

Mine Countermeasures

Addressing the quiet killer threatening to halt the U.S. Naval Service

by Capt Kyle Endyke

Twenty-seven years ago, following the success of Iraqi sea mines in significantly restricting naval operations during the Gulf War, a Navy lieutenant commander wrote, “the hazards of trying to complete an amphibious landing through mine-infested waters have once again been relegated to after-action reports and ‘fix it’ solutions with an all-too-low priority.”¹ Almost three decades later, the naval Service struggles with the exact same mine-countermeasures (MCM) problem. The emergence of future operating concepts such as *Littoral Operations in a Contested Environment and Expeditionary Advanced Base Operations* (EABO), coupled with the most recent *Commandant’s Planning Guidance* (CPG), has started a new era of Navy and Marine Corps integration. With it comes added complexities with regard to MCM and how the Naval Service will operate in a mine-contested environment. Unfortunately, current technology, tactics, techniques, and procedures are woefully antiquated. Regardless of whether or not EABO is the doctrinal future of the Marine Corps, the ability to project power into and from the littorals is of central importance to the Marine Corps once again. The Marine Corps is returning to its roots as a Fleet Marine Force and cannot currently overcome the challenges associated with the ability to maneuver in close and confined seas in a mine-contested environment without a significant risk to the mission and force. Specifically, the naval Service is not adequately addressing the adversary mine threat or corresponding

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MCM consequences to assure freedom of maneuver in the littorals in the future operating environment. This article identifies the problems in creating a disjointed and complex effort to solve the MCM problem, provides historical and current perspective of the critical nature of mine warfare, and illuminates ongoing efforts that will require broader support in order to continue progress toward an integrated Navy and Marine Corps MCM solution. It is not meant to serve as a complete solution to the MCM problem, but to make decision makers aware of areas where significant focus needs to be applied.

Through the lens of conceptual future operating environments, a coastline with a fully integrated defense-in-depth is the most daunting scenario—regardless of the operation. It is all but universally accepted that the future of the Marine Corps lies in its ability to integrate with the Navy and operate in the littorals. As the geopolitical picture becomes increasingly polarized, the probability increases that these littorals will be contested. Just as important is the fact that an amphibious assault on a massive scale in a joint operation is far from the only mission that would require MCM. It is crucial for the Marine Corps to carry its weight in an integrated MCM effort to ensure the freedom of littoral mobility for the entire range of military operations. With the CPG stressing a return

to the sea, every potential mission the Marine Corps undertakes (including humanitarian assistance/disaster relief, operations in support of littoral naval maneuver, and amphibious assaults) must first find a way to navigate mined littorals.

Adversaries of the United States have maritime mine inventories that number in the tens of thousands. These mines are not all moored contact mines of which many are familiar with. Today, many different triggering systems, such as acoustic, magnetic, and pressure triggers, exist on a vast array of deadly, modern mine types with multiple different emplacement methods. All of these factors create a veritable plethora of mining possibilities which result in a tailored mining system that can severely impact virtually every aspect of the operating environment. This capability exists today in environments Marines could be called to, and there is no practical integrated doctrine to maneuver Marines to shore in this environment. In fact, it is even worse than it sounds. Doctrinally, the Navy is responsible for MCM seaward of the clearance coordination line, while the Marines are responsible for direct mine and obstacle breaching landward of the clearance coordination line. The Navy, however, does not conduct proofing operations on the seaward side. Therefore, it is incumbent on the Marine Corps to proof Navy seaward clearing operations. This dichotomy in doctrinal overlap creates gaps in each Service’s MCM capability. Specifically, there is no Navy or Marine Corps unit currently capable of conducting MCM operations in the surf zone (SZ) with more than limited ability.

port of MCWL. Additionally, it directs divisions within MCWL to coordinate their efforts in order to refine the LMU, observe and report on emerging relevant science and technology, and define future experimentation opportunities with uniformity.

If one connects the dots between the LMU concept of employment for experimentation, TACMEMO, and CWC, it starts to become a little clearer how it is possible to have a capability to navigate the very shallow water, through the SZ, onto the beach, and toward the objective while mitigating command and control transition gray areas in mine-contested littorals. The LMU would not necessarily be a standing unit but a capability that exists within a future force naval unit. As required, the ExWC (who, it should be noted, does not replace the commander, landing force, but rather seems like an appropriate fit for the position) could composite a scalable LMU to address the maritime MCM concerns of the landing force. He could then maintain excellent tactical awareness of the assault lanes and craft landing zones and decrease response time and confusion of the common operating picture when adjustments are required.

Finally, technological developments and experimentation are beginning to address this issue. Multiple organizations are developing technology to identify and neutralize mines in the SZ. Some of these prototypes and capabilities are being thoroughly tested and scrutinized by acquisition personnel within the DOD in order to assess their value to the future operating force. Many, however, lack the written requirements and the associated funding for development. MCM simply is not currently a high enough priority to secure the funding needed to improve the circumstances of the naval Service in the SZ.

Experimentation, in its purest form of trying out new ideas or methods, also takes the shape of conceptual experimentation. At a table-top exercise in 2019, dozens of agencies from the Navy, Marine Corps, and Air Force planned an amphibious landing in a mined environment and identified more than 50 issues that require so-

lutions to solve the MCM problem. These problems will shape the technological and conceptual experiments in the coming years. As each identified issue gets resolved and technological gap gets filled, the Navy and Marine Corps come closer to a cohesive, cooperative solution to MCM in the littorals, but they are not there yet. This exercise should be made into an annual event so each year any solutions discovered for the identified gaps could be incorporated to assess actual progress toward an MCM solution.

There seems to be an unintentional yet inexplicable naiveté toward MCM and the possible ramifications of the relatively quiet and disjointed Navy and Marine Corps efforts continuing to run in parallel. This is not to claim the naval Service is not doing anything to address mine warfare and MCM. Both the Navy and Marine Corps are dedicating personnel and resources to try and modernize MCM capabilities. The problem is two-fold: neither the Navy nor the Marine Corps appear to be committing a proportional amount of effort toward a problem that could cause catastrophic loss of life and materiel if not addressed immediately, and there needs to be a more concentrated effort to involve personnel in decision-making bodies across Service lines. Funding must not be prohibitive for experimentation to take place to modernize the technological approach to MCM. There must also be a paradigm shift in personnel integration. The DC CD&I example previously mentioned is only one potential access point for integration. There are multiple events at multiple levels where the opportunity exists for the two Services to have integrated teams recommending cohesive priorities to decision makers. This will elevate MCM through the proper channels, so doctrinal and technical requirements can be adequately addressed. In any case, adjustments need to be made as quickly as possible. Right now, far too many gaps exist for the naval Service to be confident in its ability to conduct MCM through the SZ and, therefore, accomplish the full range of missions necessary to support EABO, *Distributed Maritime Operations*, and

Littoral Operations in a Contested Environment.

Notes

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6. Gen David H. Berger, *Commandant's Planning Guidance*, (Washington, DC: July 2019).
7. Expeditionary Warfare Directorate, Program Executive Office Littoral and Mine Warfare, *U.S. Navy Mine Casualties Chart*, (2009), available at <http://cimsec.org>.
8. Tyler Rogoway, *Naval Mines Are A Growing Threat Near the Mandeb Strait, The Warzone (The Drive)*, (May 2017), available at <https://www.thedrive.com>.
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10. Tyler Rogoway, "Pork Floats!: Congress Inserts Three Littoral Combat Ships The Navy Doesn't Want Into Budget," *The Warzone (The Drive)*, (September 2018), available at <https://www.thedrive.com>.
11. *Commandant's Planning Guidance*.
12. Ibid.
13. Department of the Navy, *TACMEMO 3-56.1-19: Integration of Navy And Marine Expeditionary Warfare Capabilities Into the Composite Warfare Construct*, (Washington, DC: 2019).
14. Ibid.

