

Marine Artillery and Fixing the Force  
EWS Contemporary Issues Paper  
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To  
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## Introduction

In 2000, the 32nd Commandant of the Marine Corps, General James L. Jones, ordered a review of artillery within the Marine Corps, "fixing the artillery - bringing robustness back to the Marine artillery."<sup>1</sup> His vision was to build an artillery organization capable of providing flexible and lethal fires to the Marine air ground task force (MAGTF). As a result, a triad of ground based fires consisting of the Expeditionary Fire Support System (EFSS) rifled, towed, 120mm mortar; M777E2 lightweight, towed, 155mm howitzer; and the High-mobility Artillery Rocket System (HIMARS) were developed to provide the MAGTF commander with flexible, scalable, and lethal ground based fire support options. After a decade of acquisitions, the moment is within sight; nearly all the elements of the triad of artillery fires have been fielded and are being employed in the current operating environment (COE). Still, no consensus exists within Marine artillery of how best to train, equip, and employ artillery units deploying in support of the MAGTF. Nevertheless, artillerymen must be prepared to meet the evolving requirements of naval expeditionary operations as well as the expeditionary requirements of the future MAGTF to maintain the Marine Corps as a force in readiness.

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<sup>1</sup> Patricia Slayden Hollis, "Fixing the Marine Artillery", Field Artillery Journal, September - October 2000, 3.

## Background

Artillerymen must be wary of how Marine artillery is employed within the current operating environment. The improvement in military-tribal relations in Iraq, restrictive rules of engagement associated with urban operations, and low tolerance for collateral damage by commanders have made traditional area fire weapons nearly obsolete. Time constraints and approval authorities associated with the positive identification (PID) of hostile personnel possessing hostile intent make artillery fires less responsive. As a result, commanders are becoming overly reliant on precision munitions to address time sensitive targets (TSTs). Artillery systems, when employed properly, are capable of delivering accurate and timely fires without the use of precision munitions. At the same time, advances in target location, mensuration, and munitions guidance control are making artillery systems more valuable. Programs like the Target Location Designation Hand-off System (TLDHS) reduce observer target location error. Software like the Precision Strike Suite - Special Operation Forces (PSS-SOF) allows for precision target location without subsequent adjustment. Advances in munitions have led to evolutionary developments such as the fuze kit adapter and revolutionary developments such as the *Excalibur* Global Positioning System (GPS) guided artillery round. Artilleryman must educate

commanders on how to employ mortars, howitzers, and rockets to their advantage in the COE.

The current operating environment of Iraq and Afghanistan are situations limited by time. While the campaigns will pass, the lessons learned should not be forgotten. Fires will be more difficult to employ in the future as the Marine Corps and Navy face new and complex adversaries. Non-state actors, tribal warlords, state sponsored terrorists, and others will challenge the MAGTF commander by using human populations, urban terrain, contested national boundaries, and cultural differences to their advantage. The problems, obstacles, limitations, and constraints of Iraq and Afghanistan will be evident in future warfare, magnified by global media, and elevated by global public opinion.

### **Evolving Requirements of Naval Expeditionary Operations**

Marine artillery must continue to evolve as the Naval service's joint vision progresses. The Navy and Marine Corps have addressed the foreseeable future of joint warfare in *Sea Power 21* and *Marine Corps Strategy 21*. The Navy has merged blue-water and brown-water doctrines to develop "a broadened strategy in which naval forces are fully integrated into global

joint operations against regional and transnational dangers."<sup>2</sup> The key concepts of the strategy of *Sea Power 21* include sea-basing, sea-shield, and sea-strike which will enable the forward positioning, defense, and employment of MAGTFs around the world without the constraints of securing and maintaining basing rights in foreign nations. As stated in the joint maritime vision of the Navy, Marine Corps, and Coast Guard, "the sea is a vast maneuver space, where the presence of maritime forces can be adjusted as conditions dictate to enable flexible approaches to escalation, de-escalation, and deterrence of conflicts".<sup>3</sup>

Marine Corps concepts of expeditionary maneuver warfare (EMW), operational maneuver from the sea (OMFTS), and ship to objective maneuver (STOM) are designed to complement Navy doctrine in order to provide for a unified naval vision.<sup>4</sup> However, artillerymen must be capable of communicating how the triad of fires will support evolving Marine Corps concepts. OMFTS and STOM will drive requirements for long-range fires and highly mobile fire support systems capable of aviation lift. The MV-22 Osprey tilt-rotor aircraft was designed to facilitate long-range and mobile fires. Furthermore, the EFSS was designed

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<sup>2</sup> Admiral Vern Clark, *Sea Power 21: Projecting Decisive Joint Capabilities*, Proceedings, October 2002, <http://www.navy.mil/navydata/cno/proceedings.html> (17 December 2007).

<sup>3</sup> "A Cooperative Strategy for 21st Century Seapower", Marine Corps Gazette 91, no. 11 (2007): A-4.

<sup>4</sup> Programs and Resources Department, Headquarters Marine Corps, *Concepts and Programs*, 2005 (Washington D.C.: GPO, 2005), Chapter 1, Pg 9.

to be internally loaded in the MV-22. According to General Jones, "within the expeditionary context, the EFSS' principle role will be to support the air assault elements of the STOM during OMFTS."<sup>5</sup> The EFSS and MV-22 allow the MAGTF commander to shape a non-contiguous battlespace through artillery raids, while providing close fires to the subordinate elements of the MAGTF during operations throughout the spectrum of conflict. As a MAGTF asset, an EFSS battery may be employed in direct support (DS) of the ground combat element (GCE), as a supporting element in a limited raid, or in general support (GS) of other elements of the force.

Likewise, the M777E2 lightweight howitzer is designed to operate with the MV-22 as an external load for ranges up to 50 miles.<sup>6</sup> While the M777E2 is principally a towed asset and does not have any appreciable surface mobility advantage over the M198 medium howitzer, it is more easily lifted by tilt-rotor and helicopter assets. The M777E2 is meant to replace the M198, and in doing so, to be the DS artillery asset within the division.<sup>7</sup> While the M777E2 is best employed in a DS relationship with the

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<sup>5</sup> Patricia Slayden Hollis, "Fixing the Marine Artillery", Field Artillery Journal, September - October 2000, 3.

<sup>6</sup> Sergeant Donald Bohanner, "Expeditionary Fire Support System", About.com/US Military, 21 February 2005, <http://usmilitary.about.com/od/marineweapons/a/efss.htm> (17 December 2007).

<sup>7</sup> Patricia Slayden Hollis, "Fixing the Marine Artillery", Field Artillery Journal, September - October 2000, 3.

GCE, it increasingly has relevance as a MAGTF raid element given the nature of distributed operations (DO).

The HIMARS is commonly understood to be a MEF asset, but could just as likely be employed as a MAGTF asset within the MEB. Potentially, HIMARS could be transported via C-130J and directed to operate as a Marine Expeditionary Unit (MEU) asset. It is most likely to be deployed on maritime pre-positioned ships (MPS) or via strategic lift. It is nevertheless, a component of the triad of fires. Every artilleryman should be capable of communicating the capabilities and limitations of the system, as well as the considerations for deploying a HIMARS battery to the MAGTF commander. The introduction of new systems will require additional education, as force fires coordinators, fire support officers, artillery liaison officers, and their fires chiefs will be expected to make recommendations for employment and coordination.

As MEUs and MEBs begin to develop tactics, techniques, and procedures for operating from Navy sea-bases, for conduct over-the-horizon sea-strikes into the littorals, and become involved in the concept of sea-shield, new and unconventional requirements for Marine artillery will inevitably surface. Artillerymen must be prepared to support these requirements, leveraging all the fire support assets of the MAGTF to the commander's advantage.



### Future MAGTF Environment

As the MAGTF returns to expeditionary operations, artillery units will need to re-equip and train to accomplish artillery specific mission essential tasks (METs). Commanders will require education to break the mindset of the COE. Units experienced in provisional operations will return to the continental United States (CONUS) to refit with a new artillery system. Moreover, some may be expected to refit with both an artillery system and a mortar system.

In the future, fire support personnel, specifically battery commanders, artillery liaison officers, fire support officers, and fire support coordinators, will be asked to define their requirements to a MAGTF commander. In an ever uncertain world, the power of the MAGTF is in task organization. This means that the commander will take what he requires to accomplish an anticipated mission. Furthermore, this means that what he does not need will remain behind in CONUS or be forward positioned as necessity dictates. For instance, the GCE commander may require a tank platoon and additional wheeled-vehicle assets to accomplish a potential mission in Iraq and may not require artillery assets given the current COE. If a MAGTF is flown to Iraq, this may not be a problem if the "relief in place" or "transition of authority" (RIP-TOA) includes taking over the

predecessor's equipment. If the MAGTF is a MEU, then equipment is constrained by the availability of space on ESG ships. In this scenario, fire support assets are in competition for space with vehicular assets. The fire supporter will be required to advise the commander on the optimum mix of artillery, or be required to validate taking artillery systems at all.

Marine artillerymen are taught to communicate the capabilities of a six-gun battery. Increasingly, fire supporters are asked to define the capabilities of four guns, two guns, and, in some cases, forecast the impact of taking no guns. While the capabilities of a six-gun battery are commonly understood, the capabilities of a six-mortar battery are not. Furthermore, a fire support officer may be able to communicate the degradation of support inherent in a reduced artillery capability. However, what a reduced mortar battery or mixed battery will afford a MAGTF commander is not as simple to define. These lessons will be learned in the operating forces and refined to suit the needs of commanders.

While a six-gun battery is necessary to destroy an armored threat in conventional warfare and a six-mortar battery is assessed to affect virtually any other threat, the mortar can not currently counter an armored threat.<sup>8</sup> The EFSS is initially being fielded with high-explosive, white phosphorous,

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<sup>8</sup> Major John Swope, conversation at MARCORSSYSCOM, 17 December 2007.

illumination, and practice rounds. Currently, the EFSS has no improved conventional munitions or similar capability. The reality of modern warfare determines that a mixed battery of howitzers and mortars will be necessary to operate across the full spectrum of conflict. Artillery commanders must be capable of employing both the M777E2 and EFSS if they are to furnish flexible fire support. Fire supporters must not only be able to communicate the capabilities and limitations of both systems, but also must be able to recommend how best to employ each system to create a combined arms effect capable of accomplishing the commander's end-state. Artillerymen must learn to market capabilities to commanders in order to allow them to make decisions, rather than default to the status quo of the six-gun battery.

### **Counterargument**

In the absence of well trained, knowledgeable, experienced fire supporters, infantrymen and aviators are rising up to provide their commanders with the best fire support they can provide. In the absence of the combined arms exercise (CAX), and out of the necessity of the COE, people other than artillerymen are advising commanders not only how to employ artillery, but also how to use other fire support systems to overcome the limitations of artillery. According to Captain

R.C. Mitchell in his Marine Corps Gazette article titled, *Employment of the EFSS*, "The artillery community does not have the resident mission, structure, or TTP to employ the RT 120mm mortar effectively...Immediate, responsive indirect fires from the RT 120mm mortar are achievable by fielding the EFSS to the Marine infantry." According to the Marine Corps Warfighting Publication 3-16.1, Marine Artillery Operations, the mission of Marine Corps field artillery is to furnish close and continuous fire support by neutralizing, destroying, or suppressing targets that threaten the success of the supported unit.<sup>9</sup> Marine artillery currently has the table of organization and equipment to both employ the EFSS and the M777E2, as well as to provide close and continuous fire support. More importantly, Marine artillery has the mission. While Marine artillery is currently over tasked with provisional missions, in the long-term, artillery regiments will remain flexible and responsive. While it is up to the artillery community to determine how the mission will be accomplished, it is up to the commander to decide whether he will employ artillery. Artillerymen must learn to market capabilities if they expect to retain the mission.

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<sup>9</sup> MCWP 3-16.1, *Marine Artillery Operations*, Headquarters Marine Corps, Washington D.C., 2002, p. 1-1.

## Conclusion

The nature of the world is uncertain and chaotic. Naval expeditionary doctrine is evolving to counter emerging conventional and non-conventional threats. Marine artillery must rise to the challenge, explore new ideas, refine new tactics, and ensure that whether employing mortars, howitzers, or rockets, the "King of Battle" is ready to furnish accurate and timely fires.

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