

**STRATEGY
RESEARCH
PROJECT**

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NEW ARMOR FORCE FOR THE MARINE CORPS

BY

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USAWC STRATEGY RESEARCH PROJECT

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ABSTRACT

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This study proposes a new armor force for the Marine Corps. It addresses the emerging reality of an uncertain and unstable environment in the 21st Century. It explains the Marine Corps' support, doctrine, and Master Plan in support of the National Military Strategy. It defines the unique tank and light armored vehicle unique link to the Marine expeditionary forces, indicating their contribution to the National Military Strategy of shaping, responding, and preparing for an uncertain and unstable environment. It further discusses the tank and light armored vehicle's role and employment within the Marine expeditionary forces. Finally, it argues that the proposed New Marine Armor Force anticipates 21st Century strategy and conforms to the current Marine Corps' Master Plan.

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NEW ARMOR FORCE FOR THE MARINE CORPS

This study will demonstrate that a new armor force combining the heralded capabilities of the M1A1 tank and the superior qualities of the light armored vehicle should be organized into a cohesive fighting team to conduct successful operations in an uncertain and unstable environment in preparation for the 21st Century.

NEW REALITY AND THE COMING 21ST CENTURY

UNCERTAIN AND UNSTABLE ENVIRONMENT

The Marine Corps Commandant, General Charles C. Krulak offers this assessment for the 21st Century:

The Global challenges of the 21st Century will be increasingly complex and less amenable to solution by overwhelming force and will require innovative approaches that are timely and effective across the full range of military operations.¹

His assessment goes on to characterize the 21st Century strategic environment:

Eighty percent of the world's megacities (10 million plus) will be found within 200 miles of a major ocean or sea by the year 2020.

By 2020, 7 out of 12 of the world's largest economies will be located along the Pacific and Indian Ocean littorals.

Increases in failed or failing states will threaten U.S. lives and property and add to regional instability.

There will be more challenges to the legitimacy of nation-states by increased numbers of transitional actors and nonstate entities.

Transnational ethnic and religious strife will increase.

The majority of potential conflicts will be at the lower end of the range of military operations.

The number of crises requiring forces capable of operations other than war will increase.

The quantity and quality of effective but relatively low technology weapons, using available countermeasures to frustrate more sophisticated weapons, will increase.

Resources for current and future force modernization initiatives will continue to be constrained.²

Since the demise of the Cold War, we have already witnessed an increasing rise in crises and conflicts around the world.³ As the Commandant observes, chances are that this trend will probably continue well into the 21st Century.

As the Marine Corps enters into this *uncertain and unstable* environment of the 21st Century, it is relying on armor organizations that were structured during the Cold War. Now is the time for the Marine Corps to assess whether these organizations and their structure best serve the needs of the Marine Corps. Marine armor forces must continue to evaluate their organizational structure in order to ensure they remain viable and relevant; Marine armor forces must be an integral part of the combined arms team; and they must be able to respond to the majority of operations that Marine expeditionary forces will participate in through 2010. As former Commandant General Gray

(USMC, Ret) once said, "You must be light enough to get there, but heavy enough to win." His observation is especially true for Marine armor and its support to *Marine expeditionary forces*.

MARINE SUPPORT TO NATIONAL MILITARY STRATEGY

General Charles C. Krulak, Commandant of the Marine Corps predicts, "The Marine Corps will be the nation's force of choice -- a certain force for an uncertain world." No matter what the crisis or the threat, the nation will have one thought: "Send in the Marines." ⁴

The Marine Corps' Master Plan for the 21 Century cites the National Military Strategy objectives and accordingly sets forth the Marine Corps' strategy:

The National Military Strategy sets the national military objectives of defeating adversaries, deterring aggression and coercion, preventing or reducing conflict, and promoting regional stability. These objectives drive our **strategic tasks**: shape the international environment while supporting diplomatic, economic, and political elements of power; respond to the full spectrum of crises; and prepare now for an uncertain future.⁵

The Marine Corps' battle tested Marine Air Ground Task Forces (MAGTFs) provide many of the nation's forward deployed forces for shaping the international environment. The Marine Master Plan says, "They provide **strategic** flexibility and operational versatility to respond to a wide range of crises across the entire range of military operations."⁶ The Marine Corps is preparing for tomorrow by embracing the winds of change,

encouraging innovative thinking through the Marine Corps' Warfighting Laboratory (MCWL) and Advance Warfighting Experiments (AWE), and continuing to develop Operational Maneuver From The Sea (OMFTS).

MARINE AIR GROUND TASK FORCES: THEIR CONTRIBUTION TO THE STRATEGIC AND OPERATIONAL ENVIRONMENT

Marine Air Ground Task Force (MAGTF)

The MAGTF is an organization consisting of command, ground, air, and service support. The forces comprising the MAGTF are determined by the mission, enemy, terrain, and troops (METT) to accomplish an assigned mission(s). MAGTF elements consist of a Marine expeditionary command (Headquarters), Marine aircraft wing (MAWs), Marine divisions (MARDIVs), and Marine force service support groups (FSSGs).⁷

All MAGTFs, whatever their size, have the same structure: a command element (CE), an aviation combat element (ACE), a ground combat element (GCE), and a combat service support element (CSSE).⁸ The CE consists of command and control, intelligence, surveillance, and reconnaissance. The ACE provides offensive air support, assault support, air reconnaissance, anti-air warfare, electronic warfare, and control of aircraft and missiles.⁹ Marine aviation is organic to the MAGTF (as are the GCE and CSSE) and critical to successful GCE and CSSE operations. "The teamwork (ACE with GCE and CSSE) *produces a synergistic effect* increasing net combat power beyond the simple sum of air, ground

and logistic forces operating independently."¹⁰ The MAGTF does not fight without its ACE. The GCE conducts ground combat operations. It is composed of infantry, artillery, armor, engineer, and reconnaissance units. Armor units consist of tanks (M1A1), light armored vehicles (LAV armored wheeled vehicles), and amphibious assault vehicles (AAV).¹¹ The CSSE consists of organizations that provide all the classes of supplies to support ground, air, and amphibious operations.

Marine Expeditionary Force (MEF)

A MEF (CE) is the largest and most capable MAGTF. It is normally composed of one or more Marine divisions (GCEs), a Marine Air Wing (ACE) and a force service support group (CSSE). It normally deploys with 60 days of sustainment. It can conduct amphibious (forcible entry) and sustained operations ashore.¹²

Marine Expeditionary Force-Forward (MEF-FWD)

The next largest MAGTF is the MEF-FWD (CE).. It is normally composed of a reinforced infantry regiment (GCE), a Marine Air Group (ACE), and supporting combat service support group (CSSE). The MEF-FWD can be configured for deployment as an air contingency force (ACF), a maritime prepositioning force (MPF), or an amphibious force (force entry capable).¹³ The MEF-FWD deploys with 30 days of sustainment. Currently, the Marine Corps has sufficient amphibious lift to put approximately two MEF-FWDs afloat simultaneously. Additionally, one maritime prepositioning squadron (MPSRON) can support one MEF-FWD. Three MPSRONS are

strategically forward positioned in the Indian Ocean, the Mediterranean Sea, and the Pacific Ocean.

Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC))

The smallest of the MAGTFs is the MEU(SOC) (CE). It is normally composed of a reinforced infantry battalion (GCE), a composite fixed and rotary wing squadron (ACE), and a MEU service support group (MSSG). The MEU(SOC) is forward deployed as the immediately responsive, on-scene, sea-based Marine component of the fleet commander's amphibious and power projection forces.¹⁴ The MEU(SOC) deploys with 15 days of sustainment. There are seven standing MEU(SOC)s, three of which are normally *strategically* forward deployed in the Indian Ocean, the Mediterranean Sea, and the Pacific Ocean.

MANEUVER WARFARE AND OPERATIONAL MANEUVER FROM THE SEA

The Marine Corps' warfighting philosophy strongly advocates maneuver warfare. Operational Maneuver From The Sea (OMFTS) integrate the tenets of maneuver warfare to amphibious operations.¹⁵ It is essential for the Marine Corps' armor community to understand these two concepts (maneuver warfare and amphibious operations) in order to ensure the best size and/or mix of armor forces are available to the MAGTFs for employment.

Maneuver Warfare

Maneuver warfare designates an overall concept or "style" of warfare.

Maneuver warfare is a warfighting philosophy that seeks to shatter the enemy's cohesion through a

series of rapid, violent, and unexpected actions which create a turbulent and rapidly deteriorating situation with which he cannot cope.¹⁶

The objective of maneuver warfare is to get inside the enemy's decision cycle and act faster than he can respond. In other words, stay one step ahead of the adversary. Its principal tools are highly mobile forces hitting the enemy's weak points at unexpected places and times, thereby breaking his decision cycle and shattering his cohesion and dissipating his fighting spirit. Firepower, direct and/or indirect, is used to facilitate maneuver in order to gain a position of advantage.¹⁷ In order to fully execute maneuver warfare, commanders must act on mission type orders, have a clear understanding of their commander's intent, and trust their subordinates to carry out that intent during the friction and fog of war.¹⁸ The basic tenets of maneuver warfare:

- Focus on the enemy; not on terrain objectives.
- Act more quickly than the enemy can react.
- Support maneuver by fire
- Issue mission type orders.
- Avoid enemy strength and attack enemy weakness.
- Exploit tactical opportunities developed or located by subordinate units.
- Always designate a point of main effort.
- Avoid set rules and patterns.
- Act boldly and decisively.
- Command from the front.¹⁹

Forces using maneuver warfare multiply their combat power. This is especially true for a force like the Marine Corps, which is expected to fight out-numbered and win. Armor forces that meet maneuver warfare tenets will provide the MAGTFs with a

greater chance of breaking the enemy's cohesion and will to fight.

Operational Maneuver From The Sea

The Marine Corps' OMFTS applies the tenets of maneuver warfare to amphibious operations. Using the sea, air, and land as one maneuver space, OMFTS seeks to seamlessly project the MAGTF from amphibious shipping over the horizon to the objective ashore. This seamless transition is designated ship-to-objective maneuver (STOM).²⁰ OMFTS and STOM commanders observe several tactical principles:

- Focus on the operational objective.
- Treat the sea as maneuver space.
- Create overwhelming tempo and momentum.
- Apply strength against weakness.
- Maneuver combined arms from over the horizon (OTH).
- Maneuver to cause an exploitation reaction.
- Emphasize intelligence, deception, and flexibility..
- Integrate organic, joint, and combined assets.²¹

OMFTS and STOM utilize several key capabilities:

- Sea-based command and control.
- Sea-based fire support.
- Sea-based aviation.
- Sea-based logistics.²²

Using maneuver warfare, OMFTS, and STOM to enact their warfighting philosophy, Marine MAGTFs provide theater commanders with the following options:

Strategic and operational reach. MAGTFs can quickly respond to crises with forces in the region or deploy additional forces via sea and air to any theater of operation and have immediate impact.

Strategic and operational deception. MAGTFs can be used to focus the enemy away from the main effort.

Strategic and operational flexibility. MAGTFs command and control, aviation, fire support, ground elements (including armor), and logistics can remain at sea threatening and/or shaping the environment for the nation. When employed, it can choose the place and time of attack while negating a large logistic footprint ashore. This provides greater force protection.

Strategic and operational reserve. The theater commander can hold the OMFTS MAGTF at sea until the situation has been further developed-as a pending threat, poised to take advantage of a window of opportunity.²³

Marine armor forces can contribute substantially to maneuver warfare, OMFTS, and STOM. OMFTS and STOM can be executed to a limited degree today. However, the Marine Corps awaits the MV-22, Osprey, tilt-rotor aircraft and the advanced amphibious assault vehicle (AAAV) to be able to execute the concept to its full capability. As these concepts mature, Marine armor forces must be sized and/or integrated within an organization that enables them to participate to the maximum degree possible. Cold War doctrine and current Marine Corps armor organizations will not adequately support the emerging dynamics of OMFTS and STOM.

CONCLUSION

The Cold War is gone. The new reality of an *uncertain* and *unstable* environment has replaced it. The Marine Corps has a sound strategy for accomplishing the National Military

Objectives, a winning warfighting philosophy, and the most capable forces (MAGTFs) to win the nation's battles. Within the MAGTFs, the Marine Corps needs an armor force capable of responding to these new realities, not to the old Cold War mission-one that can enhance the shaping and responding missions carried out by the MAGTFs.

MARINE CORPS AND ITS TANK FORCE

The most significant ground weapon system of the 20th century has been the tank! Its arrival on the battlefield changed the face of warfare and reintroduced maneuver warfare. The tank's relationship with the Marine Corps and it's Marine expeditionary forces have contributed significantly to the nation's military strategy and its operational and tactical successes.

Historically, the Marine Corps has experimented with and employed tanks from their earliest days. Marine tanks with their versatility and flexibility have a rich history of providing Marine expeditionary forces with firepower, mobility, armor protection, and shock effect.

Marine tanks have played important roles in historic Marine operations: 1920s - China,²⁴ 1940s - World War II (Island hopping in the Pacific), 1950s - Korea and Lebanon, 1960s & 70s - Vietnam, 1980s - Grenada and Beirut, 1990s Saudi Arabia, Kuwait, and Somalia, and standard MEU floats throughout.²⁵

Marine tankers have a proud tradition of supporting Marine expeditionary forces. Perhaps no armor force in the world is as flexible and imaginative as Marine tankers. Without doubt, Marine tankers have upheld General Bruce C. Clarke's (USA, Ret) observation that "There is no place in the principles of employment of armor for the words *always* and *never*."²⁶ Marine Corps' historical employment of tanks reveals that flexible minds and progressive thinkers with liberal imagination can employ tank forces to advantage in almost any situation.

ROLE OF MARINE TANKS

Army tank forces and Marine tank forces are quite different. Army tank forces are organized into tank/mechanized divisions and brigades. Their leadership, organization, and warfighting philosophy are armor-centered. Their force is armor based with mechanized infantry, built to win a land war in a predominantly armor/mechanized theater of operation against like enemy armor/mechanized forces.

On the other hand, a Marine tank battalion is organized as an independent maneuver battalion within a Marine infantry division. Its leadership, organization, and warfighting philosophy are expeditionary in nature. Its force is infantry centered (general purpose infantry), built to respond to crises across the spectrum of conflict. Marine armor is forward-deployed on amphibious shipping in order to be an immediate shaping and responding force for the nation.

While most armies of the world organize armor formations to counter enemy armor formations, the Marine Corps relies on task organized, combined arms forces for anti-armor defense.²⁷ Working with Marine aviation, the Marine division uses tank units as an attack, exploitation, or counterattack force. The **tank** as a combat multiplier provides the MAGTFs with a decisive weapon system to employ at a critical point in the battle in order to weight the fight and ensure victory.²⁸

Although the M1A1 tank is a highly effective antitank system, **its primary role in the Marine Corps** is to function as an independent maneuver element or supporting combat arm and **not to focus** on defeating large enemy armor formations. In other words, **Marine tanks** (when possible) fight **ASYMMETRICAL** warfare. Whenever possible, Marine tanks avoid a decisive engagement with enemy armor forces. Instead, they pursue the enemy's operational and tactical critical vulnerabilities, such as command and control, supplies, logistic forces, and artillery/missile units.²⁹ The objective of Marine armor is to exploit the gaps in the enemy's defense, thereby threatening his vital lines of communication in order to shatter his cohesion and will to fight. And, of course, Marine tankers provide their infantry brothers with the shock effect and lethal suppression and destruction necessary for them to maneuver across the battlefield.

MARINE TANK EMPLOYMENT

Mission

To close with and destroy the enemy utilizing armor-protected firepower, shock effect, and maneuver, and to provide antimechanized fire in support of the Marine division.³⁰

Concept of Organization

A tank battalion (58 tanks) consists of a headquarters and service company, one armor (wheeled) carrier scout platoon (8 antitank/heavy machine gun vehicles), one armor (wheeled) carrier heavy antitank platoon (24 antitank vehicles), four tank companies (14 tanks), and three tank platoons per tank company (4 tanks per platoon). The tank companies are the basic tactical unit with which the tank battalion accomplishes its mission. The scout and antitank platoons provide general support reconnaissance and antitank support to the battalion respectively.³¹

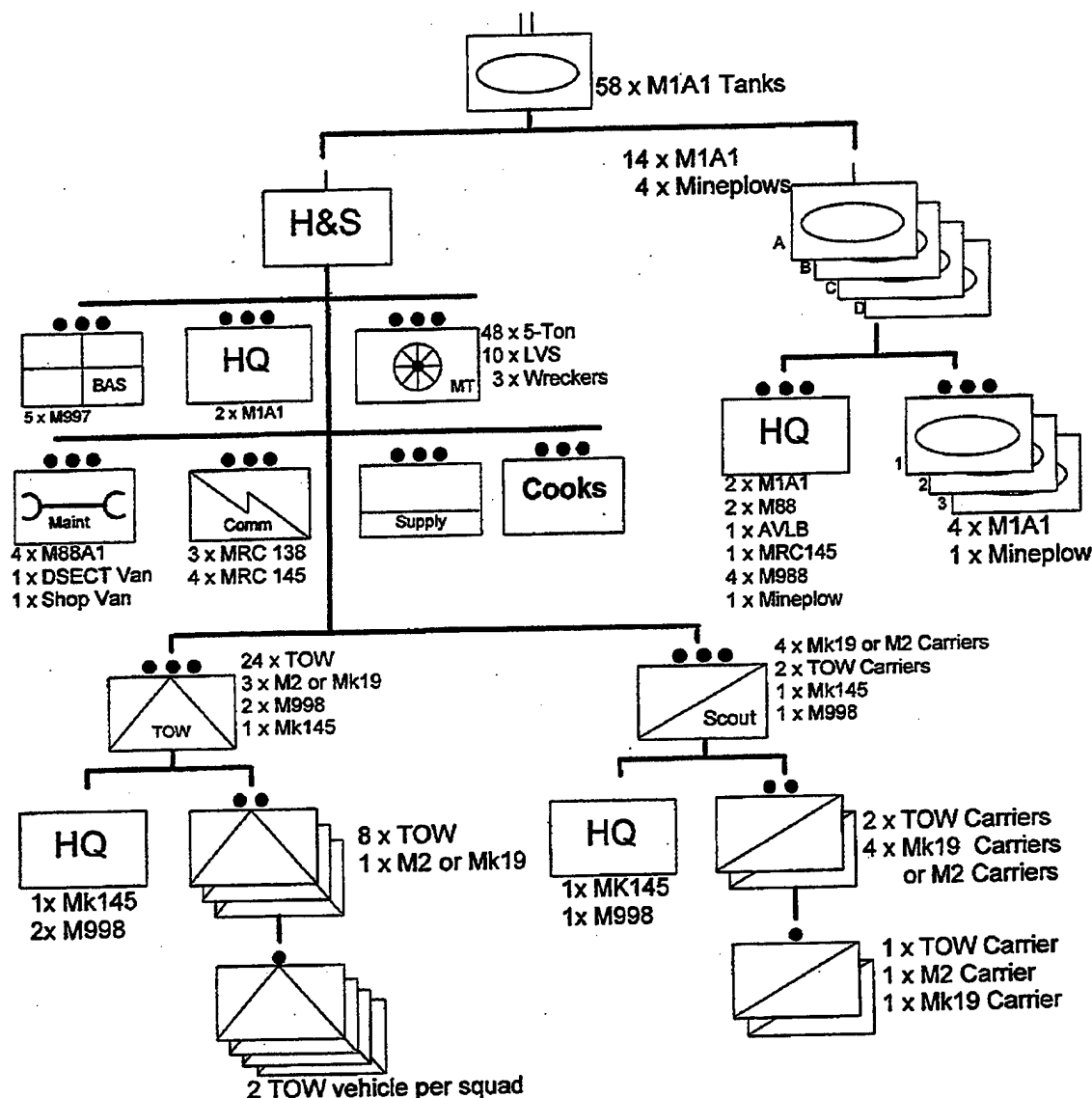


Figure 1: CURRENT M1A1 TANK BATTALION

Concept of Employment

FMFM 6-1 (Marine Division) provides an excellent description of tank employment:

Tanks are the key element in creating shock effect for the GCE. The firepower, armor protection, and mobility of tanks is well suited for exploiting

breakthroughs and conducting counterattacks. They provide precision direct fires against enemy armor, fighting vehicles, and hardened positions. Combined with aviation forces and surface fire support, tanks and mechanized infantry provide the commander with a potent maneuver force capable of rapidly uncovering terrain and forcing the enemy to fight or displace. The mobility and range of tanks and vehicle mounted anti-armor guided missile systems allow their employment throughout the battlefield to include security operations.³²

Offense

The tank battalion and its subordinate companies operating as a mechanized combined arms task force are employed as maneuver elements in the offense.³³ Task organized or pure tank forces can participate in the following offensive combat operations:

- Movement to Contact
- Attack
- Reconnaissance
- Exploitation
- Pursuit
- Raid³⁴

Conducting these types of missions, given the speed and mobility of the M1A1 battalion can easily carry it outside of towed artillery range. As a result, the tank battalion sustains a close relationship with the ACE. Operating outside of artillery range, the tank battalion and fixed/rotary wing aircraft form a deadly partnership.

The M1A1 is far superior to any other weapon system in the GCE. Its ability to rapidly maneuver over most terrain and to identify and engage targets under most conditions make it

necessary to consider employing the M1A1 in any offensive operation conducted by the MAGTFs.³⁵

Defense

In the defense the tank battalion and its companies are employed as with security and/or counterattack forces. Task organized or pure tank forces can participate in the following defensive operations:

- Position Defense
- Security Forces
 - Screen, Guard or Cover
- Main Battle Force
- Reserve
- Mobile Defense³⁶

The M1A1 can be employed in both a position or mobile defense as part of one or more of the elements identified above.³⁷ The capability of the M1A1 to rapidly maneuver against an enemy force allows the MAGTF commander to seize the initiative.

Other Tactical Operations.

The versatility of the M1A1 allows it to conduct a variety of operations that support the MAGTFs ability to build combat power ashore, to transition from the defense to the offense, or to overcome enemy emplaced obstacles.

- Amphibious Operations
- Breaching Operations
- Military Operations On Urban Terrain (MOUT)
- Military Operations Other Than War (MOOTW)
- Operational Maneuver From the Sea (OMFTS)³⁸

The M1A1 is a highly versatile weapon system with the potential to be employed in conflicts ranging from high-intensity war against sophisticated enemy to low-intensity peace enforcement operations in third world countries.³⁹

MARINE AIR GROUND TASK FORCE AND TANKS

Marine Expeditionary Force (MEF)

The tank battalion supports the deployment of the MEF. The MEF normally deploys in phases to the theater of operation via amphibious and air lift. When the MEF is employed, the tank battalion will normally receive its tanks from the MPSRON that contains 58 M1A1 tanks and supporting equipment. Material not prepositioned on the MPSRON for the tank battalion is flown in, in the fly-in-echelon (FIE). In the early phase of such an deployment, the tank battalion deploys with the lead element, which is a Marine infantry regiment of the Marine infantry division (GCE). Once the Marine infantry division arrives, the division commander employs the tank battalion as the situation dictates. For example, I Marine Expeditionary Force employed four tank battalions to Desert Shield/Storm.

Marine Expeditionary Force-Forward (MEF-FWD)

The MEF-FWD serves as headquarters for either an amphibious or maritime prepositioning force (MPF). The tank battalion reinforces the MEF-FWD's GCE, the Marine infantry regiment. Tanks go ashore in the amphibious assault in landing craft, air cushion (LCACs) or landing craft utility vehicle (LCUs). The

LCAC can carry one M1A1 tank and the LCU can carry two or three M1A1 tanks, depending on model. For example, the 4th and 5th Marine Expeditionary Brigades (one tank company per brigade) deployed to Desert Shield/Storm in 1990/1991, which provided the commander of Central Command with an amphibious threat to Iraq. MEF-FWD MPF operations are established via the MPSRONS. As we have observed, the tank battalion then joins up with its MPSRON tanks and reinforces the Marine infantry regiment (GCE).

Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC))

The tank battalion supports the deployment of the MEU(SOC) with a tank platoon. The tank platoon reinforces the Marine infantry battalion (GCE). For example, three MEUs are forward-deployed in amphibious ready groups (ARGs) of three ships floating in the Mediterranean Sea, Indian Ocean, and Pacific Ocean.

CONCLUSION

Since their arrival, tanks have played a key role with Marine expeditionary forces. From the tank platoon through battalion level, Marine tanks have helped win our Corps' and our nation's battles. The battle-tested M1A1 tank units of Desert Storm (Saudi Arabia/Kuwait) and Restore Hope (Somalia) have continued the legacy of those earlier tank units by demonstrating their lethality, versatility, and flexibility. However, given today's constrained resource climate and the *uncertain* and *unstable* global environment, we face new realities as the 21st

Century approaches. We need an armor force more capable of shaping, responding, and winning well into the 21st Century.

MARINE CORPS AND ITS LIGHT ARMORED RECONNAISSANCE FORCE

The most significant new Marine ground weapon system of the 1980s and 1990s has been the light armored vehicle! It gives the Marine Corps MAGTFs a truly mobile, high speed ground reconnaissance capability. LAV's relationship with the Marine Corps and its Marine expeditionary forces have contributed significantly (as have tanks) to the nation's military strategic, operational, and tactical success.

In 1982 the Marine Corps contracted to have six 8x8 light armored vehicle (LAV) variants built: (1) LAV-25 (turret version with 25mm chain gun), (2) LAV-AT/Antitank (Emerson two missile launch TOW under armor), (3) LAV-M/Mortar (internally fired 81mm mortar), (4) LAV-C (Command and Control Vehicle), (5) LAV-L Logistics (Resupply), and (6) LAV-R/Recovery (Maintenance).⁴⁰

This LAV family of vehicles was accepted by the Marine Corps in 1984. Since its introduction into service, the LAV has proudly supported the maritime prepositioning forces and Marine expeditionary forces across the MAGTF spectrum

ROLE OF MARINE LIGHT ARMORED VEHICLES

The LAV wheeled variants provide the Marine Corps with reconnaissance forces that operate on the basis of stealth. In general, the light armored vehicles serve as highly mobile

vehicles that move rapidly about the battlefield to locate enemy flanks and weaknesses for exploitation.⁴¹

The LAV-25 is not a tank; it is not an infantry fighting vehicle nor an assault vehicle. It depends on its speed and agility for protection.

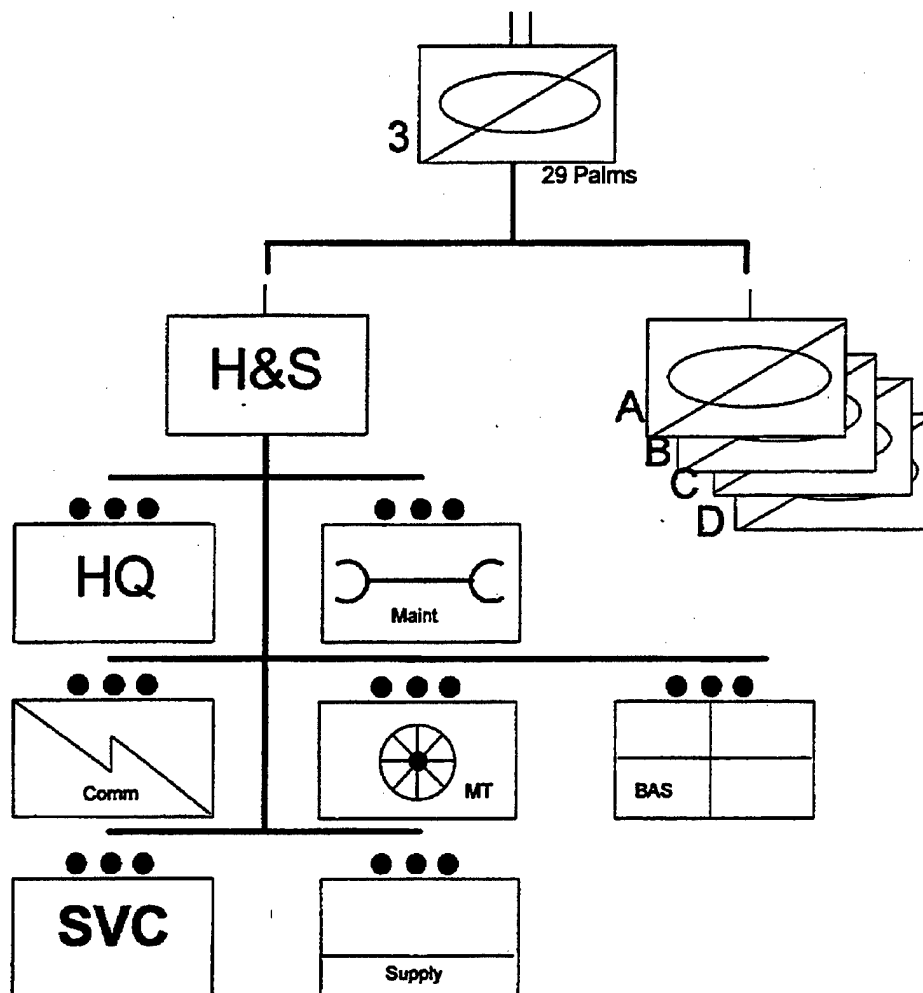
MARINE LIGHT ARMORED RECONNAISSANCE EMPLOYMENT

Mission

The mission of the Light Armored Reconnaissance Battalion is to conduct reconnaissance, security, and economy of force operations, and within its capabilities, to conduct limited offensive or delaying operations that exploit the unit's mobility and firepower.⁴²

Concept of Organization

The light armored reconnaissance battalion consists of a headquarters and service company and four light armored reconnaissance companies (14 LAV-25s, 4 LAV-Antitanks, 2 LAV-Mortars per company). They are 4 LAV-25's per LAR platoon.⁴³



H&S Co	LAR Bn	LAR Co
4 x LAV-25	60 x LAV-25	14 x LAV-25
4 x LAV-C2	8 x LAV-C2	1 x LAV-C2
4 x LAV-L	16 x LAV-AT	3 x LAV-L
2 x LAV-R	16 x LAV-L	2 x LAV-M
	8 x LAV-M	4 x LAV-AT
	6 x LAV-R	1 x LAV-R

Figure 2: CURRENT LAR BATTALION

Concept of Employment

A balanced, flexible, agile, mobile, and limited offensive and defensive fire-and-maneuver team, the LAR battalion and its subordinate companies are capable of being employed separately or as part of a larger ground combat element.⁴⁴

Speed and firepower, combined with maneuver, enable the LAR battalion to exploit the offense in all types of combat operations.⁴⁵ It is the principal provider of extended long-range ground reconnaissance and surveillance in the division.⁴⁶ It possesses the capability to further develop the situation after gaining enemy contact.⁴⁷ The LAR battalion assets emphasize the mobility and protection that are characteristic to light armored vehicles.⁴⁸

Offense

The LAR battalion offers a superior ground reconnaissance capability to the MAGTF and/or GCE commanders. The LAR battalion can conduct the following offensive combat missions:

- Reconnaissance
 - Route
 - Zone
 - Area
- Movement to Contact
 - Screen forward, flanks, or rear of the main body
- Limited Attack
- Exploitation
- Pursuit
- Raid

Defense

The LAR battalion can be a tremendous asset to the MAGTF and/or GCE commanders conducting security operations in the defense. In the defense the LAR battalion can conduct the following missions:

- Screen
- Delay
- Deceive
- Position Defense
- Mobile Defense
- Main Battle Force
- Reserve
- Rear Area Security⁴⁹

But the LAR battalion **cannot** conduct a guard or cover mission due to a lack of armor protection and firepower. To perform these missions, the LAR battalion **requires tank support**. Just as the tank battalion, the LAR battalion has a close relationship with the ACE. Since it often works outside of towed artillery range, air support complemented by organic 81mm mortars are essential.

Other Tactical Operations.

The versatility of the LAV allows it to conduct a variety of operations that support the MAGTF's ability to build combat power ashore and transition between operations.

- Amphibious Operations
- Breaching Operations
- Military Operations On Urban Terrain (MOUT)
- Operations Other Than War (MOOTW)
- Operational Maneuver From The Sea (OMFTS)

These missions show that the LAV is a highly versatile weapon system with the potential to be employed across the spectrum of conflict.

MARINE AIR GROUND TASK FORCE AND LIGHT ARMORED RECONNAISSANCE **Marine Expeditionary Force**

The LAR battalion supports the MEF and/or the GCE just as the tank battalion does. The major difference is the MPSRON carries only 27 LAV variants; additional LAVs must come via air or sea lift.

Marine Expeditionary Force-Forward

The LAR battalion supports the amphibious MEF-FWD with 33 LAV variants. For this size of LAR force, the battalion will normally provide a slice of its headquarters for command and control. During amphibious operations, both the LCAC and LCU can carry four LAVs.⁵⁰ The LAR battalion supports the MEF-FWD on the ground through the MPSRON.

Marine Expeditionary Unit (Special Operations Capable)

The LAR battalion supports the MEU(SOC) with 8 to 17 LAV variants. The number of LAVs depends on the needs of the MEU(SOC) commander and the mix of ground weapon systems that can best support his mission.

CONCLUSION

Since 1984 the LAV has played a key role with Marine expeditionary forces. Just as with the tank, the LAV has been employed from platoon through battalion. Battle-tested, the LAV

has proven its reconnaissance and surveillance capabilities, while demonstrating its versatility and flexibility around the world.

LAVs have significantly contributed to recent operations: 1980s - Panama (Operations Nimrod Dancer, Big Show, Hippocrates, Westward, Rough Rider, Just Cause, and Promote Liberty),⁵¹ 1990s - Saudi Arabia, Kuwait, Somalia, and standard MEU(SOC) floats throughout.

PROPOSED MARINE ARMOR FORCE FOR THE 21ST CENTURY

By now, we have reviewed in detail the current status, organization, and capabilities of Marine tank and light armored forces. We are entering a new century and a new strategic era. The stage is now set to propose a new armor organization. But what should be our vision? Let's first look at the *vision* of our Marine Commandant to ensure the right focus. Then we should consider the *character of forces* that military writers think will be required to achieve operational and tactical success on the battlefields of tomorrow. These critical *visions* and *force characteristics* then support a proposal for reforming Marine armor to emerging threats and to serve future national military strategies.

MARINE CORPS' VISION

The Marine Corps' Master Plan provides a great deal of information on what kind of Marine Corps is envisioned:

It is a Corps with limited resources; therefore, it must provide cost effective military capabilities. It must be a highly versatile fighting force prepared to handle a variety of missions. It will be a fully combined arms team, on the scene, ever ready to protect the nation's interest. It must be a force that can flourish under conditions of uncertainty and be ever-ready to win our nation's first battles. The force must be expeditionary and prepared for immediate deployment. Forces must be able to operate from sea. Finally, the Marine Corps must be able to conduct forcible entry from the sea in the face of armed opposition. Reserve forces must be able to quickly integrate and add combat power to a theater of conflict. These capabilities add up to strategic reach and operational and tactical success. MAGTFs must have sufficient force to respond rapidly and effectively and act as an enabling force for follow-on forces. These forces must be compact enough to respond rapidly and yet heavy enough to get the job done. The forces must provide relevant and easily integrated forces to the unified commanders.⁵² Furthermore, they must provide agile, adaptable, and combined arms force for OMFTS.⁵³

Finally, to support the National Military Strategy, the Marine Corps must have the forces to shape and respond across the spectrum of conflict as we look to the 21st Century.

THE CHARACTER OF FUTURE WARFARE

To win outnumbered the Marine Corps must embrace the vision discussed by the Commandant. What then will define the character of future forces and allow them to win quickly and decisively? **Knowledge and speed**, the basic tenets of maneuver warfare and OMFTS. However, knowledge and speed will be more deadly in the future than any time in our history. A greater knowledge of the

enemy and greater speed of movement of forces will ensure greater tactical and operational success (the hope of information warfare), thereby achieving strategic objectives. Therefore, *knowledge* and *speed* of movement will be the factors effecting future organizations and doctrine.⁵⁴

Additionally, warfighting organizations of the future will display the following characteristics:

- (1) Highly lethal direct and indirect weapons.
- (2) Forces that integrate more and more arms and service progressively to lower and lower levels of organizations.
- (3) Greater ability of systems to see the battlefield.
- (4) Greater decentralization of operations in an ever expanding battlefield.
- (5) Greater information at lower levels of command.
- (6) More timely information to lower levels of command.
- (7) Greater collection of information by reconnaissance
- (8) Increased logistic mobility.
- (9) Close air support to ground forces increasing.⁵⁵

Knowledge, speed, massing of the effects of fires, and mission type orders will allow highly mobile forces to "enter an engagement more quickly, achieve decisions more rapidly, finish the fight faster, and reengage the enemy elsewhere."⁵⁶ Employing speed of maneuver based on certain, detailed knowledge; using precision fires; and guided by mission type orders, commanders at the tactical level will function in compressed planning and operating cycles at very high tempos.⁵⁷

NEW ARMOR FORCE

Future commanders need a "maneuver force possessing the ability to see with greater clarity, to anticipate with greater

assurance, accelerate the pace of movement with organized velocity, and maintain a high tempo."⁵⁸ Such a force could traverse the land and sea with greater security yet create greater havoc across the tactical and operational battlespace.⁵⁹ Deploying its new armor force, using maneuver warfare, OMFTS, and STOM, MAGTFs can achieve battlespace dominance and success across the three levels of warfare.

An integral part of the MAGTFs, Marine armor forces within the GCE can play a dynamic role in this era of warfare. They are near perfect forces to achieve the Commandant's vision and ensure a credible shaping and responding force. Unfortunately, today's tank and LAR battalions are **not optimally configured** to achieve the desired end state of the Commandant. Each battalion has great capabilities, but each has limitations that prevent their greater utility. For example, much has been written in the Marine Corps Gazette about the deep operational maneuver group. This is the LAR battalion's concept of conducting operations deep in the enemy's rear. This is a great concept with tremendous potential; however, the force is too light and the risks too high to warrant these operations. Such a deep operational strike group requires tanks! Why? First, deep operations are high risk missions; second, greater survivability of the force; third, enhanced lethality of the force; fourth, more capable of handling the unexpected; and fifth, better chance of accomplishing the mission. What about supporting arms? Supporting arms are great

and should always be part of the plan. They can greatly enhance chances of success and survivability, but maneuver commanders cannot always count on them due to the friction and fog of war, especially in certain kinds of weather. But commanders can count on those Marines and weapons they directly control. Consider the advanced warfighting experiment Hunter Warrior. At no time was the Red Force concerned about LAR units on the battlefield. Without tanks, they posed little threat. Any heavy machine gun, shoulder-held anti-tank weapon, or mines could easily take them out. The blue's landing force of LAVs was not credible.

To achieve a more relevant role in the MAGTFs and OMFTS, old paradigms must be broken. Tracked and light armored wheeled vehicles cannot merely operate together, they can also be organized together. Logistics and maintenance can be combined under one organization. Training tank and LAV crewmen within the same organization would not be difficult, since the missions and gunnery training are similar. There are challenges, but these obstacles can easily be overcome.

An armor force cohesively built to launch from a standing start and dynamic enough to shape and respond across the spectrum of conflict is needed. The proposed Marine armor battalion in the following graphics are ideally configured to serve 21st century strategy needs:

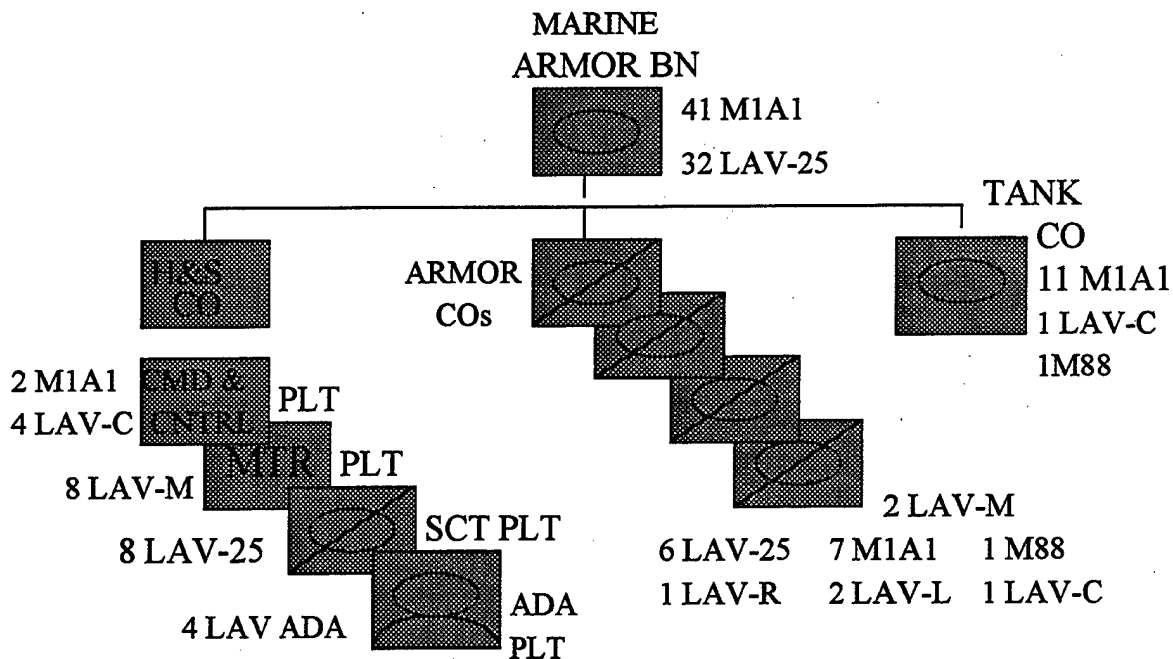


Figure 3: PROPOSED ARMOR BATTALION

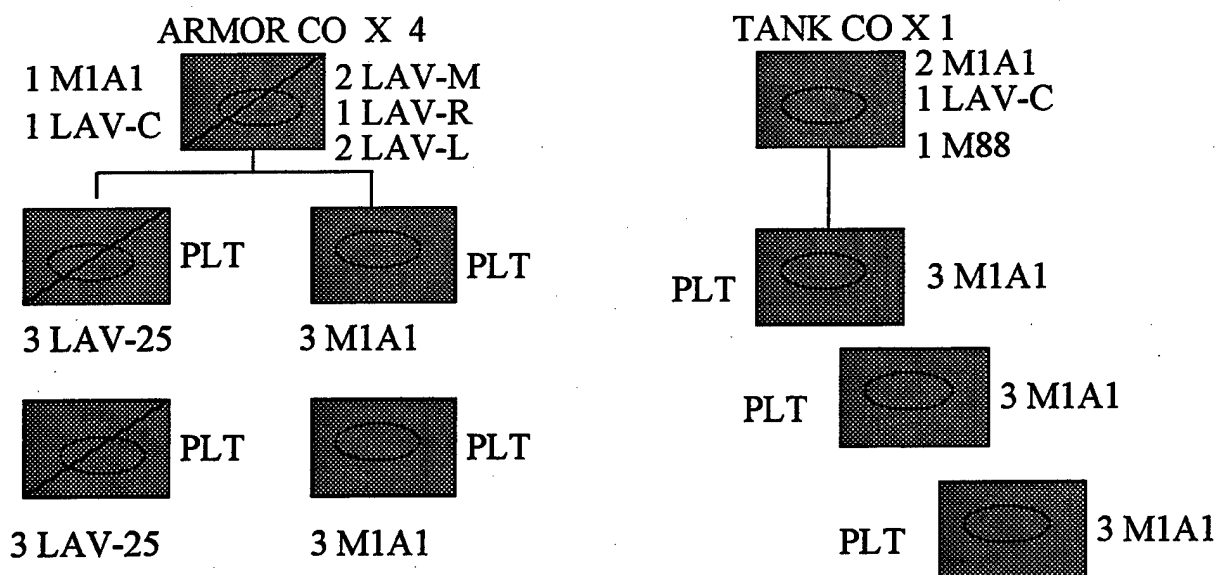


Figure 4: PROPOSED ARMOR COMPANIES AND TANK COMPANY

Table 1: Distribution of Armored Vehicles

WPN	C-CO (1)	C-BN (1)	C-BN X (2)	C-BN X (3)	C-MPF(1)	C-MPF (3)
M1A1	14	58	116	N/A	58	174
LAV(V)	N/A	N/A	N/A	N/A	27	81
LAV-25	14	60	120	180	27	81
LAV-C	1	8	16	24	N/A	N/A
LAV-M	2	8	16	24	N/A	N/A
LAV-R	1	6	12	18	N/A	N/A
LAV-L	3	16	32	48	N/A	N/A
LAV-AT	4	16	32	48	N/A	N/A
M88	2	12	24	N/A	5	15

Notes:

(1) LAV(V): All LAV variants include LAV-25s. Distribution of LAV variants to MPF to be determined. LAV(V) & LAV-25 C or F - MPF columns include other variants which are listed as N/A.

(2) LAV-AT is not required in new armor battalion as tanks are available. Excess LAV-25 & LAV-ATs are available for transition to other variants.

(3) Reduction of M1A1s on MPF opens room for more LAV-(Vs) . .

(4) Adequate number of LAV hulls are available to meet requirements. However, LAV-25 & LAV-ATs would require transition to LAV-C/M/R to meet distribution requirements for new armor bn.

(5) Seven additional tanks are required for active/MPF new armor bn. Additional active/MPF tank requirement could come from tanks located in the reserves and/or in the maintenance float.

(6) Code: C stands for current Co/Bn/MPF.

(7) Code: F stands for future Co/Bn/MPF.

Table 2: Distribution of Armored Vehicles

WPN	F-CO (1)	F-BN (1)	F-BN X (4)	F-MPF (1)	F-MPFX(3)	PLUS	MINUS
M1A1	4X7 1X11	41	164	41	123	0	7
LAV (V)	N/A	N/A	N/A	44	132	N/A	N/A
LAV-25	6	32	128	44	132	52	0
LAV-C	1	8	32	N/A	N/A	N/A	8
LAV-M	2	16	64	N/A	N/A	N/A	40
LAV-R	1	6	24	N/A	N/A	N/A	6
LAV-L	2	12	48	N/A	N/A	N/A	N/A
LAV-AT	0	0	0	N/A	N/A	48	N/A
M88	1	6	24	5	15	N/A	N/A
					LAVs	+100	-54

Armor Battalion Mission

The mission of the Armor Battalion is to provide lethal armor protected firepower, shock effect, and maneuver in the offense or defense in support of the ground combat element's participation in Marine air ground task force amphibious, maritime prepositioning, and air contingency operations.

Concept of Organization

The armor battalion would consist of a headquarters and service company (scout, mortar, air defense, and command & control platoons), four armor companies, (two armor and two tank platoons), and one tank company (three tank platoons).

The tank and LAR platoons would be downsized to three tank/LAVs per platoon. Given the capabilities of each of these vehicles (especially the M1A1 tank), a three-vehicle platoon is still extremely capable and lethal. The increase in maneuver units across the battlespace more than offsets the slightly reduced platoon. Another advantage for the platoon commander is that his span of control is increased. Many would argue that this increases his ability to fight his weapon system, command and lead his platoon, and coordinate supporting arms. I believe the overall gain contributes to maneuver warfare and OMFTS warfighting doctrines.

The available LAV 25mm chain gun with two antitank side launchers ⁶⁰ and LAV 120mm turret mortar vehicle ⁶¹ would greatly enhance the LAV's lethality and provide greater tactical

flexibility. Extended range munitions currently being developed by the Army will greatly enhance the M1A1's capability to engage targets non-line-of-sight to 10 kilometers. These tank munitions may change the way tanks are tactically employed in the 21st Century.⁶² The armor battalion's organization would best support future tank capabilities.

The LAV-scout, LAV-mortar, and LAV-air defense platoons (blazer turret with 25mm gatling gun and two stinger pods that can carry four missiles each) provide a balanced offensive and defensive capability that greatly enhances the armor battalion's employment across the spectrum of conflict.

Additional mobility equipment would be added to the armor battalion, such as tank mineplows (already available in the tank battalions) and a platoon of six Grizzly in-stride/obstacle vehicles (planned allowance under procurement).⁶³

The LAV-command vehicle in each of the maneuver company headquarters serves as a dedicated fire support vehicle for coordinating supporting arms.

Concept of Employment

The armor battalion can be employed as an independent maneuver force. Task forces can be formed by attaching tank or armor companies to infantry battalions and infantry companies to the armor battalions. This procedure extends to platoons within the infantry and armor/tank companies.

The armor battalion's combat support platoons, its four integrated combined tank/LAV companies, and one tank company can perform **all the offensive and defensive missions** assigned to the separate tank and LAR battalions, including the guard and cover missions LAR cannot currently perform. This organization is structured to fight for information, conduct rapid maneuver, and coordinate supporting arms with greater *knowledge* (situational awareness) and greater *speed*; so it retains the offense initiative for the GCE or MAGTF. As a result, the sum of these capabilities is greater than any of its parts.

The smaller size of the companies provides for greater *command and control*, *speed of movement*, and *agility* while **increasing** the number of **maneuver companies** from **four** to **five** in the battalion. The smaller size of the platoons also supports greater *command and control*, *speed of movement*, and *agility*. This in turn provides greater flexibility to the MAGTF commander as well as a smaller footprint and less logistical support for MAGTF employment.

This organization is a "natural" culmination of the close relationship the tank and LAR battalions have had with the ACE. The synergistic effect of this armor force operating with fixed/rotary wing aircraft, unmanned aerial vehicles, and its own indirect fire capability (mounted mortars) would be a powerful combined arms force in its own right.

ARMOR FORCE THAT MEETS THE MARINE COMMANDANT'S VISION AND CREATES
A FORCE WITH THE CHARACTERISTICS OF AN ORGANIZATION FOR THE 21ST
CENTURY

Cost Effective Military Capabilities

Currently, the Marine Corps has two active duty tank battalions and three active duty LAR battalions. The new organization would produce four armor battalions, with a reduction of one battalion headquarters. This reduction has resulted in four battalions that are far more capable and would provide the battalion with five maneuver companies to support the MAGTF.

The reorganization of weapon systems can be done within the current structure of the Marine Corps, although it would require modifications to LAVs in order to obtain the right mix of weapon systems desired. Furthermore, it places more LAV variants on MPSRONS thus reducing the number of sorties required to delivery the MPF. (See Tables 1&2)

Additionally with four armor battalions, the Marine Corps can deploy all three armor battalions to the three MPSRONS and support the two amphibious MEF-FWDs without calling up the reserves. This provides *greater strategic* and operational capability to the MAGTFs and warfighting theater commanders.

Highly Versatile Fighting Force

This combined tank/LAV force organized as a cohesive fighting team can conduct operations spanning the range of

offensive and defensive missions. A highly mobile armored reconnaissance force provides greater situational awareness. Combined with the most lethal, mobile, and survivable tank on the battlefield, it facilitates organized velocity across the battlespace. The armor battalion will be able to quickly expand the battlespace by entering the battle quicker, achieving decisions more rapidly, finishing the fight faster, and reengaging the enemy elsewhere sooner.⁶⁴

Fully Combined Arms Team

The armor battalion fights as an integral player in the combined arms team of the MAGTF. Pure or task organized, provided with close air and/or artillery support, the armor battalion can easily conduct combined arms operations as an independent maneuver battalion.

The robust LAV (81mm) mortar platoon (8 tubes) at the battalion level and the mortar section in each armor company gives the battalion its own artillery during those times when towed artillery is not positioned to provide support. The available LAV 120mm turreted mortar with a range of 9+ kilometers (standard) or 12+ kilometers (rocket assisted) would truly enhance the armor battalion's ability to conduct high speed operations at greater distances in offensive or defensive operations.⁶⁵

This would truly be a "deep maneuver force" with the punch necessary to survive. It is "compact enough to get there rapidly and heavy enough to get the job done."⁶⁶

Flourish Under Conditions of Uncertainty

This flexible, versatile, agile, and lethal information seeking battalion would flourish in *uncertainty*. LAR and tank forces normally deal with mission type orders and conduct operations on the move. This is an organization with a 360 degree capability to exploit *uncertainty*.

Expeditionary; Enabling Force.

The four armor battalions would provide immediate deployable armored forces to all the MAGTFs. They would meet all armor force requirements. The two reserve tank battalions and one LAR battalion could remain unchanged, available for major theater war. These new armored forces would impact the MAGTF's capabilities at all levels, resulting in MAGTFs having greater *strategic, operational, and tactical impact*.

Operate From the Sea, OMFTS Player

Amphibious ships can transport the M1A1 and LAV. Over-the-horizon deliverable, LCACs can carry one M1A1 and four LAVs. The LCU can carry two to three M1A1s and four LAVs. Ship-to-objective capable, the cruise range of the M1A1 is 289 miles and the LAV is 375 miles. Able to be resupplied by air droppable supplies, the force can be supported by air and/or from the sea.

With the M1A1 and LAV ammunition storage and communication capabilities, this armor battalion is a definite OMFTS player.

Relevant and Easily Integrated Force

Instead of Marine tanks being located in two battalions awaiting the call to glory in the next major theater war, they would be integrated into four battalions making them much more accessible to Marine forces. Tanks would be placed in 20 companies rather than the current eight.

This armor force organization would provide greater operational and tactical support to the MAGTFs, who are the true strategic instruments of the Marine Corps. The armor battalion is easily task organized and can be quickly integrated into any operation.

MARINE AIR GROUND TASK FORCE AND THE ARMOR BATTALION

Marine Expeditionary Force

The employment of the armor battalion generally remains the same. However, reconfiguration provides two major advantages: (1) The armor battalions can conduct all offensive and defensive missions as one cohesive fighting force, (2) the battalion and companies' organization provide a more capable maneuver and reconnaissance force for the MAGTF while remaining a powerful armor force in its own right. The net result is a force possessing greater knowledge and speed.

Marine Expeditionary Force-Forward

The employment of the armor battalion generally remains the same. However, reconfiguration provides three major advantages: (1) the amphibious MEF-FWD can take either an armored company or a tank company depending on METT (greater flexibility), (2) the MPF MEF-FWD can source all three MPSRONS with active duty armor forces, and (3) at this level the armor battalions and their five companies truly impact the MAGTF commander's operational and tactical battlespace.

Marine Expeditionary Unit (Special Operations Capable).

Employment generally remains the same, tanks and LAVs deploy as separate platoons. However, with the new armor company mix of LAVs and tanks, an entire armor or tank company may be able to deploy. Having an armor or tank company support the MEU(SOC)s would greatly enhance their combat capabilities and provide them a fourth company for combat employment.

The MEU(SOC)s, forward deployed, are truly one of the nation's instruments for shaping the environment. Enhanced combat power at this level can have tremendous tactical impact, affecting the operational level resulting in *strategic implications*. The armor company with a MEU(SOC) is not going to win any wars, but it will win battles. To the Marines at the tip of the spear, an armor company or platoon may mean the difference between life and death.

CONCLUSION

The new armor battalion is a more relevant force for an uncertain and unstable environment. It is definitely the type of armor force (knowledge and speed) the 21st century demands. In a fiscally constrained environment, it gives the Marine Corps the greatest utility of its tank and LAV force. Finally, our warfighting doctrine demands we organize our force to obtain the greatest shaping and responding force in order to impact the three levels of war. This armor force is the right size and mix of combat weapons (lethal, highly mobile, survivable, and sustainable) to ensure the Marine Corps' MAGTFs can meet the national military strategy.

Word Count: 8,660

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