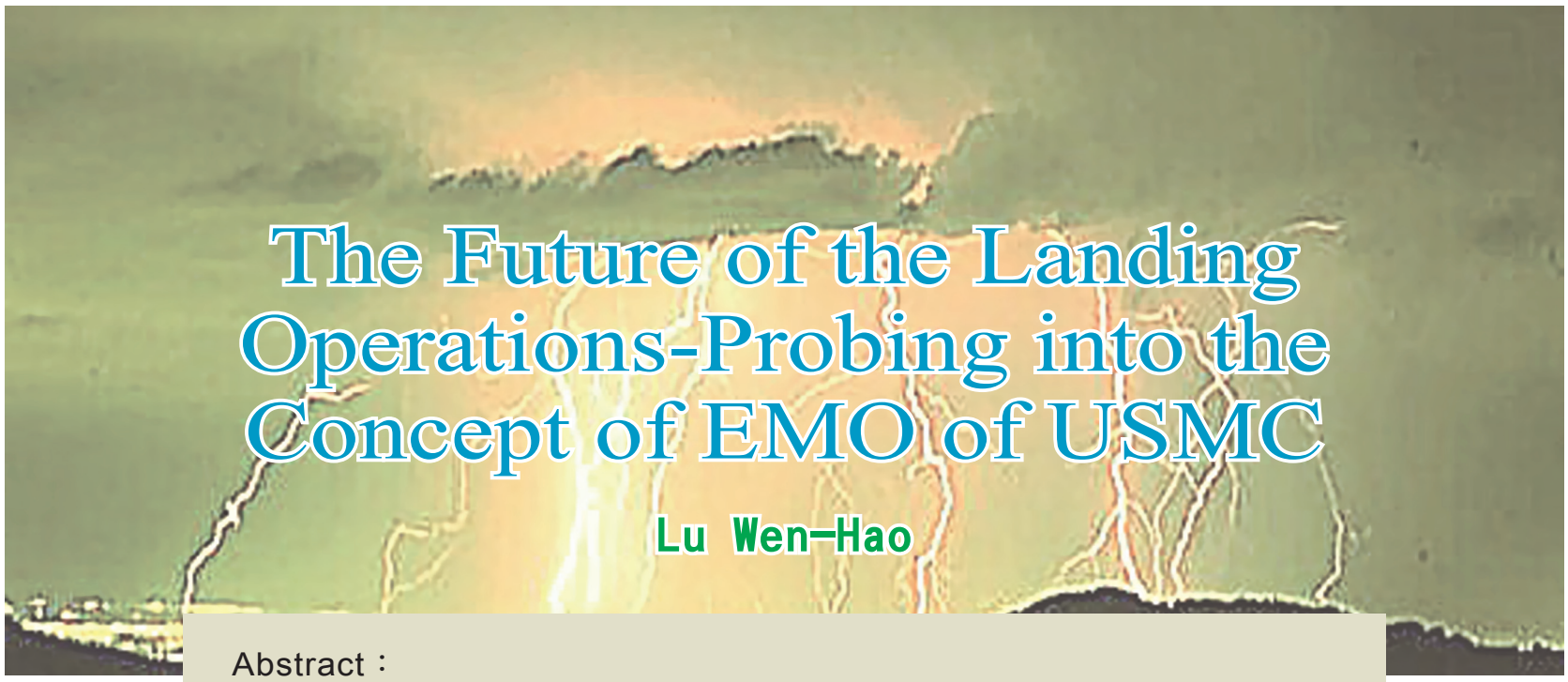

The Future of the Landing Operations-Probing into the Concept of EMO of USMC

Lu Wen-Hao

Abstract：

U.S. Marine Corps' "Marine Corps air-ground task forces" (MAGTF) is the unique formation for conducting the expeditionary and amphibious operations. These task forces combine air-ground capabilities and create many enormous successes for the USMC. However, in the so-called "post-Iraq" and "post-Afghanistan" era, the operational types have turned as "low-scale regional conflicts" and "small wars." In the condition of the fading possibility of the large-scale amphibious operation, the Marine Corps' value of the landing operations will face a great challenge. Hence, the USMC is developing the concept of "Enhanced MAGTF Operations" (EMO) in order to tackle the change of the modern war.

Keyword：Landing Operations,EMO,MAGTF,Company Landing

Introduction

The U.S. Marine Corps is an expeditionary intervention force with the ability to move rapidly, on short notice, to wherever needed to accomplish whatever is required. The Corps possesses a full range of combat capabilities integrated into a single-service, air-ground, combined arms team. These qualities make the Marine Corps unique when compared to other U.S. military services. The Marine Corps has the ability to project combat power ashore for a wide range of contingencies. Dependent upon the nature of the threat, U.S. Marine Corps can field a task organized combined arms team, consisting of ground, air, and combat service support elements under

a single commander. Ship, aircraft, or a combination of both may deploy these task forces, called Marine air-ground task forces (MAGTFs), as an independent force or as part of a joint task force.[1]

Depending on different missions, there are several types of MAGTF. All of which consist of the need of missions. The smallest formation, the Marine Expeditionary Unit, still sticks to the conventional wisdom that the battalion is the smallest tactic formation. However, while U.S. force engages the plight of conducting counter-insurgents and counter-guerillas operations in Iraqi and Afghanistan, the concept of the "small war" and the "low-scale regional conflict" operations gradually replaces the traditional wisdom of the mass-scale operations. Therefore, James T. Conway, the Commandant of the U.S. Marine Corps, describes that the company should be the smallest tactical formation capable of sustained independent operation in the paper "A Concept for Enhanced Company Operations."[2] Based on this concept, the style of the MAGTF will develop dramatically. In order to adapt to the modern battle environment, a new MAGTF's formation which comprises the company-level body will take place of the smallest type of the MAGTF. This brand new concept is called "Enhanced MAGTF Operations; EMO." The purpose of this paper is by probing to U.S. Marine Corps' new concept to inspire our military personnel a different thought about the amphibious operations.

What is the MAGTF?

In order to have a clear view for the concept of the "Enhanced MAGTF Operations," we should first discuss the principles of the "Marine air-ground task forces; MAGTF." As mention above, MAGTF is a unique formation that is able to implement expeditionary intervention operations and rapidly manage crises. The MAGTF's capabilities, elements, types, and recent conducted operations will be described as following[3]:

Capabilities

The Marine Corps task-organizes for operations consistent with its statutory tasking to "...provide

1.U.S. Marine Corps, "Marine Air-Ground Task Force Concepts," The Basic School Training Command, Dec 2002, pp.2-10.
2.James T. Conway, "A Concept for Enhanced Company Operations," Marine Corps Gazette, Dec 2008, p.57.
3.U.S. Marine Corps, "Marine Air-Ground Task Force Concepts," The Basic School Training Command, Dec 2002, pp.2-10.

forces of combined arms, including aviation...” by forming MAGTFs. The MAGTF is a balanced, air-ground combined arms task organization of Marine Corps forces under a single commander, structured to accomplish a specific mission. It is the Marine Corps’ principal organization for all missions across the range of military operations. It is designed to fight, while having the ability to prevent conflicts and control crises. All MAGTFs are task-organized and vary in size and capability according to the assigned mission, threat, and battlespace environment. They are specifically tailored for rapid deployment by air or sea and ideally suited for a forward presence role. A MAGTF provides the naval, joint or multinational commander with a readily available force capable of operating as-

1.Move forces into crisis areas without revealing their exact destinations or intentions.

2.Provide continuous presence in international waters.

3.Provide immediate national response in support of humanitarian and natural disaster relief operations.

4.Provide credible combat power in a nonprovocative posture, just over the horizon of a potential adversary, for rapid employment as the initial response to a crisis.

5.Support diplomatic processes for peaceful crisis resolution before employing immediately responsive combat forces.

6.Project measured degrees of combat power ashore, day or night, and under adverse weather conditions, if required.

7.Introduce additional forces sequentially into a theater of operations.

8.Operate independent of established airfields, basing agreements, and overflight rights.

9.Conduct operations ashore using organic combat service support brought into the AO.

10.Enable the introduction of follow-on forces by securing staging areas ashore.

11.Operate in rural and urban environments.

12.Operate under nuclear, biological, and chemical warfare conditions.

13.Withdraw rapidly at the conclusion of operations.

14.Participate fully in the joint planning process and successfully integrate MAGTF operations with those of

the joint force.

Elements(see figure 1)

All MAGTFs are expeditionary by design and comprised of four core elements: a command element (CE), a ground combat element (GCE), an aviation combat element (ACE), and a combat service support element (CSSE). The MAGTF's combat forces reside within these four elements. Although MAGTFs will differ because of mission and forces assigned, a standard procedure exists for organization, planning, and operations.

As a modular organization, the MAGTF is tailor able to each mission through task organization. This building block approach also makes reorganization a matter of routine. In addition to the Marine Corps units, MAGTFs may have attached forces from other Services and nations; e.g., naval construction force, multiple launch rocket system batteries, and armor brigades.

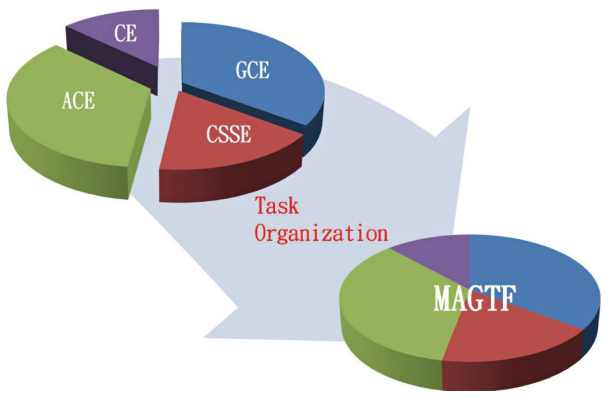

Figure 1: The Organization of the MAGTF (Author's Design)

Source: U.S. Marine Corps, "Marine Air-Ground Task Force Concepts," The Basic School Training Command, Dec 2002, p.5.

A key feature of Marine expeditionary organization is expandability. Crisis response requires the ability to expand the expeditionary force after its introduction in theater without sacrificing the continuity of operational capability. The MAGTF's modular structure lends itself to rapid expansion into a larger force as a situation demands by simply adding forces as needed to the core units of each existing element. This expandability includes expanding into a joint or multinational force because the MAGTF structure parallels the structure of a multidimensional joint force. Operation Restore Hope in Somalia is an example of the expandability of the MAGTF. This contingency began with the employment of a MEU (special operations capable) (MEU[SOC]) to seize the port and airport in Mogadishu, enabling the deployment of elements of I MEF via air and MPS, with the MEF eventually employing a bri-

gade-sized force to provide security and humanitarian relief to the Somalis.

Command Element(CE)

The CE is the MAGTF headquarters. As with all other MAGTF elements, it is task-organized to provide the command and control capabilities necessary for effective planning, execution, and assessment of operations across the warfighting functions. Additionally, the CE can exercise command and control within a joint force from the sea or ashore and act as a core element around which a joint task force headquarters may be formed, provide interagency coordination for MOOTW, and conduct "reach back." The six warfighting functions are: command and control, intelligence, maneuver, fires, logistics, and force protection.

A CE may include additional command and control and intelligence capabilities from national assets and theater, force reconnaissance company assets, signals intelligence capabilities from the radio battalion, and a force fires coordination center. A CE can employ additional major subordinate commands such as the force field artillery headquarters, naval construction regiments, or Army maneuver or engineering units.

Ground Combat Element(GCE)

The GCE is task-organized to conduct ground operations, project combat power, and contribute to battlespace dominance in support of the MAGTF's mission. It is formed around an infantry organization reinforced with artillery, reconnaissance, assault amphibian, tank, and engineer forces. The GCE can vary in size and composition from a rifle platoon to one or more Marine divisions. It is the only element that can seize and occupy terrain.

Aviation Combat Element(ACE)

The ACE is task-organized to conduct air operations, project combat power, and contribute to battlespace dominance in support of the MAGTF's mission by performing some or all of the six functions of Marine aviation: antiair warfare, assault support, electronic warfare, offensive air support, air reconnaissance, and control of aircraft and missiles. It is formed around an aviation headquarters with air control agencies, aircraft squadrons or groups, and combat service supportunits. It can vary in size and composition from an aviation detach-

ment of specifically required aircraft to one or more Marine aircraft wings. The ACE may be employed from ships or forward expeditionary land bases and can readily transition between sea bases and land bases without loss of capability. It has the capability of conducting command and control across the battlespace.

Combat Service Support Element (CSSE)

The CSSE is task-organized to provide all functions of tactical logistics necessary to support the continued readiness and sustainability of the MAGTF. The six functions of tactical logistics are: supply, maintenance, transportation, health services, engineering, and other services which include legal, exchange, food, disbursing, postal, billeting, religious, mortuary, and morale and recreation services. See MCWP 4, Logistics, for a detailed discussion. The CSSE is formed around a combat service support headquarters and may vary in size and composition from a support detachment to one or more force service support groups. The CSSE, operating from sea bases or from expeditionary bases established ashore, enables sustainment of forces, thus extending MAGTF's capabilities in time and space. It may be the main effort of the MAGTF during humanitarian assistance missions or selected phases of MPF operations.

Types

MAGTFs are integrated combined arms forces structured to accomplish specific missions. MAGTFs are generally categorized in the following four types.

Marine Expeditionary Force(MEF)

The MEF is the Marine Corps' principal warfighting organization. It can conduct and sustain expeditionary operations in any geographic environment. MEFs are the sole standing MAGTFs; e.g., they exist in peacetime as well as wartime. Size and composition can vary greatly depending on the requirements of the mission. A MEF is normally commanded by a lieutenant general. It can be comprised of—

1. A standing command element.
2. A GCE of one or more divisions.
3. An ACE of one or more aircraft wings.
4. A CSSE of one or more force service support groups.

A MEF not only deploys and commands its own units, but also units from other MEFs, the Marine Corps

Forces Reserve, other Services and nations, and the Special Operations Command. It typically deploys by echelon with 60 days of sustainment, but can extend operations with external support from other United States Services or through host-nation support agreements. The MEF commander and his staff can form the nucleus for a joint task force or functional component headquarters.

A MEF nominally consists of a permanent CE as well as a tailored Marine division, Marine aircraft wing, and Marine force service support group. Each MEF deploys a MEU(SOC) on a continuous basis to provide forward presence and crisis response capabilities to the combatant commanders. There are three standing MEFs:

1.I MEF, based in southern California and Arizona, assigned to CINCUSPACOM.

2.II MEF, based in North Carolina and South Carolina, assigned to CINCUSJFCOM.

3.III MEF, based in Okinawa, mainland Japan, and Hawaii, assigned to CINCUSPACOM.

Marine Expeditionary Brigade(MEB)

The Marine expeditionary brigade (MEB) is the "middle-weight" MAGTF. It is a crisis response force capable of forcible entry and enabling the introduction of follow-on forces. It can serve as part of a joint or multinational force and can provide the nucleus of a joint task force headquarters. It is unique in that it is the smallest MAGTF with a fully capable aviation element that performs all six functions of Marine aviation and is self-sustaining for 30 days. A MEB is capable of rapid deployment and employment deploying either by air, in combination with the MPS, or by amphibious shipping.

As a result, the MEB can conduct the full range of combat operations and may serve as the lead echelon of the MEF. The MEB is not a standing organization, but rather imbedded within the MEF. As a result, MEBs are task-organized for specific missions from within the assets of the MEF. The MEB conducts the mission or prepares for the subsequent arrival of the rest of the MEF or other joint or multinational forces. However, the deployment of a MEB does not necessarily mean that all the forces of the MEF will follow. Currently, the 1st, 2d, and 3d MEBs have been designated within I, II, and III MEF and are commanded by the

deputy MEF commanders or other general officers. A MEB notionally consists of the following elements:

1.A CE that may include additional assets such as command and control, force reconnaissance company, signals intelligence capabilities from the radio battalion, and engineering capabilities from the naval construction regiments. It can also control the forces of other Services and nations in missions ranging from combat in an urban area to disaster relief.

2.A GCE composed of an infantry regiment reinforced with artillery, reconnaissance, engineer, light armored reconnaissance units, assault amphibian units, and other attachments as required.

3.An ACE composed of a Marine aircraft group comprised of combat assault transport helicopter, utility and attack helicopters, vertical/short takeoff and landing fixed-wing attack aircraft, air refuelers/transport aircraft, and other detachments as required.

4.A CSSE task-organized around a brigade service support group. This element has engineering, supply, transportation, landing support for beach, port and airfield delivery, medical, and maintenance capabilities.

The 4th MEB (AT) provides the unified combatant commanders with a rapidly deployable and sustainable specialized antiterrorism force to deter, detect, and defend against terrorist actions and conduct initial incident response to combat the threat of terrorism worldwide.

Marine Expeditionary Unit(Special Operations Capable)

The MEU(SOC) is the standard forward-deployed Marine expeditionary organization. A forward-deployed MEU(SOC) provides an immediate sea-based response to meet forward presence and power projection requirements. A MEU(SOC) is commanded by a colonel and deploys with 15 days of supplies. It is normally comprised of-

1.A CE that may include additional assets such as command and control, force reconnaissance company, and signals intelligence capabilities from the radio battalion.

2.A GCE comprised of an infantry battalion reinforced with artillery, reconnaissance, engineer, tanks, light armored reconnaissance units, assault amphibian units, and other attachments as required.

3.An ACE comprised of a combat as-

sault transport helicopter squadron reinforced with utility and attack helicopters, vertical/short takeoff and landing fixed-wing attack aircraft, air refuelers/transport aircraft, and other detachments as required.

4.A CSSE task-organized around a MEU service support group. This element has engineering, supply, transportation, landing support, medical, and maintenance capabilities.

A forward-deployed MEU(SOC) operates continuously in the Mediterranean Sea, the western Pacific Ocean, and the Indian Ocean or Arabian Gulf region. Embarked aboard a Navy amphibious squadron, the MEU(SOC) provides a combatant commander or other operational commander a quick, sea-based reaction force for a wide variety of missions such as limited forcible entry operations, noncombatant evacuations, raids, or disaster relief. In many cases, the MEU embarked on amphibious shipping may be the first United States force at the scene of a crisis and can enable the actions of larger follow-on forces. It can provide a visible and credible presence in potential trouble spots and can demonstrate the United States' willingness to protect its interests overseas. While the MEU(SOC) is not a special operations force per se, it can support special operations forces and execute certain maritime special operations missions. These include reconnaissance and surveillance; specialized demolitions; tactical recovery of aircraft and personnel; seizure/recovery of offshore energy facilities; seizure/recovery of selected personnel or material; visit, board, search, and seizure of vessels; and in extremis hostage recovery.

Prior to deployment, the MEU(SOC) undergoes an intensive 6-month training program focusing on its conventional and selected maritime special operations missions. Training culminates with a thorough evaluation and certification as "special operations capable." To receive this certification, a MEU must demonstrate competence across the entire spectrum of required capabilities, be able to plan and execute any assigned mission within 6 hours of notification, and conduct multiple missions simultaneously. Inherent capabilities of a MEU(SOC) are divided into four broad categories:

1.Amphibious operations.

2.Direct action operations.

3.MOOTW.

4.Supporting operations.

Special Purpose MAGTF

A special purpose MAGTF is a non-standing MAGTF temporarily formed to conduct a specific mission for which a MEF or other unit is either inappropriate or unavailable. They are organized, trained, and equipped to conduct such a mission. Special purpose MAGTFs have been deployed for a wide variety of missions such as humanitarian relief and coalition training. Designation of a special purpose MAGTF is based on the mission it is assigned (“Special Purpose MAGTF Hurricane Relief”), the location in which it will operate (“Special Purpose MAGTF Somalia”) or the name of the exercise in which it will participate (“Special Purpose MAGTF Unitas”).

A special purpose MAGTF may be of any size-but normally no larger than a MEU-with narrowly focused capabilities required to accomplish a particular mission. It may be task-organized from nondeployed Marine Corps forces or formed on a contingency basis from a deployed MAGTF. Regimental-level headquarters often assume the role as a special MAGTF CE and may conduct training in anticipated mission skills prior to establishment. A special purpose MAGTF may be deployed using commercial shipping or aircraft, strategic airlift, amphibious shipping or organic Marine aviation.

Recent MAGTF’s Operations

There are misperceptions that the United States has not conducted an amphibious operation since Inchon during the Korean War in 1950. Since 1982, our Nation has conducted more than 100 amphibious operations. For example, the Navy-Marine Corps Team has been on the scene in Bangladesh (1991), the Philippines (1991), Liberia (1996), and East Timor (1999).[4]

After 9/11, U.S. amphibious forces, from a seabase, led the first conventional strikes against the Taliban in Afghanistan. In 2004, the 15th Marine Expeditionary Unit was on station in Southeast Asia to support the relief efforts after the Tsunami. In 2005, from a seabase in the Gulf of Mexico, the Navy and Marine Corps supported recovery efforts after Hurricane KATRINA. In 2009, off the coast

4.General James T. Conway, “The 2010 Posture of The United States Marine Corps,” U.S. State Armed Services Committee, Feb 25, 2010, p.15.<www.marines.mil/unit/hqmc/.../2010%20CMC%20Posture%20Statement.pdf>

of Somalia, when pirates boarded the Maersk Alabama, the 13th Marine Expeditionary Unit and the USS Boxer were on station to support the counter-piracy operations. This year (2010), with Haiti's airfield overwhelmed and their seaport disabled by wreckage following the earthquake, the USS Bataan Amphibious Ready Group and the 22nd Marine Expeditionary Unit provided a significant and sustainable delivery of food, water, and other supplies without the logistical burden ashore.[5]

The origin of the concept of "Enhanced MAGTF Operations"

The U.S. war against terrorism and insurgency has been lasting almost 9 year in Iraq and Afghanistan. Facing insurgents and militias who hide their self among civilian conducting the guerrilla warfare make U.S. force realize that to enhance capabilities of low-level units is the only way to win this war. Therefore, in 2004, the Marine Corps Warfighting Laboratory developed a concept of the "Distributed Operation" which emphasizes on capabilities of individual marines and squad-level, platoon-level formations by revising their table of organization and reinforcing table of equipment in order to engage low-scale conflicts. After 3 years experimentations, to enhance training and equipment, however, could dramatically increase squad and platoon level combat efficiency, in the same time, it also means that the unit would separate from its mother unit and conduct operations by itself. Under this condition, the low-level unit would suffer from higher risk and heavier casualty.[6] Hence, a concept, called the "Enhanced Company Operations," at basis on "Distributed Operation" has been developed since 2007. This concept has set the conditions for employment of highly capable company-sized formations across large, complex battlefields. Over the course of 2years, ECO led to development of standardized company-level intelligence cell (CLIC) and company-level operations center (CLOC) experimentation and capability development.[7]

When the experimental outcome of the concept of the "Enhanced Company

5.Ibid, p.16.
6.General M.W. Hagee, "A Concept for Distributed Operations" (Washington, D.C.: HQ Marine Corps, 25 April 2005)
7.Vincent J. Goulding Jr. "Enhanced Company Operations." Marine Corps Gazette, August 2008, pp.17-19.

Operations" was reviewed, it shows extremely capable of conducting operations in the modern battlefield. The company has successfully replaced the battalion as the smallest tactic formation. Consequently, USMC begins to mull the next question-how to adapt this concept to Marine Corps' conventional capabilities-the expeditionary operations and the amphibious operations. Under this thought, the types of the MAGTF will have a different shape. A concept called "Enhanced MAGTF Operations; EMO" has been developed in 2009. This type of the MAGTF with a main body of the company landing team compare to the "Marine Expeditionary Unit" which is the current smallest formation with battalion landing team. EMO is an approach to expeditionary operations that maximizes the flexibility offered by highly capable tactical formations. EMO builds on ECO to ensure that improvements at the tactical level are matched by those at the operational level and shared across the MAGTF.[8]

The operational requests of the EMO[9]

Table/Organization & Table/Equipment

Marines are intimately familiar with battalion landing team. Built around a standard infantry battalion, the landing team is reinforced with elements from within the MAGTF depending on mission, enemy, and terrain. The landing team has proven itself time and again. Current operations and the demands of future operations point to the necessity of ensuring that company-sized units are equal to the myriad complex tasks on distribute battlefields. Whether conduction "split amphibious ready group operations" or operation hundreds of miles from the MAGTF headquarters off the deck of a littoral combat ship, company-level command has taken on new meaning and must reflect capabilities that run the gamut from security cooperation to kinetic operations. Therefore, the entire company t/o requires reexamination, as does the training regime that produces its commander and headquarters element. If the rifle company requires reinforcement with nonorganic indirect fire assets, combat support, and CSS detachments, and perhaps even joint and/or coalition representatives, then the fundamental t/o must

8.Vincent J. Goulding Jr. "Enhanced MAGTF Operations," Marine Corps Gazette, August 2009, p.14.
9.Ibid, p.16.

be an enabling and not limiting factor. The same is true of the table of equipment. Standardized "unit operation center capability sets," currently extant only at the battalion level and above, must be available in scalable variants at the company level. Moreover, company landing team in not restricted to the ground combat element (GCE). The MAGTF's ability to be effective across the range of military operations also requires nontraditional command arrangements and task organizations, sometimes led by noninfantry commanders. A larger challenge exists in training, manning, and equipping these formations.[10]

Intelligence

Intelligence is central to maneuver warfare, whether from the sea or operating ashore. Forcible entry does not imply massing at the point of attack and bludgeoning the force ashore through predictable colored beaches while vertical assault forces secure beach exits or seize vital chokepoints. To truly attack from the sea, the MAGTF must maintain constant linkage to joint and coalition special operations forces, non-governmental actors, and all levels of other intelligence, surveillance, and reconnaissance (ISR) assets. Company-sized surface maneuver elements cannot afford pitched battles at strongly defended littoral penetration points, and aviation-borne elements cannot afford to fight their way through potentially overwhelming air defenses as they approach the coast or maneuver toward objectives deep inland. The broader requirement of intelligence does not end with the STOM portion of the MAGTF's mission. Once ashore, enhanced company landing teams will generate a much more detailed picture of the battlespace. The training and technical means must exist to share information laterally, to subordinate elements and, over what is likely to be significant distance, to organic higher headquarters and the MAGTF command element.

Command & Control

Tactical command-and-control and communications programs of record do not satisfy the requirements of enhanced company or MAGTF operations. Long-haul communications are still reliant on limited military satellite

10.Ibid, p.16.

linkages, cumbersome equipment, and training-intensive protocols. Viable on the move, over the horizon tactical communications is a nonnegotiable requirement on distributed expeditionary battlefields. Enhanced companies must be able to talk and share data not only with organic elements, but with adjacent, higher and coalition organizations operating in the Joint Force Commander's area of operations, to include interagency and nongovernmental.

The company needs a standardized suite of equipment that can be tailored to the mission, whether it is helicopterborne or conducted from a more static position, The combined arms potential of the MAGTF cannot be achieved without a viable and truly expeditionary digital voice and data communications system that starts at the company level. The MAGTF commander must know where his units are, what their assessment of the situation is, and what products they are generating in their areas of responsibility in order to exert his influence over the joint battlespace. Only then can he adjust his planning and provide the full range of combat and combat service support these units will require. Finally, the enhanced MAGTF will require subordinate units, to include company landing teams, to be able to monitor, intercept and exploit radio, cell phone, and cyber traffic throughout its area of operations. At a minimum, this capability must be the beneficiary of a robust shared information exchange with the MAGTF command element.

Fire support

Fires are first on the list. Highly maneuverable task-organized CoLTs will possess minimal organic fire support assets. Access to all MAGTF, naval, and joint fires is critical to mission accomplishment - perhaps even survival. This is more than a communications issue, and everything from organization to training and equipping requires evaluation. Current configuration and employment of surface fires in the MAGTF must be critically assessed for their ability to provide timely all-weather fires to widely distributed forces, especially during the STOM phase of the operation. Towed artillery must be able to operate effectively below the battery level. Naval surface fires must be robust and responsive. Air delivered fires cannot

be viewed as the only alternative, as suggested by current joint doctrine.

Air-delivered fires are what make the MAGTF unique; however, only represent part of what the naval, joint, and multinational force brings to the table. Company landing teams must have access to it all. Recent combat operations have pointed out issues in all categories. The entire joint terminal attack controller training and certification protocol needs serious evaluation. Lack of standardized terminology and procedures have caused denial of coalition air in critical situations. None of this is acceptable on future battlefields.

Logistics

Seabased and expeditionary logistics must focus on providing the full spectrum of combat service support to tactical formations operating across the breadth and depth of large and complex battlespaces. The challenge does not reside exclusively at the logistics command element. It begins at the infantry battalion, permeates the entire MAGTF and requires effective linkages to the joint force commander. In simple terms, the infantry battalion T/O and T/E is designed to support a "two up, one back" fight with logistics support pulled from higher headquarters. The battalion staff is not manned or equipped to do otherwise. Similarly, combat service support organizations are not optimized to push tailored resupply packages to widely distributed and highly mobile tactical formations, whether from the seabase or even once ashore.

Combat service support elements must be able to do more than replenish and maintain combat arms formations. They must also be viewed as potential maneuver elements themselves, trained to maximize organic direct fire, as well as leverage MAGTF supporting fires and ISR assets. In some cases, CSS elements will need to be reinforced with combat support and even combat units in order to accomplish their mission. It is not enough that every ground unit on the battlefield is a hard target; it must be a lethal tactical formation.

Casualty treatment and evacuation must be assessed from the bottom up. Current operations describe complex ambushes where enemy forces employ large numbers of rocket propelled grenades and other weapons that could have devastating effect on execution

of standard casualty evacuation procedures. Logistics and medical combat developers must develop technologies to extend the "golden hour" and safely move injured Marines from their point of injury to competent medical authorities－without reliance on sophisticated facilities ashore.

Maneuver

Enhancing the MAGTF must occur while simultaneously reducing its weight. The process of MAGTF enhancement cannot automatically start with adding another piece of high-tech equipment. Reducing the MAGTF's load will only be accomplished along a number of parallel tracks, none of which can blindly depend on the science and technology community developing a lightweight armor "silver bullet" for personnel protective equipment or vehicle armor. These approaches start with the individual Marine and his immediate commander, but have implications across the MAGTF.

The MAGTF must reduce demand across all its combat elements. Lighter and more fuel efficient tactical vehicles, exploiting non-traditional fuels, must be developed. As with individual Marines, the level of protection afforded to the MAGTF's ground vehicles must be scalable to the mission. Tactical communications must be multifunctional and use standardized chargeable power sources. Tactical formations must be able to produce usable power and potable water. Miniaturized precision munitions at the tactical level offer the promise of better results with fewer bullets.

Ground tactical units must become the beneficiaries of dependable and tailored precision resupply, eliminating the propensity for small unit leaders and individual Marines to carry extra items "just in case." This resupply capability should include unmanned air and ground systems, thereby reducing time of resupply and the vulnerability of manned systems seeking to accomplish it. (Unmanned air and ground systems see figure 2, 3)

EMO's Future Campaign Plan (See figure 4: MAGTF's Future Types)

In July 2010, the experiment will began in conjunction with the biennial "RIM of the PACIFIC 2010" exercise provided access to amphibious shipping, reasonable joint/coalition higher HQ participation. It is envi-

Figure 2: Unmanned Little Bird; ULB

Source: Ralph L. Featherstone, Determination of Critical Factors in Unmanned Casualty Evacuation in the Distributed Environment，Naval Postgraduate School, June 2009, p.7. <www.stormingmedia.us/88/8811/A881105.html>

Figure 3: Ground Unmanned Support Systems (GUSS)

Source: Vince Goulding, "Enhanced Company Operations & Enhanced MAGTF Operations Experimentation and Capability Development," NDIA Expeditionary Warfare Conference, Panama City, FL, Nov, 19, 2009, p.17. <www.dtic.mil/ndia/2009expedition/GOULDING.pdf>

sioned that the "Company Landing Team" will maneuver from over the horizon into the rugged Kahuku training areas. The training venue is a good fit and an excellent test site for all aspects of the experiment. It will require realistic force distribution to accommodate LCAC employment of the artillery platoon and CH-53D insertion of the rifle company.[11] This exercise can be considered the start point of the concept of EMO. The questions which figured out in the exercise will be the basis of EMO's campaign plan. The EMO campaign plan from 2011 to 2014 as follows:[12]

2011: EMO LOE 1 (Line of Experiment) C2ISR/Fires

1. Develop/assess fires related capabilities that enhance the ability of the MAGTF to support ECO

2. Identify/assess C2 & ISR related capabilities that enhance these functions and enable the MAGTF to fully exploit ECO

2012: EMO LOE 2 Logistics

1. Identify/address logistics capability gaps and develop logistics related capabilities that enable the MAGTF to support ECO

2013: EMO LOE 3 MAGTF (Constructive)

1. Assess the combined impact of the C2ISR, Fires, and Logistics related enhancements developed and tested in previous projects

2014: EMO LOE 4 MAGTF (Live Fire)

11. Vincent J. Goulding Jr. "The Rifle Company Experiment." Marine Corps Gazette, Dec 2009, p. 69.
12. Vincent J. Goulding Jr. "Toward a Modern Seabased Expeditionary Capability." NDIA Expeditionary Warfare Conference, 19 Nov, 2009. < www.dtic.mil/ndia/2009expedition/GOULDING.pdf>

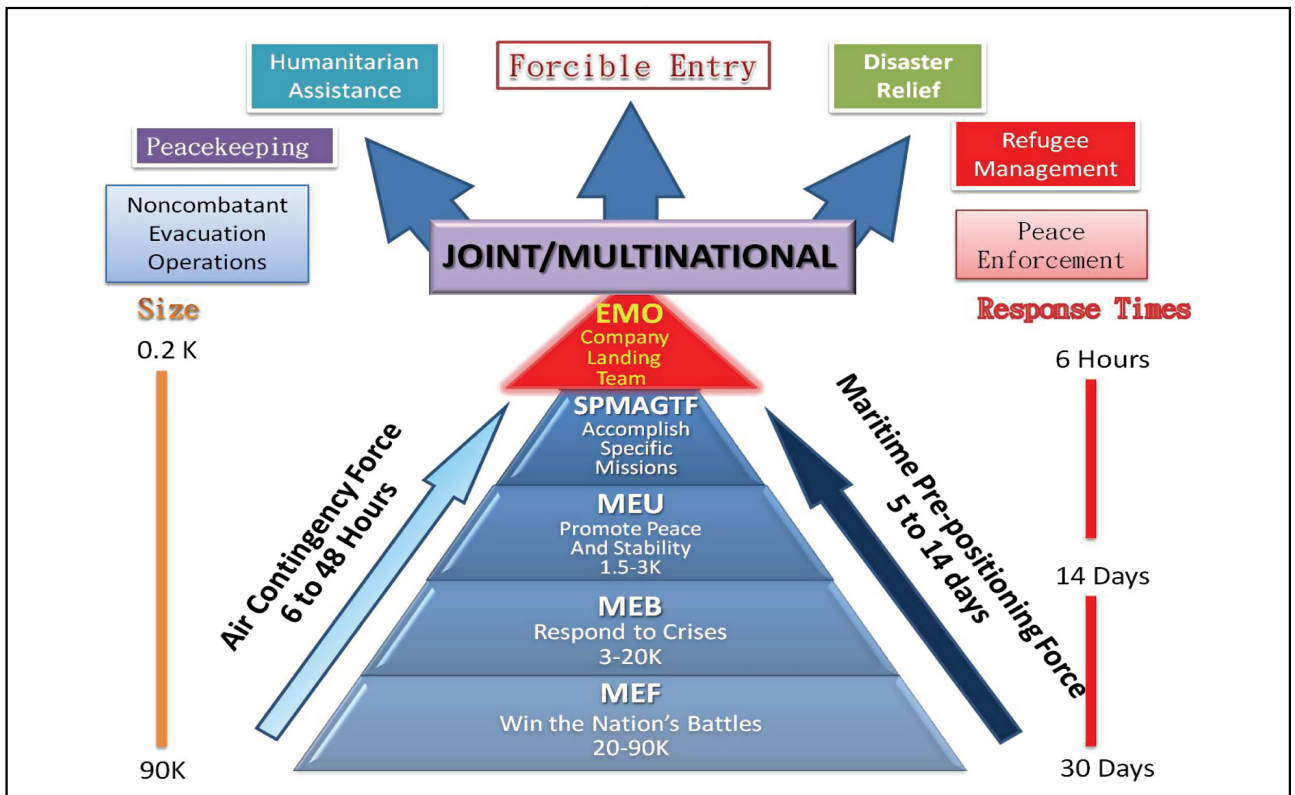

Figure 4: MAGTF's Future Types (Author's Design)

Source: U.S. Marine Corps, "Marine Air-Ground Task Force Concepts," The Basic School Training Command, Dec 2002, p.4.

1. Culminating event for EMO

2. Provide a live force venue that allows MCCDC to assess the combined impact of the C2ISR, Fires, and Logistics-related enhancements developed and tested in previous LOEs.

A Different Thought (Conclusion)

On May 7, 2010, during a discussion with students at the U.S. Army's Command and General Staff College, Defense Secretary Robert Gates revealed that he is interviewing candidates to replace Marine Corps Commandant Gen. James Conway, who will retire this fall. Gates said he will expect the candidates to explain to him what in the future will make the Marine Corps unique and not just a second-and by implication, wastefully redundant-Army. "We will always have a Marine Corps," Gates said. "But the question is how do you define the mission post-Iraq, post-Afghanistan? And that's the

intellectual effort that I think the next commandant has to undertake.” Moreover, during his talk to the students, Gates wondered whether large-scale amphibious landings would ever again be practical in the age of relatively cheap, numerous, and precise anti-ship missiles.[13] According to these debates, we should mull the following question-U.S. Marine Corps is always considered one of the best forces in the world and made many battle successes by carrying out expeditionary and amphibious operations. While facing the change of the battlespace in the Mid-East, U.S. Marine Corps is also unable to get rid of the concern of feasibility of amphibious operations in the modern war. However, Marine Corps seems already to realize this fact by conducting the concepts of the “Distributed Operations,” the “Enhanced Company Operations,” and “Enhanced MAGTF Operation.” In order to overcome the challenges of the future “low-scale regional conflicts” and “small wars” and clarify the doubt of the value of the Marine Corps in the era of decreasing possibilities of conducting large-scale amphibious operations.

By probing into the change of the MAGTF, we should have different thought of the landing operations. Whether the large-scale amphibious warfare will continue? Under the condition of developing the advanced amphibious landing craft, whether the PLA, as U.S. Marine Corps, is able to conduct several small-scale landing operations regardless of the restriction of the colored beachhead? And our military has long-history to conduct war games based on the PLA’s large-scale landing operations. In the time, whether our low-level units are capable of engaging the enemy in the distributed battlefield? These are the important questions which need to be deliberated. ⚓

Author:
Profile: Lu Wen-hao, He graduated from class 84 of Army academy. He received master degree of Military Study in Marine Corps University of U.S. He also graduated from class 2009 of U.S. Marine Corps Staff College. He is a commanding officer of Cadet Command in Management College of National Defense University.

13.Robert Haddick, “The Marine Corps just another army?,” smallwarsjournal.com,, May14, 2010, <http://gunnyg.wordpress.com/2010/05/15/is-the-marine-corps-just-another-army-by-robert-haddick/>