each plan includes preparatory instructions to the counterattacking force and other landing force elements in the event of minor penetrations occurring simultaneously with a major penetration.

e. Plans for the attack force/reserve should include spoiling attacks to impair or delay enemy attacks. The spoiling attack, normally forward of the FEBA, is launched against hostile mechanized forces which are forming or assembling for an attack. Nuclear weapons are particularly valuable in the execution of a spoiling attack against a hostile mechanized force.

2907. ORGANIZATION OF THE GROUND FOR ANTIMECHANIZED OPERATIONS

When defensive antimechanized operations are to be undertaken, the integration, coordination and protection of the landing force's antitank weapons, and the fire and maneuver plan of the tank-heavy attack force/reserve take precedence over all other activity. The objective is to provide mass surprise antitank fires from well-covered positions to contain and seriously damage the attacking hostile mechanized forces at a killing line or to canalize them into predesignated killing zones. Communication systems, with emphasis on warning of the enemy's approach, will be installed concurrently with other tasks. The normal priority of work provides for preparation of:

- a. Well-covered primary positions for the landing force's anti-tank weapons with routes into and out of each.
- b. Individual positions.
- c. Alternate and supplementary positions for antitank weapons.
- d. Barriers, obstacles, and mines to block principal avenues of approach.
- e. Counterattack routes.
- f. Successive positions in depth throughout the battle area for the landing force's antitank weapons.
- g. Defensive positions in designated killing zones.
- h. Covered firing positions for tanks and antitank weapons.

- i. Obstacles and barriers in predesignated killing zones.
- j. Dummy positions.

2908. PREPARATION OF POSITIONS

As soon as possible after the landing force assumes a defensive posture, defensive positions for antimechanized operations are occupied by designated landing force elements. Positions occupied include those selected to provide direct antimechanized fires on a killing line, blocking positions selected to canalize enemy armor into a killing zone, and those selected within killing zones to contain and destroy enemy armor. Fields of fire are cleared, tanks are placed in hull defilade, and emplacements are dug for crew-served weapons. Foxholes and slit trenches are dug for all other personnel. Range cards are prepared for all weapons. All vehicles, weapons, and emplacements are camouflaged. Every effort is made to deceive the enemy as to the type and location of the defensive positions. When landing force elements have been assigned defense areas, immediate action is taken to camouflage antimechanized means against air and ground observation. Movement of individuals and vehicles within the defense area is kept to a minimum.

a. The preparation of the counterattack route for an attack force receives high priority. A reconnaissance is conducted for each counterattack plan to determine the requirements for improving the route so as to facilitate the movement of the attack force/reserve. This task includes the reconnaissance and improvement of routes to supplementary positions and the preparation of routes and helicopter landing zones to facilitate the rapid movement of troops to blocking positions.

b. Strengthening the position provides for construction of obstacles and minefields and, when directed, the planned use of chemical weapons. Landing force units use protective-type obstacles and mines to provide close-in defense for each blocking position. Extensive route mining is normally conducted along principal avenues of approach when time permits.

Section X. EXECUTION OF THE ANTIMECHANIZED OPERATION

21001. GENERAL

The execution of the antimechanized operation provides for both offensive and defensive actions on the part of the landing force. Offensive type actions are conducted to prevent enemy mechanized forces from interfering with the landing force in the accomplishment of its basic amphibious mission. Defensive type actions; i.e., mobile or position defense, are conducted by the landing force to counter the assault of enemy tanks. This section discusses both types of operations in their normal sequence of development.

21002. PRE-D-DAY ANTIMECHANIZED OPERATIONS

Prior to the arrival of the amphibious task force in the amphibious objective area, the principal means available to attack hostile mechanized forces are fast naval striking forces and theater air forces. When such operations have been requested by the commander amphibious task force, they are ordered by higher authority. Destruction of hostile mechanized forces is conducted in coordination with supporting operations such as feints and demonstrations, interdiction operations, and air operations designed to gain or maintain air, ground, or naval supremacy. In situations where it appears that the enemy armored strength will present a marked threat, the theater commander coordinates with the ATF commander and initiates aggressive action against hostile armored forces. Theater and fleet air continue to attack hostile armor in the vicinity of the objective area until such time as the attack aircraft of the amphibious task force are able to conduct their own antitank strikes. Aircraft, while carrying out antimechanized missions, attack hostile armored forces, fuel dumps, and repair installations. Isolation of the objective area is aided by bridge destruction, road cutting, route mining, and establishment of chemical barrier systems in depth. During pre-D-day bombardment by fire support ships, naval gunfire performs antitank missions similar to those discussed above.

21003. PRE-H-HOUR OPERATIONS

Once the amphibious task force is in the objective area, the destructive power of naval gunfire against hostile tanks augments aircraft efforts. During the preparatory naval bombardment, fire support ships give priority of fire to mechanized targets that come within their zone of responsibility.

21004. LANDING AND OPERATIONS ASHORE

As the landing force proceeds ashore, air and naval gunfire continue their antitank efforts, receiving targets initially from aerial observers and from forward air controllers and naval gunfire spotters with the assault troops.

a. During the early stages of the landing attack, the principal defense against hostile tanks continues to be aircraft supplemented by naval gunfire. They attack hostile mechanized targets which appear, destroying or dispersing them and delaying the enemy buildup. This action facilitates the rapid seizure of initial objectives by elements of the landing force

thus permitting the early landing of additional antitank weapons. During this period, units may be landed by helicopter to delay and harass hostile mechanized units. They can assist in canalizing any future hostile mechanized effort by route mining and obstacle construction. While the landing force is only beginning to develop its full antimechanized capability during this period, the enemy reaction is also normally limited. The enemy is generally limited to local forces which are already present in the landing area. Usually major mechanized forces are not committed by the enemy until he confirms the principal landing.

b. Amphibious task force and landing force air elements continue their antitank search and attack missions throughout the entire operation. Theater and fleet air elements may assist as required both within and beyond the objective area. Air attack missions are carried out from the forward elements in contact to the limits of the objective area. Naval gunfire ships reorient their antitank efforts as the forward elements of the landing force pass beyond the effective range of their weapons and direct their antimechanized efforts to the flanks of the landing force.

c. As the strength of the landing force builds up ashore, its capability to defeat a hostile mechanized force increases. The assault infantry, both vertical envelopment and beach assault units, possess organic antitank weapons which have a high kill probability at medium ranges. Tanks are landed as early as possible for the dual purpose of adding combat power to the assault and providing antitank protection for the landing force. Added antitank strength accrues from the landing of the artillery.

d. If the mechanized threat in the landing area is of serious proportions, the tanks are landed in the early waves. Tanks may be landed in the first wave of the beach assault if circumstances permit and indicate the desirability of this course of action. Units transported by helicopter land only in areas which will not place them in imminent danger of an enemy tank attack. Successful operations of such forces require that the landing zone be free of enemy mechanized forces long enough for them to organize and provide for their defense.

21005. OFFENSIVE ACTION BY THE LANDING FORCE

Not all antimechanized actions open to the landing force are of a defensive nature. Air and supporting arms are employed to attack enemy tanks as far from the landing force as possible. In addition, the helicopter gives the landing force a versatile vehicle for the conduct of aggressive antitank actions throughout the area of operations at times and places of the landing force's choosing. Such offensive actions serve to relieve the pressures of hostile mechanized attack against the landing force.

a. Helicopters can readily transport forces with a mission to strike at the highly vulnerable support elements of the hostile mechanized force. These strikes are aimed at fuel dumps, maintenance shops, ration stores, and ammunition supplies.

b. Similar small units, skilled in demolitions and mining, cut routes used by hostile mechanized forces by mining roads and blowing bridges. This serves either to impede the entry of hostile armor into the landing

force objective area or to cut the armor off from its combat support troops and logistics train.

c. When feasible, these small raiding parties conduct ambush operations against the hostile armor itself or its logistic train.

d. Helicopterborne antimechanized units are employed whenever practicable within the range of friendly supporting fires. Their employment is closely coordinated with friendly aircraft.

21006. DEFENSIVE ACTION BY THE LANDING FORCE

An attack by enemy tanks in force normally compels the landing force to assume the defense. When the landing force as a whole is forced to adopt a mobile or area-type defense, immediate steps are taken to execute pre-arranged defensive plans to include barrier plans. Thereafter, in the execution of the defense, the commander takes as positive and aggressive action as is feasible. In the execution of the antimechanized defense, he considers the following:

a. Unless surprise offers a greater opportunity for success, advancing hostile mechanized forces are taken under fire as early as possible, at first by air, then by other supporting arms. As the enemy advances, he is taken under fire by the security forces who warn, deceive, and execute maximum damage and delay within their capabilities, without becoming decisively engaged. They attempt to inflict maximum casualties on the advancing hostile mechanized forces and force them to deploy. Elements of the security force, such as stay-behind patrols, may remain in the area after passage of the enemy as a means of collecting information and to direct friendly supporting fires against followup enemy forces.

b. The attacker's strength and disposition during the engagement with the security forces and the destructive effect of the landing force's long range antimechanized resources on the hostile force may be such as to favor the counterattack by the attack force/reserve forward of the FEBA. When considering such a counterattack, the commander carefully weighs the risks involved in terms of their effects on the accomplishment of the landing force's overall mission.

c. Consideration is given to a spoiling attack to disrupt the hostile mechanized attack during its formative stages. Care is exercised in the selection of this force to preclude piecemeal commitment of the striking force/reserve or of component elements to the detriment of the landing force's overall mission.

d. As the security forces withdraw through landing force elements in the forward battle area, the enemy is taken under fire by all weapons within effective range. Forces occupying positions within the forward battle area conduct their portion of the antimechanized action essentially as a delaying action extending over considerable depth. As the attack develops, commanders of landing force elements are able to judge the degree to which specific terrain features must be held. Forces and fires not affected by the attack are shifted to establish supplementary blocking positions along the axis of the hostile mechanized attack and to concentrate massed fires against the enemy. Landing force elements may occupy defensive blocking positions from company to battalion size along the path or flanks of the hostile attacking force or the force beachhead line to compel the

enemy to mass or become canalized. No attempt is made to hold terrain for its own sake; it is held only for that period of time during which its retention contributes to the overall plan. When circumstances dictate, landing force elements may be given the mission of occupying strongpoints to be defended at all cost. Such actions must be essential to the accomplishment of the mission since forces in a strongpoint lose freedom of maneuver by the nature of their mission. Forces within the forward battle area may be employed in limited offensive action when opportunities occur to inflict damage on the enemy.

e. If the enemy penetrates the landing force's positions, the gap created by such a penetration is immediately sealed by fire. Massed air, naval gunfire, and artillery are employed to separate the enemy's tanks from their supporting infantry and combat support elements so as to destroy the continuity of the hostile attack. Landing force units on the flanks of the penetration "shoulder the gap" and mass all available antitank fires against the enemy force. Such units are "boxed in" with artillery and naval gunfire when necessary to counter the followup assault of the enemy's mechanized infantry.

f. The decision as to when and where the counterattack should be launched by the attack force/reserve is made as the situation develops. Normally, the counterattack is made when the enemy attack has been slowed, stopped, or disorganized. However, these are not essential prerequisites to the counterattack. Criteria for determining where and when the counterattack should be launched are primarily those for assessing offensive maneuver. Success depends, among other things, on determination, surprise, boldness, speed, shock effect, and firepower. For a more detailed discussion of counterattack planning, see the "6" series of Fleet Marine Force Manuals.

g. The attack force/reserve is normally committed as a unit to destroy the hostile mechanized force. The counterattack plan may include terrain objectives for control purposes, but the goal of the attack force/reserve is destruction of the enemy, not seizure of terrain to restore the battle position. The attack force/reserve seeks to employ the principles of offensive action to destroy enemy mechanized units, reserves, command facilities, fire support elements, and combat service support. Commanders at all levels employ all means to increase the violence of their attacks.

h. In dealing with multiple penetrations, the most effective method is the elimination of hostile mechanized forces in the order of the seriousness of the threats. Simultaneous counterattacks by elements of the attack force/reserve divide combat power and are avoided.

21007. INDIVIDUAL AND SMALL UNIT ANTIMECHANIZED ACTION

If enemy tanks succeed in penetrating the blanket of heavy antitank fire and make contact with elements of the landing force, it is possible for the individuals of such elements to repulse the attack. The variety and number of antitank weapons organic to every unit, coupled with the individual's antimechanized training and his will to stay and fight, provide an excellent capability to defeat hostile mechanized forces.

Section XI. ATTACK FORCE OPERATIONS

21101. GENERAL

Countermechanized planning provides for appropriate antimechanized resources to satisfy the basic requirement for a tank-heavy attack force/reserve at the division level. The size, composition, and organization of a division attack force/reserve is derived from its mission, the hostile mechanized situation, trafficability in the area of operations, and the landing force scheme of maneuver. The employment of the attack force in offensive operations is similar to employment of the attack force in mobile defensive operations. An infantry regiment reinforced with antimechanized resources, principally tanks, may constitute the attack force/reserve. It employs helicopters and amphibious tractors, and is provided motor transport support, if required, to make it completely mobile and/or motorized.

a. When assigned such a mission, the infantry regiment normally is reinforced to form a task organization of combined arms suitable for tank-killing operations. Planning for the operations of such an attack force is extensive due to the individual characteristics of the units involved.

(1) Tanks and LVT's are relatively sensitive to certain types of terrain and require considerable logistics and service support when operating over extended distances.

(2) To provide the necessary fuel, spare parts, and maintenance for these vehicles, ground supply routes must be available. It may be possible to mobile-load sufficient supplies and include maintenance elements within the force. In addition, air resupply is planned to facilitate attack force operations.

21102. ATTACK FORCE MISSIONS

Plans for the employment of the attack force/reserve are flexible, and its missions are generally designed to provide for the accomplishment of the following operations:

a. Counterattack operations to limit, contain, and destroy hostile mechanized forces forward of or within the battle area.

b. Linkup operations to support separate task groupments under attack by hostile mechanized forces, and to assist isolated landing force elements that have been cut off by hostile penetrations.

c. Pursuit and exploitation operations against withdrawing hostile mechanized elements.

21103. ATTACK FORCE ORGANIZATION FOR COMBAT

A typical organization for combat of the attack force/reserve generally includes tanks, mechanized infantry, engineer, and mobile and flexible combat and combat service support elements.

a. Mechanized combined arms forces are principal assault elements of the attack force. They are employed to deliver the "knockout" blow against hostile tanks contained in a killing zone by infantry blocking positions, supporting arms fires, and barriers.

b. Helicopterborne infantry elements and mobile antitank weapons may be used in containing missions by the attack force. They are employed to move rapidly to designated killing zones where they organize the area to block and contain the penetration of hostile mechanized forces.

c. When a contained hostile force is in a killing zone which is within the range of emplaced artillery, fire support is normally provided by external artillery assigned a tactical mission of direct support. This ensures immediate availability of fires and reduces logistics requirements of the attack force. If the killing zone is outside the range of artillery fire, self-propelled artillery is generally attached to the attack force.

d. Engineer support is required to breach minefields and obstacles that impede the advance of mechanized elements of the attack force. Engineer support also organizes and constructs antitank barriers within designated killing zones. They also construct covered positions for the attack force's heavy antitank weapons.

e. It is vital for close air support to cover the advance of the attack force or its organic groups moving separately. Air locates and attacks hostile mechanized elements well forward of friendly advance elements. Tactical air control parties with the force may operate from command LVT's. Aerial observation is provided the attack force to search in depth, provide early warning of hostile mechanized forces, and report location of barriers that will impede the advance of the attack force. Mobile anti-aircraft vehicles are included in the force if they are available and if air opposition is expected.

f. All elements attached to or supporting the attack force must be capable of a high degree of mobility. This mobility, particularly for the service support and combat support groups, is attained by the use of organic or attached motor transport and amphibious vehicles.

APPENDIX A

SAMPLE TANK ESTIMATE OF SUPPORTABILITY

CLASSIFICATION

1st Marine Amphibious Force (CTF 77)
Operation TORNADO
CAMP PENDLETON, CALIFORNIA
161430 May 19__

TANK ESTIMATE OF SUPPORTABILITY

Ref: (a) Map: TOOLO, 1:50,000, AMS Sheets 12506, 12507
(b) CTF 77 Concept of Operation, 11-1130 May 19__

1. MISSION

The landing force will land by helicopter and surface means to seize and secure the island of TOOLO.

a. Impact on Tanks. Land on order over designated beaches, support the breakout and advance of the linkup force, and provide tank support to infantry forces.

b. Previous Decisions

- (1) One company of medium tanks will be attached to the helicopter-borne RLT upon linkup.
- (2) Nuclear and chemical munitions will be employed only on order of CTF 77.
- (3) Air attacks will be conducted on enemy mechanized forces and facilities prior to D-day.

2. SITUATION AND CONSIDERATIONS

a. Characteristics of the Area of Operations. (See Intelligence Estimate.)

b. Enemy Capabilities and Most Probable Courses of Action. (See Intelligence Estimate.)

c. Friendly Forces

- (1) Own Forces. (See Planning Guidance, Forces Available.)

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(2) Courses of Action

- (a) C/A #1. Land by helicopter with one RLT to seize and defend the MORRO PLATEAU and the TOOLO AIRFIELD. Land by surface means south of the city of LAU. Effect linkup with helicopterborne force; subsequently continue the attack to seize and secure the island of TOOLO.
- (b) C/A #2. Land by helicopter with one RLT to seize and defend the MORRO PLATEAU and the TOOLO AIRFIELD. Land by surface means north of the city of LAU. Effect linkup with the helicopterborne force; subsequently continue the attack to seize and secure the island of TOOLO.

d. Assumptions

- (1) The enemy will not reinforce the mechanized forces currently on TOOLO ISLAND.
- (2) Linkup with the helicopterborne force will be effected by D+2 days.

3. TANK ANALYSISa. Considerations Having Equal Effect

- (1) Forecasted weather and hydrographic conditions will prevail.
- (2) Trafficability will not limit tracked vehicle movement except in the mountain areas to the east and north.
- (3) All landing beaches favor the landing and egress of tracked vehicles.

b. Courses of Action

- (1) C/A #1. This course of action provides for the landing and egress of the tank units to the MORRO RIVER line and unrestricted movement in support of the infantry units in this area. The linkup force initially and the major force subsequently will have to cross the MORRO RIVER.
- (2) C/A #2. This course of action provides for the landing and egress of the tank units and positions the tank units north of the MORRO RIVER to facilitate support and movement of the linkup force. Tank movement in the area and extending south to the MORRO RIVER line will not be restricted by the terrain.

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4. EVALUATIONa. C/A #1(1) Advantages

- (a) Facilitates the landing and egress of the tanks to the MORRO RIVER.
- (b) The MORRO RIVER to the north will limit movement of enemy mechanized forces into the beachhead.
- (c) Terrain extending north to the MORRO RIVER will permit movement of tank units for support of the infantry units.

(2) Disadvantages

- (a) The linkup force will be required to cross the MORRO RIVER prior to effecting the linkup.
- (b) Once crossed, the MORRO RIVER will restrict tank movement to the south and east.

b. C/A #2(1) Advantages

- (a) Facilitates the landing and egress of the tank units to all force objectives except Objective SPARROW in the southeast.
- (b) The MORRO RIVER to the east and south will limit enemy mechanized movement into the beachhead area.
- (c) The terrain south and east to MORRO RIVER and north to the coast will permit unrestricted tank movement except in the mountain areas.
- (d) The terrain will facilitate movement of the linkup force.

(2) Disadvantages

- (a) Movement south and east will be restricted by the MORRO RIVER.
- (b) The landing force will be exposed to the majority of the enemy mechanized strength, positioned north and west of the MORRO RIVER, upon landing.
- (c) Tank units required for the seizure of Objective SPARROW will have to cross the MORRO RIVER.

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5. CONCLUSION

Either course of action can be supported by tanks.

- a. Best Course. C/A #2 can best be supported. It facilitates the landing and immediate accessibility of tank support to the major portion of the landing force in the seizure of initial and final objectives. It permits the movement of the linkup force without the necessity of crossing the MORRO RIVER.
- b. Other Course. C/A #1 will require the linkup force to cross the MORRO RIVER during D+1 in order to effect a linkup by D+2. All forces except the left RLT will be required to cross the MORRO RIVER to seize their final objectives.
- c. Significant Problems. If C/A #1 is selected, crossing sites over the MORRO RIVER for the linkup force must be secured. Bridging to construct a minimum of two crossings should be landed on D-day and made available to the linkup force.

Signature

J. J. BRAVO
Colonel, U.S. Marine Corps
Chief of Staff

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APPENDIX B

SAMPLE ESTIMATE OF TANK REQUIREMENTS

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Copy ___ of ___ copies
 1st Marine Amphibious Force (CTF 77)
 Operation TORNADO
 CAMP PENDLETON, CALIFORNIA
 281350 May 19__

ESTIMATE OF TANK REQUIREMENTS

Ref: (a) Map TOOLO, 1:50,000, AMS Sheets 12506, 12507

1. MISSION

- a. Landing Force Mission. Land by helicopter and surface means to seize and secure the island of TOOLO.
- b. Division Mission. Land one RLT by helicopter to seize and defend the MORRO PLATEAU and the TOOLO AIRFIELD. Land two RLT's by surface means north of the city of LAU. Effect linkup with the helicopterborne RLT; subsequently continue the attack to seize and secure the island of TOOLO.
- c. Effects of the Mission on Tank Requirements
 - (1) The mission assigned will require the division to conduct an amphibious assault; extensive combat operations ashore, to include mountain and river-crossing operations; and mopping up operations subsequent to seizure of final objectives.
 - (2) The size of the area of operations exceeds the land area normally assigned to a reinforced division.
 - (3) The estimated duration of the operation is 25 days.
- d. Deduction. The size of the force, one reinforced division, the type of operations to be conducted, and the estimated duration of the operation are considered to be within the limits of tank support normally provided by four tank companies. The added influence of an increased area of operations may require additional small, heavily armed and mobile reserves in support of increased frontages. The relatively short duration period should not require tank units to reequip and is not considered to materially influence tank requirements. Based principally upon the influence of an increased area of operations, a minimum of three and a maximum of four medium

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tank companies may be required to provide adequate tank support to the division.

2. SCHEME OF MANEUVER

- a. Scheme of Maneuver. 1st Marine Division (Rein) lands RLT-5 and RLT-7 over RED and BLUE BEACHES to seize designated objectives; lands RLT-1 by helicopter on MORRO PLATEAU; effects linkup with RLT-1; continues the attack.
- b. Effects of the Scheme of Maneuver on Tank Requirements
 - (1) One tank company is to be initially assigned to the linkup force and subsequently in direct support of RLT-1 during the period D+2 through D+5.
 - (2) RLT-5 and RLT-7 will require tank support in the beachhead area from D-day through D+5.
 - (3) During subsequent operations in the Southeast, RLT-7 will require tank support south of the MORRO RIVER.
 - (4) During subsequent operations in the west and north, tank support for RLT-1 and RLT-5 will be limited due to the mountainous nature of the terrain and the tanks' inability to negotiate the terrain.
- c. Deduction. Based upon the scheme of maneuver, the time phasing for the landing, linkup, and subsequent operations, three medium tank companies appear adequate. General scheduling to provide tank support with three companies would be as follows:
 - (1) D-Day to D+1. Two tank companies committed in support of the landing and defense of the beachhead. One company assigned to the linkup force.
 - (2) D+2 to D+5. One company direct support of RLT-1. Two companies supporting operations in expansion of the beachhead.
 - (3) D+6 to D+10. Beachhead area expanded to include the MORRO PLATEAU and the position occupied by RLT-1. One company reverts to division control from attachment to RLT-1. One company crosses MORRO RIVER to support infantry attack of Objectives CROW, SWAN, and ROBIN. Two companies support division (-).
 - (4) D+11 to D+18. One company support of RLT-7. Two companies support division (-).
 - (5) D+19 to D+25. Three companies in division reserve.

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3. ENEMY SITUATION

- a. See Intelligence Estimate.
- b. Effects of Enemy Forces on Tank Requirements. The estimated strength of enemy mechanized forces, including tanks and self-propelled assault guns, is equivalent to one force tank company. The disposition of this force, approximately 40 percent south of the MORRO RIVER and 60 percent north of the river, further reduces its combat potential.
- c. Deduction. Based upon the strength, armament, and disposition of the enemy mechanized force, two medium tank companies would provide adequate tank support. Subsequent to D+5 the one company supporting RLT-7 would have sufficient strength and armament to provide adequate support in the area south of the MORRO RIVER.

4. CHARACTERISTICS OF THE AREA OF OPERATIONS

- a. See Intelligence Estimate.
- b. Effects of Hydrography, Terrain, and Weather on Tank Requirements
 - (1) Hydrography. Beach gradients will require causeways for the landing of tanks.
 - (2) Terrain. The land area to the west and north is mountainous and will restrict tank movements except in the foothills and on the TABOO PASS ROAD in the north. The balance of the land area (approximately 80 percent) favors the employment of tanks and will be trafficable even in heavy rains. The MORRO RIVER is a major unfordable obstacle to tanks paralleling the general direction of the division's attack. The south one-third of the island of TOOLO is inaccessible to tanks unless a crossing over the river is effected. The course of the river will require the division to split its combat forces about D+5 and the ability of tanks to laterally traverse the division's area will be restricted by the MORRO RIVER.
 - (3) Weather. Forecasted and normal weather for the estimated period of the operation will have little or no influence on tank operations since drainage is excellent and soil trafficability will not be adversely affected.
- c. Deduction. Based upon the known and anticipated effects of the characteristics of the area of operations, and in particular the influence the MORRO RIVER will exert in loss of lateral movement and the splitting of the combat force, four tank companies are considered necessary to provide minimum tank support.

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5. EMPLOYMENT OF OTHER ANTIMECHANIZED MEANS

- a. Antimechanized Units and Weapons. Due to the limited strength of enemy mechanized units, any increase or reduction in organic anti-mechanized units or weapons should not materially influence tank requirements. Should a reduction in excess of 25 percent occur, however, tanks may be diverted from their offensive role to reinforce the antimechanized defense in certain areas.
- b. Other Fire Support Means. The employment of air, artillery, and naval gunfire against enemy mechanized forces will further enhance the capability of assigned tank units. However, in view of the limited enemy antimechanized capability, addition or deletion of auxiliary weapons or other fire support means should not materially influence tank requirements.
- c. Barriers, Obstacles, and Mines. The employment of extensive barriers, obstacles, and minefields is not anticipated due to the time phasing of the operation which does not envision a prolonged defense. The employment of tactical minefields will supplement individual unit antimechanized defenses.
- d. Deduction. The addition or deletion of other fire support means or employment of barriers, obstacles, or minefields is not expected to materially influence tank requirements. A reduction in organic antitank weapons within the division which exceeds 25 percent will influence tank requirements since tanks may be diverted to supplement antimechanized defenses in certain areas. Three tank companies should provide adequate antitank support in the antimechanized defense of the division when organic antimechanized units and weapons are at 75 percent strength.

6. CONCLUSION

- a. Tank Requirement. Based upon the mission and the characteristics of the area of operations, four tank companies are required to ensure adequate tank support. This conclusion is based upon the influencing factors of the increased size of the area of operations and the requirement to split the combat force. Based upon the scheme of maneuver, the enemy situation, and the influence of auxiliary and other fire support means, three tank companies appear adequate. Analysis of all the factors indicate that the combination of a limited enemy tank and mechanized capability and the anticipated schedule for commitment of RLT-7 south of the MORRO RIVER will lessen the influence of the size of the area of operations and the splitting of the combat force. Accordingly, and provided that RLT-7 is not committed south of the MORRO RIVER prior to return of the tank company supporting RLT-1, three tank companies could provide the necessary tank support in execution of the assigned mission.

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- b. Tank Ammunition Required. Basic allowance plus 18 days at combat rates and 7 days at extended operation rates.

SUMMARY OF AMMUNITION REQUIREMENTS

<u>Allowance</u>	<u>Per Tank</u>	<u>Tank Battalion (3 Medium Companies)</u>
BA	55	2,805
CA (18 Days)	540	27,540
Extnd Opns (7 Days)	175	8,925
TOTALS	<u>770</u>	<u>39,270</u>

- c. Special and Resupply Equipment Required. Sufficient bridging (60-ton capacity) for tank crossings over the MORRO RIVER will be required by D+5.
- d. Shipping and Landing Craft Required. As set forth in Division Embarkation SOP (shipping requirements, tank battalion).

Signature

W. X. BAKER
Colonel, U.S. Marine Corps
Chief of Staff

ANNEXES: (All Omitted)

- A - Soil Trafficability Overlay
- B - Extract of Enemy Tank Characteristics and Capabilities
- C - Road Reconnaissance Report of Taboo Pass Road

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APPENDIX C

TOW MISSION AND EMPLOYMENT CONSIDERATIONS

1. GENERAL

Marine Corps plans call for 486 TOW systems--240 TOW systems organic to antitank companies in the active and reserve forces, and the remaining 246 in operational readiness floats (ORF)/prepositioned war reserve (PWRS). The systems consist of TOW launchers mounted on M151A2 ¼-ton vehicles. Each launcher will be served by a two-man crew.

2. MISSION

The primary mission of the antitank (TOW) company of the tank battalion is to provide antimechanized support to Marine infantry units, utilizing the TOW to engage and destroy enemy armored vehicles, particularly tanks. When not performing its primary mission, the antitank company may assume a secondary mission of engaging other point targets such as nonarmored vehicles, crew-served weapons, and launchers.

3. METHODS OF EMPLOYMENT

a. There are three methods of employing TOW units: general support, direct support, or attachment.

b. General support is an assigned mission. When in general support, the operational commander retains control over all weapons in order to mass his antimechanized capability or to make their fires available on call to subordinate units. Logistics and administrative support are the responsibility of the commander to whom the weapons are organic. The advantage of centralized control and massed fires must be carefully weighed against the disadvantage of the weapons being less responsive to the subunit commander in fast-moving situations or unavailable to him for incorporation in his defensive plan.

c. Direct support is an assigned mission. TOW units in direct support provide continuous antimechanized fire support to the unit they are supporting. Logistics and administrative support are the responsibility of the commander to whom the weapons are organic.

d. Attachment is not a tactical mission, but a command relationship. The commander to whom TOW units are attached becomes operationally, logistically, and administratively responsible for them. This may be desirable for independent operations when the TOW unit is completely divorced from its parent organization. The commander who has a TOW unit attached may place the entire unit, or elements thereof, in general or direct support of his subordinate units.

4. TACTICAL EMPLOYMENT CONSIDERATIONS

a. Fields of Fire.--In determining fields of fire for the TOW, four specific factors should be considered--range, line of sight, terrain, and obstacles--all of which are interrelated. Like the "lone tree on the

skyline," rarely will the position with ideal fields of fire be found which also meets the other tactical employment considerations. Certain trade-offs will have to be accepted. For instance, a "tank-proof" location which provides line of sight for 2,000 meters may be better than a position which offers 3,000 meters of range, but can be overrun by tracked vehicles.

(1) Like all antimechanized weapons, TOW should be emplaced to take maximum advantage of its range. Unlike other antimechanized weapons, its first-round hit probability is not appreciably decreased by increasing the engagement range. Thus, accuracy is not increased by shortening the range to the target. However, reducing missile time in flight, locating in a position with better cover and concealment, or other sound reasons may dictate moving the launcher closer to its anticipated kill zone.

(2) Line of sight between launcher and target is a necessity. A well trained gunner could conceivably maintain the missile on a flight path which will intercept a target as it reappears from a temporarily masked position. This involves as much luck as skill, however, and such engagement situations should never be deliberately undertaken. TOW crews must be aware of areas within their field of fire which will interrupt line of sight, since a vehicle traveling 25 miles per hour can cover approximately 180 meters from the time the trigger is activated until the missile travels 3,000 meters. Only intensive training will prepare a crew to maintain line of sight on a target until missile impact. Failure to perfect this judgement will waste missiles and, more importantly, compromise the firing position without benefit of a kill.

(3) The skillful and judicious use of terrain must become instinctive for the TOW weapon to be effective. The ideal position would be on high ground with natural cover and concealment overlooking flat, open terrain on the flank of an armored avenue of approach. An attacking force will rarely have available such a location; however, in the defense, these positions are more likely. In order to take the maximum advantage of existing terrain, section leaders and squad leaders should accompany reconnaissance patrols to determine the best primary, alternate, and supplementary position for their crews. For offensive operations, the unit leaders primarily look for the best overwatch positions; defensively, they want to cover armored avenues of approach from the flanks. Defensive positions can be made more effective using mines or other obstacles to canalize enemy armor into specific kill zones. Undulating terrain is the most difficult to cover because tracked vehicle movement is unrestricted and can be masked by terrain features. Locating the TOW on high ground will increase its effectiveness in such terrain.

(4) The connecting command-link wire magnifies the problem of obstacles for the TOW. Direct fire antimechanized weapons, such as the 106mm recoilless rifle and tank, can overcome obstacles such as brush and trees by clearing lanes of fire. This is difficult for the TOW. Clearing a lane 200 meters wide will seldom be practical. However, emplacement with narrow fields of fire, or in an ambush/road block position, is practical. Its 3,000-meter range capability may have to be sacrificed in such situations, but this too may be acceptable. To avoid clearing wide lanes, the TOW can be set up near the edge of tree/brush lines. The amount of trees/brush to clear will be minimal, depending on how far back the TOW is set. Minimal clearing also will help conceal the effects of backblast. TOW crews must be constantly conscious of obstructions which may interfere with the fire during missile flight. A tree, pole, or building can break

the wire when engaging a moving target across the weapon's front. Such obstacles can often be used to divide a squad's sector of fire, and should be used as reference points.

b. Cover and Concealment.--Cover and concealment are extremely important because the TOW is vulnerable to both indirect and direct fire weapons, including small arms fire. The necessity for the gunner to remain exposed for a relatively long period of time magnifies this vulnerability. Overhead cover and concealment are important to prevent detection from the air and to provide protection to the crew from airburst munitions. The backblast effect must also be considered. Backblast restrictions and other safety precautions are discussed in TM 9-1425-470-12 and must be strictly followed. Conversely, since the TOW position can be detected easily by spotting the backblast, efforts to reduce the visibility of these effects are necessary. Clearing away loose debris and watering down the area to the rear of the launcher will help. Locating on the edge of tree lines will also help dissipate backblast effects. Unfortunately, it is much easier to describe what cover and concealment is necessary than it is to physically accomplish this in the field. Preparing dummy positions which confuse the enemy as to the team's true strength and position may be required. Under certain tactical situations, it may be possible to prepare a hardened position a short distance from the team firing position, move up to fire, and then retreat to the protected position.

c. Access Routes.--The Marine Corps' two-man crew prohibits man-packing the TOW for more than very short distances. Therefore, firing positions should be selected which enable the TOW to be fired from its carrier. The mobility of the weapon system is of prime importance to its survivability. Routes to alternate and supplementary positions must be available. A note of caution--there may be unique tactical situations whereby a TOW crew enlists the help of others to man-pack or move the jeep into a firing position, after which the additional personnel depart. This, in effect, leaves the TOW weapon stranded. The consequences of such a situation should be recognized and their acceptability determined in advance.

d. Security.--TOW units cannot provide their own security. When necessary, the supported commander must assign personnel to provide security for the TOW crew. This takes on added importance when the TOW is located some distance from the main fighting positions. The supported commander must realize that the TOW crew may have to relocate rapidly and for a relatively long distance. Since the TOW weapon carrier cannot transport additional personnel, the supported commander will have to move the security personnel.

e. Mutual Support.--TOW weapons are employed in squads (two launchers) as a minimum, so that the crews can provide mutual support. The weapons should be emplaced with overlapping fields of fire, but not so far apart that they are not mutually supporting. The squad leader, with his vehicle and radio, can control both weapons and resupply them with missiles even though they are separated. When TOW squads are assigned to guard restricted armored avenues of approach, road blocks, ambush sites, or other limited sectors, it is critical that both weapons be able to cover the entire area. The redundancy of firepower is not a luxury but a necessity; enemy armored vehicles do not move singly.

f. Fire Discipline.--With each TOW crew carrying only two TOW missiles and the squad leader carrying only six more, it is imperative that they not

be wasted against targets than can be engaged by other weapons. Tanks are much better suited for bunker-busting, even at ranges out to the TOW's 3,000-meter capability. Trucks and other soft vehicles are normally not dangerous at long ranges, and only in rare instances should they qualify as TOW targets. When a moving target is engaged, gunners must be conscious of the terrain so that the target does not become masked and result in a wasted missile. Remember, a tank moving at 25 miles per hour can travel about 180 meters in the 14-16 seconds it takes for the missile to reach its maximum range. The squad leader must have positive control of his two crews to ensure that they do not fire on the same vehicle. Since both launchers will often be covering the same area, prior procedures designating which crew will take the vehicle on left or right, front or back, should be arranged.

5. OFFENSIVE OPERATIONS

Just as the tank is primarily an offensive weapon and should be given offensive missions in the defense, the TOW is primarily a defensive weapon which can be used effectively in the offense. Its long range and accuracy make it an ideal overwatch weapon (not to be confused with base of fire) to support an attack by fire.

a. Overwatch on Line of Departure

(1) The TOW should be positioned on the flanks of the attacking unit's LOD to support by fire. Ideally, these positions will permit coverage of armored avenues of approach from the LOD to the objective and allow engagement of point targets on the objective. Because of the limited missiles in a TOW squad's basic load, every effort must be made to pre-position missiles at the LOD locations so that the basic load is not depleted. The TOW crew engages enemy armor as soon as it comes into range. Other point targets are engaged only if other weapons cannot take them under fire and they are a definite threat to the attack force. TOW crews do not lay down a base of fire or engage suspected crew-served weapon positions.

(2) If the TOW's fire is masked by the attacking force, the TOW unit moves forward by bounds to positions which will permit them to continue their overwatch role. The TOW, unlike the tank, has no armor protection and is unable to fire while moving; thus, position relocation must be carefully planned. Since the prime mover is a jeep, routes to new positions must be carefully selected to ensure they are negotiable.

(3) Once the objective is seized, TOW units move by bounds to take up positions on the objective rapidly and be prepared to defend against a counterattack. These positions must cover the armored avenues of approach and preferably are on the flanks. The opportunity to engage retreating armor is at its best at this time. However, squad leaders must ensure their crews do not expend all of their missiles, becoming defenseless against a counterattack.

b. Assault of the Objective.--During the assault, when terrain is favorable and the situation permits, the TOW unit can occupy positions which will allow engagement of enemy armor moving to reinforce or withdraw from the objective. The positions should be out of range of the enemy's small arms, including the 12.5mm and 14.5mm crew-served machineguns. Again, it is desirable to pre-position missiles so that if the TOW crews have to move after the objective is seized, they can do so with a full basic load.

c. Built-Up Areas.--The effectiveness of the TOW in built-up areas is reduced because of the numerous obstacles which can interfere with the wire, the advantage of its long range is nullified, and it may be necessary to dismount it from the jeep. Additionally, the missile does not arm until it has traveled 65 meters. It can, however, be used when the Dragon missile cannot, since the capture range of the Dragon missile may be as far as 200 meters. The desirable method of employing the TOW is to locate it where it can overlook the built-up area and can engage armor approaching or withdrawing. It can be used to knock out point targets within the built-up area. Built-up areas confine tanks, making them easier targets for the TOW because they cannot maneuver to evade the missile.

d. Water-Crossing Operations

(1) Because the TOW's prime mover cannot ford deep streams or lakes, it may be necessary to leave the TOW in positions behind these obstacles. If LVTP-7's are available, the weapon system can be carried across. Dismounting the TOW launcher and leaving the vehicle behind is usually unacceptable because the weapon's mobility is lost. If the TOW supports an attack from behind a water obstacle, plans must be made to move the TOW across immediately upon seizure of the objective. An aggressor who has tanks will most certainly use them in a counterattack, particularly if he knows the water obstacle has prevented tanks and TOW's from joining the infantry on the objective. When firing over water, the maximum range of TOW is approximately 1,800 meters due to the guidance wires trailing in the water and the resultant adverse electrical effects.

(2) The TOW prime mover with a fording kit can cross water obstacles up to 4 feet deep. It is imperative that the fording site be physically checked to ensure that the vehicle can enter and exit and that the stream bottom is solid. Additional firing limitations are imposed when operating with the fording kit installed. A technical instruction delineating the restrictions is being published.

6. DEFENSIVE OPERATIONS

The TOW weapon increases the commander's defensive options on the battlefield. In the past, commanders were frequently required to use tanks on armored avenues of approach and in other static positions on the FEBA rather than exploiting their mobility and firepower. The TOW can now be assigned these duties. The long range and accuracy of the TOW will permit the defender to engage the attacker's armor before it can get within effective range, forcing the enemy to dismount his infantry and possibly disrupt the attack. The TOW can be effectively employed on a combat outpost (COP) or as part of a reserve force.

a. Employment on FEBA

(1) The majority of a unit's TOW assets will be located on the FEBA. The TOW should be positioned to cover armored avenues of approach from the unit's flanks when possible. Terrain permitting, it is preferable to position the TOW at least 500 meters behind and on the flanks of the frontline in overwatch positions.

(2) The TOW weapon must be integrated with all other antitank weapons available to the commander. Terrain may dictate positioning all antimechanized weapons so that they open fire simultaneously in a

designated kill zone, or using the everincreasing volume of fire method (whereby each antimechanized weapon opens fire as the enemy armor gets within maximum effective range of the weapon and continues firing as the aggressor closes).

(3) Because of the TOW's signature and its high priority for enemy counterfires, it is important that each crew have several alternate positions. To avoid enemy preparation fires, TOW crews may remain on the reverse slope of a defensive position until required to engage a target.

b. Employment on Combat Outpost

(1) TOW's should be located to cover the most dangerous avenues of approach to the COP. The TOW's are positioned to engage enemy armor at their maximum range. The purpose of the COP is to make the enemy deploy; once the TOW's have achieved this, they can then withdraw to overwatching positions while the tanks and remainder of the COP force continues to take the enemy under fire. Before becoming decisively engaged, the COP force withdraws while the TOW weapon provides antimechanized fire to keep the enemy force from regrouping its mechanized task force.

(2) It is imperative to plan routes of withdrawal for the TOW's to their new positions. The routes should be protected from the enemy's line of sight. The positions should be prepared carefully to ensure the TOW's can cover the withdrawing COP force without having their fires masked. They must also be close enough to the FEBA to permit the main defensive line weapons to cover the TOW's withdrawal when this becomes necessary. Additional missiles should be positioned at these locations, or a detailed plan arranged to resupply the crews as they arrive at their new positions. Once the COP force passes through these positions, the TOW moves with them under the cover of the main line of defense.

(3) If the reserve unit was used to provide the COP force, the TOW weapons may remain with the reserve force, taking up blocking positions behind the FEBA. The commander may, however, choose to retain the TOW weapons on the FEBA.

c. Employment With Reserve.--The TOW units supporting the reserve should be given fields of fire to add depth to the defense. In the event of a penetration of the frontline, these TOW's would be in blocking positions to slow or break up the attack.

d. Firing Positions

(1) Reconnaissance

(a) Under ideal circumstances, a detailed map study, an aerial overflight, and a physical ground reconnaissance should be made of the area to determine:

1 Armored avenues of approach.

2 Locations for barriers and obstacles.

3 Chokepoints.

4 Routes of movements for the TOW within the tactical area of responsibility (TAOR).

5 Best primary, alternate, and supplementary positions for the TOW.

(b) Frequently, time or the situation will not allow such a detailed reconnaissance. As time permits, the TOW positions should be continually reevaluated, and as many alternate positions as possible identified and prepared.

(2) Selection of Positions.--The supported unit commander will normally designate the general location for his antimechanized weapons, including TOW, based on his antiarmor defense plan. The TOW unit commander, with his squad leaders, picks out the exact positions (primary, alternate, and supplementary). The positions and routes between them are carefully prepared by the TOW squads.

(3) Occupation of Positions.--Movement to and preparation of the positions should be done during periods of reduced visibility, if feasible. Routes to the positions should be selected which prevent observation by the enemy. The weapon should be left in a defilade position while positions are being prepared. Local security should be provided by the supported unit. Fields of fire and a backblast area are cleared, and range cards are prepared. With the weapons in position, the squad leaders and section leaders evaluate the cover and concealment from the front of the positions. Fields of fire are rechecked by tracking the weapon in the firing position. Wire communications should be established from the TOW crews to the squad leader, and from the squad leader to the section leader or supported unit commander. The laying of wire should be incorporated in all training exercises. Wire communications are practical even when TOW positions are to be occupied for relatively short periods of time. In addition to radio and wire communications, emergency signals such as smoke, flags, whistles, flares, etc., should be established.

7. AGGRESSOR ARMOR DOCTRINE

Knowledge of the enemy's doctrine is as important to the successful employment of the TOW as is knowledge of our own. It increases the effectiveness of the TOW unit's support and enhances survivability.

a. Conduct of Tank Fire.--Aggressor armor crews will fight on the move and from short halts. A tank platoon (three tanks) moves swiftly to contact and engages its targets. A tank will fire on targets out to 1,500 meters while on the move. In order to increase the accuracy with the main gun at point targets, tanks will stop for 8 to 10 seconds. The tank moves immediately after firing its main gun but will often wait for a command to move after firing a machinegun volley. Distance between halts is usually 50 to 150 meters. Every attempt is made to use cover and concealment during these halts.

b. Conduct of Attack

(1) Tank movement in the attack is governed by its vulnerability. If our antimechanized fire is effective, the enemy will not expose tanks unnecessarily by moving them at the speed of dismounted infantry. If the enemy infantry is dismounted, tanks will continue to move out at a high rate of speed leaving the infantry as far as 500 to 600 meters behind. Once tanks reach covered firing positions near the objective, they will wait for the infantry. Tanks will usually lead the assault on the objective as long as the avenues of approach are adequate.