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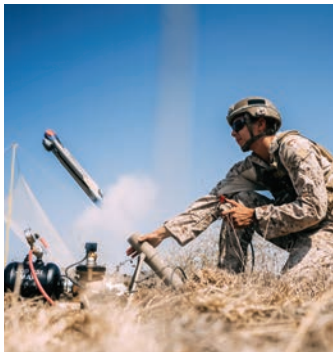

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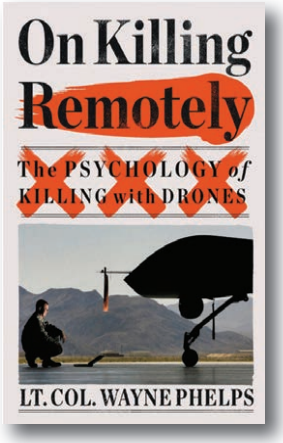

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2022 LtCol Earl "Pete" Ellis Essay Contest

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In an essay of 2500 to 3000 words, answer the following question:

Loitering munitions, semi-autonomous drones, and cyberspace operations are changing the character of war in the 21st century. How does this change drive a new approach to combined arms and how can the MAGTF retain a competitive advantage in the future operating environment?

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MARINE CORPS Gazette
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AUGUST 2022

Editorial: A Modern Maritime Multi-national MAGTF

This month, we have the unique opportunity to present a group of articles on current operations "from the fleet and from the field" focusing on one of the Corps' premier warfighting MAGTFs, the 2d MEB. Starting with an introductory letter on page 10 from BGen Anthony M. Henderson, the Commanding General of the MEB at the time these articles were written, we present a series of six works covering the gamut of the MEB HQ forming, planning, preparation, deployment, and training as part of the NATO Exercise COLD RESPONSE 22 in the North Atlantic and Norway. These articles provide important insights into how MAGTFs will operate today and in the future—as maritime HQs, as part of combined, joint forces, and in the case of 2d MEB aboard an allied (Italian) aircraft carrier as their flagship.

This month's edition also showcases this year's winning essays from the MajGen Harold W. Chase Prize Essay Contest starting on page 82. We also cover a range of topics in sections on Future Force Design/Innovation, Training & Education, Strategy & Policy and Irregular Warfare. Highlights include "IW Rising" by LtCol Solon McGill on page 35, "Title X and Gray-Zone Tactics" by Capt Richard W. Protzmann on page 56, "The Learning Insurgency" by Mr. Donald E. Vandergriff on page 64, and "Military Build-Up in the East China Sea and the Spark for Conflict" by Maj Dylan Buck on page 72. We also present the return of "Marinus" with a second article analyzing the Russian invasion of Ukraine through the lens of maneuver warfare on page 90, and the final article in Maj B.A. Friedman's series "Reconnaissance-Strike Tactics and Maneuver Warfare III" on page 40.

Finally, as I write this editorial the Corps is mourning the loss of former Assistant Commandant Gen Richard I. "Butch" Neal who passed away on 17 June. Gen Neal was the epitome of a tough New England kid throughout his distinguished career both in uniform and as a senior mentor to a generation of Marine Corps and joint force leaders. From service as an Artillery Forward Observer in Vietnam to U.S. Central Command's media spokesman during Operations DESERT SHIELD and DESERT STORM, Gen Neal's charismatic leadership, sharp wit and strength of character made a lasting impression and all who knew him. A truly unique personality and Marine's Marine, he will be sorely missed.

Christopher Woodbridge

MajGen Harold W. Chase Prize Essay Contest Winners

Capt Walker D. Mills

Maj Jacob Clayton

Erik R. Limpaecher

Photo Unavailable

Maj Christopher A. Denzel

Capt Margaret Ann Mello

Maj Bradley J. Mohr

The *Gazette* is proud to announce the winners of the 2022 MajGen Harold W. Chase Prize Essay Contest. Of note, due to circumstances beyond our control, the 2021 contest was suspended and those entries were carried forward into this year's judging.

The essays competing were all well-written, and the winners definitely fit into the contest theme of challenging the status quo and examining radical change within the Marine Corps.

All of this year's winning essays examine different aspects of implementing the historic changes defined in *Force Design 2030* and Expeditionary Advanced Base Operations and take a look at some of the resultant requirements and effects across the Corps.

This year's first place winners are Capt Walker D. Mills, Maj Jacob Clayton & Erik R. Limpaecher for their essay titled "Powering EABO: Aluminum Fuel for the Future Fight." The authors take on the logistics challenges of sustaining energy for distributed Stand-in Forces operating inside an enemy's weapons engagement zone through the use of alternative fuel sources and advanced/emergent technologies.

The *Gazette's* second place winner, Maj Christopher A. Denzel, takes a critical view of the Corps' warfighting doctrine in "Achieving Decision on The Battlefield: Redefining Maneuver Warfare as Method, Not Philosophy." The author identifies oversimplification and false dichotomies as partial sources for the Corps incomplete adoption and fundamental mis-application of maneuver warfare as doctrine, and examines the combined employment of maneuver, attrition and positional warfare in actual battlefield success.

This year the Editorial Advisory Panel also recommended two essays for honorable mention: first honorable mention goes to Capt Margaret Ann Mello for her work "There's No L in MAGTF." Capt Mello looks into the relative ineffectiveness of the accepted model of large-scale logistics combat elements in the conduct of EABO and distributed operations.

"Preparing to Deceive: Harnessing the Art and Science of Deception for Action in the Littorals" by Maj Bradley J. Mohr was awarded second honorable mention. In this essay the author examines the importance of military deception and OIE to the employment of Stand-in Forces is the congested littorals of a contested maritime environment, and the necessity to train and resource Marine and naval forces in the conduct of deception operations.

The first and second place essays can be found beginning on page 82 and the honorable mentions will appear in an upcoming edition of the *Gazette*. Congratulations to all of this year's winning authors.

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Org: **West Coast Drill Instructor Association SgtMaj Leland D. "Crow" Crawford Chapter**
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808–366–0199
arhulett@gmail.com
Alternate POC: Gregg Stoner
619–884–9047
greggstoner22@aol.com

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Org: **West Coast Drill Instructor Association**
POC: GySgt Alan Hulett (Ret)
808–366–0199

*SgtMaj Leland D. 'Crow' Crawford Chapter wants to hear from current and former drill instructors who are interested in becoming members. NO dues or fees https://wcdia.us.

Correction

In the *MCG,* May22 issue Dr. Jennifer L. McCullough's article titled, "Check Tables HSI" should have been titled, "HSI." The *Gazette* apologizes for this oversight.

Marine Corps Gazette

2022 Monthly Themes

November Edition
Themes: History, Leadership, and Esprit de Corps
Author drafts due: NLT 22 August 2022

December Edition
Author drafts due: NLT 19 September 2022

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Seize and Hold: An Open Message to the Enlisted Infantryman

"The infantry Marine and the greater Ground Combat Element have been, is, and will remain the main effort of the United States Marine Corps. No single element of the MAGTF wins the war because we are a combined arms team capable of integrating every command and potential new fighting domain, but the infantry remains central."
—19th Sergeant Major of the Marine Corps Troy E. Black

From Iwo Jima to Pusan; Khe Sahn to Kandahar; Falluja to Marjah, one thing has remained constant: infantry Marines were tasked to seize and hold key terrain. The "in order to" may change, but tomorrow's battlefield still requires infantry Marines to seize and hold key terrain. This is why the infantry is and remains the main effort.

In the last three years, there has been a lot of discussion regarding the transitions that the Marine Corps must go through to remain ahead of the competition and a lethal warfighting organization while being able to respond to all manners of crises. The Marine Corps recently began fielding modernized and technologically advanced platforms like the F-35B variant of the Joint Strike Fighter, the CH-53K heavy-lift helicopter, the AH-1Z and UH-1Y light attack helicopters, the Amphibious Combat Vehicle, improved communication systems, and updated precision strike capabilities—just to name a few. These advancements are all designed to improve the lethality of ground forces engaged in close combat.

In the face of these advancements, one thing remains unchanged: the infantry must seize and hold key terrain. Without this essential contribution to the warfighting effort, nothing else matters.

History demonstrates this has always been true for the Marine Corps and remains true even in our newest concepts of seizing and holding expeditionary advanced bases in support of larger joint force and naval campaign plans. When nuclear weapons were introduced, infantry formations were deemed obsolete and no longer necessary. However, infantry formations are indeed deployed to deter the use of such strategic weapons.

History would argue that the infantry, too, is a strategic weapon of deterrence. Advanced technology alone will not win the future fight. Warfighters win battles when their boots are on the ground, armed with little more than a rifle, and look their adversary in the eye and say, *not on my watch*.

Infantry Marines do not fight alone, however. They are often the first or last line of defense, where the stakes are higher, operating in full view of the enemy. They are asked to fight the country's battles like no other, do more with less, and always come out on top. Infantry Marines pride themselves on being among the first to run to the sound of gunfire and engage the enemy. Considered fearless yet unassuming, they do not boast or brag but just work hard for the fellow Marine to their right and left.

They deliver tactical victories to larger operations and strategies.

At times, infantry Marines are often called knuckle draggers with bad attitudes and boorish behavior who are always looking for a fight. Yet, they live for the moment when the country calls. They deliver tactical victories to larger operations and strategies. Following in the footsteps of their Marine Corps forebears they are willing to sacrifice themselves for their Marines.

They fight the enemy with every weapon at their disposal to include their calloused, bloody, bare hands if needed. The Marine infantry refuses to quit or lose in the face of adversity. They will neither flag nor fail.

At the recent GCE Operations Chief Symposium, CMC Gen David L. Berger stated flat-out that "the infantry is the Marine Corps' main effort." He continued by saying the infantry is the reason the service will win the next fight—either in competition or conflict.

Infantry Marines have one simple demand of themselves—to be ready for the next battle—and they know that hard, realistic training is what they need to prepare for that certainty. More importantly, it is what they want, all part and parcel of the Spartan life they chose. Infantry Marines have pride in "the suck," pride of being an infantry Marine, and pride in knowing that if something happens in the world that they will be the ones that get to make things right, they are the ones that stand tall and say *I got this* as they move forward into the fight.

They joined for the esprit de corps, to be the ones that protect others, longing to be at the tip of the spear when the decisive blow is landed.

Let this serve as a reminder to all infantry Marines: stand up tall, lift your chin, stick out your chest, and remind the world around you where the Marine Corps' center of gravity is. The infantry is the essential element of Marine expeditionary forces and the reason this country can sleep well at night without fear.

The next generation's infantry formation is more lethal than ever. These formations are already equipped with a rifle that delivers better accuracy and range, better optics, vastly improved night vision capability, targets that simulate enemy movement, and lighter gear that provides both better protection and improved mobility.

The Service is also investing heavily in its most precious resource—the human—and holistic human performance programs. The new Infantry Marine Course is not just improving the quality of infantry Marines reporting to the fleet

Letters of professional interest on any topic are welcomed by the *Gazette*. They should not exceed 300 words and should be DOUBLE SPACED. Letters may be e-mailed to gazette@mca-marines.org. Written letters are generally published three months after the article appeared.

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but it is also improving the quality of the small unit leader that trains and leads them. This approach will very soon lead to new leaders' courses that will improve all echelons of small unit leaders' abilities to lead formations in all environments to include the critical and challenging littorals.

The Marine Corps is far from finished with this transformation. Future infantry Marines can expect to see improved assault/anti-armor capabilities, sUAS, organic precision fires, next-generation tactical communications, and the tools to integrate all of these increased capabilities. These assets are being fielded all the way down to the smallest tactical formations. Those formations must be led by our best and most-capable young leaders. This is what drove the Service-wide change of how we evaluate, promote, and empower our young leaders.

This talent, developed and refined, must be kept within our ranks. This is a steadfast truth. These small units must, as it has always been, be led by the sturdy professionals and practitioners of war who call themselves The Few and The Proud to remain the most ready when our Nation is least ready. This is how we meet the Commandant's drive for a more capable and better trained and educated force.

Future infantry formations require educated and experienced leadership from its enlisted ranks. The operations chiefs, the most senior enlisted infantry leaders, were tasked by both CMC and the Sergeant Major of the Marine Corps at the recent GCE Operations Chief Symposium to find and pursue better ways to keep our best infantry Marines in our ranks.

Infantry Marines of the future should expect to see improved opportunities to shape where and how they serve, to improve their quality of life through tough and realistic training, additional resources to take better care of their families, and rewards for continuing to answer the call.

Make no mistake, the Nation will call again and need her Marines to go forward. When that happens, experienced leaders are needed in that formation—experienced infantry Marines who have been honing their craft in the swamps of Camp Lejeune, the deserts of Twenty-nine Palms, the hills of Camp Pendleton, the jungles throughout the Pacific, and everywhere in between, preparing their squads and platoons. Marines never have the luxury of choosing the time and place of answering the Nation's call, but no matter the clime or place, they always answer and so it will be for our future infantry formations.

"I need you for tomorrow's fight. The young men and women you are training right now need an experienced leader, not the next Marine up. Don't leave it to someone else. Be a part of the change that will allow us to be great for another century. You are the main effort and our nation and our Corps need you. Seize and Hold!"
—MGySgt Robert N. Robinson, 5th Marine Regiment Operations Chief

MGySgt Beau F. Hornsby,
MGySgt Robert N. Robinson,
MGySgt Justin W. Aiken,
MGySgt Tim P. Hanson &
MGySgt Joshua P. Adkins

"Marine Corps Groundbased Air Defense"

I would like to thank Col Lobik for his May 2022 update on the Groundbased Air Defense (GBAD) Program Office and overview of the current and future state of Marine Corps GBAD. Col Lobik correctly identified that many of our tactics, techniques, and procedures to mitigate the threat from enemy air have atrophied as a result of the assumption, and realization, that the United States has achieved air supremacy in past conflicts. Marine leaders would be wise to re-think this assumption moving forward as the air domain will almost certainly be contested in the future.

As a former Low-Altitude Air Defense Marine, I routinely found myself challenged to ensure those that I was advising planned for and took actions to counter the enemy air threat. This was true both in training against a notional threat, and in combat helping design and implement integrated air defense systems for the MAGTF. I am heartened to hear that our senior leadership has provided the GBAD Program Office and Operating Forces with the necessary support and resources to counter threats posed by potential peer and near-peer adversaries.

... the MAGTF will continue to be largely reliant on the Marine, their Stinger missile, and a sensor ...

While the approach and technology described in the article are evolutionary, for the near future it seems as though the MAGTF will continue to be largely reliant on the Marine, their Stinger missile, and a sensor for close-in, short-range, groundbased air defense. I encourage the GBAD Program Office to continue to consider highly interoperable, mobile, and lethal systems that support our maneuver warfare doctrine. While we await those systems to be fully fielded, it will be incumbent upon Marine leaders to assume that the airspace will be contested in future fights and take actions to mitigate the threat to their units through active and passive air defense measures.

LtCol David McCulloh (Ret)

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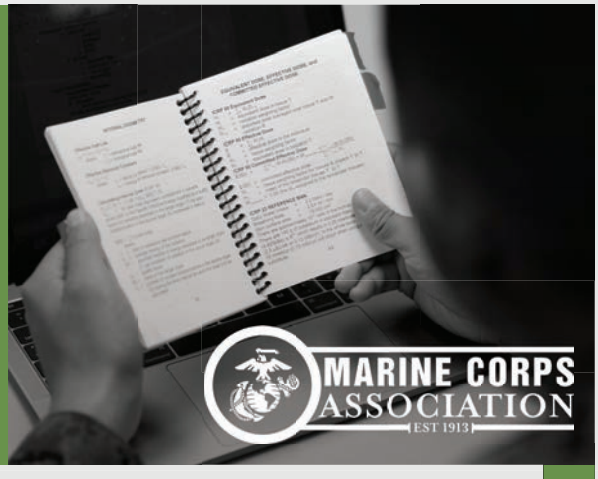

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A Message from the Commanding General, 2d MEB

Such as brigades hand down forever

by BGen Anthony M. Henderson

The future of the MEB is as important to our Corps as the dynamic roles Marine brigades have played throughout history in the projection of national power. Since its first use in 1913, the task-organized brigade structure has served as a highly versatile formation to meet the needs of crisis response and combat operations ashore. Just as our Corps and warfighting doctrine have evolved over the years, our conception of what constitutes a brigade has likewise evolved. Originally conceived as our largest infantry formations, eventually they were diversified into combined-arms organizations. Naming conventions also varied, with descriptive terms applied to meet perceived needs. Perhaps the most memorable example is the "Marine Brigade" in action alongside Army infantry brigades during World War I and its distinguished service as part of the American Expeditionary Force. The "provisional" brigade used early on during the Korean conflict left open the possibility we would create a larger formation. In later applications, "amphibious," "expeditionary," and "anti-terrorism" revealed expectations for employment. Standing brigades have largely been a historical anomaly, although standing brigade CEs have enjoyed a greater shelf-life. In recent decades, we have established a more standardized MEB as a mid-sized MAGTF for employment across the range of military operations. Whether conducting humanitarian assistance operations, expeditionary deployments to manage contingencies, crises, or war, MEBs have answered the call over the past twenty years.

>BGen Anthony M. Henderson served as CG 2d MEB and Deputy CG II MEF at the time these articles were developed and written.

Given the evolutionary history of brigades within the Marine Corps, it bears asking the question, "Is the current MEB construct a viable capability for the Marine Corps in the future?" That is the question I have posed to the members of the 2d MEB staff.

Over the past three years, there has been much discussion and effort surrounding the *38th Commandant's Planning Guidance* and *Force Design 2030*, and those activities will continue for years to come. It is important to clarify that, while the *38th Commandant's Planning Guidance* stated we will no longer use a "2.0 MEB requirement" as the basis for determining amphibious ship requirements, the Commandant did not discontinue MEBs as a force option. The articles published herein examine and discuss the MEB as a cur-

***BGen Anthony Henderson, Commanding General of 2d MEB, discusses expeditionary warfare with Italian Navy Vice Admiral Aurelio De Carolis, Commander-in-Chief of the Italian Naval Fleet, while aboard the Italian Aircraft Carrier* Giuseppe Garibaldi *during Exercise Cold Response 2022.* (Photo by SSgt Shawn Coover.)**

rent and future capability. Before those discussions, let us place the MEB in the backdrop of our warfighting organizational approach—the air-ground task force.

MAGTF

The term "MAGTF" is well known by Marines. The challenge is that sometimes that knowledge and understanding go only to the extent of the acronym or major elements of the formation. The forming, integration, deployment, and employment of disparate parts to create a whole that is more powerful than the sum of its parts requires both art and science. As one of my mentors used to say, "1+2 equals 4 or more." This construct expands the commander's ability, to increase reach, sustain tempo, accept and pursue risk, gain advantage, and seize opportunity far beyond the basic military calculation of time, space, and force of other military designs. Properly understood and led, the power of the full integration and application of the air, ground, logistics, and CE that make up the MAGTF provides a warfighting force the ability to out-cycle and outpace an opponent. The Marine Corps long ago adopted the MAGTF organization to maximize the application of combined arms and maneuver. This warfighting organizational approach manifests in three primary organizations: the MEU, the MEB, and the MEF. Each provides a different scale MAGTF reflecting the command and control (C2) span from colonel, to brigadier general, to lieutenant general. Each has different attributes. The MEU, combined with amphibious shipping, provides the operational mobility to respond to regional crises and contingencies. The MEF is designed to fight major contingencies and wars in a joint campaign across the littorals and, if necessary, sustained operations ashore. The MEB provides the capacity to organize, deploy, and employ in a contingency at a greater scale than a MEU while also providing the basis for expansion into a MEF. An MEB must have the ability to conduct this from afloat or ashore in a littoral operation as part of a maritime campaign.[1] That is why the MEB CEs have been the headquarters of choice for amphibious planning for several decades.

"When it became apparent the United States would enter World War I the Allied fleets had already obtained sea control. Assistant Commandant Brigadier General John A. Lejeune recognized the only chance for combat was service with the AEF. Lejeune explained, 'there was no available naval mission, therefore, for an advanced base or expeditionary force. At that time, our officers and men were clamoring for service. Their adventurous spirit would brook no delay. Their thoughts were constantly turned toward France.' The Marine Brigade was formed and its service has since stood as inestimable value to the Marine Corps, endearing the Corps to the American people for generations to come."

Elements of MEB Campaign Plan

"2d MEB seeks to be ready to command and control expeditionary littoral combat forces conducting combined arms across all domains." The future requires that an MEB must be able to execute this command, control, coordination, and collaboration, as an integrated naval headquarters in a joint, NATO, and coalition environment.[2] This provides the MEF, fleet, and combatant commanders with capabilities throughout the competition continuum. The subsequent articles provide the experience of the 2d MEB in training, operating, and experimenting with our naval concepts and future force design. This future is closer upon us than we may have originally assessed.

The MEB remains a core part of Marine Corps capabilities and warfighting identity ...

The Marine Corps can envision Marine expeditionary brigades with the ability to employ as integrated naval warfighting headquarters, whether forward or CONUS based, with competencies in the C2 of expeditionary littoral forces afloat and ashore. Of equal, if not greater, importance is the competency to organize, form, deploy and employ a Marine air-ground task force across seaward and landward.

Core Capability

The MEB remains a core part of Marine Corps capabilities and warfighting identity. Recently, the Commandant stated the MEB construct "is less about the institution pushing it and more about the combatant commands seeing a value in it because we can tailor it." Fleet commanders recognize this, but to be a relevant future naval capability, we must continue to advance the future MEB construct and employment. Thus, we may hand these brigades down forever.

Notes

1. Gen David H. Berger, *38th Commandant's Planning Guidance,* (Washington, DC: July 2019).

2. Reference NATO pub.

Brigade Intelligence

Forming an intelligence section to meet the demands of future operations

by the Staff of 2d MEB

Force Design 2030 demands a balance in the Marine Corps of large sustained naval campaigning to lighter more mobile formations that can, "sense, shoot, and sustain while combining the physical and information domains to achieve desired outcomes. Achieving this end state requires a force that can create the virtues of mass without the vulnerabilities of concentration, more capable of utilizing technology to tactical and operational advantage." When considered alongside *Force 2025* and emerging operational concepts such as Distributed Maritime Operations, Littoral Operations in a Contested Environment, and Expeditionary Advanced Base Operations, it is clear that the success of future Marine Corps CEs will be in their ability to enable these smaller, more capable formations in sensing and shooting through their connection to a joint, coalition, and global inter-agency network of systems and experts.

The standing MEB is a relatively small staff with no assigned major subordinate commands until receipt of mission. By design, the MEB CE must be capable of quickly forming capability and capacity to serve as a MAGTF or Combined Joint Headquarters. By extension, the intelligence section consists of a relatively small number of Marines who primarily serve as planners in their primary field of expertise. So how does a relatively small intelligence section gain and maintain the required warfighting competency to succeed as a combined and joint warfighting headquarters in any clime or place across the globe?

Forming a MEB intelligence section builds on standard functions like meteorology and oceanography analysis and forecasting and incorporates predictive analysis across all of the intelligence disciplines. *(Photo by LCpl Kyle P. Bunyi.)*

Preparation

There are two critical elements of preparation. First, as a warfighting headquarters that could deploy globally, the intelligence section must build standard operating procedures that enable forward-leaning, all-source, and all-domain production and analysis focused on global flashpoints. An effective standard operating procedure allows the MEB intelligence section to provide quality and timely intelligence support to the 2d MEB CG and staff across the globe and spectrum of conflict. Given the size of the MEB intelligence section, thirteen Marines in the winter of 2022, it must maintain continuous engagement with higher, adjacent, allied, joint, and inter-agency intelligence counterparts to maintain staff cognizance of the breadth of possible global flashpoints.

Second, while by design, the CE must swiftly task organize *bolt-on* capacity from other units to respond to the crisis, it must gain and maintain warfighting competency in the core staff as it evolves. For each operation, the task organization is based on mission analysis and, therefore, different each time; additionally, the experience and proficiency of the individual Marine must be assessed with each mission. While lacking the capacity for wartime command and control (C2), this requires the CE intelligence section to have organic Marines with all the necessary capability, postured to quickly and seamlessly receive and integrate intelligence capacity to achieve warfighting competency for any operation. Core MEB intelligence personnel must regularly participate in Service, joint, allied, and inter-agency formal intelligence training programs to improve individual skills and gain organizational relevancy and understanding in the combined, joint, and inter-agency intelligence community. In some cases,

Marines in the MEB intelligence section are required to attend training outside their traditional occupations for the core staff to retain warfighting competencies between operations.

The Global Network

CE's success in future operations will also depend on direct access to a joint, coalition, and inter-agency multi-discipline and all-domain global network of systems and experts. The MEB intelligence section achieves that critical access in two ways.

First, and concurrent with mission analysis, is the MEB CE immediately deploys Marine Corps intelligence professionals to plug directly into key nodes at the theater, allied, and fleet analysis centers. Each location is chosen based on its unique access to intelligence operational capability and analysis, critical to situation development, support to planning and decision making, and abilities necessary to enable major subordinate commands to sense and shoot.

Second, the MEB CE immediately establishes an operational enterprise. The exact location of the enterprise is less important than the characteristics. The operational enterprise must be able to provide 24/7 resilient and redundant access to Service, joint, inter-agency, and allied data network enclaves; have resident inside of it subject-matter experts that enable 24/7 access to global multi-discipline and multi-domain entities and experts across the service, joint, inter-agency, and allied intelligence communities; and airtight foreign disclosure authorities and processes that enable authorized disclosure and airtight data transfer authorities and procedures that will allow transferring data between enclaves without spillage. The operational enterprise enables the commander and staff access to the critical global intelligence network and pushes forward the personnel and systems architecture footprint.

2d MEB executed Exercise Cold Response 2022 aboard an Allied flagship, the Italian ship *Giuseppe Garibaldi*, alongside the Italian 3rd Naval Division. While an immensely valuable opportunity to operate directly with allies on a foreign vessel, it was not without its challenges such as the number of personnel that could embark, the intelligence disciplines capable of executing their traditional roles in this environment, and restricted access to stand networks, systems, and capabilities. These challenges provided an opportunity to test a multi-node operational intelligence enterprise that enabled access to the global network, all source and all domain intelligence, and multi-discipline production and analysis while seamlessly executing multi-discipline Naval Intelligence with the Italian 3rd Naval Division.

Marines with 1st Intelligence Battalion, I MIG pilot an RQ-20B Puma. *(Photo by Cpl Austin Gillam.)*

The largest intelligence node was located at Camp LeJeune, NC, and contained the bulk of the MEB G-2's multi-discipline production and analysis as well as access to the systems that enabled connectivity to the critical global intelligence network. Production in support of battle rhythm events, targeting, and deliberate planning was executed in this node and sent forward to the intelligence node aboard the Italian ship *Garibaldi*. The five intelligence Marines on the ship were individually capable of contributing to more than one of the multiple elements required for multi-discipline and multi-domain integration into Naval intelligence production and analysis and amphibious planning. More than compiling slides into a brief they were responsible for the integration of the multi-discipline intelligence analysis into the Naval intelligence production and analysis, as well as the joint, combined, and multinational intelligence functional integration required for mutual understanding, support to planning, targeting, and decision making.

In the future operation Exercise Baltic Operations 2022, the 2d MEB G-2 intends to increase access to and integration with all-source, all-domain capabilities in II MEF at Camp LeJeune, NC, as well as expand its intelligence nodes to critical locations throughout the theater. These efforts will improve battlespace awareness, threat analysis, support to targeting, support to planning, and mutual understanding across the Naval force.

In preparation for future operations, the 2d MEB G-2 remains engaged with higher, adjacent, allied, joint, and inter-agency intelligence counterparts, training and cross-training core members of the staff, deploying intelligence professionals to critical nodes in theater, and establishing an operational enterprise in crisis or contingency, the MEB intelligence section seeks to anticipate and answer the challenges of supporting combined and joint force C2 in the future operational environment.

USMC

Echelon IV

The MEB as an integrated naval headquarters

by the Staff of 2d MEB

For 2d MEB to become the *force of choice* for fleet commanders of 2030 and beyond, it must be capable of employing as an Echelon IV integrated naval warfighting headquarters (INHQ).[1] 2d MEB as an INHQ enables unity of effort in the littorals by consolidating multiple, complementary maritime capabilities under a single Echelon IV commander. This unity of effort facilitates the fleet commander's single battle.[2]

The Echelon IV INHQ concept of employment can best be illustrated by examining the Marine Corps forces briefly featured in the scenario in the final chapter of the late Dr. Wayne Hughes' *Fleet Tactics and Naval Operations, Third Edition*. The scenario is a future maritime conflict in the Aegean Sea between Greece and Turkey with intervention from a U.S. Navy fleet to deescalate the situation and restore sea control. This futuristic vignette is the synthesis of all of the concepts, theories, historical case studies, and emerging technologies previously introduced in *Fleet Tactics*.

While the scenario itself serves as a carefully crafted verbal image for the reader to explore, Marines should read Hughes' vignette with a feeling of recognition: "We've seen this movie before." One of the first decisions made by ADM U.S. Grant, the theater naval commander, is to send his Marines, embarked on amphibious ships, out of the Aegean, outside the range of adversary long-range precision fires. This decision occurs before any shaping or decisive actions by the fleet and is the last the Marines are seen or heard from in this scenario. The sense of recognition that should dawn on Marines is that this dismissal of the Marine capabilities is exactly the force employment problem that the Marine Corps set out to solve through Force Design and force development endeavors of the last four years.

2d MEB posits that Marine littoral forces would feature much more prominently in Wayne Hughes' final vignette, given the lessons learned from four years of Force Design and force development and employed under the auspices of an Echelon IV INHQ in support of a U.S. fleet commander in contested littorals. The rest of this discussion will communicate why the Echelon IV INHQ is beneficial and even essential to a fleet commander and includes a discussion of how 2d MEB envisions employing as an Echelon IV INHQ.

What is an INHQ?

Marines are familiar with the task organization and command relationships associated with the MAGTF. An INHQ is simply another method of organizing for command and control (C2). The INHQ method of command expands the landward focus of a MAGTF to provide seaward effects from land in support of the fleet commander's sea control. An INHQ must be able to organize and employ more than just Marine forces. It must be capable of integrating warfighting functions and mission areas across organic, joint, and allied assets and activities in the maritime domain. It must develop and rehearse *naval* warfighting competencies across its staff. It must have an integrated staff, processes, and systems to enable those naval warfighting functions it is expected to provide.

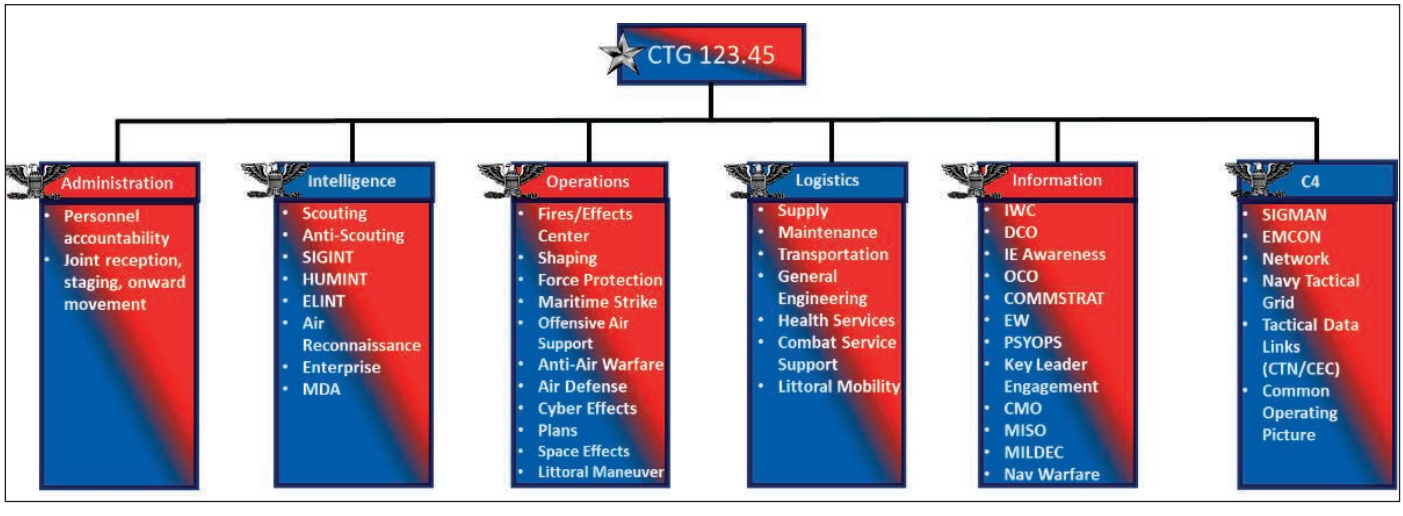

Figure 1. *(Figure provided by author.)*

Vignette

Now, reimagine Wayne Hughes' Battle for the Aegean *with an Echelon IV INHQ battlestaff (see Figure 1.) in command of littoral forces, most of which are already prepositioned in the theater of operations as stand-in forces conducting theater security cooperation.*

On the Combined Task Group (CTG) battlestaff, the CTG 123.45 N-1 (primary) is a Marine officer, the N-2 is a Navy officer, the N-3 is a Marine officer, the N-4 is a Navy officer, the N-6 is a Navy officer, the AirO is a Marine officer, and the Fires and Effects Coordinator is a Navy officer. The CTG 123.45 Fires and Effect Coordination Center is tied in with the theater targeting cycle and is ready to feed and facilitate the fleet's targeting process as it moves into the Med. The CTG's Information and Intel Fusion Cells and Air Center feed all CTG sensor data via Composite Tracking Network/Cooperative Engagement Capability to the fleet, building the fleet commander's maritime domain awareness. CTG 123.45's Air Center is tied in with theater Combined Air Operations Center and is ready to facilitate the coordination of the fleet's air tasking order cycle with the Combined Air Operations Center.

The C2 ship with the fleet is the USS Mount Whitney. *As the fleet comes into the vicinity of Italy, the commanding general and main body of CTG 123.45 INHQ fly-on to the* Mount Whitney *to establish an afloat command center. Additionally, before the initiation of conflict, the CTG 123.45 CG cross-decks to the fleet's flagship to attend an in-person fleet commanders' conference bringing his N-2 and N-3 to brief all commanders across the fleet on the situation as it stands in the Aegean.*

Why Do We Need an Integrated Naval Headquarters?

It has become clear from Navy and Marine Corps Service-level analysis, research, wargaming, and organizational direction that Echelon III organizations lack a single integrating headquarters to organize all the assets and activities in the maritime domain at the Echelon IV level. The lack of an integrating headquarters results in a gap between the warfighting functions associated with landward expeditionary operations (e.g., fires, maneuver, intelligence, etc.) and the mission areas associated with seaward expeditionary operations (e.g., anti-submarine warfare, surface warfare, mine counter-measures, etc.). Lack of unity of effort at the Echelon IV level creates friction for the fleet commander.

Specific to 2d MEB, neither II MEF, Sixth Fleet, and Second Fleet are organized nor resourced to generate coherent warfighting competencies and contiguous seaward and landward effects in the littorals at echelons below fleet/corps. This lack of capability at subordinate echelons creates risk for commanders in support of a maritime campaign. These Echelon III organizations lack a single integrating headquarters to organize all the assets and activities in the maritime domain at the Echelon IV level. This gap becomes more apparent as allied countries develop and expand their amphibious task unit-sized maritime capabilities but lack an intermediate headquarters at the task group level. Additionally, competition against our adversaries is a global effort that crosses combatant command boundaries, challenging our ability to seamlessly C2 littoral and expeditionary forces. These shortfalls represent a risk to the component commands at the Echelon II level, as Echelon III organizations are not able to fully organize and synchronize the operational capabilities of their littoral expeditionary forces into integrated campaigning.

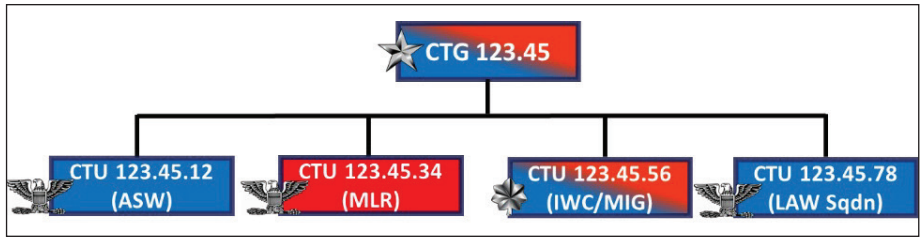

Figure 2. *(Figure provided by author.)*

Vignette Continued

As the fleet enters the Mediterranean the INHQ, CTG 123.45 is already established in a *hardened combat operations center in Naples, Italy, conducting 24/7 C2 of four subordinate Combined Task Units (CTU) (see Figure 2.):*

- *CTU 123.45.12–CTU Commander: CAPT R.U. Ready (Navy): Forward deployed afloat in the vicinity of the Dodecanese Islands. Capable of anti-submarine operations with four subordinate detachments of uncrewed surface vehicles "wave gliders," autonomous underwater vehicles, Anti-Submarine Continuous Trail Unmanned Vessels "SeaHunters," and a shore-based aviation detachment of Group 5 UAVs and (2) P-8A.*[3]
- *CTU 123.45.34–CTU Commander: Col I.M. Somoto (Marine Corps): Forward-deployed Marine Littoral Regiment (MLR) established ashore to conduct theater security cooperation exercises in the Dodecanese Islands with an "LAAB-heavy" laydown: G/ATOR, HAWK 2030 long-range air defense missile systems, and counter-UAS capabilities.*
- *123.45.56–CTU Commander: LtCol B.A. Hunter (Marine Corps): CONUS- and forward-based Marine Information Group Detachment with some forward elements augmenting the fleet's IWC. Capable of planning and requesting effects in the space and cyberspace domains from CONUS, assigned defensive and offensive cyberspace capabilities (CONUS), COMMSTRAT (forward and CONUS), psychological operations (forward), and Signals Intelligence (forward).*
- *123.45.78–CTU Commander: CAPT T.B. Determined (Navy): Light Amphibious Warship Squadron 5. Capable of littoral maneuver for CTU 123.45.34 (assuming [1] Light Amphibious Warship squadron lifts [1] MLR).*

What Must an INHQ Be Capable of? What Makes It Operationally Relevant?

Our fleet commanders lack a single integrated headquarters to organize all

***The Italian Navy Aircraft Carrier* Giuseppe Garibaldi *underway with 2d MEB for Exercise Cold Response 2022.* (Photo by SSgt Shawn Coover.)**

the assets and activities in the littorals at the Echelon IV level. This is evident by the recent 2022 deployment of a general officer-led coordination cell from 2d MarDiv to Sixth Fleet to C2 numerous expeditionary and littoral units and activities. Navy fleet headquarters are capable, but they need and often request an Echelon IV HQ to oversee multiple task units of merged Navy and Marine Corps littoral combat force capabilities. Additionally, Navy fleet headquarters require an Echelon IV HQ to oversee the allocation of expeditionary aviation assets on behalf of the CJFMCC.[4]

With an Echelon IV HQ, a Navy fleet commander can delegate maritime objectives to an Echelon IV HQ. The fleet commander then allocates a portion of the battlespace in the littorals to support the accomplishment of the objective, enabling warfighting functions and mission areas across all domains. In this construct, the Echelon IV INHQ supports the fleet commander's naval single battle—even when the littoral battlespace straddles two or more geographic combatant commanders' boundaries. Organizing forces around maritime objectives and mission, rather than along geographical boundaries, enables unity of effort in the maritime domain.

The benefits of an INHQ command arrangement go beyond more efficiently using littoral and expeditionary assets from seaward to land and vice versa. An INHQ command arrangement relies on a flexible method of C2 and inherently provides a more ready, capable crisis response headquarters. An INHQ command arrangement includes more than littoral and expeditionary assets when deployed forward. It also includes Echelon-IV level authorities, systems, and processes required to make an INHQ function as designed. A key element of this design is that the structure of an INHQ is "always on." By creating an enduring INHQ command arrangement, the fleets and Services avoid playing a pick-up game of HQs when a crisis emerges. Instead, as demonstrated by TF 51/5, the INHQ becomes a force of choice as a result of its tested, developed, and rehearsed method of C2.[5] Inherently, this makes it an ideal choice to be placed against emerging crises that preclude extended training and deployment timelines.

Through mission rehearsals with expeditionary and carrier strike groups, wargaming through tabletop exercises, interactions with ARG/MEUs, and close partnership with the NATO's amphibious and maritime forces, 2d MEB determined there are four key functions that an INHQ provides:

1. Integrate warfighting functions across all domains.
2. Integrate maritime aviation.
3. Integrate with and leverage Fleet and theater sustainment networks in support of maritime operations.
4. Plan, direct, and coordinate the preparation and employment of organic, Naval, Joint, and Allied forces during expeditionary littoral operations in support of competition, crisis, and conflict.

Command and control outputs of an INHQ include:

- Contribute to MEF and fleet activities that shape and set the theater, enabling the future deployment of maritime forces to the littorals.
- Contribute to the deliberate combining and integrating of Navy, Marine, joint, and allied aviation functions at the Joint Force Maritime Component Commander level to gain synergy in an overall maritime campaign.
- Develop and maintain a baseline understanding of the operational environment in order to quickly identify, classify, report, and react to deviations from the baseline. [6]
- Facilitate a robust and flexible method of C2 across a naval expeditionary force by merging Navy and Marine Corps C2 capabilities under a common warfighting construct.
- Serve as the command element for a NATO amphibious force, exercising C2 over NATO amphibious forces during large-scale allied military campaigns.

How Does 2d MEB Get to a Capable INHQ?

Given 2d MEB's current organization, capabilities, and competencies, the MEB battlestaff has selected six intermediate objectives to move from the current state to employ as a forward or CONUS-based INHQ with C2 of afloat and ashore expeditionary littoral combat forces.

1.1: Conduct integrated activities with units at echelon within numbered fleets.

- 2d MEB conducts monthly Naval Warfighting Symposiums and staff talks with ESG-2 to further the development of warfighting competencies with the 2d Fleet at the Echelon IV level. These activities complement the deliberate planning efforts of both staffs as they move toward major maritime rehearsals like the Baltic Opera-

tions (BALTOPS) series of exercises.
- 2d MEB recently went through deliberate planning and execution of Cold Response 22 with 3d Naval Division, Brindisi, Italy. The method of command employed for Cold Response 22 was the commander, amphibious task force (CATF) and the commander, landing force (CLF) hierarchy; however, both 2d MEB and 3d NAVDIV embarked together aboard the Italian aircraft carrier, ITS *Garibaldi* for execution and conducted an integrated battle rhythm throughout. Additionally, CATF and CLF reorganized intelligence and fires sections to achieve integration.

1.2: Rapidly Integrate with Battlestaffs at Echelon within Numbered Fleets.
- 2d MEB annually uses BALTOPS as an opportunity to rapidly integrate with ESG-2 in the conduct of operations within one of NATO's key littoral regions.

1.3: Plan and coordinate sustainment with service components and numbered fleets.
- Integration with fleet sustainment pathways and organizations is an area that requires further exploration.
- Historically, 2d MEB sends liaison officers to fleet logistics centers during the execution of maritime operations and intends to continue this practice.

1.4: Achieve and Maintain Interoperability with the Naval Tactical Grid.
- Another area requiring significant growth, integration with the Naval Tactical Grid is a multi-layered problem-set requiring constant engagement and further investment. The ultimate objective facilitated by this intermediate objective would be for 2d MEB to receive and feed the fleet's common operating picture/common tactical picture.

1.5: Plan, direct, monitor, and assess Expeditionary Advanced Base Operations (EABO) and Littoral Operations in the Contested Environment (LOCE).
- 2d MEB executed as a subordinate task group to an Expeditionary Strike Force (commanded by a carrier strike group) during the USS *Harry S. Truman's* Command and Control Certification Exercise in October 2021. Unique to this certification exercise, 2d MEB employed a (constructive) MLR. The MLR operated in concert with an ARG/MEU, commanded by ESG-2, an adjacent task group to 2d MEB. The MEB's battlestaff briefed EABO concept of operations to the underway *Harry S. Truman* Carrier Strike Group, furthering the Navy's knowledge of Marine Corps force development efforts. This was an excellent opportunity for 2d MEB to plan operations using this new formation and expose a Navy combat formation to littoral operations during a high-end conflict scenario.
- 2d MEB integrated aspects of EABO into BALTOPS 2021 and is planning EABO elements for BALTOPS 2022 to better contribute to the maritime campaign through sustainment, sensor, and fires-enabling capabilities.

1.6: Provide an Echelon IV INHQ embarked on amphibious shipping.
- While 2d MEB embarks regularly aboard amphibious shipping, it lacks the integration at the primary staff officer level to achieve what is depicted in Figure 1.
- True staff integration requires early onboarding and rehearsal of the battlestaff through the execution of boards, bureaus, cells, centers, and working groups across all warfighting functions and mission areas with integrated Navy and Marine staff sections.
- As an area for further development and improvement, 2d MEB assesses that NATO countries seek to advance naval formations beyond the CATF/CLF method and would benefit from experimentation with the INHQ model.

Conclusion

If in Hughes' closing vignette, ADM U.S. Grant employed 2d MEB as an Echelon IV INHQ, the scenario could be rewritten in the following manner:

> Instead of immediately sending the Marines outside of the adversary's threat ring, the fleet commander's first decision would be to take tactical control of the forward-based Marine-led Echelon IV INHQ with all of its subordinate units (see Figure 2.) to extend the range of the fleet's scouting, anti-scouting, and firepower capabilities. In this retelling, the Marine-led INHQ would have command and control of a capable Marine and Navy stand-in force projecting the fleet commander's capabilities into the Aegean. This is the retelling that the Marine Corps seeks to achieve by its force design and force development efforts. 2d MEB's contribution to these efforts is an Echelon IV INHQ as a vital command and control resource for the fleet commander in the littorals.

Notes

1. Echelons of command refer to the level flag officer/general officer commands. For the purpose of this discussion, Echelon I refers to a combatant command, Echelon II refers to a service component command, Echelon III refers to a Corps/Numbered Fleet/MEF, and Echelon IV refers to the one- to two-star HQ subordinate to the Echelon III.

2. BGen William J. Bowers and Williamson Murray, "Mastering the Single Naval Battle; ADM Raymond Spruance's lessons for Naval leaders," *Marine Corps Gazette*, (August 2019), available at https://mca-marines.org.

3. These futuristic capabilities come from the *Economist*, Staff, "Finding Submarines is Likely to Get Easier," *The Economist,* (January 2022), available at https://www.economist.com.

4. Nathaniel T. Lauterbach, "Marine Aviation is Naval Aviation," *Proceedings,* (April 2021), available at https://www.usni.org.

5. Philip Athey, "These Were the First Marines to Deploy to Kabul as Taliban Advanced in Afghanistan," *Federal Times,* (August 2021), available at https://www.federaltimes.com.

6. Operational environment: A composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. Also called OE. (*JP 3-0*). Contains physical areas and the information environment.

Command and Control Afloat in Contested Littoral Environments

Lessons from 2d MEB's recent experience

by the Staff of 2d MEB

2d MEB is a standing middleweight MAGTF subordinate to II MEF based in Camp Lejeune, NC. The brigade is commanded by a brigadier general and has no standing assigned forces. Steady state, the CE is a reduced staff that requires augmentation from the major subordinate elements and II MEF Information Group to respond to crisis and contingency operations with a tailorable and scalable force. 2d MEB's mission as a CE is to

> *provide command and control of expeditionary littoral combat forces conducting combined arms, all-domain operations across the competition continuum in support of MAGTF and naval expeditionary force campaign objectives and Geographic Combatant Command requirements in order to contribute to deterrence, respond to crises, and prevail in conflict.*[1]

The experiences gained from these rehearsals demonstrated to 2d MEB that while the Navy and Marine Corps team, combined with allied partners, is continuing to improve warfighting capability, additional training and equipment are required to effectively compete with a peer adversary in the littorals with a distributed force. This article will describe 2d MEB's command and control (C2) experiences over the past year, highlight similarities among mission rehearsals, and utilize a vignette to discuss significant lessons learned from those experiences.

Experiences

Between June 2021 and April 2022, 2d MEB participated in four major amphibious operations mission rehearsals that included working alongside and integrating with the Navy as well as multiple allied and partnered maritime forces. The first rehearsal was Baltic Operations 50 (BALTOPs). BALTOPS 50 is an annual multinational naval exercise comprised mostly, but not exclusively, of NATO countries in the Baltic Region. During this iteration of the exercise, 2d MEB was a task group subordinate to the Maritime Component Command (MCC). 2d MEB served as the Commander of the Landing Force (CLF) adjacent to Expeditionary Strike Group-Two (ESG-2), also the Commander of the Amphibious Task Force (CATF).

Between June 2021 and April 2022, 2d MEB participated in four major amphibious operations mission rehearsals … integrating with the Navy … allied and partnered maritime forces.

The second rehearsal was Large Scale Exercise 21. Large Scale Exercise 21 featured 2d MEB staff members serving as staff augments to ESG-2 while embarked on Naval shipping operating on the East Coast of the United States. Large Scale Exercise 21 was a global exercise that maximized the accomplishment of regional and Service-level training and experimentation objectives. 2d MEB provided a small staff to supplemental the amphibious expertise resident in ESG-2 providing C2 of live and constructed littoral forces.

The third rehearsal was the USS *Harry S. Truman* Carrier Strike Group Certification Exercise which took place at Joint Expeditionary Base Little Creek, VA, hosted by Expeditionary Warfare Training Group Atlantic (EWTGLANT). *Harry S. Truman* Carrier Strike Group Certification Exercise included 2d MEB staff employing a virtual constructed MEB formed around a Marine Littoral Regiment, augmented by composite Marine Air Group and twelve of the in-development Light Amphibious Warships. 2d MEB served as an adjacent headquarters to ESG-2 employing a virtual Amphibious Ready Group/MEU.

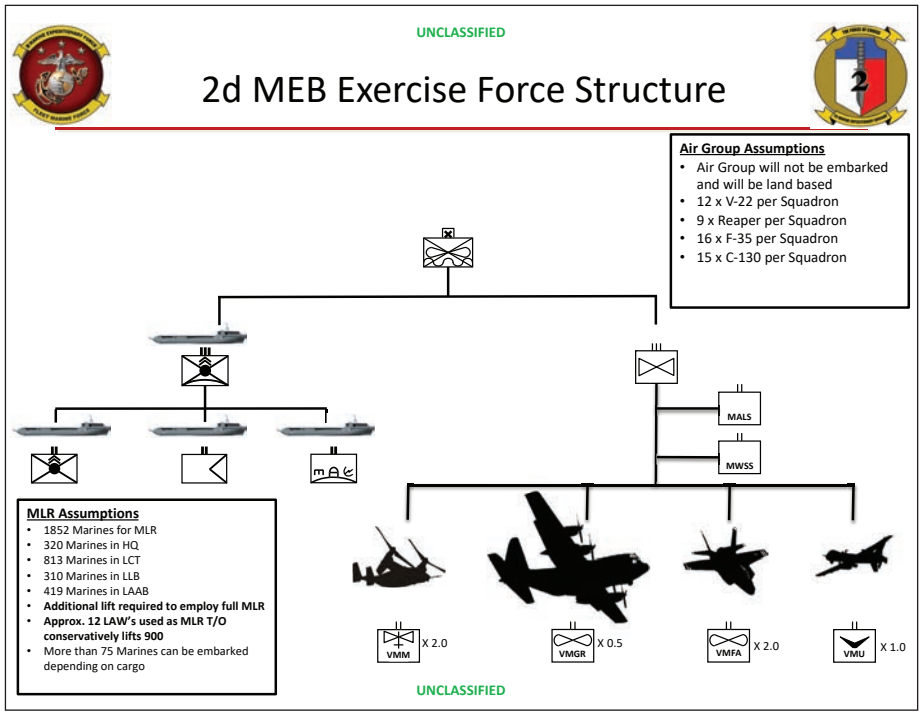

***Figure 1. Command relationships during* Harry S. Truman *Carrier Strike Group Certification Exercise.* (Figure provided by author.)**

The fourth rehearsal was COLD RESPONSE 22. COLD RESPONSE 22 took place in Norway and the North Sea, north of the Arctic Circle, and was comprised of a multinational coalition where 2d MEB served as the CLF adjacent to the Italian's 3rd Naval Division as the CATF. Both the CLF and CATF were subordinate to the United Kingdom Strike Force serving as the MCC and conducting forcible entry and littoral operations in support of landward maneuver. The task group was comprised of three multinational task units operating in an amphibious operations area in the high north contributing to sea control and conducting sea denial operations while simultaneously advancing both NATO Amphibious Leaders Expeditionary Symposium and national level experimental objectives.

While each of the four mission rehearsals featured different exercise objectives and the composition of the forces varied from United States pure to a multinational coalition, including standing NATO Maritime Groups, the rehearsal scenarios did share three significant commonalities. Those commonalities included similar adversary threat capability, the requirement for Navy and Marine Corps interoperability and integration, and physical characteristics of the operating environment. These conditions closely resemble the anticipated future operating environment.

Exercise Similarities

The scenario adversary was a peer competitor that possessed a robust multi-domain capability with both landward and seaward weapon systems. The landward threat included sophisticated coastal defense cruise missiles, long-range artillery, short- and medium-range ballistic missiles, and motorized, mechanized, and armored assets. The adversary also possessed advanced naval shipping with modernized offensive and defensive weapons systems and contemporary fixed- and rotary-wing aviation assets. The totality of adversary capabilities required friendly forces to conduct distributed operations to increase force protection and survivability.

Moreover, the staff was required to focus on friendly force electromagnetic-signature management to disrupt the adversary targeting cycle and remain below the engagement criteria for long-range indirect fire assets. Decades of operations in permissible electromagnetic-spectrum environments have resulted in the acceptance of institutional processes that are reliant on PowerPoint briefs, Voice Over Internet Protocol telephones, and video teleconference. Employing these coordination means among distributed units required significant bandwidth, amplified electromagnetic signatures, and dramatically increased the likelihood that adversary forces will locate and target friendly forces with lethal and non-lethal means.

Each mission rehearsal required, to varying degrees, Navy and Marine Corps coordination and integration to achieve joint-force objectives in the littorals. The degree of coordination and integration varied based on the command relationships and scenario; however, the method of command can be categorized as the traditional supported and supporting dynamic of a CATF and CLF. The degree of staff involvement ranged from a small augment detachment comprised of cross-functional planners to the 2d MEB CG and appropriate staff with augmentation from across the MEF.

The physical environment for all mission rehearsals was characterized by operations primarily within the littorals. The littorals are defined as: "In Naval Operations that portion of the world's land masses adjacent to the ocean within direct control of and vulnerable to the striking power of sea-based forces."[2] Operations in the littorals have three significant impacts. First, you must have the prerequisite naval expertise and subject-matter experts on staff to advise the commander on naval matters. Surface and subsurface warfare specialists, logistics, and communications experts are critical to ensure the staff is properly manned to develop a holistic approach to operational planning and sustainment. Second, the airspace coordination organizations and processes developed to support integration, de-confliction, and safety of flight must be reexamined to ensure the historical construct that existed under the CATF and CLF model is updated to meet the more complex and dynamic environment. Thirdly, as a Service, we must begin to develop leaders who can think and understand naval

concerns. Concepts such as composite warfare commander and high-value assets as it pertains to battlespace must become second nature to Marines.

Vignette

This scenario assumes a CATF/CLF headquarters element conducting C2 of multinational forces in a contested littoral environment against a peer competitor. The command relationship (depicted in Figure 2) is a generic representation of a multinational NATO-style force for the purposes of demonstrating themes from the attached article.

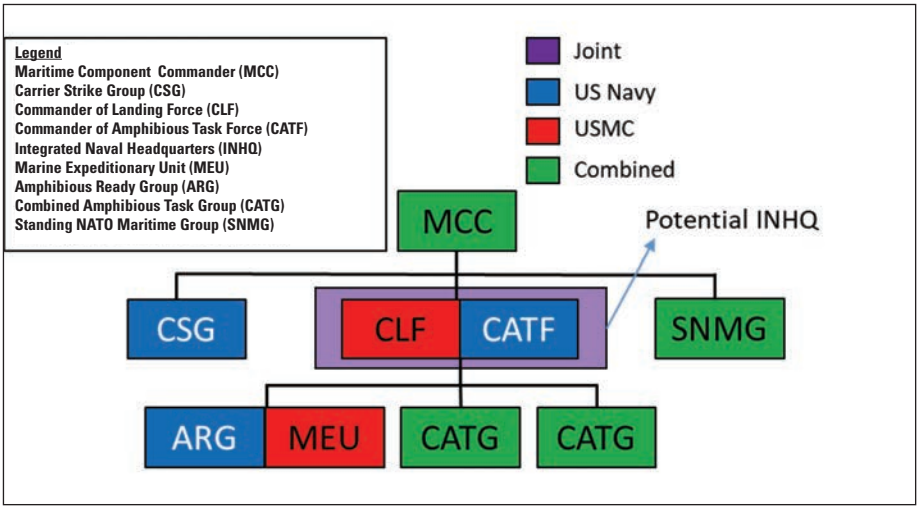

Figure 2. Combined–Joint Maritime Command and Control Relationships. *(Figure provided by author.)*

In 203X CATF/CLF forces as part of the MCC are tasked with the initial forcible entry into the littorals of Nation X with the follow-on requirement to shape and flow conventional combat power ashore for the purposes of achieving MCC objectives in support of the Joint Force Commander. The enemy—having similar military capability to the combined force—necessitates signals management and inevitably an extremely restrictive emission control status that precludes persistent use of communication capabilities interrupting the realtime C2 of forces most Western nations were accustomed to in the previous three decades prior to this conflict. MCC forces, including CATF/CLF, rapidly find that mission-type orders become critical and the use of existing tools such as the Daily Intentions Message (DIMS) becomes critical for coordinating operations when information exchanges may be limited to once a day or once every several days. Inside the DIMS, through preplanned execution checklist type documents, the MCC and subordinate elements are able to pass pro words that are capable of adjusting command relationships, objectives, and contingencies without extensive coordination. The need in this environment for the CATF/CLF staffs to have a thorough understanding of each other's doctrine and capabilities leads to a collocated CATF/CLF staff that resembles an integrated naval headquarters capable of seamlessly supporting seabased and landbased maneuver. The operating naval forces additionally find that the selective emission control unmasking of assets, such as aircraft or groundbased units, allows for this daily communication and overall cover for the masked maneuvering naval force. The naval forces find that the large number of incompatible and disparate communication networks coupled with logistical challenges driven by the sustainment of different military equipment across the several nations that make up the MCC can rapidly slow momentum in the described contested environment.

Mission C2 is critical to operating in a communications contested and denied environment.

Lessons Learned

The C2 challenges that are present in the future operating environment are substantial and require changes to current practices for U.S. and Coalition forces to operate effectively in the littoral environment. The ideal way forward is to earnestly embrace mission-type orders, utilize historically proven methods of C2 such as Navy DIMS for coordination, and codify the best practices for managing maritime and land domain battlespace that are likely to overlap in the littoral environment.

Mission C2 is critical to operating in a communications contested and denied environment. Mission command "requires the creation of self-reliant task groups capable of acting semiautonomous ... by creating semiautonomous groups we increase each commander's freedom of action and at the same time decrease the need for centralized coordination of support."[3] The complicated nature of modern warfare requires degrees of close coordination, specifically with respect to fire support, maneuver, and logistical sustainment; however, the bandwidth-intensive and obsessive infatuation with video teleconference and large picture filled PowerPoint concept of operations briefs are not supportable when friendly forces are properly managing their emissions-control status to increase force protection. In the vignette provided, the peer adversary has the ability to both target and disrupt the electromagnetic spectrum. Friendly force over-reliance on existing technological means to communicate and monitor operations assists adversary collections and targeting cycles. The continuous stream of information both into and out of a headquarters element requires the synchronization and streamlining of communications windows. This will increase the probability individual ships will remain undetected by the adversary. Figure 3 describes the emission-control status.

The communication challenges associated with a near-peer adversary

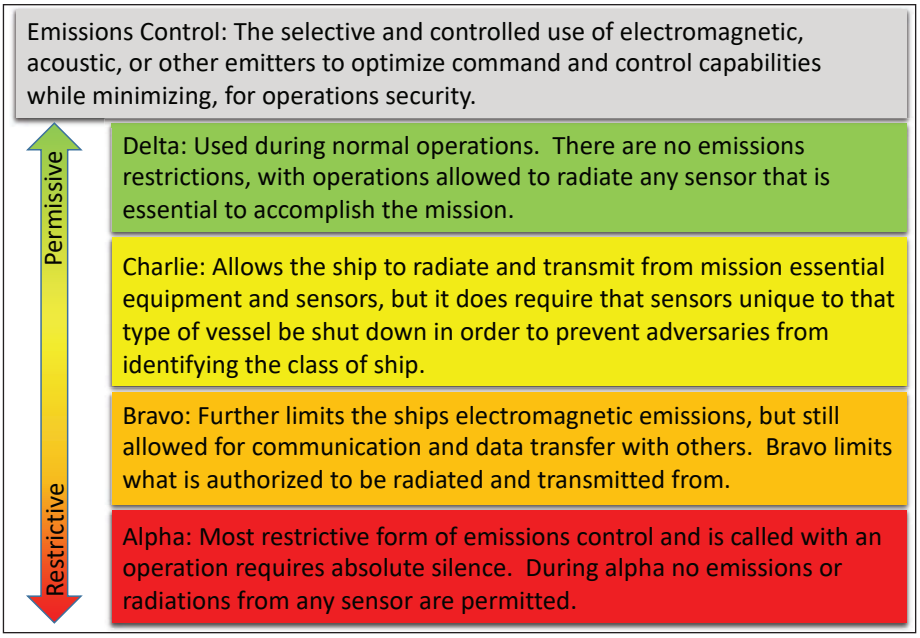

Figure 3. Emission control status. *(Figure provided by author.)*

and the technical capability to disrupt friendly communication, combined with the internal restriction of signatures required by friendly forces for tactical maneuver, will only allow for a fractional amount of communication modern forces are accustomed to. The reduction of periodicity for overall communication requires commanders and their staffs to develop new comfort levels associated with tactically operating in the littorals. While knowing exactly what level of communication will be possible in a future conflict is difficult, the expectation of only exchanging information between higher headquarters and subordinate elements once daily or less is likely realistic.

Using existing and historically proven techniques of C2, such as the DIMS, to coordinate the force will be invaluable. Developing reduced communication techniques and enforcing operational discipline regarding such practices in exercises will be key for staffs to develop an understanding of this new C2 reality. Utilization of a DIMS-like document that provides a single source of daily information that can be pushed out with pre-planned data transmissions would allow for the tactical maneuver of the force with minimal impact on signature management and greatly increase force protection. These data transmission windows allow for pre-planned execution-style checklists that can be used with the passing of codewords associated with operational requests, mission status, or changes in command relationships among the force.

… new technologies alone are not enough to ensure we develop the most competent and capable force able to thrive in uncertain environments.

Lastly, developing a common understanding of how maritime and land domain battlespace will be managed among the Navy and Marine Corps team will be critical for managing operations in the littoral environment. Utilizing current doctrinal techniques such as the establishment of an Amphibious Operations Areas that the CATF/CLF or INHQ can utilize for its operations with slight modifications could be a simple solution. Such modifications could include overlaying operational boxes/areas of operations for subordinate elements that can be used to enable C2 of forces and coordination of fires as they are projected ashore. Currently, existing capabilities do not adequately address air space control in the littorals. It is clear that—regardless of how these problems are solved—at a minimum, staffs need to begin to understand the substantial challenges regarding C2 the future will hold and begin simulating those challenges in planning and execution of exercises to avoid being unprepared for the conflict of the future.

Conclusion

Both the Marine Corps and the Navy have identified the likely future peer threat capabilities and are conducting experimentation with emerging concepts to ensure the Nation is best positioned to compete. However, new technologies alone are not enough to ensure we develop the most competent and capable force able to thrive in uncertain environments. The past year of mission rehearsals has demonstrated to the staff of 2d MEB that refocusing on developing competent leaders who excel in a mission C2 structure and who can minimize their electronic signature while concurrently synchronizing the actions of their force across time, space, and purpose, and develop an operational understanding of the Naval requirements of operations in and support to the littorals is a necessity.

Notes

1. See *2d MEB Training Campaign Plan*.

2. Department of the Navy, *NTRP 1-02*, (Washington, DC: April 2019).

3. Headquarters Marine Corps, *MCDP 6, Command and Control*, (Washington, DC: April 2018).

Preparation to Form a MEB for Deployment

Ensuring readiness across the competition continuum

by the Staff of 2d MEB

Upon hearing the term "MEB," most Marines likely call to mind what they read or were taught from doctrine:

> A MEB is a mid-sized Marine Air-Ground Task Force consisting of approximately 14k-17k Marines which can sustain itself for 30 days and is capable of conducting missions across the range of military operations, or to use more current terminology of across the competition continuum.[1]

However, only a few Marines have experienced 2d MEB utilized in its full doctrinal capacity. More frequently, both in operations and during exercises, the 2d MEB employs for crises response and contingencies, often consisting of only an augmented CE or a CE with limited forces—either Marine Corps, joint, or multi-national, assigned.

In execution, a working conceptual definition for a MEB is a task-organized force commanded by a brigadier or major general. Examples of 2d MEB employment across the competition continuum within the past two decades include: Defense Support to Civil Authorities for COVID-19 consisting of a CE with approximately 75 personnel; Maritime Prepositioning Force Arrival and Assembly Operations consisting of an augmented CE with nearly 400 personnel; and MEB-Afghanistan consisting of all elements of the MAGTF exceeding the doctrinal size with over 20,000 personnel. Additionally, as part of the Marine Corps Service-retained Global Force Management offerings, the 2d MEB CE has to maintain a global focus. Currently, the Marine Corps maintains 2d MEB CE as a steady-state organization, consisting of a core staff of 96 personnel and with no assigned subordinate structure as well as no pre-identified or aligned forces or equipment to rapidly organize and employ a task force. Augmented enablers for 2d MEB CE primarily come from II MEF, II Marine Information Group battalions. In summary, today's 2d MEB CE must be capable of rapidly deploying to anywhere in the world, quickly augmenting the core staff, and building a force ranging from a small capable CE of under 100 personnel to a large force offering of over 13,000 personnel to conduct a wide range of potential missions within the competition continuum.

Regardless of mission scope, requirements, and task organization, 2d MEB logistics … must accomplish several key tasks to form and deploy the MEB.

The 2d MEB G4 has significant logistical planning and support challenges because of the ambiguity resulting from the wide range of the MEB's possible missions, locations, and force sizes. The G4 must establish concepts, policies, and processes—including completing Time Phase Force Deployment Data (TPFDD)—to successfully execute a rapid deployment event. For a scalable task-organized force with a multi-faceted mission statement, developing these products after receipt of a mission creates unacceptable latency in deployment readiness when attempting to consolidate details needed for deployment planning. Each exercise and preparation as a response force provides opportunities to evaluate existing processes for force deployment planning and attempt to refine G4 actions and a TPFDD template to expedite future deployments. A future MEB, ready for deployment, will require "assigned" forces and equipment to build warfighting capabilities and a TPFDD to enable rapid deployment and employment when called upon to fulfill Geographic Combatant Commander operational requirements.

Regardless of mission scope, requirements, and task organization, 2d MEB logistics, in coordination with all other staff sections, must accomplish several key tasks to form and deploy the MEB. Upon receipt of the mission, the 2d MEB CE conducts mission analysis to identify capabilities and requirements in collaboration with II MEF and its major subordinate commands as well as other organizations that will affect the operation. Identified capabilities and requirements are translated into a mission-tailored force of personnel and

equipment. Force requirements are usually communicated through a manning document and equipment density list. Non-organic personnel and equipment must be resourced and attached to 2d MEB. Finally, the force consisting of a CE and any attached subordinates must be developed into a TPFDD and entered into the Joint Operation Planning and Execution System.

Unit organization and force readiness planning while in steady-state (phase 0) operations can significantly impact the efforts and efficiencies during form-and-deploy activities. Because the 2d MEB exists as a core staff without subordinate units assigned, allocated, or attached, any mission received requires a force to be built from the ground up, utilizing the core staff as an initially deployed element and the basis to receive and integrate the force. Most practical logistical deployment planning cannot take place until after the receipt of a mission once specific equipment is identified. Equipment type is added to an equipment density list based on capability requirements and then sent out for resourcing, resulting in specific serial numbers identified for each equipment type. Finally, the G4 coordinates for equipment readiness validation, which requires additional time and energy. Significant energy and man-hours are expended to take empty manning documents and equipment density lists and build up a deployable force—with deployment sequencing—from scratch.

To establish some efficiencies in the current process and prepare for a rapid deployment event, the 2d MEB G4 maintains oversight of several sustained processes and template products. The Material Readiness Branch maintains active Global Combat Supply System–Marine Corps and Crane (weapons accountability) accounts which can be geographically aligned once a mission is received. The Mobility Branch maintains a skeleton TPFDD for a large MEB for use as a baseline to build upon. However, until the MEB is in receipt of a mission. the skeleton TPFDD can only be hypothetically validated for deployment planning. Although these template products are regularly reviewed during mission rehearsals, the most time-consuming actions to develop the details are unable to occur until a mission is received and the force must rapidly deploy.

A MEB that is continuously ready for force deployment will require "assigned" forces and equipment prior to a mission being tasked from higher. The exact nature of the command relationship of assigned units to 2d MEB requires additional conversations with higher headquarters as the solution needs to increase the efficiencies of a MEB without degrading already task saturated battalions and regiments. Possible relationship options range from coordination to one similar to apportioned units and actual assignment of units to the 2d MEB. This assignment (whatever command relationship is chosen) will allow the 2d MEB staff to conduct mission analysis to identify capabilities and requirements to validate the force deployment readiness. With forces and equipment already identified, unit readiness can be managed prior to the receipt of a mission, providing the commander increased flexibility in deploying a tailored force quickly and with little notice. Developing modular packages of personnel and equipment facilitates rapid swapping of individual and unit capabilities into an overall force package. Assignment of subordinates allows the MAGTF planners to establish TPFDDs for multiple mission sets, quickly aligning previously developed packages to be submitted for embarkation and transportation resourcing. Additionally, assignment allows readiness reconciliation and tracking with actual unit data.

Along with the rest of the Marine Corps, 2d MEB seeks to posture itself for success in the future fight and is currently experimenting with its roles within coalition operations, littoral operations, and distributed maritime operations. Future exercise and operational employment concepts require dynamic logistical support from G4 to include forming and deploying processes with the flexibility to rapidly adjust to changing requirements. The G4 maintains active logistical systems and capabilities and leans as far forward as possible with embarkation data to be ready to support force employment to fulfill Geographic Combatant Commander operational requirements. 2d MEB continues to evolve its concepts through deliberate deployment planning, rapid response force planning, and integrated Naval wargaming and exercises. Without assigned forces, the G4 can only establish conceptual frameworks, skeleton processes, and blank templates that, upon mission assignment, require significant resources in time and effort to transform into mission-specific products. With assigned forces, the G4 is able to work with subordinate forces during mission rehearsals to mature future employment concepts and to build TPFDDs grounded in actual readiness data, facilitating tailoring of capabilities by adjusting from an already established baseline—resulting in rapid and efficient deployment and employment of the force.

Both within the current and envisioned future constructs, 2d MEB deployment and employment logistic challenges will continue to be implementing established concepts, policies, and processes during a rapid deployment event. While the 2d MEB G4 can execute a rapid deployment event, the current construct requires the 2d MEB core staff and supporting organizations to build a task-organized force from scratch. A future G4 construct looks to establish modular capability packages using actual subordinate element unit data to increase force generation speed and efficiency. As we work towards the future, 2d MEB will continue to stand as a force-in-readiness to rapidly grow and deploy to meet the Nation's needs.

Note

1. Headquarters Marine Corps, *MCDP 1-0, Marine Corps Operations*, (Washington, DC: March 2019).

A Critical Capability

C4 in a NATO environment

by the Staff of 2d MEB

Operating in a NATO task organization and building the communications architectures to support those operations is a unique problem set. At the outset of planning for a NATO mission, it is critical to understand the need to integrate NATO cultural, procedural, and technical standards into planning, especially communications planning. Oftentimes, Marines wish to apply the same MAGTF communications standards to a NATO mission. However, the planning, installation, operation, maintenance, and (perhaps most importantly) defense of communications networks and devices in a NATO mission construct is different from the MAGTF standard practices. As Marines, we must accept and embrace those differences to create and protect the underlying communications networks which support NATO interoperability. Although many of the practices described apply to any coalition task organization, this article focuses specifically on NATO missions.

2d MEB has increasingly assimilated to NATO communications techniques and practices over the past several years. Just within the last year, 2d MEB has participated in Baltic Operations 50 as the Commander, Landing Forces for Naval Striking and Support Forces NATO (STRIKFORNATO); Cold Response 22 as the Commander, Landing Forces aboard an Italian Navy ship partnering with an Italian Commander, Amphibious Task Force working for a British Maritime Component Command; and holding the Service and National Crisis Response Force duties for an Echelon IV command, mostly focused on the European theater. 2d MEB, along with Expeditionary Strike Group–2, has prioritized integration with NATO as a key campaign line of effort and a mission-essential requirement to best posture all Marine and Naval forces for potential large-scale use within a NATO command task organization or response force. We—as a combined MEB/Expeditionary Strike Group-2 naval integration team—have worked hard to move past our Service proclivities into a NATO-ready force that can be employed at the ready. It is our hope that we can share our experience as an educational tool for other units that do not have the opportunity to work directly with NATO.

Build the Appropriate C4 Architecture

NATO integration has not been the Marine Corps' focus for at least two decades. Despite recent events undeniably drawing long overdue attention and even membership expansion to NATO, NATO integration across all warfighting functions is still not the primary focus of Marine Corps contingency planning. Today's global pacing threat actors pull the Marine Corps' focus across all seven seas. However, NATO is not going anywhere, and neither are the Marine Corps' codified responsibilities to NATO and its mission sets. Therefore, there is an enduring requirement for Marine Corps units to plan and train with NATO intimately that we do not do with other constructive international organizations.

NATO integration is not currently part of the Marine Corps DNA in the same way as counterinsurgency operations or rifle marksmanship.

NATO integration is not currently part of the Marine Corps DNA in the same way as counterinsurgency operations or rifle marksmanship. Even Marine Corps doctrine lacks the insight of NATO interoperability. *MCDP 1-2, Campaigning,* does not even mention NATO missions. In fact, *Campaigning* overtly suggests that the only way for the Marine Corps to integrate into any joint or coalition task organization is in the shape of a fully formed MAGTF.[1] That is an excellent advertisement for keeping the MAGTF together in a post-Goldwater-Nichols, 1990s world. However, in today's modular world of Distributed Maritime Operations, Expeditionary Advanced Based Operations, and Littoral Operations in a Contested Environment, the advocacy to "never break up the MAGTF" is more of a critical discussion point in joint professional military education rather than a reality for our evolving tactical engagement scenarios. NATO integration is the same: Marine Corps units have to be prepared to plug-and-play independent elements of the MAGTF into a NATO task organization hierarchy to meet the NATO mission requirements. This is the first paradigm-breaking concept readers should accept before proceeding with this article.

To gain compatibility and interoperability with NATO, Marines must abandon our proclivities in command, control, communications, and computers (C4) to operate in our MAGTF bubble with networks we own and ultimately control. This requires a cultural change in addition to technical adjustments. As Marines, we are most comfortable operating for, with, and in command of other Marines. This is simply how we most often exercise

at multiple echelons and what we are satisfied with. In the same way, the Marine Corps' communications community is comfortable with owning, operating, and controlling all of our networks—and Marine communicators are not satisfied with releasing control and utilizing networks provided by our joint or coalition partners. For example, the Marine Corps C4 community advocates for Deployed Marine Corps Enterprise Network vice partner-provided NIPRnet and SIPRnet, a Marine Corps domain of the Joint Worldwide Intelligence Communications System vice the Defense Information Agency provided environment, and home-grown tactical NATO secret-compatible mission networks instead of the NATO Communications and Information Agency provided NATO Secret Wide Area Network. On the flip side, the Marine Corps communications community has pushed back for years on the Joint Information Environment concepts and the mail.mil domain—both efforts would fuse the Marine Corps deeper into joint communications interoperability but would require the Marine Corps to release a modicum of network autonomy.

For NATO tactical and operational level interoperability, global Marine Corps access to the NATO Secret Wide Area Network is critical for planning, exercising, and operating with NATO. This should be a standing requirement. This requirement grows stronger daily as real-world events unfold and NATO activity increases in Europe. Marines cannot afford to be isolated from NATO networks and on an island of our own U.S. NIPRnet and SIPRnets. Marines need to communicate not just with Marine Forces Europe/Africa and other Marine units in the theater; rather, Marines need to communicate directly with NATO agencies and activities, directly with U.S. European Command planners in the NATO secret mission planning environments, and directly with NATO-allied countries. The Marine Corps needs to fund and prioritize global assets and access to the NATO Secret Wide Area Network and not attempt to re-create the wheel with Marine Corps or U.S. European Command-owned/operated NATO *compatible-only* networks.

To some extent, the Marine Corps and U.S. military forces have a way of conducting business that is not in line with our NATO allies. We have habits that do not translate well to our international partners or the threat environment. Marine Corps units want to have meetings over Video Teleconference, using PowerPoint slides in scripted sessions. Our European partners, especially those who are more concerned about bandwidth constraints, do not operate this way. Our NATO allies use official message traffic applications over different classifications of networks to pass information, taskings, and requests for support. Marines are not comfortable with either the message traffic format and systems, or we are uncomfortable not getting in front of a high-bandwidth, high electromagnetic signature video teleconference.

When in Rome, do as the Romans do. This does not require a radical change from a communications and operations standpoint but rather a return to basic fundamentals. NATO interoperability requires using the appropriate message traffic systems. NATO interoperability means using encrypted radio net calls when meetings are necessary (a practice Marines desperately need to practice anyway). NATO interoperability means using basic communication windows and burst transmissions, both afloat and ashore. Again, these are not new tactics, techniques, and procedures for Marines, but a rebirth of tried-and-true practices necessary for operations with international partners against near-peer threats.

To know ourselves and seek self-improvement, Marines must admit—not admire—our cultural resistance to changing our staff practices such as video teleconferences and PowerPoint slides, and we must acknowledge our cultural resistance to reliance on joint or coalition networks. Beyond cultural resistance, there is a downright fear of putting our trust in our communications network control in the hands of our international partners. We have to move past our fears and work with our partners on shared communications networks, not strive to work separately and apart on our enclaves. We must work toward a shared information space, not against the concept.

Beyond cultural resistance, there is a downright fear of putting our trust in our communications network control in the hands of our international partners.

Defend the C4 Architecture

Before a deep dive into cyberspace protective measures, it is essential to have a baseline understanding of cyberspace missions and units. Figure 1 (on following page) breaks down the three critical types of cyberspace operations (CO) and analogies closer to what most Marines, regardless of rank, can understand. DOD Information Network operations are those that keep our friendly networks' (regardless of classification) healthy, up-to-date, and secure. Defensive COs (DCO) are those operations, under the authorities granted by Commander, United States Cyber Command (CDRUSCYBERCOM), in which a live human operator is using tools and sensors to actively seek out and possibly engage a malicious cyber actor (MCA) on our friendly networks (blue space). Offensive COs are those operations under the authorities of CDRUSCYBERCOM and executed by USCYBERCOM-assigned service members (i.e., not Service Cyber Components), in which a live human operator engages MCAs in enemy cyberspace (red space) or the commercial cyberspace in between friendly and enemy cyber terrain (grey space).

Cyberspace authorities are consolidated under CDRUSCYBERCOM to

allow for the seamless flow from DCO identification and exploitation of an MCA to a hand-off to OCO targeting and exploitation of that MCA in their enemy safe-haven network. It is an efficient kill chain methodology. DCO is provided a path to *follow the shot* on MCA vice just kicking the MCA out of a friendly network. However, this consolidation of authorities excludes Services from identifying defensive cyberspace requirements and registering the need for direct DCO support. The Service Cyber Components of each branch of the military work for the CDRUSCYBERCOM and work on the priorities established at the USCYBERCOM level. There is a system for combatant commands to register cyberspace requirements through priorities and requests cyber mission force alignment to those priorities. Still, that process is a discussion for another article. The fact remains that, as of the writing of this article, there is no official, standardized way for a FMF unit to request a DCO Cyber Protection Team from any of the Services to provide direct DCO mission support. USCYBERCOM authorities are not designed with responsiveness to the FMF in mind.

Marine Forces Cyber Command is working to change this deficiency. Marine Corps Cyberspace Operations Battalion, Marine Corps Cyberspace Operations Group, and the Deputy Commandant for Information are collectively developing a Service Concept of Employment (COE) to instate the needed path for FMF units to request DCO support for operations and exercises. 2d MEB is proud to be a part of the COE development and proof of concept.

When this COE is developed and implemented, FMF units need to be prepared to "speak" cyberspace and understand what they are asking for. For example, Marine units need to understand what kind of DCO capabilities they desire based on a mission set. An FMF unit might need to request a cyber-terrain aligned, a threat aligned, a Service aligned, or a CCMD aligned Cyberspace Protection Team. These different Cyberspace Protection Teams may come from all other military branches, and the FMF unit must be comfortable enabling their full access to the observed network.

Operating and defending NATO networks adds another layer of complexity and approvals, compounding the already tumultuous and undefined process for requesting DCO. Many questions need answering before even attempting to request a Cyberspace Protection Team: Who owns the network? Who controls the classification of the network? How much of the targeted network owning agency can and should know about the DCO mission? And how many different commands and constructive organizations need to give their approval for the DCO to transpire? These are difficult questions that do not have answers at this moment. However, developing the Service COE for FMF units to request DCO needs more FMF units interested in and attempting to request DCO through Marine Forces Cyber Command to register the demand signal that will ultimately drive change in the USCYBERCOM authorities construct.

Cyberspace Operations Explained

DODIN Operations	*JP 3-12 "Cyberspace Operations" Definition*	DODIN operations mission includes operational actions taken to secure, configure, operate, extend, maintain, and sustain DOD cyberspace and to create and preserve the confidentiality, availability, and integrity of the DODIN.
	Author's Translation	This is an 06XX; S/G/N/J-6 staff function. DODIN Ops are binary: either the network and it's objects are secure and in compliance, or they are not. I.e., the router is properly configured with the most up to date patches, or it's not; and the firewall is either programed correctly, or it's not. DODIN protective measure are static, programmable, defensive measures. (*DODIN Ops is often used interchangeably with DCO-Internal Defensive Measure (IDM), which is incorrect. DCO-IDM is a sub-set of a DCO missions, and not merely network security.)
	Author's Analogy	By using an analogy of defending a patrol base, we can look at different Cyberspace operations through a lens most Marines can be familiar with. DODIN Operations is like the fence or concertina wire providing the protective perimeter around the patrol base. The fence is non-thinking and static, but it is an obstacle to potentially attacking forces. In the same way, DODIN Operations provides that programmatic obstacle to potential malicious cyber actors.
Defensive Cyberspace Operations (DCO)	*JP 3-12 "Cyberspace Operations" Definition*	DCO missions are executed to defend the DODIN, or other cyberspace DOD cyberspace forces have been order to defend, from active threats in cyberspace.
	Author's Translation	This is a 17XX function executed under USCYBERCOM authorities. DCO is the active maneuver of a friendly human (using sensors, tools, and an approved weapon system) in cyberspace to actively seek out and exploit or engage a malicious cyber actor (another human) in or near friendly territory (blue cyberspace). DCO missions are conducted as prioritized and approved under the USCYBERCOM command structure, by USCYBERCOM OPCON forces, regardless of what Service those forces are sourced from.
	Author's Analogy	Using the same patrol base analogy, DCO missions are the friendly patrols to defend the base both inside and immediately outside the perimeter wire. They are the internal security measures, looking for insider threats already inside the wire, and DCO is the observation post just outside the wire looking for any enemies approaching. DCO is active searching for and, if necessary, engaging the enemy in cyberspace.
Offensive Cyberspace Operations (OCO)	*JP 3-12 "Cyberspace Operations" Definition*	OCO are cyberspace operations mission intended to project power in and through foreign cyberspace through actions taken in support of CCDR or national objectives.
	Author's Translation	This is a 17XX function executed under USCYBERCOM authorities. OCO is executed by elements of USCYBERCOM proper, not the Service Cyber Components. OCO is executed in support of national level priorities; however, OCO utilizes information, TTPs, and digital signatures of malicious cyber actors gained by other cyber forces through DCO and DODIN Ops. OCO is going after the bad guys from their base of operation, in red and grey cyberspace.
	Author's Analogy	Again, utilizing the same patrol base analogy, OCO is like the assault force sent out from the patrol base to fix, exploit, degrade, or destroy an identified enemy base of operations. OCO is reliant on actionable cyberspace intelligence, opposing force TTP knowledge, and a substantiated threat that validates the risk of exposing friending forces and escalating a conflict.

Figure 1.[2] *(Figure provided by author.)*

… Marine Corps Cyberspace Operations Group, and the Deputy Commandant for Information are collectively developing a Service Concept of Employment …

Conclusion

First, we must become comfortable with the uncomfortable if we, as a Corps, are to truly integrate a part of NATO operations on a constant basis rather than a spectator, admirer, and part-time player. They do business differently, and that is fine. We are Marines, and we can adapt. Marine Corps units must embrace staff processes to align with NATO allies. Marine Corps communicators must forcibly evolve our intransigent resistance toward externally owned and controlled communication networks and become inclusive and cooperative in the NATO task orga-

nization structure. We must be honest with ourselves on how we will adjust, so that staff and units are not flabbergasted when execution begins.

Second, we must embrace DCO as part of *all* our communications concepts of support and employment. There is a debate to be had about whether DCO is operational or part of the communications COS. That is a great philosophical debate, but it does not matter. DCO will not become part of the Marine Corps DNA if 06XX communicators do not embrace and advocate for DCO. DCO is necessary if the endstate for any unit is to protect the network and thus the operation. It has to happen wherever Marines operate, regardless of type/model/series network Marines are using.

Know yourself and seek self-improvement. Cultural change in our operational practices and our communications tendencies is required to properly integrate with NATO allies. Once integrated with NATO allies on NATO networks, we must defend our shared networks and mission. Bottom line: this requires Marines to change. This is not radical change; many of the changes are simply a return to tried and true communications practices. Other changes are more difficult such as developing the pathways to DCO direct support for FMF units. Regardless of the difficulties of change and evolution, we must first come to understand that (1) NATO is our partner for the long-term duration, and we are not where we need to be with communications interoperability; and (2) cyberspace defense is an enduring requirement that the Marine Corps communications community must advocate for, not resist against.

Cultural change in our operational practices and our communications tendencies is required ...

Notes

1. Headquarters Marine Corps, *MCDP 1-2 Campaigning*, (Washington, DC: 1997).

2. Office of the Joint Chiefs of Staff, *Joint Publication 3-12 Cyberspace Operations*, (Washington, DC: 2018).

Steps to Develop a COMMSTRAT Annex for a MEB Campaign Plan

Telling the story and controlling the narrative

by the Staff of 2d MEB

The 2d MEB is a flexible and dynamic unit with a unique mission set that is scalable to meet the operational needs of the combatant commanders. A well-crafted campaign plan that guides training and objectives fills in the operational needs expected of a MEB. A MEB has a distinct role with a mission statement:

> 2d MEB's command element (CE) provides command and control (C2) of expeditionary littoral combat forces conducting combined arms, all-domain operations across the competition continuum in support of campaign objectives and GCC requirements.[1]

MEBs have been around since 1913 and are a critical component in power projection while simultaneously offering commanders the benefit of a uniquely scalable force. Each MEB has a special mission set that supports its specific MEF and area of operation where 2d MEB supports II MEF and its area of operation.

The release of the 2019 *38th Commandant's Planning Guidance* directed II MEF to undergo substantial change. These changes included efforts that would better align 2d and 6th Fleet's objectives to increase their ability to operate inside actively contested maritime spaces while also remaining focused on providing globally deployable, combat-ready units within the context of *Force Design 2030*. 2d MEB provides a critical capability and function as a II MEF major subordinate command, postured to swiftly deploy and operate in a manner that builds and strengthens relationships with joint Service partners and allied nations, and support competition while also being able to rapidly transition to blunt force operations around the globe.[2] To support the commander's intent and mission, a communication plan and framework are designed to not only nest II MEF's communication objectives but also capture and highlight the unique goals of 2d MEB's Training Campaign Plan.

A COMMSTRAT Marine documents training at the Mountain Warfare Training Center, Bridgeport, CA. *(Photo by Cpl Francisco Britoramirez.)*

The 2d MEB is a standing brigade CE, ready to attach mission-appropriate enablers to the CE and receive major subordinate elements to accomplish an assigned mission. When the CMC announced that the Marine Corps was going to optimize maritime campaigning consistent with its naval roots and the power of its FMF background, 2d MEB was already positioned to accomplish that task. In the development of the 2d MEB Training Campaign Plan lines of effort, the MEB solidified its mission direction in further facilitating the CMC's operational direction.

As the communication strategy and operations officer assigned to 2d MEB, it became my mission to ensure that

our communication strategy not only aligned with these specified efforts but also ensured they were highlighted and amplified. 2d MEB's Communication Plan provides a full command communication approach to accomplish campaign plan objectives and effects. Aligning messaging allows for mutually supported efforts while also maintaining the unity of messaging with higher, adjacent, and subordinate commands. 2d MEB's Communication Plan was crafted to provide a unified messaging approach with higher and adjacent units as well as joint Service partners and allied nations. This enabled the achievement of communication objectives and effects with synchronized and aligned messaging, which ensures mutually supported efforts and desired end state effects.

When creating the communication plan framework, themes, and messages from the key lines of effort established within the training campaign plan are developed. The key themes that were chosen were to be a prepared, positioned, and partnered force. These strategic phrases encompass the desired end state abilities of 2d MEB. Nested under each are key messages for our audiences to take away from what we are communicating. Included in the communication plan are the key publics and audiences for 2d MEB that holds a stake in 2d MEB or in the accomplishment of its mission. The means and strategies that ensure those messages reach their intended audience in the communication plan elaborate the *how* in the communication plan.

A critical part in ensuring an effective training campaign plan is the annexes where each staff section understands their interrelated roles in enabling the success of each other thus leading to the overall success of the unit. This type of crosswalk in the planning and coordination process also identifies stakeholders, task leads, and contacts. This transparent accountability synchronizes the staff and validates roles and initiatives. In addition to being the external voice to the command, COMMSTRAT also serves as a critical information-related capability with non-kinetic effects within the information environment. The annex for COMMSTRAT is also heavily involved in the operations in the information environment. Planning, coordinating, synchronizing, and executing operations in the information environment is an element of 2d MEB's MAGTF multi-domain techniques.

Once the Training Campaign Plan and Communication Plan for 2d MEB were completed, key events were identified as well as training and exercises that would enable the MEB to achieve the desired end state. Each of these activities built upon each other and allowed 2d MEB to grow in its competencies, and it was the job of COMMSTRAT to also build the communication, en-

gagement, and messaging. These efforts started with 2d MEB's naval partnership with Expeditionary Strike Group–Two (ESG-2). The two staffs engaged in an effort to better align with naval and MAGTF competencies for enhanced understanding and readiness in amphibious and littoral warfare. One of the key lines of effort for the campaign plan is to employ 2d MEB as a forward or CONUS-based integrated naval warfighting headquarters with C2 of afloat and ashore expeditionary littoral combat forces.[3]

2d MEB's Training Campaign Plan and the Communication Plan continued with a series of Naval Warfighting Symposiums between 2d MEB and ESG-2. These quarterly events were an opportunity for each team to come together to learn how to operate alongside each other through exercise, wargame, and doctrinal and conceptual study. As a result, from these events, the 2d MEB and ESG 2 episodically moved from interoperable to an integrated naval staff via coordinated augmentation in respective exercises.

One example of this relationship culminated in 2d MEB having ESG-2 staff members integrated for Exercise Cold Response 22. During the exercise, 2d MEB was selected to embark on a NATO Italian aircraft carrier to fill the role of the Commander Landing Forces alongside the Italian Navy filling the role of the Commander Amphibious Task Force.

COMMSTRAT's role in the evolution of the training from symposium to exercise execution was to ensure that key messages were being projected and amplified through a variety of means. This started with a local story about the naval warfighting symposium and built into international press covering 2d MEB's key role in Cold Response 22. The true testament to the effectiveness of 2d MEB's approach and the coordinated complementary communication plan was the recognition that 2d MEB received for the completion of Cold Response 22. The overall effect of 2d MEB's messaging and coordinated visual imagery was published in over 20 domestic and international media sources as well as shared on over 42 media sources and achieved an information reach in the millions.

Integration of training and communication plans identifies key events and enables the MEB to control the narrative. A Marine All Domain Effects Team from 2nd ANGLICO conducts an approach march during Exercise Cold Response 2022, Setermoen, Norway. *(Photo by Cpl Joshua Davis.)*

The 2d MEB communicates and engages with key publics, audiences, and stakeholders—both American and international—to build understanding, credibility, trust, and mutually beneficial relationships. Other expected tasks include communicating joint operations in context, facilitating and informing perceptions about military operations, as well as aiding in undermining adversarial misinformation/disinformation which will ultimately contribute to national, strategic, and operational objectives. Additionally, 2d MEB worked with the II MEF Communication Strategy and Operations and II MEF Information Group to measure and analyze the impacts of communication and engagement effects to provide relevant information, data, and feedback to better inform decision making for commanders.

> ***COMMSTRAT's role in the evolution of the training ... was to ensure that key messages were being projected and amplified ...***

Through the hard work of the 2d MEB staff in accomplishing the objectives and efforts set forth in the campaign plan as well as the communication plan, 2d MEB has been very successful at meeting and exceeding its desired end state of brigade-level multidomain effects. 2d MEB will continue to pursue greater competency and readiness as a force-in-readiness to leverage information effects through unlimited communications means.

Notes

1. See 2d MEB Operational Approach dtd. 25 Apr 22.

2. See II MEF Communication Framework.

3. See 2d MEB Training Campaign Plan.

The Colonel Thomas M. O'Leary Memorial
Future Force Development Writing Contest

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In an essay of **1,500-2,000 words** answer the following question:

The Marine Corps operating concepts for EABO and Stand-in Forces are intended to enable Marines to "operate inside actively contested maritime spaces in support of fleet operations"? What capabilities, produced through new approaches to organization, training and equipment does the Marine Corps need to overcome the challenges inherent in employing these concepts? Essays must propose a feasible solution to any of the following: securing access/entry, tactical mobility, sustainment, casualty care, and the reconnaissance – counter-reconnaissance fight across warfighting domains and geographic regions.

Contest is open to all Marines and Friends of the Corps. Participants associated with the Gazette editorial advisory panel may not compete.

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The Ancient Wars of the 21st Century

The evolving character and unchanging nature of war

by LtCol Michael D. Reilly

Western academics and military theorists are currently engaged in a debate about the nature, character, and conduct of modern warfare. On one side of the discussion are those like Everett Dolman, Professor of Comparative Military Studies at the Air Force School of Air and Space Studies, who argues that modern technology ushers in a "new way of war."[1] Specifically, Dolman argues that weaponizing space could counter virtually every imaginable threat—from the hegemonic competition with China to individual terrorist cells in the Middle East. On the other end of the spectrum, academics and military professionals like Mary Kaldor, Feargal Cochrane, and Shannon Beene argue that the nature of war has changed as a result of the post-Westphalian erosion of the nation-state, which no longer holds a monopoly on violence. Mary Kaldor, of the London School of Economics and Political Science, contends that the core aspects of Clausewitzean war theory are "no longer applicable"[2] as warfare has shifted from a "contest of wills" to a "mutual enterprise" where "both sides need one another in order to carry on the enterprise of war therefore war tends to be long and inconclusive."[3]

The vital point for Marines to understand during these debates is that the character and conduct of 21st-century warfare continue to evolve, but the nature of war remains unchanged. Compared to the Clausewitzean vision of interstate conflict, modern warfare is increasingly characterized by the erosion of the state's sovereignty and monopoly of violence coupled with the continuing effects of de-colonialization in developing nations, the vacuum created by the fall of the Soviet Union, and the reality of a globally interconnected society. These ancient wars of the 21st century are best described as a transnational asymmetric mixture of globalization and radicalized tribalism, enabled by high-speed communications and modern weapons, employing ancient and barbaric tactics, sustained by criminality and foreign aid, and located in geographic areas of instability characterized by weak or failed states where poverty is endemic and the majority of the population has little to no access to the political system.

>LtCol Reilly's bio was unavailable.

War's basic nature is a contest of wills between two or more competitors for a political purpose involving violence, friction, chance, and uncertainty. Clausewitz defined war as "an act of force to compel our enemy to do our will."[4] This elegant definition is both simple and comprehensive. Clausewitz envisioned two wrestlers using force with the goal of throwing the opponent "in order to make him incapable of further resistance."[5] The warfare Clausewitz theorized involved conflicts between nation-states, but the application of his theories transcend 19th-century combat and is still applicable today. Clausewitz's contention that "war is merely the continuation of policy by other means"[6] remains valid for modern conflicts and demonstrates the continued need for a strong relationship between the government, military, and populace.

On the high end of the spectrum, Dolman, the Air Force's self-identified "first space theorist," postulates that space-based weapons will change the way wars are fought and extend the "era of U.S. hegemony" by deterring adversaries through "the omnipresent threat of precise, measured, and unstoppable retaliation."[7] In his view, space is the ultimate high ground and a vital domain to be controlled. All of Dolman's prophesies of space-based, high-tech omnipotence may come to fruition, but they do not change the nature of war. Although technology changes the conduct and (potentially) the character of war, it does not alter the nature of war as a violent contest of wills for political purposes. Even the most dangerous threat course of action, like Dolman's prognostication of a "coming war with China," does not change the nature of the war from a contest of wills to something else.[8] If anything, this type of interstate conflict reinforces the timelessness and adaptability of Clausewitzian theory as technology does alter the conduct of war but not its nature.

On the opposite end of the spectrum, Kaldor acknowledges that Clausewitz allows for limited and unlimited war, but obtaining peace was the final objective of both types: either by destroying the enemy or by achieving limited objectives and negotiations.[9] She contrasts the Clausewitzian desire for decisive action with the modern phenomenon of perpetual conflict. This perpetual conflict arose from the conclusion that any attempt to compel the will of the enemy through symmetrical means, when the enemy is represented by the

"whole population," results in the annihilation of those people. This "unlimited character of war," Kaldor argues, is the result of the widening of "barriers" as exemplified by the Holocaust and the use of atomic weapons.[10] Following this logic, only mass and mutual annihilation can result from using symmetric military force "to compel an opponent to fulfill our will."[11]

Kaldor "reformulates" the modern definition of war as "an act of violence involving two or more organized groups framed in political terms."[12] By this definition, war is characterized as either a classical "contest of wills" or a "mutual enterprise" where each participant needs the other to justify their identity and obtain local power or economic advantage.[13] The difference between each "type" of war depends on the "specific political, economic, and military logic."[14] This is an interesting hypothesis as some conflicts in post-authoritarian states demonstrate aspects of criminality or ethnic cleansing with no clear political goals or desired end state. However, even if true, Kaldor's view of warfare would not constitute a change to the nature of war. She even admits that "war does imply organized violence in the service of political ends."[15] The nature of war, therefore, remains a violent (or threat of violent) struggle between belligerents for some political purpose—even if that purpose is ethnic cleansing. For example, a violent conflict for purely economic reasons (like the cartel competition in Mexico) would not qualify as war. Rather, it is better defined as a violent criminal activity. Alternatively, it may be true in some conflicts that each side needs the other to justify its existence or purpose (like the Palestinian-Israeli conflict). But both sides in these mutual enterprises are driving toward a political end state so these conflicts still qualify as war, albeit prolonged ones.

Doug Porch, a Distinguished Professor at the U.S. Naval War College, lumps "new wars" into a brand of conflicts along the long lineage of "small wars" that date back to the nineteenth century as a "discrete category of warfare."[16] Porch succinctly frames the argument proposed by new wars advocates by stating that counterinsurgency (COIN) "proponents and their 'new wars' offspring claim that the propensity of conventional soldiers to treat COIN as inferior ... is self-defeating, because counterinsurgency has become the norm of conflict" and that "future war will mean asymmetrical conflict which ... means that Clausewitzean analysis of the interaction of war, armies, and society, and its impact on strategy formulation are henceforth old think."[17] Porch counters and dismisses any notion of the changing nature of war by noting that "COIN [including the new wars proponents] offers a doctrine of escapism ... into an anachronistic, romanticized, Orientalist vision that projects quintessentially Western values ... onto non-Western societies."[18] In essence, these new wars are not so new and do not require specialized forces (like cosmopolitan law enforcement brigades, specialized COIN forces, or radical changes to Marine Corps organization and training) to handle. History, he argues, demonstrates that "any good soldier can handle guerrillas."[19]

Loitering miniature aerial missile systems and other emergent capabilities are changing the character of war—warfare, the actual conduct of war. However, the enduring nature of war as a violent struggle between opposing wills remains unchanged. *(Photo by Cpl Jennessa Davey.)*

The Marine Corps does not need a facelift. The current operational concepts under consideration have potential, but any reorganization of forces or overhaul of training standards must take into account the unchanging nature of war as well as the current changes in the conduct of warfare. Any force construct based upon an assumption that future conflicts will take place exclusively within the realm of irregular warfare is doomed to fail. Great care must be taken to ensure that the current advocacy for a distributed force capable of persistent presence and long-term foreign internal defense or security force assistance missions does not detract from the Marine Corps' ability and agility to thrive along the full range of military operations.

Warfare, the actual conduct of war, is constantly changing based on any number of factors. Improvements in technology or the use of violence by non-state actors do not change the fundamental nature of war. War continues to be a violent struggle—a deadly contest of wills—for a political purpose. Kaldor even concedes that "new wars are also fought for political ends and ... war itself can be viewed as a form of politics."[20] It appears that modern warfare is increasingly characterized as persistent undeclared guerrilla-style conflicts between societies than by short declared decisive actions between states.[21] This is an important change that impacts the policy, strategy, and operational design needed to mitigate or intervene in these conflicts. It is critical that policy makers and senior military leaders grasp the implications of committing forces

into such asymmetrical and ancient operational environments as there is usually no quick or simple solution to these complex societal problems. Even though warfare is constantly evolving, the nature of war remains the same. Clausewitz is prophetic and timeless in admonishing the "statesman and commander" to determine the "kind of war" waged and not fall into the trap of entering the desired war and not the real one. [22] That is the real secret to the Marine Corps' future success in highly complex and ancient battlefields of the 21st century.

Notes

1. Everett Dolman, "U.S. Military Transformation and Weapons in Space," *SAIS Review*, (Baltimore, MD: John Hopkins University Press, Winter-Spring 2006).

2. Mary Kaldor, "Inconclusive Wars: Is Clausewitz Still Relevant in these Global Times?" *Global Policy*, (Hoboken, NJ: Wiley-Blackwell, October 2010).

3. Ibid.

4. Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret, (Princeton, NJ: Princeton University Press, 1984).

5. Ibid.

6. Ibid.

7. Everett Dolman, "New Frontiers, Old Realities," *Strategic Studies Quarterly,* (Maxwell AFB, AL: Air University Press, Spring 2012).

8. Ibid.

9. "Inconclusive Wars: Is Clausewitz Still Relevant in these Global Times?"

10. Ibid.

11. Ibid.

12. Ibid.

13. Ibid.

14. Mary Kaldor, "In Defence of New Wars," *Stability*, (March 2013), available at http://www.stabilityjournal.org.

15. Ibid.

16. Douglas Porch, *Counterinsurgency: Exposing the Myths of the New Way of War*, (Cambridge: Cambridge Press, 2013).

17. Ibid.

18. Ibid.

19. Ibid.

20. "In Defence of New Wars."

21. Herfried Münkler, *The New Wars*, trans. Patrick Camiller, (Cambridge: Polity Press, 2002).

22. *On War*.

USMC

IW Rising

The role of culture in future conflicts

by LtCol Solon McGill (Ret)

Marines have a culture that is unique within American society, even amongst its warrior class. Uncompromising belief in the characteristics of honor, courage, and commitment are our hallmarks. These things that we believe drive our actions and radically alter our perception of the world and events. Our beliefs are very much a part of who we are—more than simple opinions or thoughts, they define us. Thus, it should come as no surprise that others place just as much value in their systems of beliefs. The role this plays in the lives of people around the world should be obvious, but its importance is often underappreciated. The way that they perceive things is shaped by it and their responses to any event are guided by it. With this in mind, it becomes readily apparent that Marines operating in and amongst people with different belief systems must gain knowledge of those beliefs. The ability to apply this knowledge across the full spectrum of operations will be vital to our success in future conflicts.

>LtCol McGill started his career as an Air Defense Control Officer/Aviation Command and Control Officer before transitioning to the reserves where he served in a variety of infantry and civil affairs billets. He deployed multiple times in support of Operation Iraqi Freedom as a Security Platoon Commander and Infantry Company Executive Officer in addition to deploying in support of CJTF-OIR in a lethal targeting role. He is retired from the Marine Corps Reserve and currently works for a large metropolitan police department where he has worked in patrol, gangs, and SWAT.

"War is a human endeavor—a fundamentally human clash of wills often fought among populations. It is not a mechanical process that can be controlled precisely, or even mostly, by machines, statistics, or laws that cover operations in carefully controlled and predictable environments." [1]

—Army Doctrine Pub 3-0, Unified Land Operations

War, as a human endeavor, is frequently discussed, but the implications are far-reaching and not always fully understood. The human aspects of war—including friendly, enemy, and increasingly civilians—can determine the outcome of a conflict. They may also determine if a situation will develop into open conflict in the first place. One of the foremost aspects of the human dimension is the prevailing systems of beliefs. They shape when people will fight, influence the tactics they use, and may change how committed the fighters are to their cause. A true understanding of the beliefs that guide people allows for a greater ability to predict behaviors and actions and to plan accordingly. Failing to understand the cultural environment we operate in is done at our own folly.

The world today is connected in ways that were unimaginable a generation ago. Internet and cellular access have penetrated even remote areas of developing nations, and as a result, groups of like-minded people are able to rapidly share information and influence outcomes. Missteps by parties to a conflict can have far-ranging consequences when populations react to events or acts. When certain cultural trigger points are hit, previously supportive individuals or groups may withdraw support and neutrals may become openly hostile. In his work, *Out of the Mountains: the Coming Age of the Urban Guerrilla*, David Kilcullen provides a great deal of insight into how this connectivity, combined with the failure of affected governments to recognize emerging belief systems, radically altered the development of the Arab Spring. ISIS used this phenomenon to reach and influence people around the globe. Information operations have become democratized and are being practiced by people who are deeply embedded in the cultures in which future operations will take place. To participate in any meaningful way in these environments, it is necessary to know and understand the beliefs of the people. The ability to act appropriately and to influence target audiences is entirely dependent upon understanding the beliefs of the people.

Mass migrations of people worldwide, the rise of megacities in disaster-prone regions, dwindling natural resources, and a probable return to proxy wars between nations are fueling insta-

bility across the globe. Deployments of Marines to austere locations are likely to increase in the coming years. Along with this, we will encounter cultures and systems of beliefs of which we are wholly unfamiliar. To prepare for these challenges, it is essential that we develop our ability to operate in unfamiliar environments and to rapidly adapt to unfamiliar and emerging belief systems. Operations at all levels must be tailored to the specifics of the places and people they involve. The emergence of conflicts that resemble the small wars of the past is likely to involve Marines with little outside support and limited resources. The ability to suppress hostile forces and insurgencies by overwhelming force may not exist, and Marines will be reliant on their ability to influence outcomes through other means. Again, this requires that they understand what makes the people tick.

As we develop our ability to operate across diverse human terrain, our understanding of the cultures and beliefs must extend beyond the superficial level. History provides a multitude of examples of campaigns that either enjoyed success as a result of such understanding or failed because of a lack of cultural knowledge. LtCol Earl "Pete" Ellis and his study of the Japanese, including culture and beliefs, allowed him to develop an incredibly accurate prediction of their prosecution of the war in the Pacific and for the United States to craft an effective strategy to defeat them. The Marine's Combined Action Program, as masterfully captured in Bing West's *The Village*, is frequently cited as one of the most successful initiatives of the conflict. This program rested on the Marine's willingness and ability to integrate into a culturally alien environment. *The Village* is consistently referred to as an example of how to do things right. Sadly, this capability is not trained to nor has it been emulated when the opportunity existed. More recent examples have not always been as positive, as a lack of cultural knowledge has led to missteps at all levels, contributed to substantial waste, and potentially prolonged and intensified our ongoing conflicts. Operational culture is a part of pre-deployment training, but it is conducted at a superficial level and is frequently inaccurate. The nuances of regional and sectarian differences are poorly understood if they are known at all. We seek to win hearts and minds through the expenditure of money or through gestures that are seen as insincere. At the same time, we conduct operations that have predictably negative repercussions. It is inexcusable that nearly sixteen years into the conflict in Afghanistan, leaflets were dropped bearing an image of a dog with a Koranic passage on it. Under our system of beliefs, this is a minor transgression, but that is irrelevant. In the operational environment, there were many with a belief system that would lead to an extremely negative response, to include violent acts against Americans. Failure to understand the beliefs of the people impacted operations.

Against this backdrop, it is essential that the United States develop the means to address emerging conflicts and instability effectively and efficiently. At a time when the roles of the various branches of the military are becoming increasingly blurred, this is an area in which the Marine Corps can carve out a niche. More accurately, the Marine Corps should reclaim this niche. The changing population patterns and other factors including environmental change virtually guarantee that the bulk of these future issues will be centered in the littorals. Our ability to operate effectively in this environment provides the physical means, while our adaptability and history of successes in small wars demonstrate the potential to rebuild a robust capability set across the human terrain. The Marines can provide a modular "right-sized" force under the MAGTF model.

Irregular warfare (IW), including the aforementioned small war model, is most successful when a relatively small force exerts a disproportionate influence on the operational environment. This can be done through numerous means including working with local partner forces. Historically, the Marines performed exceedingly well at this. With interventions in small wars numbering in the hundreds, we have the institutional experience and capabilities. These conflicts require a different approach than conventional wars. Attempts to apply conventional tactics in order to make use of perceived technological or firepower advantages can backfire. By looking to the past, we can find best practices and, when appropriate, integrate modern means. How do we develop and maintain our capabilities in the conduct of these irregular wars?

We must first undergo a transformation in our way of thinking. To a degree, we have recognized that the human and cultural dimensions of war are important, but it can be difficult to quantify success. Measures of effectiveness and measures of performance revolve around things that are easily reduced to numbers: how many projects were completed, how many food bags were distributed, and how much anti-U.S. graffiti was observed—among other factors. Money is spent in an effort to win hearts and minds, and we try to count how many of each we have won. Many a bronze star citation lists the measures taken to win them over. The next unit moves in six months later, and the process begins again. It is time to abandon the concept of hearts and minds. It has become too cliched to have any real meaning, and the attempts to win them over border on the absurd. As our troops occupy nations, we attempt to win over locals by building them things without ever truly engaging the people and understanding them. Reflecting on our own belief systems, how much success would these means have if used on us? At best, there may be some temporary improvement in attitudes toward the

"If you want to see what lies in store for the armed forces in the future, you can do worse than to cast your gaze back to the past"[2]

***—Max Boot,* The Savage Wars of Peace**

Marines had decades of experience as combat advisors in Iraq and Afghainstan, but many of these skills do not translate well into building partner capacity. *(Photo by 1stLt Robert Shuford.)*

Americans if, for example, we provide a water treatment plant. At worst, ill-conceived efforts may increase conflict and hostility. The long-term benefits of such efforts are minimal. There has been some movement away from the *money as a weapon system* way of thinking, but without a viable substitute, it is too easy to fall back on a similar method in the interest of "doing something." What will be more effective? The answer is, unfortunately, that it depends. There is no one right answer. Because the situations vary substantially, and the dynamics of the human environment may change from country to country, or even within countries, it becomes necessary to plan based on those specifics. Even more problematic for many is the difficulty in quantifying success. How do we know when we are doing well? It is difficult, and to do so requires an even deeper dive into understanding the people we operate amongst. Signs will emerge from all sides in a conflict, but we need the ability to see them, and they will likely not come in the form of statistics that can be presented in a tidy briefing. Our military leadership must accept and embrace this and learn to function in this element of the fog of war.

With an understanding of the importance and difficulty of operating in an IW environment, it becomes necessary to prepare and build capacity on a permanent basis. Too often, a capacity is built up to meet a specific challenge, then dismantled at the conclusion of a war or operation. IW has been a major part of Marine Corps operations for our entire history and will be for as long as we exist. Formalizing the IW mission and training for it across disciplines is essential.

As previously mentioned, success in these types of operations centers around the human aspect of war far more so than conventional war. Everything we do must be informed by this. From infantry operations to advising, logistics, and supporting arms, there are challenges that are unique to IW. The ability to interact with and influence relevant populations is critical. A first step is to increase cultural training across the Marine Corps, regionally aligned to the COCOMs. More specific training should be provided for regions or countries where conflict appears to be likely. Once the Marines are in a pre-deployment cycle, it is too late. The training should be relevant and answer the question: *so what?* We have frequently had our training designed by individuals who have left their countries long ago and are not appraised of current trends amongst the population. Additionally, these individuals often come from an educated, relatively wealthy class that is not representative of the populations we seek to influence. We would benefit from taking an anthropological approach to studying the cultures and beliefs of the people. The goal would not be to make every Marine an expert but to educate them on broad concepts with more in-depth study of those topics that are deemed to be most relevant. Along with this, there is an added benefit—cultural fluency is similar to language fluency in that people find it easier to learn additional languages if they already have a working knowledge of several. If the need develops to learn about a new culture, they will be more capable of doing so if they are already functionally literate in more than one. This operationalizes the concept of every Marine a collector and every Marine as part of the information operations campaign. Each Marine will be more capable in these roles when he hits the ground. Negative effects can be minimized while positives are maximized.

There exists a need to develop individuals with a greater degree of expertise for specific regions and countries who can advise commanders at all levels. A natural repository for this would be within the Civil Affairs Groups (CAG). As the wars in Iraq and Afghanistan have wound down and more people see the folly in project-based civil affairs efforts, the CAGs have struggled for relevancy. The current alignment to functional areas of governance, infrastructure, and education has not been effective. Commanders would benefit far more from a realistic appraisal of the impact of proposed operations on the success of the mission. This requires a significant understanding of the people and the beliefs that drive them. To the extent that this is done, it too often revolves around the negative (i.e. a strike on a mosque will turn people against us). There also exists a role in understanding when cultural considerations will cause lesser negative effects or enhance positive effects (i.e. a facility is predominately used by a ruling elite that oppresses the population we wish to influence). Constant monitoring of the environment and civil effects of operations is important and can be achieved through a variety of means including personal contacts, local news, and social

media. Because of the difficulty in assessing success within the human element, this provides a valuable feedback loop to operational planners. To develop these capabilities, the civil affairs community should shift toward the cultural aspects of their mission and the implications for operations. Follow-on schools, more defined regional alignment of the CAGs, and subdivided alignment within the CAGs will start the move in this direction. Immersive training and educational opportunities such as study abroad and exchange programs for select staff non-commissioned officers and officers should be pursued and funded.

The history of successful IW campaigns shows a clear need for a capability to operate with local military and law enforcement forces. The Marine Corps has taken on some advising roles with mixed success. This capability should be improved and expanded. The creation of Train Advise Assist companies in the Marine Corps Reserve is a positive step, but it focuses on the higher level of command. The interactions of individual Marines and local forces and civilians can have a significant impact, especially in the modern, connected world. The ability to work in such a role requires certain traits and skills that many good Marines do not have. Screening for aptitude is essential, and the skills, once honed, should be maintained. Advisor units should not be formed and dissolved constantly. There should exist a core group of professional advisors for all levels of command that form the backbone of any advisory mission. These units could be augmented by Marines who have obtained the Foreign Security Force Advisor MOS as needed. These core units could maintain a level of proficiency far beyond that of ad hoc units—something that is important for success. They will maintain both the tactical and cultural skills to contribute to success in a manner that will be disproportionate to their relatively small size.

The Marine Corps has taken on some advising roles with mixed success.

Related to the advisor mission, and similar to many missions carried out in the small wars of the 1800s and early 1900s, is the role of Marines in local constabularies. Success in this mission was something that set the Marines apart in the *Savage Wars of Peace* that Max Boot describes. To a large degree, the skills needed for this mission exist within the law enforcement battalions. Enhancing their ability to operate within this part of an IW campaign provides means to combat the instability that may escalate to more open conflict. A significant part of this is to boost knowledge of the culture and beliefs that are common in the area of operations. By doing so, they will enhance their effectiveness in training and working alongside partner forces and in interacting with members of the civil populace who we seek to influence. The use of this option may be particularly attractive to policymakers because of the small footprint and relative lack of intrusiveness into the operating environment.

There is a commonality to the diverse set of operations that constitute IW—the ability to understand, integrate with, and influence populations through the applied knowledge of culture and belief systems. This holds true regardless of the status of the target population as friendly, neutral, or enemy. You cannot consistently and properly affect something you do not understand; the solution lies in improving knowledge and the ability to use it in the planning and conduct of operations. The need to improve upon this capability exists across all ranks and levels of command and is applicable across the full spectrum of operations. This cannot be a capacity that is built up and cut continually but should be a constant. In an increasingly complex and volatile world, the time to move toward this end is now.

Marines with Special-Purpose MAGTF Africa 13 advise the Burkina Faso Gendarmerie. *(Photo by Sgt John La/Released.)*

Notes

1. Department of the Army, *Army Doctrine Publication 3-0, Operations*, (Washington, DC: 2011).

2. Max Boot, *The Savage Wars of Peace*, (New York, NY: Basic Books, 2014).

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Reconnaissance-Strike Tactics and Maneuver Warfare III

Maneuver Warfare with Chinese characteristics

by Maj B.A. Friedman

>Maj Friedman, USMCR, is currently the Division Cell OIC at 6th Air Naval Gunfire Liaison Company at Joint Base Lewis-McChord, WA, and works as a strategic Assessment Analyst. He is the author and editor of numerous books and articles on military tactics and strategy and amphibious warfare, including* On Tactics *and* On Operations *published by the Naval Institute Press and co-editor of* On Contested Shores: The Evolving Role of Amphibious Operations in the History of Warfare *from Marine Corps University Press.

Earlier in this series, I said that the principles of maneuver warfare applied by an organization with different roles, responsibilities, strengths, and weaknesses than the Marine Corps would look quite different from *MCDP 1, Warfighting*, which is maneuver warfare applied to and for the Marine Corps. In this article, I will look at another warfighting organization that is applying many of the same principles and examining how their version is different. That organization is the People's Liberation Army (PLA).

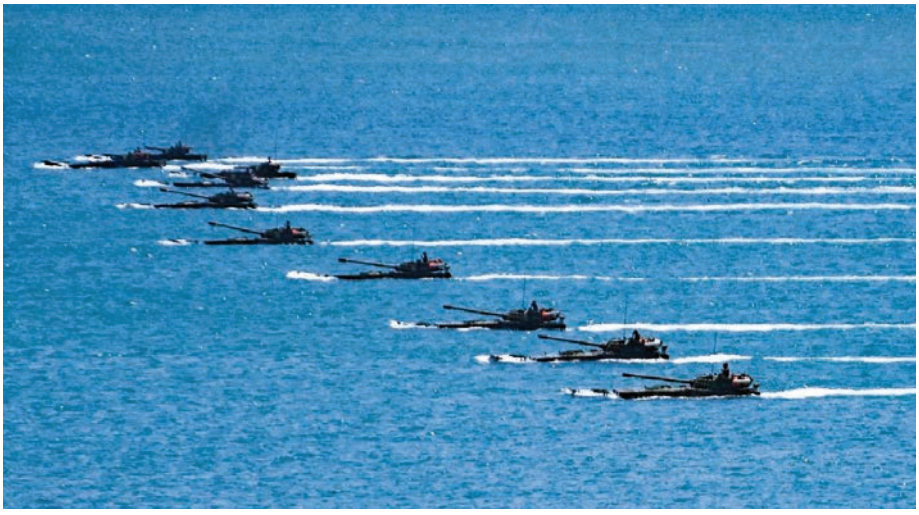
In lieu of endnotes, which tend to get ignored, I will lay out the sources for this article here in order to highlight them and where they can be found. For translations of PLA textbooks, I have used those provided by the Air Force Chinese Aerospace Studies Institute. These include the 2013 and 2020 versions of *The Science of Military Strategy*, the 2006 version of *The Science of Campaigns*, and 2021 translations of *Lectures on Joint Campaign Information Operations* published by the PLA's National Defense University Press. They are all available at https://www.airuniversity.af.edu/CASI. I have also pulled context and analysis from a number of think tank reports and articles. These include the RAND reports "People's Liberation Army Operational Concepts" by Edmund J. Burke, Kristen Gunness, Cortez A. Cooper III, and Mark Cozad (published by RAND Corporation in 2020) and "Systems Confrontation and Systems Destruction Warfare: How the Chinese People's Liberation Army Seeks to Wage Modern Warfare," by Jeffrey Engstrom (published by RAND in 2018). All these sources are available for free online and are available to anyone.

First, some caveats. One, the PLA does not have doctrine in the same sense that U.S. forces do. The materials mentioned previously are professional military education textbooks that are reinforced by regulations at the unit level, although the exact role of each is not clearly defined. Second, at times the PLA uses the same words as the United States in a number of public-facing documents, but that does not necessarily mean that they are using them in the same way. Additionally, PLA officers and academics hotly debate, discuss, and disagree on these concepts and ideas. The PLA's institutional vision, therefore, is somewhat of a moving target (as is ours). However, reading major trends and official documents reveals a sophisticated and robust warfighting vision that has a lot in common with the Marine Corps' conception of maneuver warfare. It is unclear how institutionalized these ideas are or whether or not the PLA has or can realize them but understanding the mind of potential adversaries is part of maneuver warfare.

Informatized War

The PLA divides the development of military organizations into a number of different generations or stages. The most important of which are mechanized war, informatized war, and intelligentized war. These stages are differentiated by the most decisive element in warfare. For example, mechanized war (which we might refer to as industrial-era warfare) describes much of the warfare of the 20th century where the ability to mass mechanized forces and artillery was the decisive factor in victory or defeat (according to the PLA).

The most important stage for our purposes here is informatized war, which the PLA uses to describe warfare as it is currently fought. In informatized war, victory is determined by which side is better able to acquire, process, disseminate, and exploit information. The PLA believes that the United States achieved this as early as 1991 during the Persian Gulf War. Current PLA reform efforts are aimed at achieving the same thing, although not all the PLA's forces have yet been "informationized." The



Information warfare is central to the PLA operating concept. *(Photo: Weibo.)*

PLA's vision for how a military force should be organized and employed for informatized warfare is sometimes called system-of-systems warfare and involves two major concepts which will be discussed: systems confrontation warfare and systems destruction warfare.

Intelligentized War is how the PLA is currently conceptualizing the future. As such, this concept is constantly changing as the PLA debates how various emergent technologies will affect warfare in the future. Broadly, however, PLA thinkers agree that artificial intelligence, unmanned systems, and other emergent technologies like quantum computing will create a new revolution in military affairs. Whatever that revolution ends up looking like, the PLA intends to get there first.

Systems Confrontation Warfare

The PLA's concept for how it will organize itself to fight as an informatized force is systems confrontation warfare. The central tenet of this concept is that warfare is

> no longer a contest of annihilation/attrition between opposing military forces, but rather a clash between opposing operational systems ... an enemy can be defeated if its operational system can be rendered ineffective or outright unable to function through the destruction or degradation of key capabilities, weapons, or units that compose the system.[1]

Much like maneuver warfare, the PLA will not seek to just destroy the opposing force but instead will target capabilities that tie that force together and enable it to operate as a cooperative system (hence systems confrontation warfare).

The central tenet of this concept is that warfare is ... a clash between opposing operational systems ...

For this to work, the PLA believes it has to achieve information superiority or *dominance* so it can ascertain how an opposing force is arrayed and which key components can be attacked in order to disassemble or disaggregate it. Once a system is so disordered, the now individual non-cooperative components can be attacked and overwhelmed at will. Hence information warfare is central to the PLA's entire operating concept and its main effort for its own force design efforts.

The PLA has designed joint staffs around this concept. Rather than organizing them by service component or by the traditional, Napoleonic-Era functions of S-1, S-2, S-3, etc., the PLA has broken all those stovepipes and organized high-level staffs around reconnaissance-strike tactics. The five "component systems" of these staffs are: the reconnaissance-intelligence system that collects information, prevents the adversary from collecting information, and provides situational awareness to the entire force; the information confrontation system, which is roughly similar to the MEF Information Group, employing electronic and cyber capabilities to both collect on and disrupt the adversary's systems; the command systems, which provides command and control (C2) and decision assistance to PLA commanders; the firepower strike system, which is the units that act based on intelligence gained by the other components including long-range precision fires but also maneuver forces from across the PLA services and domains; and the support system, which provides enabling functions like logistics, sustainment, medical support, and maintenance to the whole. This "operational system" will reside at the equivalent of our Joint Task Force level but is clearly organized around winning the information warfare fight and executing reconnaissance-strike tactics. Lastly, these component systems themselves may be task-organized. Once stood up, a headquarters may have only some of these component systems in combination depending on the task.

Of note, these component systems roughly correspond to the four steps of the OODA Loop (with the exception of the support system). The reconnaissance-intelligence system observes information, the information confrontation system orients that information within the system (and tries to disorient the adversary system), the command system decides, and the firepower-strike system acts.

Systems Destruction Warfare

While systems confrontation warfare describes how the PLA intends to organize their high-level staffs for modern warfare, systems destruction warfare lays out how the PLA intends to attack another modern force. Systems destruction warfare "seeks to paralyze the function of the enemy's operational system."[2] It is intended to create the same kind of operational paralysis as described in

MCDP 1 by dis-aggregating the enemy's ability to work as a cooperative system-of-systems. It does so by targeting four prioritized types of targets through both kinetic and non-kinetic means. The highest priority targets are those that will disrupt the ability of the adversary to transmit information. These include anything from communications to sensors to servers and command and control nodes. If successful, the adversary is "information isolated."[3] The second priority is "essential elements."[4] An essential element will most likely be defined by the type of enemy the PLA is facing. The essential element of an artillery unit is its cannons, for example, so those targets would be struck next. The third set of targets is "operational architecture."[5] This term is also unclear but might be referring to the logistics and mobility infrastructure required to move and support forces around the battlespace such as heavy vehicles, airfields, connectors, and ports. Lastly, PLA writings refer to attacking the adversary's "reconnaissance-control-attack-evaluation" process.[6] This could mean attacking any remaining command, control, communications, computers, intelligence, surveillance, and reconnaissance capability or directly attacking the opponent's OODA loop itself. Recall the discussion in part I of this series on information-age maneuver warfare that directly attacks OODA loops and adversary decision making.

In this way, the PLA intends to employ reconnaissance-strike tactics against a prioritized set of targets to render an opponent deaf, blind, mute, and paralyzed. It is about attacking vulnerabilities which creates opportunities that enable the attack of more vulnerabilities. Both systems confrontation warfare and systems destruction warfare are built around the core idea that warfare in the Information Age will be information-centric, making information processing both a strength and a potential vulnerability. Systems confrontation warfare exploits that fact by organizing PLA forces to foster fast, accurate, and reliable information acquisition, analysis, and dissemination while systems destruction warfare turns the necessity for information into a vulnerability for the enemy by directly attacking their ability to use it. While U.S. forces tend to have separate processes for intelligence, surveillance, and reconnaissance; targeting; and fires run by separate cells in separate staff sections which are—in theory—fused later, the PLA designed a fused process for reconnaissance-strike tactics and then built an integrated staff around it.

The PLA will employ reconnaissance-strike tactics in any scenario. *(Photo: Weibo.)*

These concepts can also shed light on the PLA's anti-access/area denial system. In reality, the system is nothing more than a coastal defense system capable of reconnaissance-strike tactics. Recall the discussion from Part II of this series about tactical adaption: newly possible tactical schema emerges and then new methods of organization are built to exploit them while retaining or repurposing older adaptations. The PLA repurposed older coastal defense concepts, married them to reconnaissance-strike tactics, and applied them to their maritime operating area.

Systems-of-Systems Warfare in Practice

First, it is not clear how well-positioned the PLA is to practice any of these concepts in the real world. They are, as of now, goals more than codified doctrine. If the PLA does succeed in putting these theories into practice though, there will be a few implications for Marine Corps forces.

In any confrontation with PLA forces, Marine Corps communications, sensors, and information systems will be targeted first, in mass, by kinetic and non-kinetic means. The PLA takes these information-centric tactics so seriously that they recently formed an entire branch, the Strategic Support Force, to manage them. Space, electronic, and cyber capabilities will be used to guide PLA Air Force and PLA Rocket Force strikes against key platforms and enablers as well as "essential elements" like long-range precision fires, fixed-wing aircraft, and amphibious platforms. Next, critical logistics enablers and infrastructure will be destroyed, leaving Marine Corps operations unsustainable. Finally, Marine Corps combat arms forces—unable to act, react, or even detect PLA forces—will either be attacked from unexpected directions in unexpected ways or simply bypassed altogether as PLA maneuver and surface

The PLA repurposed older coastal defense concepts, married them to reconnaissance-strike tactics, and applied them to their maritime operating area.

forces seize objectives with little opposition. Even as the PLA is untested and it is not clear that they have the level of training, or even the necessary human capital, to execute this vision, it still behooves Marines to understand their goals and intentions. In fact, the Marine Corps may be best positioned to understand the PLA's warfighting philosophy as the two are so similar.

First, both philosophies are focused on fighting the enemy as a system, rather than its individual pieces and platforms. They are less about having technological or numerical superiority or acquiring better platforms and more about understanding the adversary as a system, identifying critical capabilities and critical vulnerabilities, and then attacking those vulnerabilities with the most advantageous tool available.

Second, both philosophies are rooted in a Clausewitzian paradigm of war rather than a Jominian one. Jomini viewed war in linear terms: the right amount of force at the right place at the right time in the right manner according to predictable and repeatable rules would predictably and repeatedly lead to victory. Clausewitz did not; he viewed war as inherently unpredictable and chaotic and intangible psychological factors as being just as, if not more important than physical factors, making war and warfare non-linear. Boyd agreed and *MCDP 1*, *Warfighting,* makes this explicit, but PLA works do not. Instead, the PLA focuses more on the writings of Mao Tse-Tung. Mao's theory and practice, however, were also based on Clausewitz's work. Mao cited Clausewitz in his most important work and his most famous phrase, "political power grows out of the barrel of a gun," is simply a reframing of Clausewitz's core idea of war as the continuation of politics with the addition of violence. As for Boyd's influence on PLA doctrine, he is not mentioned by name but his ideas are obviously influential as noted above.[7]

This is important because the current Marine Corps (along with the efforts of all the other Services as well) is still predicated on linear conceptions of platforms defeating platforms while ignoring the enemy system as a whole. This platform-centric mindset is characterized by the idea of kill chains or kill webs, which are reductionist depictions of how platforms interact, stripped of all human decision making and context. The PLA does not think in terms of kill chains, physical attrition, stovepiped domains, or linear operations but rather in holistic systems and non-linear effects. If the Marine Corps falls into a trap of platform-centric thinking and gets stuck in a linear, domain-centric Jominian paradigm, the more maneuverist PLA will have the conceptual high ground.

That being said, there are major differences between Marine Corps and PLA philosophies. The PLA does not and will not pursue decentralized decision making along the lines of mission command, which features mission-type orders, commander's intent, and empowered subordinates. The PLA does not have a competent and empowered non-commissioned officer or staff non-commissioned officer corps. The PLA is still beholden to a Leninist system that favors centralized planning. However, they are well aware of the disadvantages of this system and are seeking ways to mitigate those disadvantages. Marines tend to take it as a matter of faith that maneuver warfare cannot be pursued without mission command, but this may not be the case.

Conclusion

We must be careful not to "mirror-image" potential opponents when highlighting similarities, so we should not take conclusions too far. The PLA serves the Chinese Communist Party, not the Chinese people or China itself. The People's Republic of China's government is totalitarian, oppressive, currently engaged in large-scale ethnic cleansing on its own territory, and is clear about its aims to expand that territory at the expense of free, democratic nations in its proximity. Just because there are similarities between the warfighting philosophies of the PLA and the Marine Corps does not mean those principles will be applied the same way by two vastly different organizations that serve two vastly different nations.

While it is still unclear how the PLA will put system-of-systems warfare into practice on the battlefield, one thing is very clear: it is not attrition warfare. It is a sophisticated and clever warfighting philosophy designed to enable the People's Republic of China to build a modern military force capable of meeting and defeating other modern military forces, not just to shore up a regime or protect its own borders. We should not underestimate it or them.

It is, in my opinion, not yet clear that the Marine Corps should update or rewrite *MCDP 1, Warfighting*. In fact, it probably should not. However, some or all of the other MCDP publications should undergo a review. The world has changed a great deal since the publication of *MCDP 1.* Reconnaissance-strike tactics were a distant dream but are now a reality. The world itself is now interconnected by a global digital communications network and inhabited by both manned and unmanned systems, meaning the information environment is everywhere and occupied by everyone all the time. Lastly, the Marine Corps has a stated pacing threat which it did not when *MCDP 1* was published. While our philosophy has not changed, the application of that philosophy has to change as quickly as the world changes in order to stay relevant.

Notes

1. Jeffrey Engstrom, *Systems Confrontation and Systems Destruction Warfare,* (Santa Monica, CA: RAND Corporation, 2018).

2. Ibid.

3. Ibid.

4. Ibid.

5. Ibid.

6. Ibid.

7. For more on Mao Tse-Tung and Clausewitz, see B.A. Friedman, "The Strategy of Small Wars," in Nathan K. Finney, ed. *On Strategy: A Primer*, (Fort Leavenworth, KS: Army University Press, 2020).

Remote Split Operations

Lessons from the Air Force for the Marine Corps' future fleet of armed unmanned systems

by LtCol Wayne Phelps (Ret)

The Commandant's Desire to Accelerate Unmanned Systems in the Marine Corps

The role of unmanned systems in the Marine Corps is going to expand significantly—and if the Commandant has his way—at an accelerated and uncomfortable pace. Gen Berger views unmanned systems as vital to the Marine Corps' success in a great power competition. He envisions unmanned systems finding targets from the air, striking targets from both the air and ground, as well as moving logistics and perhaps even casualties around the battlefield. The unmanned systems' expansion has already begun, which is why now is the perfect time to reflect on lessons the Air Force has learned employing armed unmanned aircraft over the last twenty years to inform the best way forward for the Marine Corps.

In 2021, the Marine Corps created a new MOS for MQ-9 pilots and sensor operators, bought two MQ-9s, flew its first flight without contractors, conducted a trans-Pacific flight from California to Hawaii in collaboration with the Air Force, and decided to buy six more MQ-9s in 2022. These are monumental steps in the right direction of rapidly fielding this system. The early operational capability of the MQ-9s in the Marine Corps is projected for 2023 and initial operational capability is planned for 2025 with a total of 18 MQ-9s in the inventory. Based on the pace of activity in the last year, it is safe to assume that the Commandant's desire to grow unmanned systems at an uncomfortable rate is becoming reality. Eighteen Reapers still flails in comparison to the 351 in the Air Force inventory, but it is a fantastic start to having armed Marine unmanned aerial systems (UAS) in direct support of the Marines on the ground.

***>LtCol Phelps is the former commanding officer of VMU-3 and the author of* On Killing Remotely: The Psychology of Killing with Drones.**

In addition to buying six more MQ-9s in 2022, the Marine Corps has determined it needs to double the number of unmanned aircraft squadrons from three to six. Unmanned aerial systems have been around in the Corps since 1987, but this is the first time in thirty-four years that Marines are flying a UAS capable of conducting strikes directly from their own platform. This is a significant milestone because an armed UAS shrinks the kill chain, an absolute necessity in expeditionary advanced base operations where units are geographically dispersed in austere environments and targets need to be identified and prosecuted quickly.

In a statement on the posture of the Marine Corps to the House Appropriations Committee for Defense in 2021, Gen Berger explained the importance of having a larger UAS platform in the Marine Corps:

> Long-endurance Group 5 UAS, like the MQ-9, also provides the persistent presence necessary to win the hider/

Marines with Marine Unmanned Aerial Vehicle Squadron (VMU) 1 prepare to launch and operate the first Marine Corps-owned MQ-9A Reaper on Marine Corps Air Station Yuma, AZ, 30 August 2021. *(Photo by LCpl Gabrielle Sanders.)*

finder competition for the fleet. Additionally, a proven platform like the MQ-9 supports quickly learning the platform through the experience of the U.S. Air Force while continuing adaptation and innovation over time as we procure the future system.[1]

The MQ-9 is a bridging capability to a future unmanned aircraft but having it in the hands of Marines now will allow them to develop tactics, techniques, and procedures for operational employment and integration into the MAGTF. The MQ-9 will also provide valuable experience for aircrews that to date have only flown smaller unarmed Group 3 UAS including the Pioneer, Shadow, and Blackjack.

New lessons for optimal employment of a Group 5 UAS will have to be learned through large-scale integrated training exercises. Adding MQ-9s to Marine Unmanned Aerial Vehicle Squadron 3 (VMU-3) at Marine Corps Base Kaneohe Bay, HI, will enable experimentation, innovation, and integration with the Marine Littoral Regiment, the foundational unit of how the Marine Corps anticipates fighting in the future. Although there are many lessons to be learned from the Air Force regarding the employment of the MQ-9, the Marine Corps has a different mission than the Air Force and approaches problems from an expeditionary and amphibious mindset. This period of experimentation and innovation with the Marine Littoral Regiment is crucial for future success.

First Marine to Strike from a Reaper

October 30, 2020 marked the occasion of the first time a Marine struck a target directly from the UAS they piloted. The excerpts below are the pilot's own recollection of the strike the day after the event and are worthy of capturing as a historical footnote for the Marine Corps and as a reference to the complexity of remote operations. The pilot chose to remain anonymous:

> I picked up the mission overhead the place of worship, got in the seat, and resumed the mission of tracking these confirmed bad dudes as they moved around with multiple heavy machineguns. I received a pre-emptive game plan and nine-line from the joint terminal attack controller (JTAC) with the intent that we were going to strike as many heavy machineguns as we could when the enemy was clear of the place of worship and in a collateral-free area. My sensor operator was slightly greener than me but also an E-7 that is extremely proficient, competent, and reliable. We had the game plan and nine-line so we just talked through our internal plan over and over again; both to build my confidence in my ability and also to build his confidence in my ability as a pilot in command with zero strike experience.
>
> Thirty minutes after we got in the seat a group of adult males started to move away from the place of worship with heavy machineguns in tow. We followed them into a collateral-free zone. We had an additional MQ-9 above us calling far collateral damage and we were self-lazing, shooting, and calling near collateral damage. We got told to call ready, and once we were ready, we were told to push time on target immediately. I turned in, ran through the final checklist items, and we got cleared hot. At that point, we were laser on, within our weapons engagement zone, and were just waiting to be at the optimal range to meet the ground force commander's requirements for missile end game parameters.
>
> About a half kilometer from my release range a collateral damage concern entered the picture, we called it, aborted the attack, and came off dry. We egressed to the overhead to reestablish strike posture, called ready, and waited to be told to push time on target immediately again to execute scans and get clearance. Once we got to strike posture our group of adult males reached a family compound and went inside a building with the machineguns. This of course was a collateral FULL zone so we could not strike. We got told to maintain strike posture and keep the northwest side of the building (where the door was) in our field of view at all times. This is very task intensive for the pilot to hold in that position. It requires essentially constant turns every sixty seconds or so in strike posture. We held this for about sixty minutes.
>
> At this point, we debriefed with the JTAC. We discussed why we came off dry and then immediately aborted. All calls were the correct calls. The biggest thing I took away from the first attack attempt was to trust my gut and act as the pilot in command (PIC) when I am the PIC. Had I not come off dry on my own initiative but rather waited for the JTAC to abort the strike, I may have launched the missile potentially resulting in collateral damage.
>
> The JTAC informed us that we were going to get pulled to support another unit as soon as the other MQ-9 from my squadron could transit from their current airspace and get a talk-on/positive handoff from us. They told us that if our guys came out of the building before then we would strike. What made this even more rich is that my good friend, a prior Marine RPA [remotely piloted aircraft] pilot (who is now a USAF Captain), was the pilot for that other Reaper.
>
> About ten minutes from when the other MQ-9 was supposed to be with us, our targets came out of the building carrying their heavy machineguns. Only this time they jumped on a motorcycle three deep. My first strike had now developed from a vanilla group of foot mobile adult males to a complex moving target engagement through a semi built-up environment. The restricted operating zone went hot. The other MQ-9 had been listening on the radio and advised he would maintain clear to enable deconfliction. I still had the other MQ-9 above me calling far collateral and we were still shooter, self-laze, and near collateral only now with a moving target. I called ready and we got cleared to push time on target immediately. I turned in, my sensor operator did his near scan and called collateral no factor, I called in with my heading, and as soon as we got clearance, our group of adult males was in an alley that was luckily oriented along our run-in heading; had it not I would have had laser masking and would have had to call off-dry again. I waited for my desired release distance and fired the hellfire missile. I provided a stable platform and let my sensor operator do the rest. When the smoke cleared, we had all three adult males with heavy machineguns killed in action. We immediately egressed,

ran a preemptive reattack check, and regained strike posture. It was eerie how ready we were for another shot and were not even rattled; we were in the zone.

While executing the strike you are so focused on meeting the ground force commander's intent that you must execute how you are trained without overthinking it to meet timelines and intent. Post-strike when I ran the numbers my end game solution was perfect. It either met or exceeded the ground force commander's requirements based on their standards. Based on the sensitivity of where we work it is not as simple as getting effects on target. You must employ ordnance in such a timely way that the collateral concern mitigation techniques are viable while at the same time employing the weapon in such a way that you can have success against your enemy. This is incredibly tasking for the pilot and that is why it was so satisfying after the fact to run the numbers, see that the solution was perfect, and gain that confidence in my skill set; even as a very green MQ-9 Pilot.

I rode a high through the rest of my flight and then back home to my wife. Only once my head hit my pillow was I out cold. I crashed hard. Slept deeper than I had in a long time ... for two hours. Then I was wide awake playing out the strike over and over again. Not guilty, not remorseful, but as the perfectionist that I am, critiquing myself over and over and over. [2]

Will Marine Reapers Remain in Support of the MAGTF?

During joint operations, the Joint Force Air Component Commander (JFACC) is responsible for air operations, including developing the air-tasking order. For certain missions, each of the Services provides what is known as "upfront sorties" to the JFACC to assign tasks, and the Service component retains the remaining sorties to achieve its tasks and missions. Electronic warfare is one of those specified missions and the reason why, when the Marine Corps had EA-6B Prowlers in its inventory, they were almost always tasked by the JFACC to support the joint force. Another one of those missions that each service kicks up to the JFACC upfront for tasking is Intelligence, Surveillance, and Reconnaissance (ISR).

The majority of ISR assets in recent conflicts have come from the Air Force to fulfill the JFACC's requirements. But what happens when the Marine Corps flies the same ISR asset as the Air Force, such as the MQ-9? Will the Marine Corps still be able to retain those sorties in direct support of the MAGTF or will the Marine component have to kick some MQ-9 ISR sorties upfront to the JFACC?

The Marine Corps argues that it fights as a MAGTF within a joint operation and is usually successful at retaining its own aviation assets in direct support of Service-specific missions. However, one cannot help but wonder if an Air Force that is already stretched thin to fulfill its ISR obligations with MQ-9s will not request relief from some of those responsibilities now that another Service possesses the same platform.

Remote Split Operations

The Air Force employs its fleet of RPA using a model called remote split operations (RSO). RSO consists of a launch and recovery element (LRE) and a mission control element (MCE). The LRE is forward-deployed close to or in the theater of operations and conducts maintenance, fueling, arming, and launch and recovery efforts of the MQ-9. Once airborne and flown to a predetermined handoff point, control of the MQ-9 is passed from the LCE over a satellite link to the MCE. The MCE flies the tactical portion of the flight from a cockpit on the ground known as a ground control station, usually from a stateside base such as Creech Air Force base.

The Air Force has evolved RSOs over the last twenty years, and it is a well-established model at this point. The RSO model has many advantages such as keeping airmen out of harm's way, connecting the missions to a larger intelligence support enterprise, and reducing boots on the ground in theater. RSO also contributes to many challenges experienced by the Air Force's RPA community. Since the Marine Corps is still in the early stages of determining how to best employ the MQ-9, it is worthy of a deeper dive into the Air Force's lessons over the last twenty years to inform the best path forward.

Lessons Learned from the Air Force Regarding RPA Employment

RSO enables the Air Force to keep most RPA crews at their home station supporting line operations, effectively flying combat sorties daily from home. To support daily operations, Air Force RPA crews are scheduled to work in shifts. Those shifts rotate about every six weeks from days to nights to prevent crews from being stuck working for too long in an undesirable shift. An unintended consequence of frequently rotating shifts is that a person's circadian rhythm never quite catches up to

The Marine Corps' first MQ-9A completed 10,000 flight hours in support of Marine Corps Forces Central Command operations on 31 March 2021. *(Photo: U.S. Marine Corps.)*

the rapid change in sleep patterns and the aircrew end up working in less-than-optimal conditions. Over long periods of time, this leads to cumulative fatigue, which can reduce reaction time and impair judgment. Shift work is further exacerbated by the pace and duration of combat operations that RPA crews conduct.

Units that forward deploy traditionally have a period of dwell time post-deployment, a period where they can recover from the rigors of deployment, take some well-earned time off, and train for the next deployment. However, the Air Force's RSO model does not allow for dwell time for two reasons: demand for RPAs and the fact that most of the crews are deployed in garrison rather than forward deployed.

The demand comes from Geographic Combatant Commanders (COCOMs) in the form of combat air patrols (CAPs), essentially a line filled by multiple MQ-9s and aircrews that is made available for tasking by the COCOM every 24 hours within their area of responsibility. Each COCOM has multiple CAPs within its area. The requirement to fill CAPs with MQ-9s has only increased over the last twenty years with no sign of slowing down. In the Fiscal Year 2021 budget submission, the Air Force requested relief from 70 CAPs down to 60, but the CENTCOM and AFRICOM Combatant Commanders quickly objected, stating that despite a reduction in hostilities on the ground, the requirement for ISR still exists in the quantities requested.

That CAP requirement was further reinforced by the Secretary of Defense following the U.S. withdrawal of troops from Afghanistan in August 2021, touting the importance of over-the-horizon operations in the region. These operations, including drones conducting ISR and strikes as necessary, would come from U.S. bases in Kuwait, the UAE, and Qatar. Even though the Air Force trains more RPA pilots than manned aviators, it still struggles to train and retain enough RPA pilots and sensor operators to fulfill the demand levied by the COCOMs. The manpower shortfall manifests in a couple of negative ways, no dwell time from combat operations for RPA crews and burnout, exhaustion, and fatigue.

The counterargument to dwell time is that RPA crews are not forward deployed, not in harm's way, and get to go home every evening and therefore do not rate any dwell time. It is safe to say that RPA units flying combat sorties from home stations disrupt the mold of traditional deployments, but it is not difficult to argue that everyone needs a break from conducting high-tempo combat operations. RPA aircrews in the Air Force sustain this operational tempo for years at a time without respite which has led to myriad challenges within the Service.

Airman from Creech and Nellis Air Force Bases coordinated an MQ-9 training flight on the Nevada Test and Training Range, 15 July 2019. *(Photo by Senior Airman Haley Stevens.)*

An Air Force study published in 2021, titled "Sources of Stress and Psychological Health Outcomes for Remotely Piloted Aircraft Operators: A Comparison Across Career Fields and Major Commands," looked at 331 RPA pilots, 137 sensor operators, and 103 Intelligence analysts across the two major commands that fly RPA: Air Force Special Operations Command and Air Combat Command. The study determined that an average of 30 percent of respondents experienced high levels of exhaustion, 18 percent experienced high levels of cynicism, and 15 percent experienced high levels of psychological distress. The main causes related to operations were low levels of manning, excessive workload, long hours, and the nature of work.

A similar study published by Air Force psychologists in 2014 determined that 4.3 percent of 1084 RPA personnel surveyed exhibited PTSD-like symptoms. A follow-on study in 2019 looked at 715 RPA warriors and determined that 6.15 percent exhibited PTSD-like symptoms. At first blush, it appears counterintuitive that someone conducting combat operations from the safety of their home base could experience PTSD, but that rationale only takes physical distance to the fight into consideration. The more important distance to consider for RPA crews is cognitive or empathetic distance.

The most desired capabilities of a Group 5 UAS are its persistence, high-definition zoomable camera, and ability to conduct precision strikes. Those are the same capabilities that put RPA crews in a cognitively close fight. RPA crews observe targets for a long period of time developing a pattern of life, zoom in to see the fine details of the individual, strike them, and then conduct battle damage assessment in zoomed-in high-definition video. RPA crews may be physically removed from the battlefield, but cognitively they observe some vivid details of their work. The long-term effects of conducting sustained remote operations are still unknown, but psychological distress experienced by RPA crews as evidenced by the Air Force studies is trending in the wrong direction over time.

An additional negative effect of the high operational tempo of RPA crews comes in the form of a deficit of traditional rewards experienced within the occupational field associated with

performance. A 2019 Government Accountability Office report determined that promotion rates for RPA pilots in the Air Force lagged traditional manned pilots' rates, despite being in higher demand. The operational tempo also makes it more difficult for RPA crews to attend professional military education schools such as career level schools, oftentimes necessary for promotion. Lastly, even though an RPA pilot or sensor operator may have combat flight time in a theater, they often do not rate awards associated with the campaign as a result of never having stepped foot in country.

This deficit of traditional occupational rewards within the RPA community combined with the high operational tempo, the lack of dwell time, rotating shifts, and the nature of the work marginalizes RPA crews' efforts and leads to burnout, fatigue, retention issues, and psychological distress.

Best Way Forward

In a fight in the USINDOPACOM area, survivability rests on the force's ability to maneuver, minimize its logistical footprint, and manage its electronic signatures. Fixed site installations become targets. Perhaps in this environment conducting ISR and precision strikes with MQ-9s using the RSO model makes the most sense. Protect the force by only deploying forward a minimal footprint such as an LRE to conduct operations and keep the rest of the aircrew out of the area of responsibility.

Operationally, employing Marine MQ-9s in the RSO model in the USINDOPACOM area may make the most sense, but tactically it may not. The combat effectiveness of the MAGTF has always derived from its ability to conduct detailed planning and tactical integration amongst the ACE, GCE, and LCE. The tyranny of distance amongst the combat elements can make that planning and integration more difficult, especially if traditional means of communication over voice and data are degraded or denied. There is no substitute for face-to-face communications and units working together in close physical proximity. Even when the Marine Corps had the opportunity to conduct something like remote operations with its headquarters units and operations centers in conflicts over the past twenty years, it still chose to forward deploy those units. Marine operations centers in Iraq and Afghanistan could have easily been employed remotely based on advances in technology and communications as evidenced by other Services. However, it is counter to the Marine warfighting ethos not to deploy to the area of conflict and lead from the front. The nature of RSO seems out of alignment with how the Corps fights.

Based on the lessons learned from the Air Force conducting RSO over the last twenty years it is evident that the model has created unintended negative consequences. If the Marine Corps chooses to continue with this model out of tactical necessity, then it should take into consideration three modifications for the health and longevity of the force.

End rotating shifts. Rotating between a day and a night shift every six weeks is not a healthy, sustainable practice. Numerous medical studies decry the harmful effects that shift work has on the circadian rhythm which impacts how the body functions including metabolism, digestion, the immune system, the cardiovascular system, and hormonal balance. Rotating shifts lead to cumulative fatigue which affects mood, judgment, and reaction time. Long-term sleep deprivation leads to ethical failures and mental health issues. This is not the environment where we want those in charge of employing deadly force to operate. Instead, RPA crews should be assigned to a shift throughout the duration of combat operations. That will only work, however, in conjunction with the next modification.

Build in dwell time for UAS squadrons. Warriors need a break from high-tempo combat operations. We understand the importance of this for units that deploy forward and attempt to schedule deployments on a 1:2 or 1:3 deploy to dwell ratio. Why would we treat a UAS squadron engaged in remote combat operations differently? One of two reasons: either we do not acknowledge that remote combat operations are indeed combat operations or, as a result of manning shortfalls and operational demand, there simply are not enough people and assets to schedule in a dwell period. Either way, the result within the Air Force manifests in burnout, exhaustion, fatigue, and mental health issues. This leads to the final modification if the Marine Corps is to adopt the RSO model.

Overman the unmanned fleet. Doubling the amount of UAS squadrons in the Marine Corps is a good start. To build in dwell time to support sustained combat operations, the Marine Corps should plan for no more than three squadrons at a time actively flying combat sorties to enable a 1:1 deploy to dwell ratio. If the requirement is six squadrons worth of combat sorties, then the squadrons should double the number of aircrews per squadron to enable a dwell time that can be managed internally to the squadron.

Conclusion

The persistent ISR and strike capabilities of the MQ-9 are a welcome addition to the MAGTF. The Marine Corps must fight to retain those assets in direct support of Marines on the ground. Additionally, it must recognize that the Air Force model of employing RPAs has led to unintended negative consequences among aircrews. If the Marine Corps adopts a similar employment model, it must strive to make modifications where feasible that will enable the longevity and health of the force.

Notes

1. U.S. Congress, *Statement of General David H. Berger Commandant of the Marine Corps as Delivered to the House Appropriations Committee-Defense on the Posture of the United States Marine Corps,* (Washington, DC: April 2021).

2. Interview between author and Marine Corps MQ-9 Pilot on 17 November 2020.

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Expeditionary Advance Base Operations

Legal considerations[1]

by LtCol Brent W. Stricker

The new Marine Littoral Regiment (MLR) and Expeditionary Advanced Base Operations (EABO) will see a Navy-Marine Corps integration tighter than the days of sail.[2] Much like the Marine sharpshooters in the topsails, the MLR and EABO concept will extend the eyes and fires of the fleet. Considering developing weapons systems, this will have a devasting effect on the strategic level—or its potential effect could be employed as strategic deterrence. A shot not fired can still have the same effect.

This article describes EABO, its strategic and deterrent effects, and certain considerations under international law. The integrated Navy-Marine Corps force will wage war in all domains: seaward—surface and subsurface; landward—surface and subterranean; airspace; cyberspace; and the electromagnetic spectrum. This concept is an answer to the pacing threat posed by the People's Republic of China.

The transformation of the Marine Corps currently underway is laid out in the *Tentative Manual for Expeditionary Advance Base Operations* (*TM EABO*). It acknowledges the increasing vulnerability of the Navy to land-based aircraft and anti-ship missiles. *TM EABO* notes that fleets may be reluctant to maneuver near littoral waters, and the new MLR and EABO concepts provide a solution to that problem. The carrier strike group has remained a cornerstone of U.S. power projection since World War II, but it may prove outdated when the Navy loses its first carrier to a land-based anti-ship missile. EABO can help avoid that outcome.

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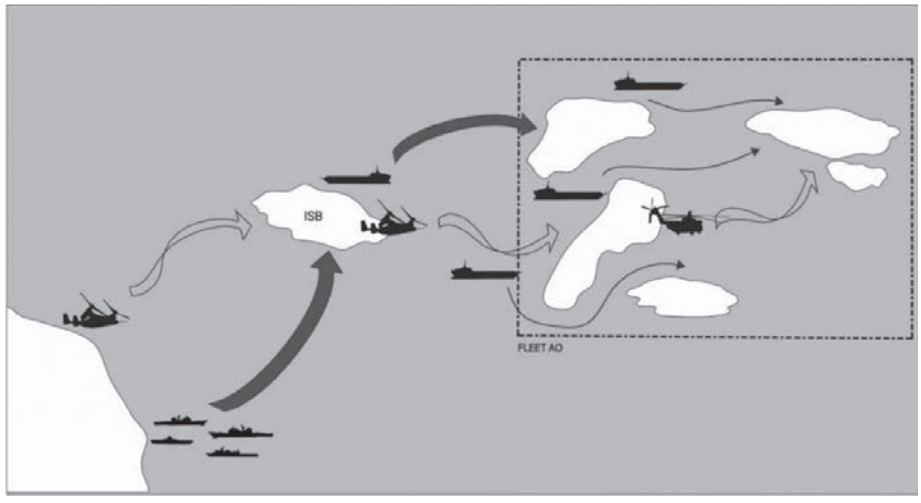


EABO illustration. *(Illustration provided by author.)*

TM EABO describes the problem as:

> Adversary anti-access/area denial (A2AD) capabilities ... pose operationally significant, disruptive, and cost-imposing barriers to the Naval Service. While U.S. naval forces remain dominant in open oceans, the A2AD systems credibly threaten vessels in close and confined seas relatively near to adversary territory. The crux of the challenge for naval forces is fighting an enemy that seeks to avoid direct fleet engagement while offering battle under a mixed umbrella of land-based and airborne long-range precision fires.[3]

EABO offers a solution to extend the fleet's eyes and fires (lethal and nonlethal) to counter the anti-access/area denial (A2/AD) threat. *TM EABO* defines EABO as:

> A form of expeditionary warfare that involves the employment of mobile, low-signature, persistent, and relatively easy to maintain and sustain naval expeditionary forces from a se-

ries of austere, temporary locations ashore or inshore within a contested or potentially contested maritime area in order to conduct sea denial, support sea control, or enable fleet sustainment.[4]

An example from the Cold War can illustrate the concept in action. For decades, strategic planners had to consider how to counter an invasion of Western Europe by Warsaw Pact forces assuming the conflict remained a conventional fight. NATO forces in Europe were expected to slow Warsaw Pact forces so that reinforcements and supplies could be convoyed across the Atlantic for the sustainment portion of the fight. Geography played an important role in this effort.

The GIUK (Greenland, Iceland, United Kingdom) Gap is the maritime chokepoint in the North Atlantic where Soviet surface and submarine forces would have to pass to attack convoys sustaining the fight for Europe. Convoys running across the Atlantic would be at risk of attack by these forces or land-based aircraft firing standoff anti-ship missiles. Therefore, defense and monitoring of the GIUK were vital. EABO offers an alternative solution to meet this challenge.

Establishing EABs in Norway could defend the GIUK further north exposing the Russian Northern Fleet to lethal fires, thus saving Atlantic convoys from defending against that threat. This deployment would thus protect the sustainment portion of the fight for Europe—having a strategic impact on the overall conflict.

EABO also provides for the potential of strategic deterrence. A deployment to Norway during an escalating diplomatic crisis would demonstrate a threat to any sortie by the Russian Northern Fleet. This would remove a military option for a potential adversary and make a diplomatic solution more attractive.

A review of the world's geography and shipping lanes shows that the GIUK Gap is not the only place where EABO can have a strategic impact. Expeditionary operations will reshape the Marine Corps, reforge the link between the Naval Services, and protect and project the fleet's power.

GIUK Gap illustration. *(Illustration provided by author.)*

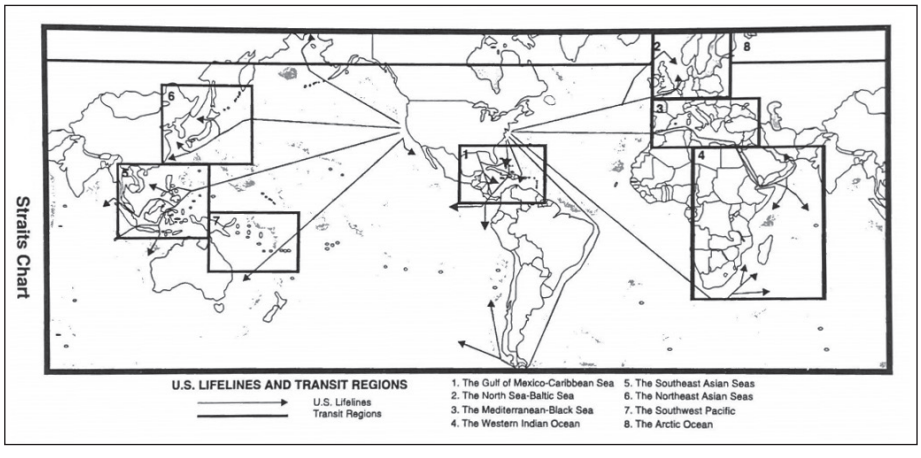
TM EABO *imagines the EABs being equipped with weapon systems that can take advantage of greater range.*

Armament

As the Marine Corps continues to adapt for its integration with the Navy, one must consider how its fires and practices can be improved to meet the new goals of EABO. Marine Corps aviation must be brought in line with naval aviation. *TM EABO* calls for a new concept of maritime aviation that will require the Marine Corps to practice anti-submarine warfare and anti-surface warfare in defense of the fleet. New weapons systems will also be needed to improve the range and lethality of fires.

The limit on range has been removed with the renouncement of the Intermediate-Range Nuclear Forces (INF) Treaty. The INF Treaty was an arms control measure between the United States and the Soviet Union prohibiting landbased medium-range and intermediate-range missiles. The United States withdrew from the treaty in 2019 citing violations by the Russian Federation. The Russians followed suit, effectively placing no range limitation on missiles for U.S. forces.

TM EABO imagines the EABs being equipped with weapon systems that can take advantage of greater range. The Navy is currently equipped with RIM-174 Standard ERAM (Extended Range Active Missile), which fills a variety of roles including as an anti-ship missile. The Marine Corps may adopt a similar missile battery for an EAB. The Navy is also in the early stages of adopting the AGM-158C LRASM (Long Range Anti-Ship Missile), which can be launched either from a ship or fighter aircraft. The Marine Corps could consider deploying this weapon on its existing aircraft flying from EABs or developing a portable launching system that can make the ship-to-shore movement.



U.S. Lifelines and Transit Region illustration. *(Illustration provided by author.)*

AGM 158C. *(Photo provided by author.)*

Common-hypersonic glide body. *(Photo provided by author.)*

Kratos XQ-58 Valkryie. *(Photo provided by author.)*

The emerging development of hypersonic weapons over the next decade may be of immense value for EABO. The DOD is working to develop these weapon systems that fly in a non-parabolic path at speeds more than Mach 5. These weapons differ from the traditional ballistic missile whose launch and re-entry track can easily be observed, predicted, and shot down with anti-ballistic missiles. It is expected that hypersonic weapons can be launched and steered in flight through either ground or satellite communications to be non-predictive and avoid anti-air defenses. An EAB might be equipped with such a ground battery version being developed by the Army.

Extending the Eyes of the Fleet: Kratos XQ-58 Valkryie

EABO will be able to extend the eyes of the fleet through the use of sensors aboard Unmanned Aerial Vehicles like the newly developed Kratos XQ-58 Valkryie. This vehicle is boasted as a low-cost wingman to an F-35.[5] The Valkryie can be launched without a runway, a key feature for low-profile EABs. It can also launch its own drones while in flight departing an area but allowing continued ISR by the disposable drone. It is expected that the Valkryie, a "stealthy" aircraft, may also be used in swarm attacks of drones overwhelming air defenses by sheer number.[6]

Territorial Integrity and EABO

EABO was born from the threat to the fleet from landbased attacks in littoral waters. EABs turn this concept around because, once established, they will be able to conduct area denial. The issue to consider is what country's territory an EAB can be legally located. *TM EABO* does not directly address this point, but it is presumed that EABs will be established on hostile territory or with the consent of a friendly nation where U.S. forces are engaged in collective self-defense. It is worth considering the ramifications of establishing an EAB in a neutral country without its consent.

Establishing an EAB on neutral territory would be a clear violation of international law. Neutrality law is codified in the 1907 Haque Conventions

(HC). HC V governs neutrality on land while HC XIII governs neutrality at sea. These conventions expressly prohibit the use of neutral territory or waters by belligerents.[7] The neutral power would be justified in using armed force to repel belligerents from its territory.[8]

An EAB established covertly in neutral territory as a fait accompli poses a unique set of problems. Practically, many nations would be unable to militarily counter this situation. The HCs do not require a neutral power to provide an armed response to eject a belligerent from its territory, but a country allowing a belligerent to use its territory would lose its neutral status—thus allowing other belligerents to attack it. A neutral power might forestall this with diplomatic protest, but if the EAB remains, another belligerent would be justified in attacking it.

TM EABO notes that training exercises with friendly foreign nations will be useful in advancing EABO doctrine and demonstrating its power to a pacing threat nation. In the scenario "MAKING USE OF EABO IN THE CONTACT LAYER," a fictional Democratic Republic of Centralia (DRC) has established a series of fortified artificial islands as a potential threat to its neighbors.[9] In the scenario, the U.S. Naval Force works with host friendly nations to establish EABs and conduct freedom of navigation operations. The EAB, as a more permanent establishment, allows for a longer opportunity to collect on DRC spectrum emissions and demonstrate the lethality of fires to the DRC.

The EABO doctrine of mobility, low-signature, and decentralized bases allows these bases to appear when needed (e.g., launch fires and relocate as needed). This presents an enemy with a confusing and ever-evolving threat picture that could wreak havoc on the known fixed-defensive positions of DRC forces on their artificial islands.

As EABO doctrine is established through joint training missions with host nations, the integrated Navy-Marine Corps team may find itself being studied by a potential adversary to determine its capabilities. A host country could exclude maritime traffic from its territorial waters during such an exercise as a security measure.[10] In international waters and airspace, this is normally handled as a Navigation Warning Advisement or a more passive Air Defense Identification Zone.[11] As discussed below in cyberspace and spectrum warfare, an MLR might want the opportunity to observe the observers and collect on their capabilities.

Distinction Between Civilians and Combatants

EABO's emphasis on "mobile, low-signature, persistent" bases in littoral areas poses an issue for the principle of distinction between combatants and civilians. *TM EABO* acknowledges that "forces involved will be widely dispersed within littoral areas where civilian populations make their livelihood and considerable commercial activity takes place."[12] *TM EABO* also advocates in various ways that civilians in host nations can be used to reduce the sight profile of an EAB. This includes contracting services to limit a detectable logistics footprint and the use of host nation telecommunications to limit emission control and signature management. This is creating the potential for hostile forces to mistakenly attack civilian targets.

It is well established in treaty and customary international law that there is a distinction between combatants and civilians. Article 51 of Additional Protocol 1 of the Geneva Convention enshrines this principle. Article 51 specifically notes that the presence of civilians in an area will not prohibit military operations. The potential for incidental damage to civilians should be considered in the location and operation of an EAB.

EABO will have to balance the requirements of distinction and additional rules under Article 58 of Additional Protocol 1. This requires that civilians be removed from military objectives and prohibits locating military objectives in or near densely populated locations.

The *DOD Law of War Manual* notes that protecting civilians is "one of the main purposes of the law of war."[13] The manual notes that, besides making civilians off-limits, there are "affirmative duties to take feasible precautions to protect civilians and other protected persons and objects." The standard is a balancing act of due diligence. EABO will have to consider potential incidental damage to civilians relative to military objectives as it seeks to remain "mobile, low-signature, and persistent."

Cyberspace, Information Operations, and Electromagnetic Spectrum Warfare

The MLR will wage war in all domains, but three areas are of particular interest for the new MLR: cyberspace, information operations, and electromagnetic spectrum warfare. *TM EABO* provides the following definitions:

> Cyberspace Operations: "Missions intended to project power in and through cyberspace or to preserve the ability to utilize blue cyberspace capabilities and protect data, networks, cyberspace-enabled devices, and other designated systems by defeating on-going or imminent malicious cyberspace activity."[14]
>
> Information Operations: "1. The integrated employment, during military operations, of information-related capabilities in concert with other lines of operation to influence, disrupt, corrupt, or usurp the decision making of adversaries and potential adversaries while protecting our own. 2. The integration, coordination, and synchronization of actions taken to affect a relevant decision maker in order to create an operational advantage for the commander."[15]
>
> Electromagnetic Spectrum Warfare: "Military operations in the Electromagnetic Spectrum (ESM) involve the transmission and reception of electromagnetic energy in the electromagnetic operating environment (EMOE). Electromagnetic Spectrum Operations (EMSO) are military actions undertaken by a force to exploit, attack, protect, and manage the EMOE."[16]

These areas can be confusing due to the nature that they overlap. For example, an information operation could be launched to influence the decision making of an opponent. This influence effort may be transmitted through a cyberspace operation penetrating the opponent's network. This would be

possible after a thorough reconnaissance of the opponent's electromagnetic spectrum to identify potential areas of penetration.

These three domains are vital to command and control. Through defensive and offensive operations, the MLR will be able to disrupt an enemy's sight picture, mislead them, and overwhelm them with a cascading series of events they are unable to predict or properly respond to. There are some unique considerations for the MLR conducting EABO.

The key tenet of EABO is that forces must be deployed in a decentralized and low-profile manner to limit detection and improve survivability. Operating in these domains increases the risk of detection. The MLR will have to act like a concealed scout sniper team observing the environment and calling a shot where effectiveness outweighs the risk of exposure.

They are actions that can be taken that might be viewed as hostile but are not considered an attack. For example, in spectrum, one is free to collect a potential opponent's electronic signature to determine capabilities. One can also transmit to jam or interfere with an opponent's own communications. This would be considered potentially hostile but does not constitute an armed attack.

Cyberspace also poses an issue of what constitutes an actual attack. The *DOD Law of War Manual* acknowledges that this is an emerging area where customary international law has not been settled.[17] Discussion of what constitutes an attack is often defined by effects, with the manual noting that temporary or reversible effects of cyber operations do not constitute an attack.[18] The manual provides several examples of cyber operations that would constitute an attack in violation of international law notable because of the lasting physical effects.[19]

The MLR might use cyberspace to passively collect on an adversary. The *Tallinn Manual* describes a honeypot as a defensive measure meant to deceive intruders with a decoy environment and waste their time. Observing the intruders might provide information about their "intent, identity, and means and methods."[20] This passive measure does not pose a legal problem for the MLR since it takes place on its own network. The intruder to the network is at fault.

The MLR might also actively penetrate another nation's cyberspace to collect on a potential adversary. This is a form of peacetime espionage.[21] These intrusions might be seen as hostile, but so long as they avoid physical damage, they would not be seen as an attack in violation of international law.[22]

The MLR will be engaged in information operations to both control the public narrative and influence its opponents. The methods for deceiving an opponent are classified and will not be discussed here. *TM EABO* information operations are based on the notion that perception is reality, and controlling the public narrative is an important part of this.

TM EABO provides an interesting example of deterrence through information operations in the fictional scenario, "BATTLE OF NARRATIVES: A FISHING DISPUTE IN 203X." The fictional DRC is using its massive fishing fleet to encroach on the Dakota Sea and poach from Dakota's Exclusive Economic Zone at a place called John's Bank. The DRC and Dakota both claim sovereignty over this area. The 25th MLR has launched an operation of "deterrence by detection." This is a "battle of narratives" short of armed conflict. The contested area would be under constant surveillance and any violations by DRC vessels would be documented and presented to the media as "the DRC is exploiting someone else's natural resources for their selfish gain."

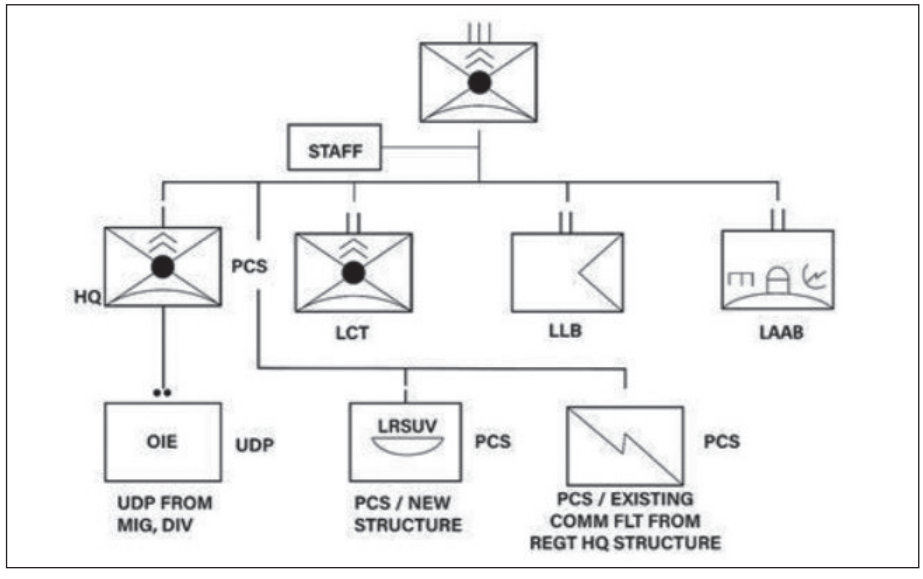
The Future of the Marine Corps? The Marine Littoral Regiment

The Marine Corps has a strong tradition and remains in many ways unchanged throughout its history, but the MLR represents the most fundamental reformation. The MLR is not a transformation to justify the continued existence of the Marine Corps; it is a practical solution to the threat in littoral waters and a force multiplier for the fleet.[23] As EABO doctrine is developed and adapted, the MLR will likely undergo changes as well. We must adapt to meet the pacing threat.

Notes

1. Dedicated to Col William H. Smith (Ret) for unwittingly taking a chance on me and Maj-Gen Dan Lecce (Ret) for sending me to the Stockton Center for International Law at the Naval War College.

2. EAB will be used to describe expeditionary advance bases.



MLR illustration. *(Illustration provided by author.)*

3. Headquarters Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations*, (Washington, DC: 2021).

4. Ibid.

5. 88 Air Base Wing Public Affairs, "XQ-58A Valkyrie Demonstrator Completes Inaugural Flight," Wright-Patterson AFB, (March 2019), available at https://www.wpafb.af.mil.

6. Tyler Rogoway, "More Details Emerge On Kratos' Optionally Expendable Air Combat Drones," The Drive, (February 2017), available at https://www.thedrive.com.

7. Articles 1-4 HC V and Articles 1-2 of HC XIII.

8. Ibid.

9. A nod toward all graduates of The Basic School and certainly intended to be a work of fiction and not represent any particular country.

10. United Nations, *United Nations Convention on the Law of the Sea*, "Article 25," (Montego Bay: December 1982).

11. Department of Defense, *Department of Defense Law of War Manual*, (Washington, DC: June 2015).

12. Tentative Manual for Expeditionary Advanced Base Operations.

13. *Department of Defense Law of War Manual*.

14. Tentative Manual for Expeditionary Advanced Base Operations.

15. Ibid.

16. Ibid.

17. *Department of Defense Law of War Manual*.

18. Ibid.

19. "Such operations may include cyber operations that: (1) trigger a nuclear plant meltdown; (2) open a dam above a populated area, causing destruction; or (3) disable air traffic control services, resulting in airplane crashes." See *Department of Defense Law of War Manual*.

20. Cooperative Cyber Defence Centre of Excellence, *Tallinn Manual on the International Law Applicable to Cyber Warfare*, (Cambridge: Cambridge University Press, 2013).

21. Ibid: "Cyber espionage refers to any act undertaken clandestinely or under false pretenses that uses cyber capabilities to gather, or attempt to gather, information."

22. *Department of Defense Law of War Manual*.

23. "We have pride in ourselves and in our past, but we do not rest our case on any presumed ground of gratitude owing us from the Nation. The bended knee is not a tradition of our Corps. If the Marine as a fighting man has not made a case for himself after 170 years of service, he must go. But I think you will agree with me that he has earned the right to depart with dignity and honor, not by subjugation to the status of uselessness and servility planned for him by the War Department." –Gen Alexander A. Vandegrift

USMC

Title X and Gray-Zone Tactics

Addressing gaps in statutory authorities that limit the potential of Force Design and the Navy-Marine Corps team in the future operating environment

by Capt Richard W. Protzmann, USMCR

One of the most profound statements in the Commandant's *Force Design 2030* is that the Marine Corps' ability to operate in actively contested maritime spaces requires it to "create the virtues of mass without the vulnerabilities of concentration."[1] In furtherance of this mindset, the Marine Corps has divested legacy capabilities and compelled a restructuring of the force around concepts like the Littoral Operations in a Contested Environment (LOCE) and Expeditionary Advanced Base Operations (EABO). To effectively assure allies/partners and deter in the gray zone of competition, the Nation needs to reconsider and redefine the authorities and roles of the Marine Corps and the DOD as well as engage civilian personnel and officials in strategy development and force composition. The force and its mission must reflect the combined effort and insight of the civil-military construct.

The gray-zone tactics required to be successful in these environments will involve "an effort or series of efforts beyond steady-state deterrence and assurance that attempts to achieve one's security objectives without resort to direct and sizable use of force."[2] Successful gray-zone tactics are consistent with the concept of "virtues of mass without the vulnerabilities of concentration."[3] For the Marine Corps, it has divested itself of its legacy capabilities that have enabled the MAGTF to mass combat power. The mass will not be achieved through fewer tank and infantry battalions, cannon artillery, or attack aircraft.

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The challenge is finding out how to achieve the same effect.

Civil-military authority and cooperation are a logical first step. The force must look at making changes in *Title X* authority, clarifying responsibilities in the civil-military operational structure, and re-defining the relationship dynamics between civilian and military leaders. These are all important to ensuring that *Force Design 2030* and the *Commandant's Planning Guidance* can be enacted and successful. The impacts of these changes on force design, specifically on training and education, will demand adaptive, modern approaches that better equip tactical leaders to integrate with sister Service, civilian agencies, and foreign partners to achieve combined military and political objectives in asymmetrical, gray-zone tactics.

Civil-military authority and cooperation are a logical first step.

Title X Authorities Must Expand Training and Coordination with Foreign Partners

Since 9/11, we have seen a shift and an expansion of the DOD's authority, particularly when it comes to security operations. There has been an ebb and flow to the department's specific authorities as they pertain to crisis response and addressing changing threats to the Nation. Predominantly, the DOD has been given degrees of authority to train and equip foreign military partners in support of counter-insurgency and stability operations, especially in the Middle East. Over the past few years, studies and reports have surfaced that evaluate the effectiveness and scope of such programs and authorities. The Rand Corporation published a lengthy essay that (partially) concludes Congress has often failed to clarify issues of process, resource management, and relationships that are necessary for the DOD to effectively carry out these programs. The result is "enabling and confounding" to the department.[4] To this point, the Navy and the Marine Corps must seek better clarification.

To achieve "virtues of mass," clear guidance and authority with respect to our interactions and coordination with foreign military partners are vital. We need programs such as the Coalition Readiness Support Program that allow the Services and combatant commands to embed and train our partners. Properly trained and equipped allies will help them meet the standards of lethality and readiness required to support EABO and LOCE operations and achieve the

necessary effects in gray-zone tactics. To properly deter an adversary through coalition (versus a traditional, organic MAGTF), that coalition must be competent and capable across the board. If it is not, we are fractured and cannot achieve mass.

Consider this illustration. In an area-denial operation in the South China Sea, the entire MEF complement aboard Navy ships would certainly raise an eyebrow; the vulnerability of that concentration, as the Commandant notes, would offset the value of the combat power. However, a MEU complemented by Australian air and navy forces, Philippine ground forces, and a diplomatic coalition would provide the same deterrent to direct engagement and continued aggression. The DOD's ability to support that effort with clear *Title X* authority and execution guidance would facilitate that end state. For that reason, programs like the Coalition Readiness Support Program and others should be expanded and clarified to meet the needs of the *National Defense Strategy* (*NDS*) and the *Commandant's Planning Guidance* in particular.

DOD Responsibilities during Civil-Military Operations Should Expand

Clausewitz defines war as politics by other means, an exchange of violence to compel the opponent to do what we want politically. At its core, war inexorably links combat and diplomacy, the latter becoming necessary when the former becomes ineffective. In our history, the U.S. government has been compelled to build inter-agency partnerships and incorporate the DOD into stability, counterinsurgency, and foreign-assistance strategies to which the department ultimately contributes. That must continue and the DOD's responsibilities must be clarified because the existing model is inefficient and leads to inter-agency power struggles for command and control (C2) of the mission. In LOCE and EABO, particularly when host-nation support and foreign-military coordination are critical, efficiency in C2 is key. The diplomatic arm of foreign policy is fully justified in wanting to retain ownership and close oversight of the politics of foreign diplomacy—avoiding armed conflict is the principal objective. However, it is imperative that the DOD become a part of that process since it is the primary stakeholder if that process fails.

The Marine Corps has a long track record and solid foundation for building partnerships through training exercises, international military skills competitions, and forward presence. ***(Photo by LCpl Bernadette Wildes.)***

The DOD needs to be a bigger player in diplomatic strategy planning and oversight; its responsibilities in civil-military operations must be better defined. Inter-agency relationships should be streamlined so that operational and tactical leaders have the ability to communicate and coordinate with diplomatic partners in realtime. The dynamics of expeditionary warfare and the urgency of our immediate response model require clear C2 responsibilities in order to respond to changing circumstances in realtime. The DOD needs to be a part of that structure and the structure needs to promote speed, tempo, and operational relevance—just as our warfighting doctrine dictates.

The DOD Needs Direct, Consistent Engagement by Civilian Leaders in Structural and Operational Planning

The flip side to the DOD being a bigger presence in civil-military operations is that civilian officials should also invest in the DOD process of structural and operational planning. Congressman Mike Gallagher of Wisconsin wrote a commentary in *War on the Rocks* that talks about the importance of bringing Congress into the wargaming process. Congressman Gallagher argues that members should be at the table, "examining maps, strategy, forces, and assumptions" in the room with DOD leaders.[5] Congressman Gallagher writes in the context of Battle Force 2045—the Sino-American battle simulation—which highlights the Navy's surface fleet readiness and, by extension, the Marine Corps' readiness to both support the Navy and compete

The DOD needs to be a bigger player in diplomatic strategy planning and oversight; its responsibilities in civil-military operations must be better defined.

in both the environment and the direct conflict. He astutely points out that the changes in electoral politics with new majorities, new administrations, and new legislative agendas make bipartisan congressional engagement crucial. He posits that bipartisan engagement and investment in DOD force composition as expressed through strategy, planning, and wargaming will promote a better dialogue and ultimately a better fighting force.

Congressman Gallagher's observation and recommendation are prescient when considering strategic planning and force design. Civilian leaders need to engage directly and consistently in that process, harmonizing strategic military objectives with political objectives and budget appropriations. They need to see our capabilities shortfalls, personnel and equipment deficiencies and proficiencies, and understand the operational impacts. This can aptly be demonstrated through their participation in the wargaming process. Members of Congress are the direct representatives of the American taxpayer and the trigger pullers on matters of funding and *Title X* authority. They need a seat at the table, and they need to be encouraged to invest in the *NDS*, Force Design, EABO, and LOCE beyond just committee hearings and one-off briefings with the DOD. It should be a part of congressional committee assignment and member participation. Educated civilian leaders who understand how we fight, how we are adapting to emerging threats, and the importance of the budget enhancements and authorities will promote more thoughtful investigation and legislation to ensure the DOD has what it needs to meet the *NDS* and our likely adversaries.

Marines and Sailors Must Learn Diplomacy and Politics

The Commandant writes, "While [force design efforts] have undeniably been productive … we should view them as first steps in a longer journey."[6] In the context of civil-military coordination, we have much more work to do and issues to consider. The aforementioned recommendations are aimed to promote a more efficient relationship where statutory authorities, operational responsibilities, and relationships are clearly defined and enforced. These changes and enhancements will ensure that all stakeholders are involved in the design of the force as well as the definition and implementation of political and military objectives. Moreover, in an effort to mass combat power without the same organic capability, implementation of *Title X* authorities through foreign partner programs will enable (but hopefully not confound) the DOD and the Marine Corps specifically with the ability to identify its operational shortfalls and train and equip our allies and partners.

More specifically, Force Design needs to focus on training and education and continue to incorporate these aspects of the *Commandant's Planning Guidance*. We need to continue to make Marines instinctive critical thinkers, adaptive, and curious. Company-grade officers and non-commissioned officers will be placed in situations to work with foreign partners, inter-agency personnel, and civilians, and make realtime decisions that are consistent with *Title X* authority and in support of the political and tactical objectives. In order for revised authorities, responsibilities, and relationships to be effective, our people need to be equipped mentally to handle them. We should focus on adaptive learning and wargaming with a heavy focus on integration with our sister Services on whom we will more directly rely as well as our foreign military and civilian partners. Resources should be continued to be allocated for exchange programs, fellowships, and similar opportunities that get our people engaged directly in other curricula beyond Marine Corps schools. As the Commandant notes, "The [*NDS*] has directed us to focus in new areas, and this requires us to think, innovate, and change."[7] We need to be prepared to be contributing members of the diplomatic mission and have the proficiency to effect political processes to leverage host nation support and foreign military capabilities where our organic footprint is small. This is crucial to conducting effective gray-zone tactics as a MAGTF.

Conclusion

The virtues of mass without the vulnerabilities of concentration should drive thought and conversation about how Force Design evolves and the *Commandant's Planning Guidance* is met. Civil-military cooperation and coordination are far more important now than it has been in the past. The operating environment and the force restructuring require new methods and capabilities that demand military personnel to adapt and learn foreign policy at the tactical and operational levels. Civilians need to better understand DOD strategies and how capabilities meet or do not meet the emerging threats called out in the *NDS*. The Marine Corps needs to adapt itself to be prepared to assume new authorities and responsibilities while continuing to be productive contributors to civilian and foreign partners. Future phases of Force Design can adapt to these statutory changes and directives and, hopefully, members of Congress and other civilian leaders will engage formally and consistently in the development of strategy and force structure to support the force.

Notes

1. Gen David H. Berger, *Force Design 2030*, (Washington, DC: March 2020).

2. Michael Green et al., "Countering Coercion in Maritime Asia: The Theory and Practice of Gray Zone Deterrence," (Washington, DC: Center for Strategic and International Studies, 2017).

3. *Force Design 2030*.

4. Thaler, David E., et al, *From Patchwork to Framework: A Review of Title 10 Authorities for Security Cooperation*, (Santa Monica, CA: RAND Corporation, 2016).

5. Congressman Mike Gallagher, "Bringing Congress to the Wargaming Table," *War on the Rocks,* (October 2020), available at https://warontherocks.com.

6. *Force Design 2030*.

7. Gen David H. Berger, *38th Commandant's Planning Guidance*, (Washington, DC: July 2019).

Why and How

Tactical intelligence at the company level

by Capt Michael Van Liew

There is an undeniable gap between real-world operations and training. This gap will always exist despite our best efforts. The recent invigoration of force-on-force exercises has derived many lessons learned in preparing the Marine Corps for real-world operations, but the gap unquestioningly persists. The realism gap between operations and training affects intelligence more than any other warfighting function because the full level of uncertainty in an operational environment cannot be replicated in a training environment. Further compounding the problem, intelligence is often only a supplement and not required to achieve success during preplanned and time-constrained training events. Fabricated intelligence during training can be ignored out of disregard for a simulated enemy and a controlled training environment. These patterns create a danger of units only learning to effectively integrate intelligence for the first time in combat.

The idea that intelligence is a one-way support function to other warfighting functions—such as fires, logistics, or maneuver—is inaccurate. Instead, intelligence is an integral component of all warfighting functions, requiring continuous feedback across the competition continuum. It must be a continuous primary, secondary, or tertiary task for units. The company formation is at the center of this issue as the centerpiece for tactical operations throughout the Marine Corps. This article describes why Marine companies must deliberately conduct their own tactical intelligence cycle while supporting the larger intelligence effort and how companies can conduct their own intelligence operations.

Intelligence is inseparable from operations; each one feeds the other.

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The intelligence cycle in the Marine Corps is a six-step process that "consists of a sequence of related activities that translate requirements for various types of information into intelligence that is furnished to the commander for use in the decision-making cycle."[1] Operations occur at the speed of the intelligence cycle, but this reliance is not simulated during training because of the need to complete training objectives in a limited time. Company-level units must be capable of supporting and even conducting their own intelligence operations. The intelligence cycle provides a framework for companies to conduct intelligence operations. Integrating intelligence training at the company level to support future operations will help close the gap between real-world operations and training.

Intelligence at the company level is necessary for winning against a thinking enemy in the current operating environment. This lesson in the necessity of company-level intelligence has resurfaced through the force-on-force MAGTF Warfighting Exercise. Furthermore, distributing capability to the company level has been shown to optimize the intelligence effort in combat operations, such as during the War in Afghanistan.[2] Maintaining an effective intelligence capability is even more important now as companies become more autonomous during distributed operations in the Indo-Pacific. Understanding intelligence integration at the company level will assist in closing the realism gap. Company commanders must understand that the requirement for intelligence operations in training is not a realistic representation of what will be required in real-world operations.

Every situation is different in regard to how the company and battalion integrate the intelligence effort to accomplish the mission. Understandably, the intelligence capability of the company will vary depending on the type (i.e. infantry, motor transportation, engineer, etc). Rifle companies generally possess the greatest capability because of size and equipment. Additionally, the intelligence that ground combat operations require is often more dynamic than logistics combat operations. Regardless of the mission of the company, the importance of intelligence is the same because uncertainty is not exclusive to a specific mission set. There are several insights that can be used in training to close the realism gap.

First, the company commander must direct the intelligence effort. Marine Corps doctrine states:

> Intelligence is an inherent and essential responsibility of command. Commanders must come to think of command and intelligence as inseparable, just as they commonly think of command and operations as inseparable ... They must be personally involved in the conduct of intelligence activities, and provide guidance, supervision, judgment, and authority to ensure a timely and useful product.[3]

The commander needs to own *the planning and direction* of his unit's intelligence effort to most effectively integrate intelligence into operations. Because of the nature of uncertainty, there is always intelligence that can be gathered such as establishing a baseline of the environment, understanding the surrounding terrain, civilian patterns, or enemy order of battle. This means that companies

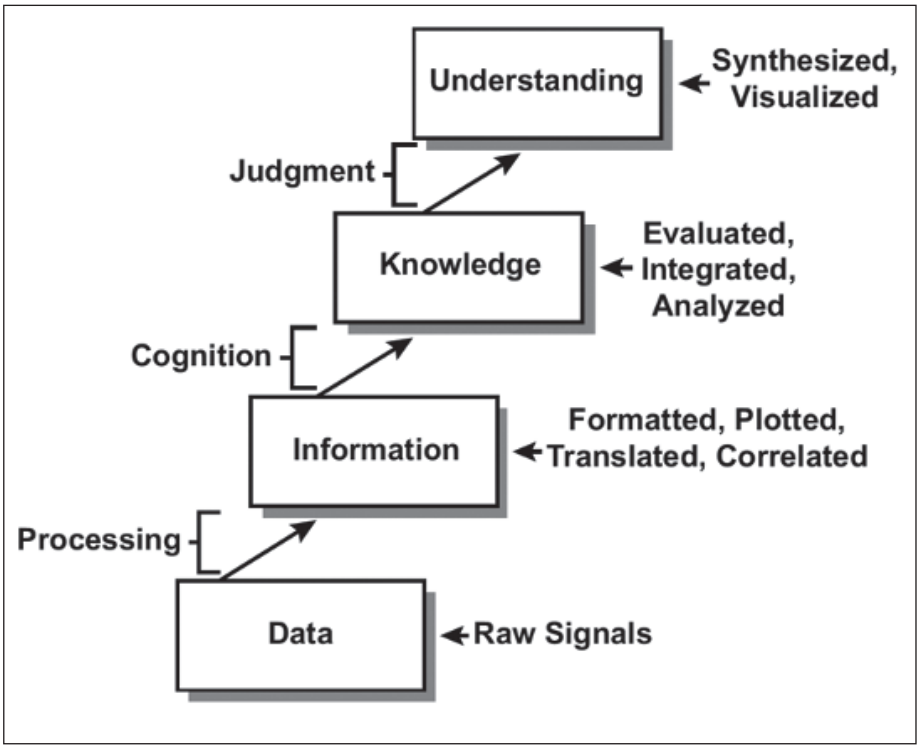

Figure 1. The information hierarchy and intelligence cycle are inherent within every operation. At the company level, these processes are smaller and less technical; however, they are just as necessary for out-cycling the enemy. *(Figure from* **MCWP 2-10 Intelligence Operations.***)*

must be conducting organic intelligence *collection* and using the Every Marine A Collector concept. Every Marine A Collector is: "the ability to maximize the observation and reporting skills of the individual Marine."[4] According to *MCTP 3-01A, Scouting and Patrolling:*

> When scouts observe, record, and report something that may seem unimportant, it could have very significant value when assembled by the intelligence staff at the HHQ [Higher Headquarters]. ... It is important for all Marines to understand that their observations are not only critical to identifying threats, but also to understanding the environment. These observations ... should not be limited only to observations made during the patrol, but should also include observations made in secure (or rear) areas where threats may be present, such as forward operating bases, airfields, and port facilities.[5]

Organic intelligence *collection* requires a collection plan, but at the company level, this plan must be simple and succinct. Complicated collection worksheets have little utility at the company level. All collection plan templates must be able to be analogue and portable. The company commander owns his priority intelligence requirements, and they should be communicated in coordinating instructions to provide a focus for information *collection* as the company conducts operations. All Marines need to be aware of the current intelligence requirements for the intelligence *collection* capacity of the company to be maximized. Treat named areas of interest (NAIs) like other control measures. Integrate NAIs into the plan and disseminate company NAIs in coordinating instructions as well as during pre-mission briefs.

Second, time and resources need to be devoted to *collecting* intelligence. How a company conducts intelligence *collection* is dependent on its estimate of the situation (mission, enemy, terrain and weather, troops and fire support, time and space, and civil considerations). There are multiple capabilities that can be employed by the company to enable intelligence. The primary means for company-level *collection* are ground reconnaissance and surveillance (R&S), information from human sources, site exploitation, and unmanned systems. The following activities can be integrated into company-level intelligence as the situation allows.

A task-organized scout team or section can provide flexibility for intelligence support to the company if not provided with direct ground R&S support. This scout unit has increased application within the rifle company but can still be used in different types of companies, depending on the mission. Applications include, but are not limited to, reconnaissance push or pull, overwatch, observation for fire support and battle damage assessment, advance guard, lane marking, and *collecting* information for physical network analysis within an assigned area. A dedicated scout team or section enables increased R&S capability while having a specified unit to develop the specialized skill sets. Furthermore, a dedicated scout unit gives the company commander a unit dedicated to answering company-level priority intelligence requirements.[6]

Listening posts/observation posts (LP/OPs) can be established for various surveillance purposes. The surveillance purposes are not limited to ground combat units, they can provide security overwatch and early warning for almost any type of mission. Furthermore, conducting observation and observing anomalies is a Marine Corps Common Skill. LP/OPs can be mounted or dismounted for the various mission sets they support. Placement, timing, and communication must be accounted for during planning to maximize LP/OP effectiveness.

Reconnaissance patrols or surveillance conducted as a secondary mission alongside an operation are proven ways to increase intelligence *collection*. This R&S can be active or passive in nature, but it should always be deliberate and integrated into the collection plan. Simple NAIs and intelligence requirements must be communicated for R&S to be effective. Convoys and squad-level patrols are two examples of employing R&S at the company level. Training in advanced scouting skills of observation, tracking, and profiling will improve the company's R&S capability.[7] Reporting, briefs, and debriefs, which may be

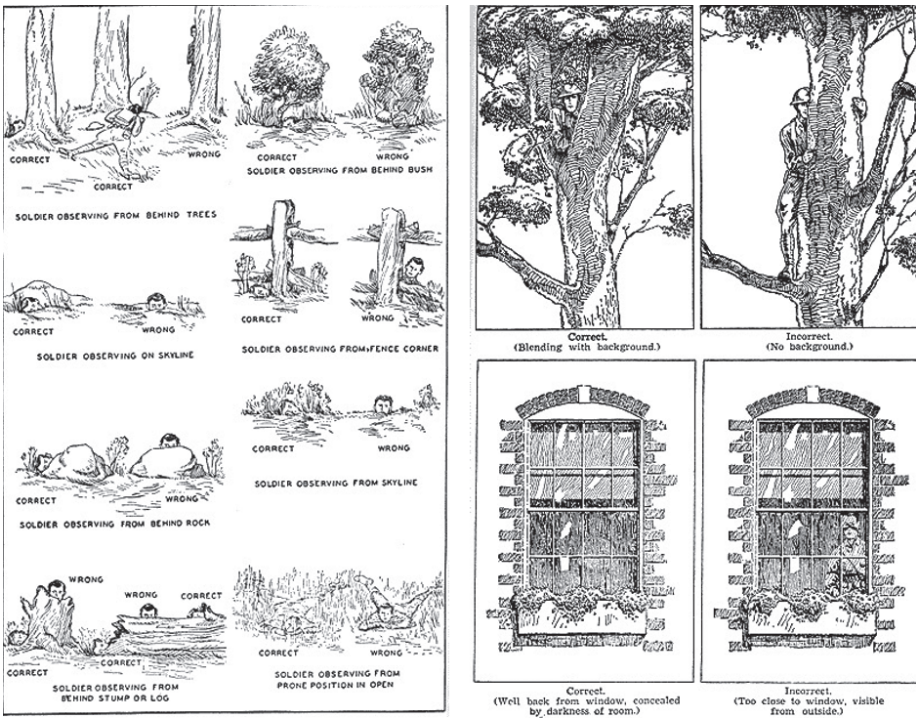

Figure 2. There are numerous resources available for learning information collection techniques, with many being available through an internet search. The above images show various observation techniques from* The Essentials of Infantry Training, 1940*, a handbook on infantry techniques. (Image: Essentials of Infantry Training-Eighth Edition, August 1940.)

neglected in training, are essential to maximizing the information *collected*.

Recording observations via a camera, voice recorder, or notebook (for sketching or logging) can supplement information collection. Cameras and voice recorders are typically available from the battalion S-2 Section. These devices should be integrated into tactical planning and can be employed during R&S, engagement with the local populace, or tactical questioning (TQ).

Optical devices, such as daylight, night, and thermal devices, should be integrated into the company's intelligence effort to enhance ground R&S *collection*. These devices are best employed in a combined-arms approach through complementary capabilities that use different portions of the electromagnetic spectrum, making it difficult for the enemy to conceal themselves.[8] Additionally, these devices should be employed with the techniques of interlocking observation and interlocking reporting when the situation allows.

Engagement with the local populace can serve as a means of learning new information that is not previously known. Although information *collection* is not the main purpose of engagement, it can supplement existing intelligence *collection*. The use of prepared questions during engagements is up to the unit leader and repeated engagements with the same individual must be reported through the S-2.[9]

TQ is"

> The field-expedient initial questioning for information of immediate tactical value of a captured or detained person at or near the point of capture and before the individual is placed in a detention facility. Tactical questioning is generally performed by members of patrols but can be done by any appropriately trained DOD [Department of Defense] personnel. Tactical questioning is limited to direct questioning.[10]

Treating detainees humanely is of the utmost importance and units conducting TQ must have sound detainee procedures. Counterintelligence/Human Intelligence Specialists can augment companies and provide instruction. TQ is not interrogation, it requires additional training alongside detainee handling to be executed properly. Equipping patrol members with a list of prepared questions contributes to effective TQ. Companies should be prepared to conduct TQ to understand their environment, capitalize on placement, and exploit success.[11]

Biometric equipment, such as the Information Dominance System-Marine Corps, can supplement identity activities during engagement with the local populace or TQ. The Information Dominance System-Marine Corps enables Marines to "collect, share, match, and store identity information" that can be used for intelligence.[12] The application of biometric equipment extends across the range of military operations from humanitarian relief, to detainee processing, direct action raids, and security operations.

Site exploitation is defined as, "systematically searching for and *collecting* information, material, and persons from a designated location and analyzing them to answer information requirements, facilitate subsequent operations, or support criminal prosecution."[13] Site exploitation is an important procedure that may be neglected in training and requires practice to be done well. Technology has greatly increased site exploitation capability since its inception, providing a return on investment for the operation and contributing tempo to future operations. Some site exploitation will require *processing and exploitation* capability that is external to the company. Document and media exploitation or translation are some examples of *processing and exploitation* that require external support while the discovery of a map may yield immediate intelligence. Companies should build and maintain kits for site exploitation and follow on *processing and exploitation*.

Unmanned systems, most prominently small unmanned aerial systems (sUAS), must be integrated into company-level operations to maintain an advantage in the current operating environment.[14] Small UAS are limited by their size, battery life, optical quality, and range. These deficiencies are planned to be resolved with investment in new unmanned systems. Launch/recovery locations, audible and visible compromise, observation time, and

range are all factors that need to be considered when employing sUAS at the company level. The small sUAS launch and recovery site must have security from a defensive position, a patrol, or a vehicle (to gain security through speed or a heavy weapon). In the future, companies may have the ability to employ unmanned systems in the maritime or land domains.

Briefs, debriefs, and reporting are critical. They must be integrated with ground R&S, information from human sources, site exploitation, and unmanned systems as they facilitate intelligence *dissemination* and ultimately *utilization*. Information from the aforementioned activities must be recorded with follow on synthesis and analysis. The best practice is to maintain a written logbook. Platoon commanders are responsible for maintaining records of information that is of potential intelligence value and is then aggregated at the company headquarters. Producing a regularly scheduled intelligence summary is a means of extracting and highlighting the information of intelligence value to focus your company's combat power and drive operational tasking.

Briefs, debriefs, and reporting are easy to neglect in training out of disregard for a simulated enemy and a familiar environment. However, they are simple to incorporate into training. Briefs, debriefs, and reporting are the responsibility of every small-unit leader. A pre-mission brief must include current NAIs and intelligence requirements along with updated enemy reporting and weather. As the mission is executed, reporting serves as a means for *disseminating* information so that it can be acted upon. Without reporting, the value of observed information is never actualized. *MCRP 3-01A, Scouting and Patrolling,* states, "debriefing should be conducted as soon as possible following the patrol's return, while information is still fresh in the minds of the Marines."[15] Furthermore, every member of the tactical unit executing the mission should participate in the debrief because each has "unique experiences, observations, and impressions" of what occurred.[16] One technique for debriefing is to verbally brief events in a story format, with contributions from each individual, and then ask questions to fill the remaining information gaps.

Third, the Company Level Intelligence Cell (CLIC) is a staff section for the company commander and should be treated as such. David Kilcullen describes the necessity of a company intelligence section as paying "for itself in lives and effort saved."[17] The often-practiced single junior intelligence specialist as the CLIC does not provide enough capacity for company-level intelligence in real-world operations, especially in distributed operations. The CLIC is meant to be made up of more than one person. It is important to recognize this deficiency in understanding the company's intelligence capacity. In 2009 during the War in Afghanistan, Alpha Company, 1/5 Mar Regiment was staffed with a CLIC of five non-commissioned officers, some of which were riflemen, to "write down ... collate and analyze information fulltime."[18]

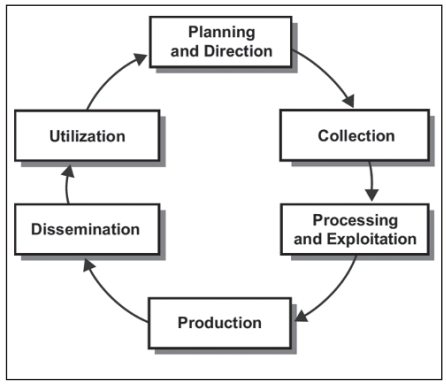

Figure 3. The Marine Corps intelligence cycle. *(Figure from* **MCWP 2-10 Intelligence Operations***.)*

The CLIC must be capable of managing the company's intelligence cycle for the commander, including the previously mentioned synthesis and analysis of recorded information. Furthermore, a CLIC is responsible for integration between the company and battalion S-2. The CLIC's products must adapt to the situation such as using analog templates vice digital products. To organize the information that has been gathered, CLICs need to record post-mission intelligence reports. This recording assists in the *production*, *analysis*, and *dissemination* of intelligence for items such as adversary order of battle, templates, and courses of action.

Last, the purpose of intelligence is for it to be *utilized*, unless intelligence is *disseminated* it is useless. An absence of information flow equates to an absence of intelligence. Therefore, intelligence *dissemination* must be completed throughout operations, using reporting formats to efficiently facilitate understanding. Reporting cannot be neglected. The value of the *dissemination* is measured with ongoing priorities and signature management. *Dissemination* builds tempo by decreasing uncertainty for future operations planning; therefore, it is important that information be communicated vertically between echelons of command in a timely manner. Consolidation provides an opportunity for intelligence *dissemination* to adjacent or higher headquarters units through physical link-up, verbal communication, radio transmission, or electronic transmission. During their 2009 deployment to Afghanistan, 1/5 Mar synchronized intelligence reporting nightly between the CLICs and battalion S-2 over the radio using a fireside chat format.[19] Resupplies can serve as a means of transporting intelligence documents or to conduct an in-person intelligence exchange. The unit's communication plan must integrate *dissemination* pathways for intelligence to be effective.

Integration of intelligence operations at the company level will close the realism gap and assist in companies being prepared to use intelligence during operations. Understandably, the realism gap will always exist, but the effort to shrink the gap must be just as persistent. This intentional effort can be accomplished through understanding the employment of intelligence capabilities at the company level and training these capabilities. Ultimately, the capability of the Marine company to conduct intelligence operations will enable its success in future real-world operations.

Notes

1. Headquarters Corps, *MCWP 2-10, Intelligence Operations*, (Washington, DC: April 2003).

2. For an example of intelligence at the company-level during combat operations see, Michael T. Flynn, Matthew F. Pottinger, and Paul D. Batchelor, "Fixing Intel: A Blueprint for Making Intelligence Relevant in Afghanistan," *Center for New American Security,* (2010), available at https://www.cnas.org.

3. *MCWP 2-10, Intelligence Operations.*

4. Headquarters Marine Corps, *MCRP 3-10A.2, Infantry Company Operations*, (Washington, DC: April 2018).

5. Headquarters Marine Corps, *MCTP 3-01A, Scouting and Patrolling*, (Washington, DC: July 2020).

6. Daniel Martin and Ryan Casey, "Rifle Company Reconnaissance: Creating a Dedicated Element to Fill a Critical Gap," *Marine Corps Gazette*, (Quantico, VA: May 2021).

7. *MCTP 3-01A, Scouting and Patrolling.*

8. Ibid.

9. Headquarters U.S. Army, *ATP 3-55.4, Techniques for Information Collection During Operations Among Populations*, (Washington, DC: April 2016).

10. Department of Defense, *DODD 3115.09, DOD Intelligence Interrogations, Detainee Debriefings, and Tactical Questioning*, (Washington, DC: October 2020).

11. Headquarters United States Army, *Techniques for Information Collection During Operations Among Populations.*

12. Thomas Adamo, David Fisher, and the IdOps Stakeholders Staff, "ISR for the Human Domain," *Marine Corps Gazette*, (Quantico, VA: September 2020).

13. Headquarters U.S. Army, *ATP 3-90.15, Site Exploitation Operations*, (Washington, DC: July 2010).

14. For further information on UAS at the small-unit level see, National Academies of Sciences, Engineering, and Medicine, *Counter-Unmanned Aircraft System (CUAS) Capability for Battalion-and-Below Operations: Abbreviated Version of a Restricted Report,* (Washington, DC: The National Academies Press, 2018), available at https://www.nap.edu.

15. *MCTP 3-01A, Scouting and Patrolling.*

16. Ibid.

17. David Kilcullen, "'Twenty-Eight Articles': Fundamentals of Company level Counterinsurgency," *Military Review,* (May–June 2006), available at https://www.armyupress.army.mil.

18. "Fixing Intel."

19. Ibid.

The Learning Insurgency

It's an evolution, not a revolution[1]

by Mr. Donald E. Vandergriff

If the Marine Corps wants to improve the decision making, adaptability, and other core warfighting skills, then we must change the way Marines learn from the current approach (which is internal process-focused, primarily based on the "Competency theory") to a new approach (which is external, effect/outcome-focused) more aligned with the outcomes we are seeking (see Figure 1). This figure was created by recent students from the Tactics Instruction Section at the Marine Corps' Officer Candidate School (OCS). They compared what they currently do with learning (referred to as training) and what they learned during the week of 5–9 November 2018. To the left, as you view the chart, is the current approach to learning, born out of the competency theory of education adopted by all public schools in 1905.[2] It was employed by the U.S. Military for World War I and institutionalized after World War II.[3]

To the right is what the Marine Corps' OCS cadre learned over five days referred to as Outcomes-Based Learning (OBL). They compared the latter to the doctrine referred to as "Mission Tactics" or "Mission Command" in *MCDP 1, Warfighting*.[4] These points will be discussed further throughout the article.[5]

In addition to establishing the current situation as one wherein Marines have been largely successful, there remains a continuous struggle to evolve both their warfighting and learning approaches (which are interconnected). Essentially, the Marines (and the military at large) are overcoming their learning model. We are succeeding despite, rather than because of, the current model. Considering the changing face of war and the increased requirement for MAGTFs to prepare for full-spectrum operations, a learning philosophy seeks to merge the benefits of training and education with self-learning and experience. The learning philosophy helps create thinking Marines and MAGTFs that can solve problems under stress based on an understanding of the problem.[7]

A well-tried and proven learning philosophy the Marine could evolve to is called Outcomes-Based Training and Education (OBT&E), now called OBL.[8] The doctrine of OBL stresses the development of intangible attributes such as initiative, critical thinking, judgment, and responsibility. The learning philosophy uses observable outcomes to measure the self-development and effectiveness of learning. More importantly, it uses those outcomes to develop more adaptive Marines and MAGTFs who are better prepared for the rigors of 21st-century combat.[9]

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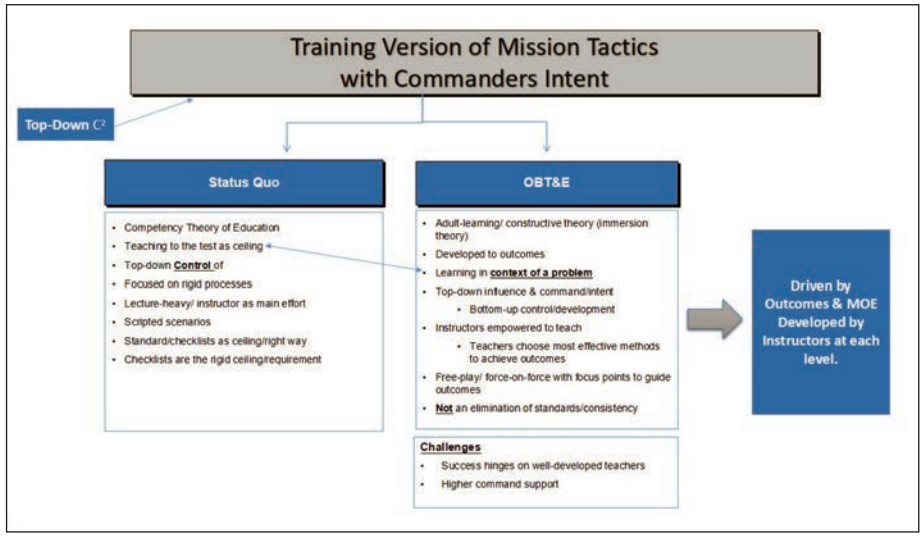


Figure 1. From old to new.[6] *(Figure provided by author.)*

What is OBT&E or OBL?

OBL is a different system for development, meaning both training and education are nested under learning. By the way of analogy, OBL is to learning what mission command or mission orders are to operations. Instructors are given requirements but not directed on

how they must achieve them. They are then held accountable for the results.[10]

OBTE/OBL is not a program of instruction (POI) or a workshop. Rather, it is an *approach* to learning that can (and should) be used in *every* school or POI. It needs to be clear (at the conceptual level anyway) that OBTE/OBL is the Information-Age approach that is the best way of getting to what MajGen William Mullen, then Commanding General of Training and Education Command (TECOM), defined as the "intellectual edge" in his 18 July 2018 guidance on the direction Marine learning should evolve.[11]

Current Marine Corps training methods seek to teach Marines and their leaders how to apply pre-defined, approved processes (which in the case of a training and readiness [T&R] event must, by rule, be performed exactly to the checklist to be correct). Nominally, these processes "flow down" from doctrine but are not considered doctrine by Combat Development and Integration. Doctrine is not the issue. The issue is the "textual adherence" to the process without regard to context. OBL seeks instead to teach them how to frame problems and solve them, focusing on the results rather than the methods used to obtain them. Methods are useful tools to guide/assist; they should not, however, have the firmness of the earth if we have a better way, which OBL provides. It is thus designed to create thinking, adaptive Marines and leaders who can apply what they know to solve problems they have not previously encountered.[12]

OBL is an approach to planning, managing, and delivering learning. It results in the attainment of a set of holistic, observable, and measurable skills and behavioral traits (outcomes) in individuals and units. It does so by requiring a thorough understanding of the underlying principles and increasing mastery of fundamentals gained while progressing through a series of increasingly challenging scenarios. These scenarios always require the instructor and student to think and solve problems in context; tasks are taught in the context of a problem and not in standalone step processes used today.

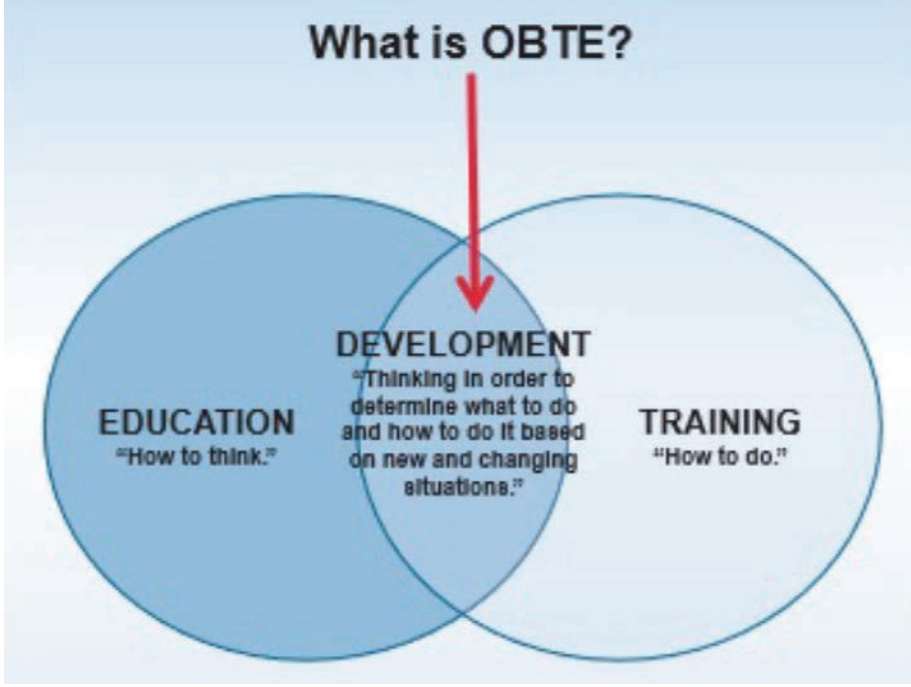


Figure 2. What is OBT&E now OBL?[13] *(Figure provided by author.)*

Mission Command and OBL Workshop[14]

Col John Boyd identified the three important determinants of success people, ideas, and things—in that order. Identifying and developing good leaders and followers is the first obligation of any large organization; without those leaders, the best ideas will not emerge and cannot succeed, and without devoted followers, the vision and decision of leaders will not be realized. Organizations are already full of potentially brilliant leaders and entrepreneurs who just need to be unleashed on the problems and opportunities a competitive economy presents.[15]

Boyd identified the three important determinants of success people, ideas, and things ...

The mission command/OBL workshop imparts the concepts and skill set necessary to become an adaptive organization operating under a culture of maneuver warfare (in *MCDP 1, Warfighting*, it is referred to "Mission-Orders" or "Mission-Command")—balancing the harmonized effort of the traditionally centralized structures of a large organization like the Marine Corps with the individual leadership, initiative, and creativity found in smaller organizations and the start-up culture.[16] More than just empowering leaders within an organization to seize opportunities and react to threats as they emerge, they must be prepared for the right way to take charge and make decisions with little guidance from above (see Figure 3). Complexity in development requires less control from above, not more.

For example, we recently conducted the five-day Mission Command and OBL workshop for the Marine Corps OCS Tactics Section (5–7 November 2018). This was an exciting first step on the road to creating a fast-moving, adaptive organization with dynamic and courageous leadership. It focuses on training the trainers, exposing them to several teaching tools. We used proven OBL and adaptive learning methodologies to ensure participants stayed fully engaged and involved throughout the five-day session.

The workshop employed interactive tactical decision games (TDGs) (or as the U.S. Military Academy [USMA] Department of Military Instruction [DMI] calls them tactical decision exercises or wargaming (using both map and dry erase versions of Kriegespiels [wargames]), peer assessment, and lively analytical discussions creating a safe yet challenging environment for all participants. We also exposed the Marine Corps OCS cadre to the creation of outcomes and measures of effectiveness, as well as planning and executing free play, force-on-force exercises, and the TDG physical training (the students planned and conducted both exercises followed by a student-led detailed and well-facilitated after-action report [AAR]).[17]

- Got exposed to a variety of tools from TDGs to wargaming, and free play force-on-force exercises to use to develop adaptability and prepare students or subordinates how to succeed in a culture of mission command.
- Understood how to develop strength of character as the premise of each and every course through problem-solving scenarios, facilitation and ownership of learning, and finally through effective AARs.
- How to teach without PowerPoint and no lectures. Theories of learning and decision making are only introduced if asked by the students or to support a given tool or methodology.

During the workshop, we introduced and practiced AARs, a tool adapted from the Marine Corps and Army, and a vital building block for developing adaptive leaders and teams. The trust, respect, and understanding developed within the workshop enable students to honestly, effectively, and critically evaluate themselves and their peers, critiquing the decisions, not the decision-makers. Conducting effective AARs is also a great way of promoting an adaptive culture, helping disseminate knowledge, experience, and hard-won lessons throughout the organization, and encouraging faster and more effective decision making and action. Most learning occurs during these sessions.

Important to note that OBL is in action inside formal schools as well as the operating force—formal and informal learning environments.

This course runs non-stop, creating a fluid and engaging learning environment. As mentioned earlier, the OCS cadre were always in a situation conducive to the development of personal initiative, teamwork, and adaptability. Everyone took ownership through an active role in the course. This consisted of learning how to evaluate peers during TDGs, briefing solutions to the class, or assuming a leadership role during one of the many TDGs, Kriegspiels, or case methods.[18] During the workshop, the cadre from OCS did the following:

- Assumed the role of decision-makers in a variety of high-pressure situations.
- Made difficult decisions with incomplete and sometimes contradictory information available and observe their peers in similar situations.
- Gained an understanding of each other's preferred working styles and the importance of moral courage in good leadership.
- Quickly developed a sense of trust among their team as they explore complex problems and build dynamic, adaptive teams.

The Mission Command/OBL workshop deliberately introduces mild stressors into decision-making games, looking to raise the heart rate of participants into the optimal zone between 115–145bpm. This occurs from the very start (no introduction, it jumps right into a problem-solving game) as soon as the students arrive. While participants might initially spike above those levels, it is precisely this kind of safe, repeatable practice that will allow them to calmly and confidently confront future real-world challenges. The workshop approach to teaching with TDGs/tactical-decision exercises uses OBL Learning doctrine, proven to embed and imprint experiences in adult learners.[19]

OBL in Action

Important to note that OBL is in action inside formal schools as well as the operating force—formal and informal learning environments. It proved highly successful in the formal school setting at the USMA's (West Point) DMI as it evolved from the Industrial Age to Information Age from 2008 to 2012 under the leadership of COL Casey Haskins.[20] Another course where OBL has been highly successful is the Army's Reconnaissance Course at Fort Benning, GA.[21] It was also introduced in 2009 and 2010 at the Marine Corps Expeditionary Warfare School, at the Marine Corps Infantry Officer Course in 2010 and 2011, and The Basic School (TBS) in the summer of 2012.[22] It also worked exceptionally well for the opposition forces as the Army's 4-10 Cavalry Squadron moved from the linear way of training and education to OBL in 2014–2016 under the leadership of LTC Chad R Foster.[23] Under the formal school and opposition forces examples, OBL relied heavily on the instructors growing expertise and ability and much less on scripts, standard procedures, or external controls. It standardized learning by the results or outcomes. In other words, success was judged when the student or unit demonstrated they can solve a new problem to an acceptable level using their newly developed skills and knowledge.[24]

OBL does not standardize learning by the process (every student will first do A, then do B, then advance to C, and finally qualify on D) or by inputs/throughputs (each student will fire 3 rounds, spend 2.5 hours on this topic, watch these slides, do three iterations of this drill, or we got 1,000 Marines through the training, etc.). It recognizes that many skills and situations have more than one acceptable way of solving the problem and does not mandate one solution. Additionally, it does not specify one way to teach a particular skill or to learn it (see Figure 3). As is

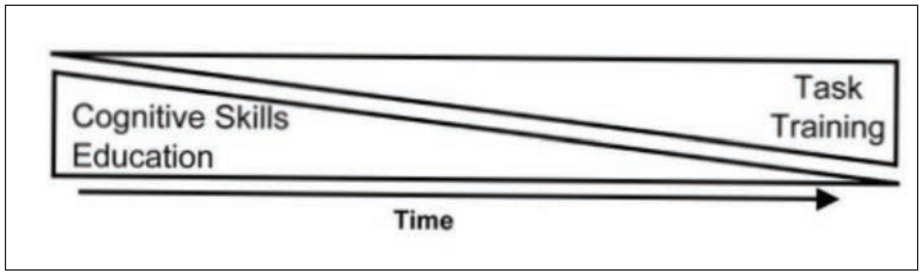


Figure 3. The fundamental is critical thinking before task training. *(Figure provided by author.)*

currently believed, processed-oriented task training, regardless of the task, is not fundamental to learning. Critical thinking and problem solving is the first thing that young or new people should be immersed in, growing in complexity as they move along their career continuum.[25]

OBL explicitly focuses at every step on developing such intangible traits as critical thinking, judgment, problem solving, initiative, and accountability—in both the instructors and the students.

Though there are similarities, OBL is not just a new term for old concepts. Outcomes are not merely terminal learning objectives. Measures of effectiveness (MoEs) are not merely task standards. Many senior leaders, upon hearing of OBL, claim they have always done it. This is a common misperception. The vast majority have not.

Finally, OBL requires no more resources than the standard Marine Corps T&R training model. While it will require a new method for allotting resources—since inputs (number of rounds, hours, miles, etc.) no longer drive the development—a standard package of resources will still suffice, so long as the instructors have been developed so they understand how to use them employing an array of various learning tools.[26]

Developing the Outcomes

The first, and arguably the most important, step at every level from the Marine Corps headquarters down to the lowest level of command, directorate, or section in a course is developing an outcome. Outcomes, like commanders' intent, should flow from top to bottom with some overlap. An outcome clearly defines what success is desired at the end of the development event, being a class, phase in a course, or the course itself, flowing down from a given command and higher (see Figure 4).[27]

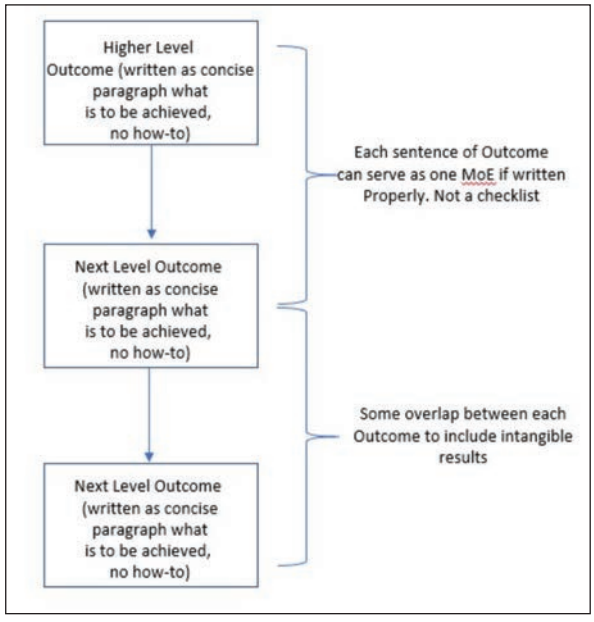


Figure 4. Creating outcomes and MoEs. *(Figure provided by author.)*

The outcomes should be simply stated in clear language. Ideally, they are broad, rather than detailed, and holistic. In other words, they are not meant to stand alone but together. That is important because it prevents a leader from conducting training that might further one outcome while hindering or even going backward in others. In the case of a unit, the outcomes are a statement of what the unit should be able to do, and they should describe its values and behavior. In the case of a school, they specify what each graduate should be able to do upon completion of a given phase, course, or the entire school.

Each outcome is then expanded one level into MoEs. These MoEs answer the question, "What does success in this outcome look like?" Taken together, the MoEs define success. Furthermore, each MoE should be measurable or at least observable, so that they form not just the basis for the training program, but also the basis for the assessment.[28]

Developing the Learning Plan

OBL is most like standard training in this step. However, there are two main differences. As with the current way the training plan is developed, the OBL development plan is not the point around which everything hinges—the outcomes are. So, if something is not working, the plan changes (without going through massive layers of approval to change it). Traditionally, units have tended to do this well, but schools/courses are much more rigid (as we discovered in the Mission Command/OBL workshop with Marine Corps OCS). Using OBL, the program of instruction in a school will change from one cycle to the next as leaders/instructors/cadre assess successes or failures at achieving outcomes.

The more significant way in which OBL differs from standard Marine Corps training plans is that instructors receive more latitude. Less is directed by higher headquarters, but the plan correspondingly builds in accountability. For instance, if land navigation is part of a school, the plan might build in several days with little direction, available to junior leaders, and resourced with training areas and transportation. There would be no expectation that each leader would use the time the same way. A description of the types of navigation problems each student would be expected to solve on the final day should provide sufficient guidance for developed leaders to teach their Marines; those Marines' performance will then show clearly how well each leader did and allow the chain of command to hold leaders accountable.

What is Gained?

The end state that the Marines are seeking in the conduct of OBL is adaptable Marines that can operate more effectively under a doctrine of maneuver warfare. OBL aligns well with the principles of maneuver warfare, particularly mission command or mission orders. What does it provide if executed as per the proposed learning philosophy? This is a significant area where it will differ from today's Marine Corps training. The differences stem mostly from an attempt to make training better fit human nature, rather than working against it as Marine Corps learning often has today.[29] OBL is also geared to fit better with the ambiguity and complexity of warfare both today and in the future. According to Dr. Alana Niscastro, educator at Marine Corps Training and Operations Group,

> And is aligned with our motto—improvise, adapt and overcome. It also helps establish" a culture of learning" and this "intellectual edge" yearning. Ha! Talk about institutional message alignment! Our current rigid practices take us farther away from realizing our brilliancy. Learning is a platform for experimentation.[30]

The cadre from Marine Corps OCS found out there is far more flexibility granted to both teachers and Marines, with far fewer external controls. This requires an investment in developing leaders (both on the skills and on how to teach). An overwhelming majority of both leaders and Marines respond and perform at a much higher level. The OCS cadre on the final day said they wanted more to become proficient![31]

OBL emphasizes principles rather than checklists, procedures, or standards. While there are certainly minimum standards outlined in T&R manuals for what an acceptable performance is, they are rarely discussed with the Marines. The Marines then strive to do their best.

OBL emphasizes the *why*. Traditional Marine Corps training emphasizes the *what* and *how* but too often neglects the *why*. For instance, every Marine knows how to low crawl, but surprisingly few can explain when it might make sense to do so. They, therefore, avoid doing it at all or they tend to do it in inappropriate circumstances. Learning philosophy builds in the *why* from the beginning and reinforces it at every step requiring the student to solve problems and newly acquired knowledge and skills.[32]

As Marines solve problems and learn by doing, they are required to figure as much of it out for themselves as they are capable of. This guided-self-discovery, in which the leader or teacher guides or facilitates the Marine only through the bits of a problem that they cannot figure out for themselves, helps the Marine thoroughly understand the concepts and connect them to their context. While it may take a bit longer to learn, the learning is deeper and retained longer. Marines in the new learning philosophy are conditioned from the beginning to think to solve problems.[33]

In much of traditional Marine training, by contrast, Marines are told what to do, whether or not they understand why. They are therefore being conditioned not to think and not to solve problems, but rather to follow sequences and procedures. This conditioning causes them difficulty when they are forced to adapt to new and unexpected circumstances. Not only are they less experienced at solving problems, but they are conditioned not to try (see Figure 5).[34]

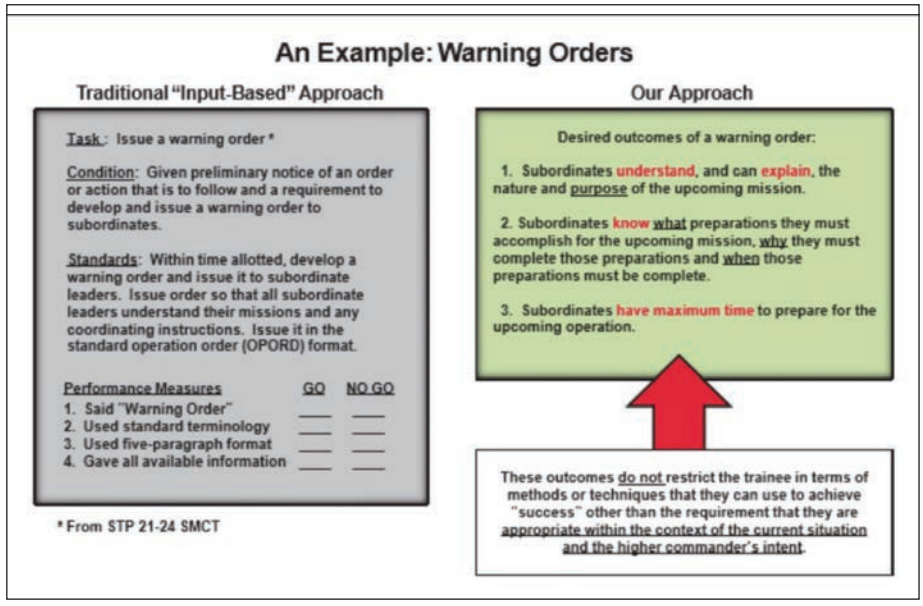


Figure 5. Traditional versus outcomes.[35] *(Figure provided by author.)*

Problems expressed through scenarios employing an array of various delivery tools under the OBL are realistic and do not divorce the skill from its context. To take an example, treating a casualty in combat is different than treating one in a classroom or on a range. This situation changes the medical response. For instance, the need to move the casualty to a less vulnerable location for further treatment not only changes the sequence of treatment steps in controlling the bleeding (a tourniquet is immediate rather than after trying direct pressure and elevation) but also requires the Marine to balance medical treatment with security, control of the unit, and accounting for personnel. Together, this results in a fundamentally different learning experience from traditional training that isolates each task and trains them one at a time.[36]

Stress is reversed. Normally in a Marine Corps school or course, the Marine will experience a high level of stress at the beginning. Whether induced intentionally or inadvertently through the unfamiliarity of the situation, that stress usually interferes in mastering the fundamentals. The Marine is more focused on avoiding trouble than on mastering the skills. OBL, in contrast, begins all learning with little or no stress. Treating the Marines as adults, teachers explain

skills thoroughly, breaking them down into their fundamentals and making sure Marines understand principles and the *why* behind each skill but without talking down to them.[37]

On the other hand, as the student begins to master the basics, the learning is presented with increasingly difficult problems to solve with their new skills—even while they struggle to master them. This results in increasing stress as the learning progresses, which helps the Marine to cement their skills and understanding, thus helping them to gain confidence as they succeed at handling more challenging problems. This helps them to learn to manage higher levels of stress as they perform—all with little or no yelling or other artificial stressors.[38]

Marines in traditional Marine schools, by contrast, tend to experience decreased stress as they adjust to the environment and get more comfortable. For example, in the Army Ranger School, students later in the course require more yelling and bigger threats to induce a similar response to early days. This reduced stress results in incomplete learning, as the student often fails to lock in the skills in a realistic combat context.[39]

OBL aims for a much higher level of mastery of individual and team skills. The tyranny of throughput and external control means that traditional Marine Corps training ("Skills and Tasks") results in everyone meeting minimum standards but often prevents Marines from achieving as much as they are capable of and penalizes initiative and new approaches (innovation). This is certainly true in schools but also often true in MAGTFs. The results are unfortunate but predictable. The level of individual expertise in many units is too low to enable a unit to excel in combat situations. Worse, the traditional approach can foster a climate where Marines and even Marine leaders tend to wait to be told what to do next, rather than exercising judgment and initiative.[40]

Mistakes by students or units under the OBL are treated as opportunities for learning to occur. Marines are encouraged to try things for themselves and to learn from their mistakes. The leader's role is to make sure that the Marines analyze why something went wrong and to draw reasonable lessons from the experience (of course the teacher or leader is expected to exercise judgment while avoiding catastrophic mistakes). Too often, Marine Corps training treats mistakes as things to be avoided or nipped in the bud. Leaders and teachers are rewarded for avoiding mistakes or correcting them immediately and are rarely encouraged to allow mistakes to unfold so that their Marines can learn from them.[41]

Strict insistence on uniformity and standardization will stop it dead ...

Accountability is built into OBL. Marines are given both the responsibility and the authority they need to conduct the learning their own way. They can be held accountable for the results they teach too while they are focused on clear outcomes and guided by MoEs. But if leaders or teachers are required a task in a certain way, as is often the case in Marine Corps training, it is difficult to blame them if their Marines do not learn. In OBL, Marines learn accountability. Required to solve problems and given the authority to try different solutions, Marines learn to accept responsibility for their actions and decisions. Results matter. In almost every case, Marines will come to see accountability as an enabler, allowing them to solve problems their own way.[42]

Under the OBL, Marines will be given problems to solve and then watch as they solve them. Those problems should be familiar to them but which they could be reasonably expected to solve given their level of skills and experience. If the problems are properly designed, the teachers or leaders who are observing them will not only see clearly whether the Marines have mastered the skills but will see whether they truly understand why things are done and will gain insight into such intangibles as initiative, judgment, and accountability. An added benefit is that the assessment is good learning for the student being assessed.[43]

Where it all Goes?

In a corps of motivated volunteers, expected to succeed on difficult and rapidly evolving battlefields, the new learning philosophy is a better way to prepare. It aligns more closely with the way people learn. While results are preliminary, the evidence is clear that it results in superior mastery of skills, better retention, higher levels of confidence, and improved judgment, initiative, and accountability.[44]

On the other hand, implementing OBL poses challenges. It relies much more on Marine leaders' abilities and so requires investment in better preparing leaders. They need to have the skills, be able to explain why things are done certain ways, and be able to teach. It requires the right command climate. Strict insistence on uniformity and standardization will stop it dead since the OBL requires both leaders and Marines to experiment with different solutions.

It requires commanders and teachers to create conditions that allow it, including neutralizing external agency vetoes (i.e., range control) and removing rules and processes that prevent initiative. It will require a different method of allocating resources to learning, and more flexibility in using them since resources are currently matched to tasks being trained rather than skills attained. Nevertheless, it can be done, and then it works very well. Finally, it will require a change in Manpower's incentives—as they all work against making the best instructors. We cannot have those who have been passed over for promotion teaching the rapidly promoted. It makes no sense, killing the seed corn at the altar of career advancement.[45]

Finally, decision makers who adapt OBL must plan to develop cadre and leaders first, then implement it in small steps. Remember, this approach cannot be done in revolutionary terms but in evolutionary steps as leaders at all levels are developed into how to implement, nurture, and teach it.

Notes

1. The author would like to thank the input of Dr. Alana Nicastro, Mr. Christopher Casey, Ms. Amara Charles, LTC Chad R. Foster, and Maj PJ Tremblay for this article.

2. Dr. Bruce I. Gudmundsson has been a big influence in the author's thinking on how learning should be conducted.

3. John Taylor Gatto, *Dumbing Us Down: The Hidden Curriculum of Compulsory Schooling*, (New York, NY: New Society Publishers, Limited, 2004); John Taylor Gatto, *The Underground History of American Education: An Intimate Investigation Into the Prison of Modern Schooling*, (New York, NY: New Society Publishers, Limited, 2001); John Taylor Gatto, *Weapons of Mass Instruction: A Schoolteacher's Journey through the Dark World of Compulsory Schooling*, (New York, NY: New Society Publishers, Limited, 2010); and Dan Glazier, "Military Reform through Education," (Washington, DC: Project of Government Oversight, October 2015)

4. Headquarters Marine Corps, *MCDP 1, Warfighting*, (Washington, DC: 1997).

5. I learned to compare the Industrial Method from the Information Age method of learning through OBT&E and now OBL from COL Casey Haskins in numerous discussions from October 2007 to August 2012.

6. Author would like to thank the students from Marine Corps OCS Tactics Section, particularly Capt Jason Klein and GySgt Gary Smith for their support and for creating this chart in Figure 1.

7. John Tillson, et al., "Dealing with Asymmetric Threats," (Alexandria, VA: Institute of Defense Analyses, June 2005).

8. Donald Vandergriff, "Today's Training and Education Development Revolution: The Future is Now," (Arlington, VA: The Institute of Land Warfare, April 2010).

9. Morgan Darwin, "Developing Outcomes," (presentation, U.S. Army Asymmetric Warfare Group Workshop on Outcomes-Based Training and Education, Laurel, MD, March 2009). The word adaptive seems to have taken on a platitude-like state for the Marines. We repeat it without knowing what it means or whether we are all defining it the same way. Adaptability is "the ability to appropriately adjust—a strategic, an approach, a skill, a COA, etc.—in response to a given situation, a given set of stimuli or shift thereof." Things we need to be adaptive: 1. Recognition (that adaptation is required); 2. Understanding (of what is needed/how to execute); 3. Capability (to communicate and execute); 4. Incentive (to do so); 5. Feedback (re: whether actions require further adaptation); and Morgan Darwin, "Outcomes Based Training and Education, Fostering Adaptability in Full Spectrum Operations, briefing," (Fort Meade, MD: Asymmetric Warfare Group, December 2008).

10. Headquarters Marine Corps, *MCDP 1-3, Tactics*, (Washington, DC: Government Printing Office, June 1997).

11. MajGen James Mullen, *Commander's Guidance to TECOM*, (Quantico, VA: Training and Education Command, July 2018).

12. Frederick W. Taylor, Scientific Management: Comprising Management, *The Principles of Scientific Management and Testimony before the Special House Committee*, (New York, NY: Harper and Row, 1964). The Competency model first appeared in New York City Schools in 1905. It was developed, and public schools patterned afterward, on producing factory workers. You see today in such concepts as "Leave No Child Behind," where students are trained for the test using memorization.

13. Thanks to LTC Chad Foster for this chart. Also see, Antoine Bousquet, *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity*, (New York, NY: Columbia University Press, 2009).

14. Starting in February 2015 through September 2015, we were conducting two workshops a month at Fort Benning, GA, for the Maneuver Center of Excellence. I also taught a workshop to students of SAMS and others from Fort Leavenworth, KS, in April 2015 while working with the Army Chief of Staff's Strategic Studies Group, U.S. Army Cadet Command, and with the Maneuver Center of Excellence's CIG in 2015–16 in regard to providing input to White Papers and POIs from various courses. My work was recently highlighted in an article by James Fallows of the *Atlantic Monthly* (http://www.theatlantic.com/politics/archive/2015/01/chickenhawk-no-13-vandergriff-as-yoda/384590). We also have conducted workshops with the D.C. Fire Department, Marine Corps TECOM School of Infantry, and the Expeditionary Warfare School, as well as the FBI in February 2015 and throughout 2015 until the author deployed to Afghanistan in October 2015.

15. John R. Boyd, "Patterns of Conflict," (brief, December 1986).

16. *MCDP 1, Warfighting*.

17. S.R. Stewart, *Correlates of Problem Solving and an Evaluation of Training to Increase Problem Solving Effectiveness*, (Ann Arbor, MI: Bell & Howell, 1988).

18. Theoretical and empirical support for this possibility comes from some domain-general decision-making research. See Gary Klein, "A Recognition Primed Decision (RPD) Model of Rapid Decision Making," in *Decision Making in Action*, (Santa Barbara, CA: Praeger 1993).

19. Robert C. Bjork, "How We Learn Versus How We Think We Learn: Implications for the Organization of Army Training," Briefing, (Fort Monroe, VA: U.S. Army Training and Doctrine Command, August 2006).

20. The success has been studied by several U.S. Army-supported Behavioral Science Groups, as well as individuals. The best pool of data is kept at the Marine Corps DMI pool with one of the best papers here: https://www.usma.edu/cfe/literature/jsmith_10.pdf.

21. MAJ Robert C. Perry and LTC Kevin McEnery (Ret), "Army Reconnaissance Course: Defining the Aim Point for Reconnaissance Leader Training," *Armor*, (Fort Benning, GA: U.S. Army Armor Center, July–Aug 2009).

22. In this course, called "Make Good Instructors Great" ran at Camp Barrett (Quantico, VA) in July 2012, two weeks of OBL and Case Method approach by Dr. Bruce I Gudmundsson was taught to cadre of the 24th Marine Regiment (USMCR) and members of the TBS cadre led by John DeForest, Academics Director The Basic School.

23. Chad R Foster, "The Case for Outcomes Based Training and Education," *Armor*, (Fort Benning, GA: U.S. Army Armor Center, October 2009).

24. LTC Chad R Foster, "Training for Mission Command," in Donald E. Vandergriff and Stephen Webber, eds., *Mission Command: The Who, What, Where, When and How, An Anthology*, (Charleston, SC: Create Space, August 2017).

25. R.A. Bjork, "Forgetting as a Friend of Learning," in D.S. Lindsay, C.M. Kelley, A.P. Yonelinas, & H.L. Roediger, III (Eds.), *Remembering: Attributions, Processes, and Control in Human Memory: Papers in Honor of Larry L. Jacoby*, (New York, NY: Psychology Press. 2015).

26. Headquarters Marine Corps, *Infantry T&R Standards*, (Washington, DC: August 2013).

Also see, Maj B.B. McBreen, "How to Plan Training," (PowerPoint Presentation, July 2001). The T&R manuals are inherently flawed and will make OBL that much harder to realize by a larger cast of characters. Furthermore, Standards Division will need to pay attention to more important things—like the quality of the learning and the impact on the fleet!

27. In 2009, DMI started to incorporate the OBT&E training approach within their classrooms and all the training events. As mentioned above, OBT&E does not focus only on tasks, conditions, and standards; it must also include the attributes that are required in individuals, teams, and organizations to carry out any task. During spring 2010, a survey has given to a handful of students in each class. The purpose of this survey was to see if this new training approach has affected the intangibles of a cadet that leaders were looking for in becoming a successful Army officer. The results stated that the attributes of the students, who were exposed more to the OBT&E training methodology, were greatly influenced in a positive way.

28. Loreto V. Borce Jr., "Outcomes Based Training and Education: in the Department of Military Instruction, United States Military Academy," (master's paper, Center for Teaching Excellence, United States Military Academy, West Point, 2012).

29. See the work of Dr. Robert Bjork, Dean of the College of Psychology, UCLA, and considered by many to be the leading learner in the world.

30. Personal email correspondence between author Dr. Alana Niscastro, Educator and Ethnographer, Marine Corps Training and Operations Center, Twentynine Palms, CA, 14 November 2018.

31. Donald Vandergriff, "From Swift to Swiss: Tactical Decision Games and their place in Military Education and Performance Improvement," (Annapolis, MD: Performance Improvement, 2007).

32. Based on hundreds of conversations with Marines from the ranks of corporal to colonel from 2005 to November 2018.

33. Edward Reed, *The Necessity of Experience*, (New Haven, CT: Yale University Press, 1996).

34. Chad Foster, "No Approved Solutions, in Asymmetric Warfare: Nurturing Adaptive Leaders in An Outcomes-Based Training Environment," *Assembly*, (West Point, NY: United States Military Academy, July/August 2009).

35. Thanks to LTC Chad Foster for this chart, employed at USMA DMI to explain traditional task conditions and standards vs outcomes.

36. John Savory and Thomas Duffy, "Problems Based Learning: An Instructional Model and Its Constructivist Framework," *Educational Technology*, (Englewood Cliffs, NJ: Educational Technology Publications, September-October 1995).

37. M. Cox, "Zeroed in on Marksmanship: Army Overhauls Weapons Training and Qualification," *Army Times*, (Arlington, VA: Sightline Media Group, May 2008).

38. Donald Vandergriff, "Adaptive Leaders Course, Part 1: Old Dogs teaching New Tricks," *Army*, (Arlington, VA: AUSA, 2006).

39. Peter vanGel and Michael Filansowski, "The Evolution of Ranger School: Supporting the Squad as the Foundation of the Decisive Force," *Infantry*, (Fort Benning GA: U.S. Army Infantry School, January–April 2013). U.S. Army Ranger School attempted to implement OBL in the summer of 2012. The Ranger Instructors pushed for this as a bottom-up change, not a top-down demand. While the RIs saw advantages to the OBL approach, the Commander of Ranger Training Brigade did not and wanted to keep the course as it was taught with the Industrial-age training process.

40. W. Marken, "Merging Doctrine: Outcomes-based Training and Mission Essential Task Lists Compared," *Initial Entry Training Journal*, (Columbus, SC: Training and Doctrine Command 2008).

41. J. Schwitters, "Command Imperative for Change," (presentation, U.S. Army Asymmetric Warfare Group Workshop on Outcomes-based Training and Education, Laurel, MD, March 2009).

42. S. Tobias, and T. Duffy, editors, *Constructivist Instruction: Success of Failure*, (New York, NY: Routledge, 2009).

43. Karl Weick, *Sensemaking in Organizations*, (London: Sage, 1995).

44. Presented in the work of the Asymmetric Warfare Group from June 2007 to June 2009 in analyzing Initial Entry Training at Fort Jackson, SC, and the Department of Military Science at the United States Military Academy from August 2008 to August 2009. The results were discussed at the OBTE conference held in October 2009, at Fort Sill, OK.

45. Based on the author's personnel observations overseeing or part of the implementation, first at Georgetown Army ROTC from 2001 to 2005, in which time, the program moved to 241st (out of 271) to number 1 in the Nation in 2003 and 2004 (based on cadet junior performance at the Cadet Command summer training, and results of attendance and graduation rates from Army schools offered to cadets). The author also worked with and assisted implemented OBT&E (OBL) at the USMA DMI, U.S. Army Reconnaissance Course (Fort Benning, GA), and the U.S. Army Cadet Command from 2010–2012 with MG Jeffory Smith, Commanding General, U.S. Army Cadet Command.

USMC

Military Build-Up in the East China Sea and the Spark for Conflict

Most concerning area in Sino-U.S. relations

by Maj Dylan Buck

"Arsonists cause only a small fraction of fires. Discarded cigarettes, smoldering campfires, industrial accidents, and bolts of lightning are much more common sources." [1]

—Graham Allison

>Maj Buck is an Infantry Officer currently serving as a Desk Officer in the G5 at MARFORPAC.

The most likely impetus for a Sino-U.S conflict is an escalation by miscalculation in the East China Sea that "stokes a tiny spark into a roaring fire."[2] Allison notes, "American and allied warships and aircraft are operating in greater proximity to their Chinese counterparts than ever before."[3] As a result of the concentration and continued build-up of forces in the region, militaries will inherently factor into the decision making for a response to crises or contingency, especially under the guise of a collision or humanitarian relief effort. Complicating matters are disputed sovereignty claims that impede coordinated navigation and blur strategic boundaries. Chinese and Japanese governments are committed to nationalistic narratives that have staked political capital in the Senkaku Islands. While Taiwan is the principal strategic concern for China, "counter-intervention" efforts to effectively isolate Taiwan are more likely to occur prior to a rapid invasion of Taiwan.[4] Events in Ukraine have made it more apparent that China will have to isolate Taiwan diplomatically and economically prior to an offensive or otherwise risk momentous international retribution. As such, it is more likely that actions intended to signal resolve over sovereignty claims over the Senkakus inadvertently are the impetus for horizontal escalation. Planners must wargame the inadvertent spark if arsonists tend to be the least likely culprit for wildfires.

Events in Ukraine have made it more apparent that China will have to isolate Taiwan diplomatically and economically prior to an offensive ...

Probability of Collision in the East China Sea

The recent amplified volume of military air and naval assets squaring off in overlapping claims of sovereignty in the East China Sea increases the likelihood of a collision and subsequent conflict.[5] In November 2013, China declared an Air Defense Identification Zone (ADIZ) over approximately two-thirds of the East China Sea that overlaps South Korean, Japanese, and Taiwan ADIZs (Figure 1: red dotted line, on following page). The United States responded to China's overreach on 25 November by flying two B-52 bombers through the claimed ADIZ, and the Secretary of Defense "declared that the U.S. military would continue to operate freely in international waters and airspace."[6]

An ambiguous ADIZ raises the possibility of miscalculation and inadvertent escalation. An ADIZ would require inbound aircraft to self-identify and submit location updates to Chinese authorities during transit. At the unclas-

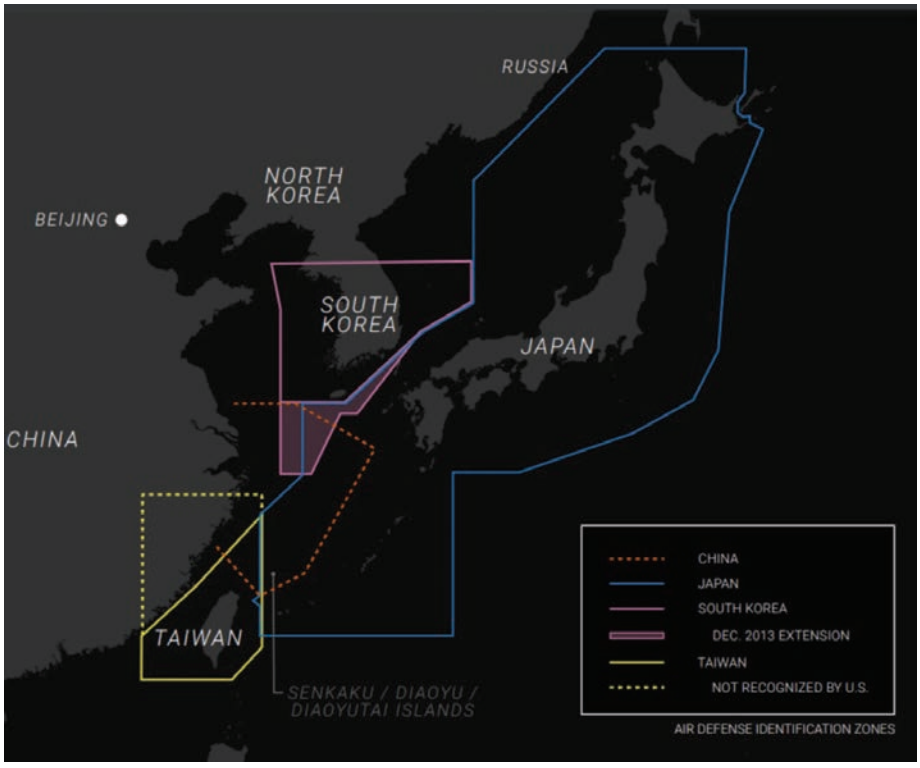


Figure 1. 2020 Air Defense Identification Zones (ADIZ) in East Asia.[7] ***(Figure provided by author.)***

sified level, the United States executes approximately 400 Navy EP-3E surveillance and reconnaissance missions off China's coast annually.[8] On 20 May 2020, the Deputy Assistant Secretary of Defense for the United States, Reed Werner, stated that "there have been 'at least nine' concerning incidents involving Chinese fighter jets and U.S. aircraft in the skies above the contested waterway since mid-March." Werner further added, "China continues to engage in 'risky and escalatory' behavior."[9] Appendix A depicts the most cited reports of U.S. and Chinese incidents where U.S. Navy ships and aircraft had to alter course to avoid a collision. Not depicted was the December 2013 incident when the U.S. Navy cruiser *Cowpens* was forced off course by the Chinese aircraft carrier *Liaoning* to avoid collision in the South China Sea.[10]

To respond to China's heightened presence in the East China Sea, Tokyo has considered constructing new bases and has allocated significant resources to expand its military operations into the region.[11] Japan's Air Self-Defense Force increased the number of air missions to respond to Chinese incursions into Japan's air space (Figure 2) and is "expand[ing] its inventory of aircraft to meet China's increasing aerial presence."[12] In July 2020, the United States approved Japan's purchase of 105 F-35 Joint Strike Fighters worth approximately $23B U.S. dollars.[13] Japan has also opened a second military runway at Naha airport in Okinawa to "accommodate the transfer of an F-15 squadron from Tsuiki Air Base in Fukuoka Prefecture to bolster air defenses."[14] Japan has surged intelligence, surveillance, and reconnaissance (ISR) assets into the vicinity of the Senkaku sea lanes to improve situational awareness of Chinese naval vessels transiting through its claimed waters (Figure 3 on following page) as the Japanese Coast Guard in 2017 reported 696 sightings of Chinese frigates and submarines in the vicinity of the Senkakus.[15] Japan has built new, and reinforced existing, ISR facilities on Yonaguni and Miyakojima islands, which are approximately 70 miles off Taiwan's coast, to monitor Chinese air and maritime forces.[16]

Japan has built new, and reinforced existing, ISR facilities ...

Strategic Importance of the Senkakus

The United States has pegged its credibility and influence in the Pacific on defending Japan's control over the Senkakus Islands. The CMC, Gen David Berger, and the Japanese Prime Minister Yoshihide Suga announced on 18 November 2020 that the alliance would take the steps necessary to "enhance our response and deterrence capabilities" against an increasingly assertive China.[19] Earlier on 1 November 2020, the commander of U.S. Forces Japan, LtGen Kevin Schneider, stated that the U.S.-Japanese bilateral Exercise

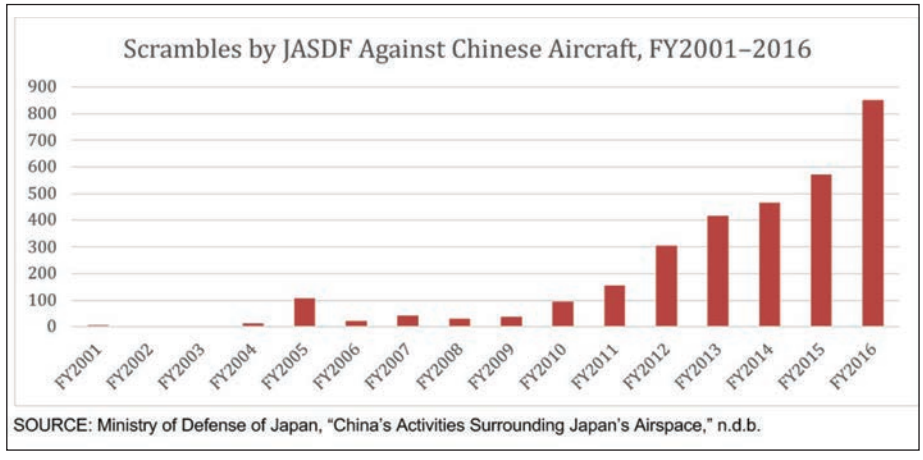


Figure 2. Aggregate reporting on Japanese fighter scrambles to respond to Chinese aircraft.[17] ***(Figure provided by author.)***

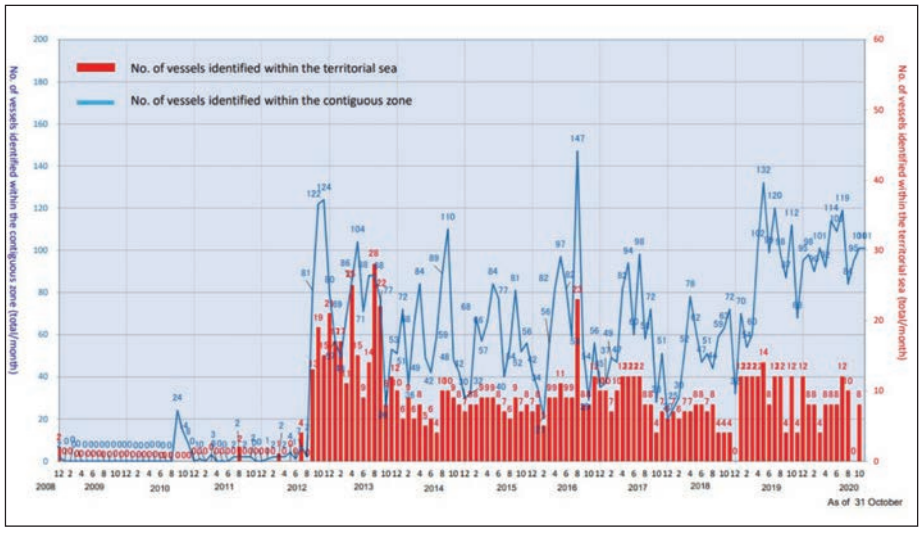


Figure 3. Trends in Chinese vessels IVO Senkaku Islands.[18] ***(Figure provided by author.)***

Keen Sword, which occurs biennially, simulates operations that "could be used to deploy combat troops to defend the Senkaku Islands."[20]

The United States underwrites the protection of the Senkaku Islands in accordance with Article 5 of the 1960 U.S.-Japan Security Treaty. In Tokyo in 2014, U.S. President Barak Obama affirmed that the United States "considered the Senkaku Islands as being under the protection of Article Five of the U.S.-Japan security treaty."[21] The treaty commits the United States to "meet the common danger of an armed attack on 'the territories under the Administration of Japan,' and Japan administers the Senkakus."[22] In January 2013, Secretary of State Hillary Clinton stated "we oppose any unilateral actions that would seek to undermine Japanese administration" of the islands.[23] In exchange for the Unites States' commitment to Japan's security, Japan hosts "approximately 54,000 military personnel, 45,000 dependents, [and] 8,000 DOD civilian and contractor employees," who protect U.S. interests and ideals in the region.[24]

Additionally, the first island chain off China's coast is economic and operational key terrain as an estimated 60 percent of the world's maritime trade transits through the region. Japan and the United States are intent on ensuring China is prevented from "placing [intelligence, surveillance, and reconnaissance] ISR assets close to the Japanese archipelago that would enable China to monitor both Japanese and U.S. activity in the region."[25] Moreover, such key terrain would enhance China's targeting and acquisition capabilities toward U.S.-Japanese assets.

China's Intent in the East China Sea

The Chinese Communist Party has viewed the United States and Japan as strategic adversaries since the United States supported its opposition leader Chiang Kai-Shek during the Chinese civil war of the mid-1950s and ever since Japan invaded in 1937. Chinese strategists have expressed to U.S. officials that "there is currently little chance of an accidental collision between U.S. and Chinese ships in the Caribbean. If the U.S. Navy would follow their example in the East and South China Seas and stay in its own hemisphere there would be no risk of colliding with Chinese ships."[26] With respect to Japan, prior to 2010 "China downplayed its claims and sought to delay any resolution of the dispute."[27] Fravel claims China's escalated rhetoric can be attributed to perceived expansionary actions from Japan and uncertainty associated with the transfer of power during the Chinese Communist Party 18th Party Congress.[28]

It is well documented that the origins of the Senkakus dispute date back to when U.S. oil firms began exploration after the potential for energy deposits were discovered in 1968 by a Tokyo University Professor's submarine geological survey.[29] In June of 1970, the government-owned Chinese Petroleum Corporation published a 1:4,000,00 map that did not depict the Senkakus.[30] However, in December 1970 Beijing declared that the United States was in "China's sacred territory" when U.S. oil firms began hydrocarbon exploration.[31] During the 1970s to 1980s however, China concentrated its efforts on Soviet threats to the north.

After the collapse of the Soviet Union in the early 1990s, and the subsequently reduced threat to the north, China set its strategic aim toward "winning local wars under modern especially high-technology conditions," and "prevent[ing] a major incident of 'Taiwan independence' from occurring."[32] The 1993 strategic shift exhibited the greatest modification to military planning by the CCP since 1956: "it remains the basis of China's military strategy today."[33] U.S. operations since the Gulf War have demonstrated to China the consequential impact ISR will have on future conflicts. The 1993 strategy exhibited this fundamental shift for the People's Liberation Army (PLA) to enhance joint capabilities tasked with becoming more proficient at actively sensing an impending attack.[34] The Senkakus would add a significant fixed ISR site 115 miles northeast of Taiwan.

U.S. operations since the Gulf War have demonstrated to China the consequential impact ISR will have on future conflicts.

At a fundamental level, Fravel argues that China shifted "from delay to escalation" to counter what was perceived as

an escalatory act by Japan to purchase of the islands in 2012.[35] China's increased economic and military prowess has correlated with its actions and rhetoric to defend its claims of sovereignty in the East Sea. President Xi stated in 2013, that China will "absolutely not give up [its] legitimate rights and interests and will definitely not sacrifice the state's core interests."[36] On 11 May 2009, China submitted survey findings to the UN Commission on the Limits of the Continental Shelf (CLCS) that extended its "continental shelf beyond 200NM as far as the western slope of the Okinawa Trough."[37] This claim overlaps Japan's claimed exclusive economic zone and envelopes the Senkaku Islands. Moreover, the claim extends the legal "latitude with which Chinese vessels operate in Japanese claimed waters."[38] Japanese military planners "fear a Chinese landing on the Senkakus becoming a *fait accompli*."[39]

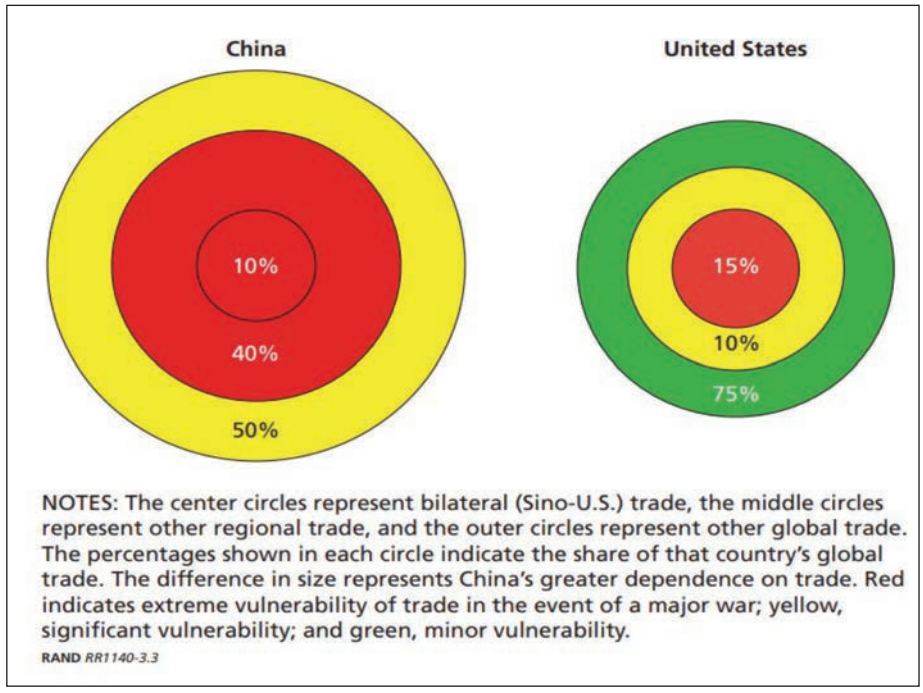


Figure 5. Effect on trade. *(Figure provided by author.)*

The Magnitude of Concern: Projected Military and Economic Consequences of War

The concern with China challenging U.S.-Japanese deterrence in the Senkakus is that actions intended to signal resolve might escalate into a great power war. If the United States and Japan acquiesce, this might encourage China to pursue forceful unification with Taiwan which is 115 miles Southwest of the Senkakus. The United States and Japan have enhanced military capability and presence in the East China Sea, thus signaling the will to use force. In September 2020, the Japanese Diet motioned to allow the Japanese Self Defense Force to "hold joint military drills with the United States around a group of East China Sea islands administered by Japan but claimed by China."[40] Japan's trajectory of military normalization further signals the will to use force to protect claims over the Senkakus.[41]

... the military cost of winning a conflict in the East China Sea increases for the U.S.-Japanese alliance over time.

As both sides signal heightened resolve in the East China Sea, a 2016 RAND study identified that from 2015 to 2025, it is projected that China will close the relative gap in U.S. military advantage in both the conduct and aftermath of war (Figure 4).[42] More plainly, the military cost of winning a conflict in the East China Sea increases for the

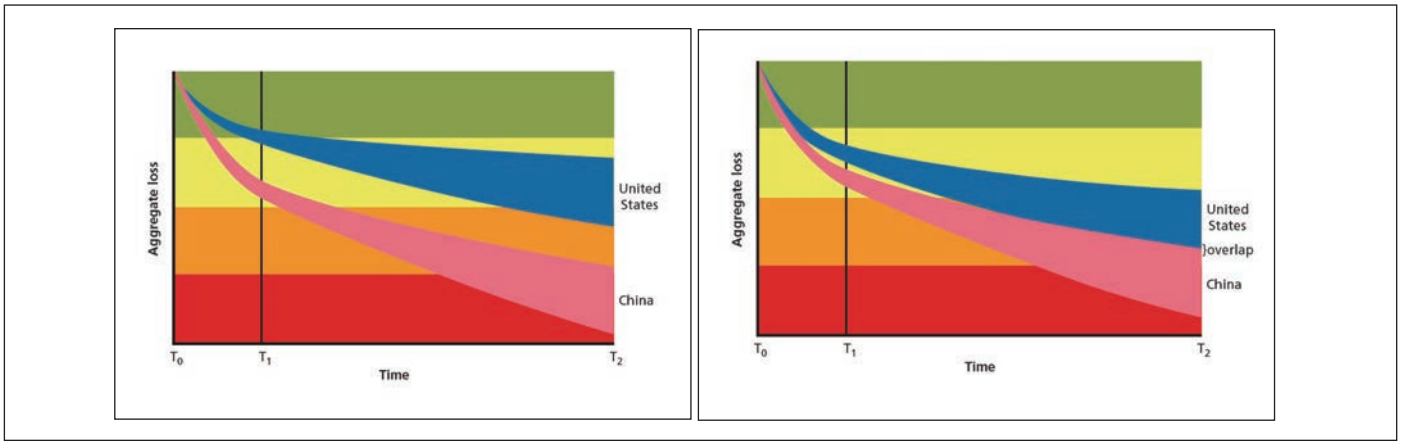


Figure 4. Estimated aggregate loss in military capability 2015–2025.[44] *(Figure provided by author.)*

U.S.-Japanese alliance over time. Hegemonic stability theory suggests there is a predisposition for war by the sated power in the event of a perceived shift in the balance of power. A RAND study identified that the U.S. is currently at a disadvantage in the region as the result of assessed relative combat power.[43]

However, the RAND report identified that impacts on China's economy would be more severe as the duration of the conflict grows since China is more dependent on international trade (Figure 5 on previous page). China's Asian regional trade would be heavily suppressed to include U.S. imports and direct investment. However, the greatest impact on China's economy would be the disruption of Chinese maritime trade routes. Approximately 95 percent of Chinese trade occurs through sea lanes which would be severely degraded in U.S. counter-A2AD operations. Allison's argument for the U.S. economy being 70 percent of China's by 2024 neglects the RAND study's impacts of war on China's economy.[45]

Why a Senkaku Conflict will Come First

China must effectively isolate Taiwan, politically, economically, and militarily prior to its seizure. Taiwan retains the greatest strategic value and concern in the ideological struggle between China and the United States in East Asia; however, it is a far more risky endeavor in the near term. China has historically "crossed the river by touching the stones," and taking advantage of leverage and momentum. Given the international resolve in response to the crisis in Ukraine, and China's slowing economy, the momentum is not in its favor to attack Taiwan. Taiwan's sea lanes and proximity present vulnerabilities to China—"Any aspirations that China might have to project military power in the broader Pacific would be seriously curtailed by a hostile, independent Taiwan which has the ability to cut off Chinese supply lines, obliging the deployment of forces closer to home."[46] In the Taiwan Relations Act of 1979, the United States declared it will "preserve and promote extensive, close, and friendly commercial, cultural, and other relations between the people of the United States and the people of Taiwan."[47] Taiwan is a strategic symbol of the United States' resolve and commitment to its alliance network and influence in the Indo-Pacific.[48] A conflict over the uninhabited Senkakus is less likely to draw international retribution as opposed to a catastrophic attack on Taiwan.

China perceives providing for domestic security and defending its sovereignty claims as quintessential to perpetuating communist rule.[49] Unification with Taiwan serves both aims directed toward "national rejuvenation," and Taiwan "has become the primary mission for the PLA" since threats from Russia, India, and Vietnam have relatively subsided.[50] Since 2003, when Wen Jiabao visited DC, China has become more aggressive in its rhetoric for Unification with Taiwan.[51] The PLA's efforts to achieve this strategic aim have been observed through "significant investments in its 'second artillery' strategic missile branch and acquiring Russian air and naval hardware" to isolate Taiwan and deter U.S. maritime assets from future intervention.[52]

However, the Chinese strategic methodology for warfare aligns more with Sun Tzu's style to win without fighting rather than Clausewitz's pitting of strength against strength. While the Taiwan issue holds more strategic significance than the dispute over the Senkakus, it is less concerning because of the likelihood of a conflict prior to necessary shaping operations. Current economic trajectories depict momentum favoring China and that U.S. and Japanese influence are in relative decline in Asia. However, at this current juncture, the international community aligns with the U.S.-led world order and there is too much uncertainty for China to risk an international backlash. Pillsbury notes, "While Chinese leaders harbor deep, even paranoid, insecurities about the United States and Western-led efforts to 'encircle' their country, there is little evidence that China seeks to intentionally incite war with America."[53] China is more likely to continue to build inertia with capabilities that decrease its vulnerability to U.S. maritime capabilities.

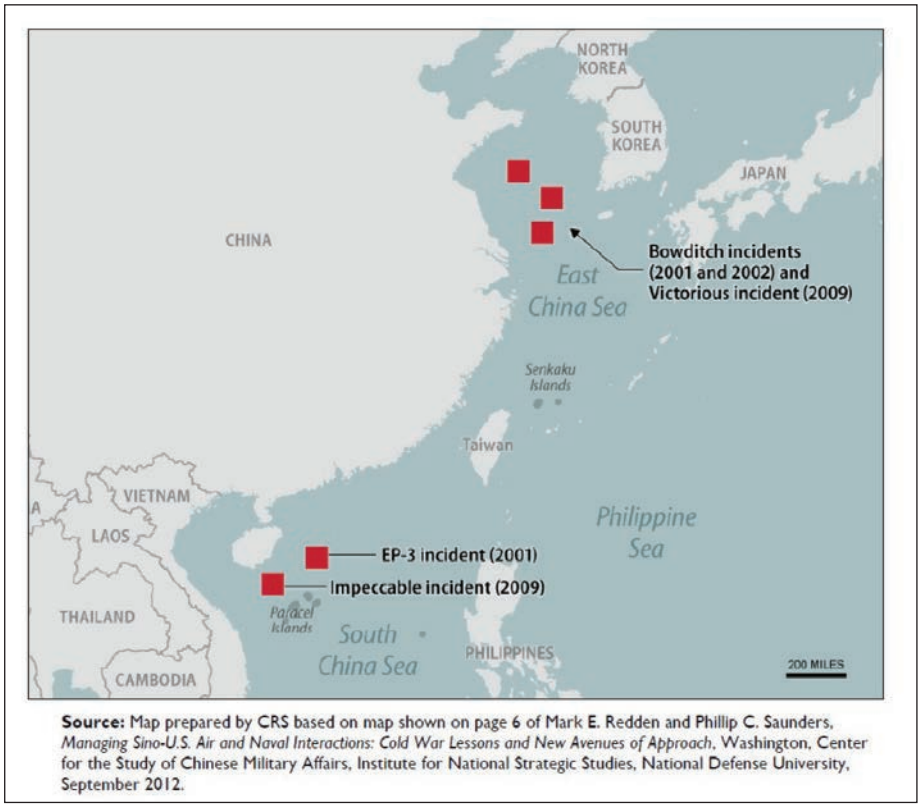
Deterrence is the product of capability, credibility, and a greater will to fight and suffer loss; surging military assets into the region is no longer an effective strategy.

Conclusion

The East China Sea is the battle line where the United States and China's security dilemma will culminate. It is more likely that the conflict is sparked by indirect means and miscalculation rather than a deliberately planned conventional offensive. Fravel asserts that the Senkakus are more about political gesturing than commitment to the strategic value of the islands.[54] However, the concentration of military buildup, the frequency of near collisions, and the blurring of strategic boundaries increase the likelihood of military interaction and subsequent escalation. The international consequences of war over Taiwan act as a deterrent for both China and the United States. Allison notes, "China and the U.S. would be better served not by passive-aggressive 'should diplomacy' (calling on the other to exhibit better behavior) or by noble-sounding rhetoric about geopolitical norms, but by unapologetically pursuing their national interests."[55] The United States' current strategy to maintain the status quo in Asia is not likely to succeed given the current economic conditions and trajectories noted by the RAND study. Deterrence alone is not a strategy. Deterrence is the product of capability,

credibility, and a greater will to fight and suffer loss; surging military assets into the region is no longer an effective strategy.

Appendix A



Source: Map prepared by CRS based on map shown on page 6 of Mark E. Redden and Phillip C. Saunders, *Managing Sino-U.S. Air and Naval Interactions: Cold War Lessons and New Avenues of Approach*, Washington, Center for the Study of Chinese Military Affairs, Institute for National Strategic Studies, National Defense University, September 2012.

Locations of 2001, 2002, and 2009 U.S.-Chinese incidents at sea and in air.[56] ***(Photo provided by author.)***

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Manstein's War

The principle of surprise in theater level operations

by Mr. Joseph Miranda & Dr. Christopher R. Cummins

JP 3-0, Joint Operations, comments about the military principle of surprise: "the purpose of surprise is to strike at a time or place or in a manner for which the enemy is unprepared."

Many wargames simulate a battle in which the defender was surprised. For example, there are over 100 wargames on the World War II Battle of the Bulge where the American forces in the Ardennes Forest were surprised by the German Wacht am Rhein winter offensive. In many of these games, surprise is modeled by some combination of enhancement to the German forces on the first turn or early part of the game. Units may be able to move further than their regular movement (e.g., movement allowance doubled) or units may be able to ignore enemy zones of control. Combat strength may be enhanced or combat support (artillery, engineers, special operations, etc.) may increase attack strength or weaken defense strength. In other situations, the game rules may simulate the fog of war in different ways. One common approach is a rule forbidding players from examining stacked enemy units. (What is under that infantry counter? A couple of decoys or their strongest armor?) A more complex approach is a hidden movement rule in which units only appear on the map when spotted by the enemy—either adjacent or with a line of sight to its position. Another method is to provide the players with cards or markers providing special one-time advantages that can be used when the player believes it will maximize his advantage (or save him from disaster)—such is the case in our example game of the month.

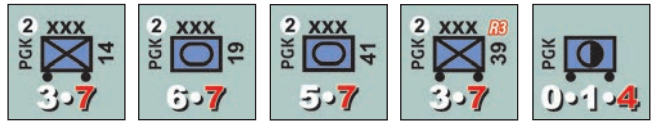
Surprise can be a difficult factor to model in wargaming because we are talking about a largely non-material factor—one which brings in at least two challenges: the first is forces showing up at unexpected places while the other is the intention of the commanders in employing those forces. Decision Game's *Manstein's War* (designed by Joseph Miranda and appearing in *World at War* magazine #84) models these factors.

The game covers the campaign in the West, May-June 1940. Historically, the Germans overran the Netherlands, Belgium, and France in a lightning six-week campaign. It is known for the panzer (armored) divisions breaking through the Ardennes and driving to the English Channel, followed by the British Expeditionary Force evacuating the continent, and closing with the Germans taking Paris. The campaign is often used as an example of mobile warfare, and the outcome was a surprise to the Western Allies and almost as much to many of the German high command which expected a protracted campaign.

>Mr. Miranda is a prolific board wargame designer. He is a former Army Officer and has been a featured speaker at numerous modeling and simulations conferences.

>>Dr. Cummins, PhD, MBA, is the publisher of* Strategy & Tactics Press *and CEO of* Decision Games. *He has led a team in publishing over 400 board wargames and 600 magazine issues over the past 32 years. He is a former Army psychologist and continues to practice part-time specializing in assessing, testing, and treating individuals with stress disorders.

The central game system is command control. Each player's forces are divided (mostly) into army groups (of two or more armies each). The Germans also have a special *Panzer Group Kleist* which is composed of several panzer (armored) corps.



The way command control works is that each player has a set of command markers corresponding to each sub-command. Players draw these markers at random, using an alternating sequence of play. They then check the marker and activate the units of the corresponding sub-command for operations. For example, if the Germans draw *Panzer Group Kleist*, they can move and attack with all units of that sub-command.

Players perform this sequence, alternating with each other and activating one sub-command at a time until the marker pool is exhausted at which point the turn comes to an end. On the ensuing turn, the markers are returned to the pool and the process is repeated.

This is where surprise comes in on the operational level. You never know which enemy sub-command is going to move and fight next. Of course, you do not know which of your own sub-commands will do the same, either! There will be opportunities opening up such that players can exploit them. What we are modeling here is the situation which occurred in May 1940 with the German breakthrough in the Ardennes. The OKW (the Wehrmacht High Command) did not expect Kleist to advance as quickly as he did in the Ardennes, a move preceding the ensuing panzer drive to the English Channel which split the Allied forces in Belgium from France and pretty much guaranteed a German victory.

There are ways for their players to weigh the situation in their own favor. Each player has a set of special command markers, representing prewar planning and logistical buildup. The Germans can choose between the Original OKH (Army High Command) plan, the Modified OKH plan, and the Manstein plan. In 1940, the Germans chose the Manstein plan, which generated the panzer drive through the Ardennes and to the English Channel.

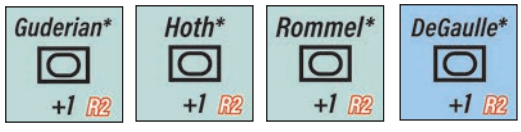
The Manstein plan marker facilitates German panzer movement through rough terrain (like the Ardennes). Now, since the Allies are not sure which plan the Germans will play in the course of a game, they cannot be sure if the main enemy thrust will come from the Ardennes or further north, via the Belgian plain or even the Netherlands. Thus, the Germans can initiate a surprise attack on one sector of the front.

Similarly, the Allies can choose between their plans "D," "E," and "R," which provide advantages for attacking different parts of the front. Historically, the Allies moved their mobile reserves into Belgian (Plan D), which set them up for the German Ardennes drive that cut them off from France. But it does not have to be this way. In the game, the Allies can use Plan R to attempt to seize the German Rhineland, a move which would have had a considerable impact on the political situation.

This gets back to the Joint Operations definition which adds: *"Factors contributing to surprise include speed in decision making, information sharing, and force movement; effective intelligence; deception; application of unexpected combat power; OPSEC; and variations in tactics and methods of operation."*

Now, those are a lot of systems to add to a board wargame without bogging the players down in complex rules. What the command markers do is integrate all these factors into a single rule. It is designed for effect, with the markers representing in part, the efficiency of staff work and communications, intelligence preparation of the battlefield, local concentrations of strength, and initiative of lower-level leaders.

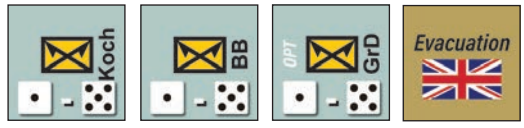
By selecting special plans, players can bring some order out of the chaos. You know where you will be conducting your big push, providing for an operational-level surprise.

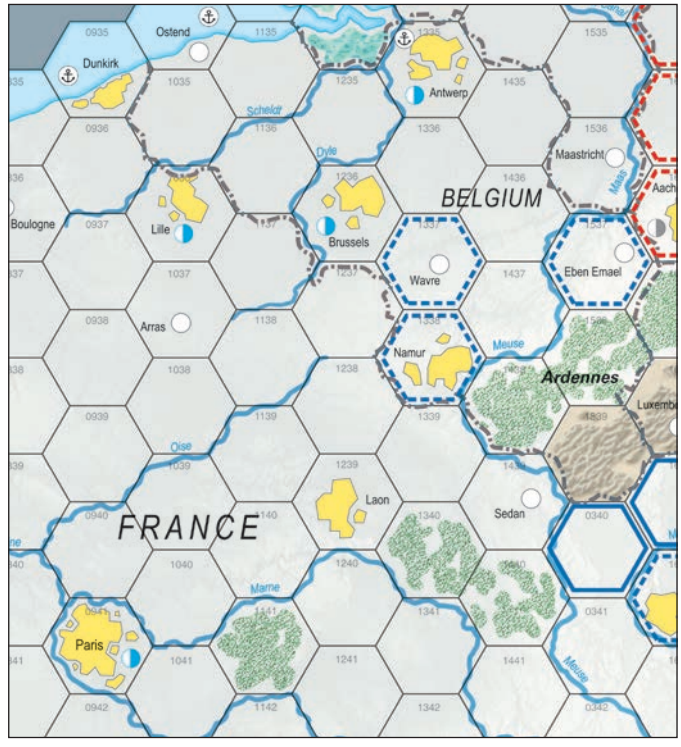


Each player also has a third set of command markers representing leaders such as Rommel and Guderian (on the German side) and DeGaulle (on the Allied side). These provide an additional operation for panzer corps echelon units, each once per game. Since the Germans have more leaders than the Allies, they are going to receive an edge in tactical surprise. This represents the qualitative edge the Wehrmacht possessed in 1940's mobile operations.

The Germans also have another tactical edge with several special forces units. These represent German airborne and commando forces that seized bridgeheads and destroyed critical enemy fortifications. One example is the glider-borne engineers who sabotaged the critical Belgian fortress of Eben Emael, opening the way for the German drive into the Belgian plain. In the game, special forces give the players a way to take out critical enemy positions by unanticipated tactics.

The Allies have their own surprise in reserve with the evacuation marker, which allows for a Dunkirk-style sealift of units from the continent. This can be used to avoid the destruction of forces if the Germans get too successful. Thus, neither side has a sure thing. It is all in Manstein's War, where surprise is a major factor in going for seizing the big victory.





USMC

World at War Issue #84: Manstein's War

Manstein's War is a two-player wargame of the German offensive in Western Europe in May-June 1940 in which the *Wehrmacht* seized a stunning victory over Allied forces in the Low Countries and France. The game uses a variant of the *Boots* system to model command, control, and logistics on an operational scale. Both players can fight a campaign of mobility and decisive battles.

World at War Issue #29: Norway 1940

Norway, 1940 is an operational level wargame of the German campaign to conquer Norway. The operation was a combined naval-air-land campaign in which all elements of military power were utilized. The historic campaign saw a German victory, but at the cost of much of the Kreigsmarine. Norway, 1940's system is based on *S&T's* award winning *Red Dragon Rising* system. It has been crafted to present the campaign as a unitary vision rather than a strictly sequenced process. The action can alternately telescope or expand, representing periods of rapid activity alternating with the slower process of building up forces.

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2022 MajGen Harold W. Chase Prize Essay Contest: First Place

Powering EABO

Aluminum fuel for the future fight

by Capt Walker D. Mills, Maj Jacob Clayton & Erik R. Limpaecher

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"We must re-imagine our amphibious ship capabilities, prepositioning, and expeditionary logistics so they are more survivable, at less risk of catastrophic loss, and agile in their employment."

—Gen David H. Berger,
38th Commandant's Planning Guidance

Logistics is the art of the possible. It defines the envelope within which military operations can happen. Logistics, specifically expeditionary logistics, will be critical in the success or failure of the Marine Corps' new operating concept Expeditionary Advanced Base Operations (EABO), and hydrogen can help overcome the logistics challenges inherent to EABO and future operations to power the Marine Corps.

EABO envisions groups of Marines and sailors operating from austere and distributed bases deep inside the enemy's weapons engagement zone, the area at which their conventional fires can effectively target U.S. forces. To persist forward, these forces will have to manage and reduce their observable signatures and win in the "hider-versus finder competition."[1] Equipped with the right sensors, fires, and command and control infrastructure, these Marines and sailors will operate as a stand-in force to create tactical and operational dilemmas for an adversary.

Wargaming has borne out that logistics will be the pacing function for EABO, and fuel will be the pacing commodity, meaning that EABO will only be as effective as the fuel logistics that support it. The Commandant's *Force Design 2030* report identified that "Logistics (sustainability) is both a critical requirement and critical vulnerability. Marine forces that cannot sustain themselves inside the WEZ (weapons engagement zone) are liabilities."[2] In the second iteration of the report, the CMC identified the systems necessary to "sustain Stand-In Forces in a contested environment" as a "Prioritized Investment."[3] The Marine Corps needs to hunt for ways to create a competitive advantage through innovative logistics and novel sources of operational energy. Marines and sailors have already been active in proposing novel platforms and concepts for making sure future Marines received the sustainment that they need.[4] However, too little attention has been paid to the promise of petroleum alternatives for powering EABO.

A recent breakthrough by researchers at the Massachusetts Institute of Technology (MIT) enables the activation of aluminum by heating it with small amounts of gallium and indium, (about 4 percent by weight), at normal oven temperatures (about 200 degrees Fahrenheit) for 1–2 hours.[5] The activated aluminum reacts with water to create hydrogen gas. Aluminum from nearly any source can be activated this way: foil, BB gun pellets, soda cans, or pots and pans. But once activated, they will react with distilled water, gray water, coffee, or even urine if necessary. Aluminum has long been known to create hydrogen when exposed to water, but this reaction is normally prevented

by the oxidation of the outer layer of aluminum. Previous methods used to activate hydrogen have been costly, slow, and require larger quantities of additional metals to work. This innovative process could provide Marines with a potentially safe and efficient alternative to petroleum-based fuels to meet the operational energy needs of inside forces. Compared to hydrocarbon fuels, aluminum is far safer to transport, easier to source and distribute, and produces a much lower signature at the point of use. The Marine Corps needs to leverage this breakthrough to prepare itself for the future fight.

Today: King Petroleum

The U.S. military has long excelled at expeditionary and forward logistics to supply thousands of gallons of fuel to the tactical edge of the battlefield, from Operation PLUTO, which laid pipelines under the English Channel, to mastering the art of underway replenishment.[6] As often as not, the outcome of campaigns and battles has hung on fuel and the operational energy logisticians could provide.

During the Pacific campaigns in the Second World War, fuel was repeatedly a decisive factor. Early in the battle for Guadalcanal, Marine aviators were so short on fuel they were forced to pick through the remains of destroyed aircraft to "drain the last of their tanks."[7] RADM Aubrey Fitch, Commander of all landbased aircraft in the South Pacific, wrote to his superior that he could "USE NO MORE AIRCRAFT UNTIL THE AVGAS SITUATION IMPROVES."[8] It was not until they were adequately supplied with fuel that they would retake the skies and attack the infamous Tokyo Express. On the other side of Guadalcanal, Japanese forces were also critically low on fuel and were forced to expend as much as a ton and a half of fuel for every soldier or barrel of supplies that landed at Guadalcanal.[9] Electing to use destroyers to transport men and supplies, Japanese convoys bled the empire of precious fuel resources. The struggle for Guadalcanal was fought as much with gasoline and diesel as it was with rifles and bullets. On the other side of the world, during the Battle of the Bulge, German troops were so hamstrung for fuel that they went into battle with siphons, and their operational plans counted on using captured fuel from the Allied stocks.[10] Future operations in the Pacific will demand even more energy at the tactical level to power the weapons and platforms that Marine forces rely on.

The energy required by deployed U.S. forces even in austere environments has risen steadily since. In Afghanistan, U.S. troops required up to 22 gallons of fuel per person, per day to meet operational needs.[11] Not only was fuel a pacing function of operations, but it was also a vulnerability. Hundreds if not thousands of trucks supplying fuel for coalition forces in Afghanistan were attacked and destroyed. Fuel trucks were so vulnerable that troops jokingly called them "Taliban targets."[12] In Iraq, attacks on fuel convoys were a major source of casualties for coalition forces; between 2003 and 2007 over 3,000 U.S. soldiers or contractors were killed in fuel supply convoys.[13]

Today, the U.S. military's reliance on petroleum fuels again represents a critical risk to its ability to execute new concepts like EABO. Soldiers and Marines have grown dependent on easy access to nearly unlimited fuel. However, the 2016 *Operational Energy Strategy* warned that "these logistically intensive future concepts may not be supportable" without major changes in the way that the DOD uses and produces energy.[14] For several years, the military has taken steps to try and reduce energy use and experiment with alternative energy sources, but fossil fuel use has continued to rise. Instead of reducing its petroleum tether, the DOD has become the "world's largest institutional user of petroleum."[15]

The military's ability to provide historical levels of sustainment to forward-deployed forces is in doubt. Distributed operational concepts and a peer or near-peer adversary will frustrate U.S. efforts at sustainment. Logistics will be contested—Chinese military leaders have made clear that U.S. logistics vessels like tankers will be targeted in a conflict.[16] Enemy forces will target resupply platforms and storage depots. It is unlikely that a stand-in force will have easy access to the fuel necessary for sustained operations.

Tomorrow: Queen Aluminum?

The new aluminum activation process, discovered at MIT through a lab accident, could make it possible to safely and quickly generate large amounts of hydrogen at the tactical edge of the battlefield.[17] Marines could do the activation process with gallium and indium on-site, using aluminum recycled or scavenged locally—a commercially available oven in just one to two hours. The discovery was significant enough that at MIT, normally reserved researchers were so excited by the potential of their discovery that referred to it as a potential component of the "Holy Grail of fuel delivery logistics."[18] Once it has been activated, aluminum has among the highest energy densities of any nonnuclear fuel, over twice the energy per volume of petroleum fuels. Once generated, hydrogen is a highly efficient fuel. According to the U.S. Department of Energy, hydrogen fuel cells paired with electric motors are two to three times more efficient than an internal combustion engine running on gasoline, further—hydrogen gas has nearly three times the energy density of gasoline.[19]

The technology to use hydrogen as a fuel is nothing new: General Motors modified a Handi-Van to run on hydro-

Distributed operational concepts and a peer or near-peer adversary will frustrate U.S. efforts at sustainment. Logistics will be contested …

gen back in 1966. But hydrogen propulsion has been held back because until now, creating the fuel was costly, difficult, time-consuming, and often dangerous. Despite this, hydrogen still has a long history of military use—including both world wars—but the problem has always been generating and transporting this gas. Manufacturing the gas required large amounts of electricity, caustic substances, or heavy equipment and was done far from the tactical edge of the battlefield. In the First World War, it was generated in plants with a stew of caustic chemicals, many of which were located in the United States, and then shipped in metal cylinders across the Atlantic to the trenches. Now, hydrogen can be safely generated by Marines at the tactical edge of the battlefield using this newly discovered process.

To power EABO and other emerging concepts, the Marine Corps should invest in aluminum reactors and hydrogen fuel cells. Using aluminum to generate hydrogen on the battlefield could allow forces to take advantage of the inherent advantages of hydrogen fuel cell technology, of which there are several when compared to internal combustion engines. First, they run nearly silent.[20] With no necessary moving parts, fuel cells are much better suited for use by inside forces and reconnaissance units. They also generate less heat, meaning a smaller thermal signature for the vehicle or generator as a whole. Fuel cells can power high-torque electric motors, making them ideal candidates for platforms like vertical takeoff and landing unmanned aerial systems. They are also much better at generating high-peak output, which is critical for the employment-directed energy weapons, which are currently limited in employment by their power requirements.[21]

Since the reaction requires mostly water and aluminum, it can help change the logistics paradigm. Aluminum is one of the most abundant metals in the Earth's crust and is widely available on the civilian market. It can be bought, scavenged, or recycled almost anywhere. Gallium and indium, which are only needed in very small amounts, are used around the work in electronics and they are not considered rare-earth elements.[22] Gallium is roughly as common as lead and is usually extracted from bauxite ore during the aluminum refining process making it widely available. It is not currently refined in the United States, though it has been in the past, and the U.S. Geological Service estimates that domestics ores could be a "significant resource."[23] Indium is less common, roughly as prevalent as mercury or silver. It is a key component in liquid-crystal displays; while none is currently refined in the United States, over a third of global production is done by U.S. allies like Canada and South Korea.[24]

This new reaction could enable innovative distributed logistics. Scrap aluminum with small amounts of gallium and indium could be procured from recyclers throughout the Indo-Pacific, negating the need to transport large amounts of bulk liquid fuel through a contested theater or operational area over a static distribution network. Aluminum could even be used to package other supplies and then converted to fuel at the point of use. Aluminum also carries less political baggage than petroleum and can be hidden in plain sight. Aluminum storage facilities do not require intensive maintenance like fuel farms and there is no risk of an environmental disaster like a spill or large fire. For these reasons, U.S. partners and allies will be much more amenable to hosting forward stocks of aluminum in comparison to petroleum.

Hydrogen is also safer to use on the battlefield than petroleum. Aluminum isn't combustible, and hydrogen is only combustible under certain circumstances. Hydrogen gas will only combust at temperatures over *double* that of gasoline fumes and higher than propane or natural gas.[25] Testing has shown that hydrogen tanks can be designed to remain intact when punctured, and because hydrogen is a lighter-than-air gas, it vents vertically instead of pooling and spreading fire along the ground. In the First World War, U.S. pilots flying hydrogen-filled aerostat balloons had only a single combat fatality related to hydrogen—an artillery observer whose parachute burned up as he bailed out of his balloon—despite their relatively crude equipment and thousands of hours of combat flight time.[26]

Today, numerous companies are pursuing hydrogen fuel cells to power everything from cars to boats and airplanes. The airplane manufacturer Airbus recently announced that it is building a hydrogen-powered passenger aircraft.[27] Chevrolet has already demonstrated their hydrogen-powered truck designed for the Army.[28] Toyota and Yanmar are jointly developing a hydrogen-powered marine motor.[29] Multiple companies offer hydrogen-fueled electric-power generators on the commercial market. The Army and the Air Force have also invested in developing hydrogen-fueled platforms on a small scale, drones for the Army, and aviation-support equipment for the Air Force.[30] Hydrogen fuel cells have inherent advantages over internal combustion engines. They are more efficient and capable of powering electric drive trains, but they also have lower signatures which is critical for EABO and any type of clandestine operation.

Solving EABO's Sustainment Challenge

The technology to use hydrogen on the battlefield already exists; all that was missing from the equation was a cheap and safe way to generate that hydrogen on the battlefield. The MIT process could be that "Holy Grail." Hydrogen produced through an aluminum-water reaction is not a panacea, but it could give commanders an alternative path to meeting their operational energy needs, one that is optimized for sustaining units in contested areas. We do not propose that hydrogen completely replace existing systems that rely on fossil fuels but that hydrogen-capable platforms be introduced where we need improved stealth and performance. In the near-term, hydrogen technology is best suited for light tactical vehicles, small unmanned aerial vehicles, atmospheric balloons, and electricity generation—importantly all capabilities that have already been developed and prototyped commercially or with federal funds.

There is also interest in hydrogen fuel for the Marine Corps in Congress.

During a recent hearing on the Navy and Marine Corps budget by the House Appropriations Committee, Representative Marcy Kaptur (D-Ohio) noted, "The Marine Corps has led in terms of energy innovation within the entire Department of the Defense" and asked the Commandant of the Marine Corps "what you might be able to bring to the table to propel to use [hydrogen] technology more quickly? ... What about hydrogen?"[31] Left without time to answer, the committee asked Berger to get back to them in writing.

EABO will require greater flexibility and innovation from Marines to support and sustain logistically than is possible using legacy fuel. Marines can use aluminum reactors on the battlefield to generate hydrogen to meet their operational energy needs and overcome the challenges of distributed and expeditionary logistics. For numerous reasons both tactical and operational, using aluminum as a fuel can provide a competitive advantage and could become exactly the kind of safe, cost-effective, and low-signature technology needed to operationalize EABO and prepare the Marine Corps for the future fight while keeping them concealed and operating free of a petroleum tether.

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2022 MajGen Harold W. Chase Prize Essay Contest: Second Place

Achieving Decision on the Battlefield

Redefining maneuver warfare as method, not philosophy

by Maj Christopher A. Denzel

>Maj Denzel is a MAGTF Planner and Graduate of the Army's School of Advanced Military Studies. He is currently serving in the G-5 at III MEF and has deployed to OEF and aboard the 24th MEU.

Since the publication of *FMFM 1, Warfighting*, maneuver warfare (MW) has hardened into an article of faith. Unproductive debates, stubbornly persistent after thirty years, demonstrate that MW has become resistant to professional discourse. MW has become a *warfare philosophy* rather than one of a few broad *methods* to defeat an enemy, crowding out discussions critical to future competition. This singular allegiance to MW has set the Service on a fool's errand, arguing the for the best way to fight, independent of strategic objectives, operational context, or tactical conditions.

I argue that MW suffers from definitional problems that mask its unreliability as a warfare method. This article redefines MW, attrition warfare (AW), and positional warfare (PW) as co-equal tools to MW, evaluating each method's reliability to explain why Marines use AW or PW methods despite sincere desire to employ MW. Reconceptualizing MW reveals that AW and PW are preferable methods to defeat the enemy, with authors like LtCol Thaddeus Drake, Jr. asking why, after 30 years, we cannot "point to at least *one* obvious example where systemic collapse won the day?"[1]

Definition of Terms

Some historians convincingly describe World War I trench warfare as positional. Others join *MCDP 1* in denouncing it as attritional.[2] Meanwhile, doctrinal MW definitions mix concepts, speaking about shattering the enemy's will to fight by gaining *positions* of advantage and *attritting* the enemy's key capabilities and forces. Clearly, clarification is needed.

In 2017, Army Major Amos Fox described warfare as a "three-part construct that oscillates among positional, attrition, and maneuver warfare as battlefield conditions dictate."[3] Army doctrine supports Fox's concept, outlining three types of effects that defeat enemy forces: physical, temporal, and cognitive.[4] The following explanations show that these track closely to AW, PW, and MW definitions.

Attritional Warfare

Fox writes that AW "[erodes] or [destroys] a belligerent's equipment, personnel and resources at a pace greater than they can replenish their losses."[5] We can simplify this definition to "methods to reduce enemy *capacity* to fight." Removal of capacity does not require a direct approach or frontal attacks. Center of gravity analysis provides an indirect but essentially attritional approach.

Positional Warfare

PW is "the use of force—through tactics, firepower or movement—to move an opponent from one position to another for further exploitation or to deny them access to an area for further exploitation."[6] We can simplify this definition as "methods to reduce enemy *capability* to fight." This definition requires elaboration as PW is infrequently discussed.

As argued by a trio of School of Advanced Military Studies graduates (including Fox) describing the return of PW:

> when America initiated the atomic age, the dominant character of land war between great powers transitioned from operational maneuver to positional defense. … The modern context of positional warfare, as argued by British theorist J.F.C Fuller, thus renders 'physical' land invasion between nuclear powers an 'obsolete thing.' Regional powers like Russia and China are protecting sovereign and adjacent territories with unprecedented reconnaissance-strike defenses that cannot be degraded without attacking systems in home territory and incurring instant strategic escalation.[7]

In essence, peer competition may not lend itself to AW's escalatory techniques. Because peer adversaries can resort to "the bomb" if we successfully threaten will-to-fight (an existential threat to regime survival), MW may similarly be escalatory. What remains are PW techniques that deny competitors the *ability* to employ their forces to military advantage, as in strategies of denial.

Within this framing, Expeditionary Advanced Base Operations (EABO)

and Stand-In Forces (SIF) rely predominantly on PW. If the Corps is to realize the effectiveness of these operating concepts, then Marines must then be capable of conversations about PW without feeling like they must be *Semper Fidelis* to MW. Similarly, Marines must understand that by adopting PW, they need not jettison essential principles of modern war (e.g., mission tactics or combined arms) that many conflate with MW. No less than CAPT (ret.) Wayne Hughes, Jr. recognized this conflation a quarter-century ago: "If maneuver warfare is nothing more than fighting intelligently, then its antithesis is 'stupid' warfare," not AW.[8]

Maneuver Warfare

Fox defines MW more narrowly than doctrine as "[seeking] *above all else* to strike at the psychological will of an opponent—to put them in a position so disadvantageous they give up the will to resist" (emphasis added).[9] In contrast, doctrine mixes MW and PW's purposes by suggesting MW seeks to maneuver to attack the enemy from a position of advantage.

Does Fox misunderstand doctrine? Is using PW to *threaten* AW and shatter the adversary's will to fight what defines MW? Defining MW by this *sequence* and *outcome* is the fantasy about which Drake writes. History provides little support to this theory of victory. Worse yet, for AW to be a credible threat, it must be planned and resourced, making MW a branch plan the enemy compels, reducing the friendly method a choice for the enemy.

Thus, we have three choices that represent the crux of MW's definitional problems. First, we may define MW as doctrine does: PW (or AW) *methods* to achieve cognitive *effects*. Second, we can explain MW's cognitive effects as setting conditions for subsequent exploitation. Third, we can more narrowly define it as the attempt to achieve cognitive effects without significant physical or temporal costs.

The first definition makes MW an outcome rather than a method. A doctrine extolling the benefit of simply *winning* would be better re-written, giving readers more than one way to win.

IDEAS & ISSUES (CHASE AWARD WINNERS)

2020 MajGen Harold W. Chase Prize Essay Contest: 1st Place

The Fantasy of *MCDP 1*

Is maneuver warfare still useful?

by LtCol Thaddeus Drake, Jr.

MCDP 1 is convincing and, on the surface, makes complete sense, but is it the right doctrine for the Marine Corps in the 21st century? Our doctrine, *Warfighting*, has transcended the generally recognized purpose of standard military doctrine and no longer provides a useful guide to Marine Corps operations in the 21st century. Since its original publication in 1989, *MCDP 1*, then known as *Fleet Marine Force Manual (FMFM) 1*, has been elevated beyond the bounds of even an organizational philosophy and has instead become more akin to a ser-

> *"It is difficult for senior commanders to resist using technological advancements in communications to micromanage those beneath them. In fact, a new irony in the Corps is that 'the push to enable the strategic corporal through technology [has] unintentionally resulted in the tactically focused colonel.'"*
>
> *—Jeannie L. Johnson,*
> **The Marines, Counterinsurgency, and Strategic Culture**[2]

> *"Maneuverists say they derived their thoughts from history, but the lack of any such body of thought in the human record prior to the stylings of mid 1970s America indicates that the thesis probably preceded the search for evidence."*
>
> *—Daniel P. Bolger,*
> *"Maneuver Warfare Reconsidered"*[1]

vice orthodoxy.[3] *MCDP 1* has become an unquestionable dogma that Marines reference in a way similar to that of holy writ such as the Bible or *On War*—generally quoted out of context and only used when it provides ammunition to support one's argument. There is nonetheless much to love about *MCDP 1*. Indeed, it is probably the most effective military doctrinal publication since the *Wehrmacht's Truppenführung*. The proof is in the pudding—it has survived (largely) unrevised for nearly 35 years and counting, the vast majority of which the Marine Corps has been engaged in combat operations. This brings up a fundamental and crucial question, however. *What evidence is there—since the 1989 publication of* FMFM 1, Warfighting*—that demonstrates the efficacy of the fundamental doctrine?* This article does not purport to argue that all of *MCDP 1* is flawed; however, it does suggest that some of the fundamental parts of the doctrine have yet to be proven effective and, indeed, may actually have been detrimental to the overall operational and strategic objectives of the wars of the past 30 years. The Marine Corps must revise key elements of *MCDP 1* to better posture the Service for operations in the 21st century.

> *>LtCol Drake will assume command as Inspector-Instructor, 1/24 Mar on 3 September. He is a graduate of Marine Corps Command and Staff College and the School of Advanced Warfighting.*

Doctrine

The most essential issue around our doctrine remains the tension between the overall purpose of military doctrine: the *aspirational* versus the *practical*. Despite nearly 35 years since its

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Multiple military theorists and authors, including frequent contributor LtCol Thaddeus Drake, have pointed out the lack of practical examples where "systemic collapse" led to victory. *(Photo:* **Marine Corps Gazette**, *Oct 2020.)*

The second definition poses the opposite problem: MW becomes a condition, not a method. Too often, arguments for MW focus on shattering the enemy's coherence, leaving unasked and unanswered the question of *to do what?* Unless the goal is an endless turning movement, the answer is to exploit with AW or PW. An enemy in disarray will reconstitute unless destroyed or displaced. This makes MW a tactic of mental suppression, not a method to achieve victory.

The third definition is more consistent with the logic of AW and PW and is used by this article. This definition relegates MW to the realm of fantasy, answering Drake's question of why, after more than thirty years, we cannot point to MW's successful use.[10]

If this is true, why? As we will see below, Marines' refusal to employ MW methods is not negligence but recognition that attacking the enemy's will is *unreliable*.

Reliability of Method

Plans are hypotheses validated only after succeeding or failing in a specific situation. Because context is ever-changing, commanders can only conduct such experiments once, leading them to prefer reliable methods. Reliability is in part constituted by the commander's ability first to *verify* execution and then exploit any gains (an outcome dependent on *reversibility*). These two terms, verifiability and reversibility, are the basis for investigating *reliability*.

Verifiability

AW is inherently verifiable. Enemy deception or attempts to hide losses make verifiability imperfect—but destroyed resources can be observed and interpreted.

PW requires positional advantage, which is subjective, and further exploitation or access denial, which adds additional uncertainty. This makes PW less verifiable.

MW is the least verifiable method because will-to-fight is a decision that, despite having indicators, is itself invisible. When is withdrawal a delaying tactic, an attempt to reset for a counterattack or a rout stemming from shattered coherence? How do commanders know when will-to-fight has been lost *here* but not *there*? And where does *here* stop and *there* begin? On tactical timelines, commanders can only surmise an enemy's will. Verification sometimes comes days or months later. Even a surrender is only proved sincere after the fact. At the least, attacking the enemy's will presents an immense intelligence challenge.

Reversibility

AW destroy assets faster than the enemy can replenish them, making AW irreversible on tactical timelines.[11] A destroyed tank remains destroyed no matter how lucky or clever the enemy is and not only do dead combatants have no will, but they never change their minds.

PW seeks to move an adversary or deny them access to an area. The mechanisms to do this are reversible, and so is PW. Gain the high ground, and the enemy may slip away in the night, or another unit may flank your position—turning you and removing your advantage. Positional advantage is time-bound.

MW's reversibility should now be apparent. Will-to-fight can be quickly reversed. Reinforcements may appear, restoring an encircled enemy's will. A

routed force may rally. And, if enveloping units conduct onward movement, encircled forces become rear-area threats instead of collapsing.

Can something inherently reversible be reliable? Military conservatism suggests not—in the ultimate contest of combat, commanders prefer definitiveness. A negotiator can talk down a hostage-taker (will to fight) or place themselves between the shooter and hostages (positional advantage). Still, the police must literally take away the hostage-taker's arms (capacity) with handcuffs for the crisis to end.

Intuitive Validation

A quick thought experiment demonstrates AW's reliability advantages. What pilot is willing to fly towards a working surface-to-air missile system, taking it on faith that the missileer has lost the will to shoot? Any pilot would want to gain some "position of advantage (jam the radar) and then definitively remove the threat from the battlefield through attrition. Even then, a strict nodal analysis prefers the radar's destruction (fewer targets, same effect), but the pilot (conservative with their life) prefers missile destruction even if the missiles cannot operate without the radar. This is for the same reason that we do not point unloaded weapons at anything we do not intend to shoot.

Attacking a belligerent's will is challenging to execute in practice because it is inherently reversible and exceptionally challenging to verify. It is harder to train because in exercises real will is not actually affected. While the mythos of MW feels right, it is AW that prevails in the historical record. Warfare theorists moved on from this fantastic view of MW a quarter-century ago. Marine "maneuverists," however, remain thoroughly *entrenched*.

Where to Go from Here?

This analysis intends not to devalue MW but to elevate understanding of what it is (and is not) to help Marines identify the appropriate method to win on the battlefield. The intent is not to convince Marines suddenly to adopt PW and AW techniques but to convince them that they already use them. Doctrine must discard the pretense that MW is "what Marines do" and embrace ideas that support the operating concepts we intend to use. What is more, the reliability of method is also constituted by a force's understanding of and familiarity with the method it is to employ, making it *essential* to reconcile doctrine and practice. If Marines *believe* they are executing MW methods, they are bound to botch the PW and AW techniques they actually employ.[12]

Our foundational doctrine should provide a range of options for theories of victory applicable across the competition continuum at the tactical and operational levels. It might borrow from Army doctrine's defeat mechanisms.

We might also use the method portion of the commander's intent to describe the actual method intended to defeat the enemy instead of cliché ("place the enemy on the horns of a dilemma") or best practice ("use combined arms").

Our foundational doctrine should provide a range of options for theories of victory applicable across the competition continuum at the tactical and operational levels.

Furthermore, the conflation of best practices, like mission tactics, with MW discourages serious discourse on method. The strawman exercises of the "Attritionist Letters" and "Manueverist Papers" are prime examples of how this suppresses professional discourse by turning MW into a Marine Corps *shibboleth* that is supposed to distinguish wise tacticians but instead outs its users as ignorant of battle's essence. No other Service harbors this obsession.

It remains difficult to imagine a commander writing, "Method: I will use attrition to remove the enemy's capacity to resist." But this aversion is irrational (and the opposite, "I will remove the enemy's will to fight," sounds even more absurd). Many methods commanders already employ are attritional. Consider: "I will mass my long-range artillery and dedicate offensive air support sorties against X in order to degrade the adversary's ability to Y."

The MAGTF Warfighting Exercise (MWX) at Marine Corps Air Ground Combat Center, Twentynine Palms, CA, focuses on training Marines in combined arms fire and maneuver. *(Photo by Sgt Courtney G. White.)*

The MWX also challenges Marines to fight against a free thinking enemy with similar capabilities in a force-on-force environment–a pathway to better understand maneuver, attrition and positional warfare. ***(Photo by LCpl Jacquilyn Davis.)***

Professionals should neither be reluctant to use the right tool nor insist on calling it by its name simply because *MCDP 1* calls it evil. If we understand forms of warfare merely as *methods of defeating the enemy on the battlefield*, we can talk maturely about AW and PW and strip MW down to a meaningful and *employable* definition. Blind adherence to MW chains the Service to fixed ways, regardless of means and ends. This doctrinal straitjacket may explain why Marines ignore *MCDP 1*.

Current operational concepts and the security environment are self-evidently *not* about removing the enemy's *will* to fight. They are about countering anti-access strategies and denying competitors the *ability* to achieve their objectives despite an enduring will to do so. By the definitions above, such concepts rely heavily on PW. How strange then that we talk so little about it.

Notes

1. Thaddeus Drake Jr., "The Fantasy of MCDP-1," *Marine Corps Gazette*, (Quantico, VA: October 2020). Emphasis in original. Drake is neither alone nor first in this observation. Military historian Hans Delbrück similarly concludes "The possibility of forcing the enemy to such an extent, even without battle, that he accepts the conditions sought by our side leads in its ultimate degree to a pure maneuver strategy that allows war to be conducted without bloodshed. Such a pure maneuver strategy, however, is only a dialectical game and not any real event in military history." (Hans Delbrück, The Dawn of Modern Warfare, trans. Walter J. Renfroe, Jr. [Lincoln, NE: University of Nebraska Press, 1990]).

In political scientist Richard Bett's investigation of the "illusions" of strategy, one of the defenses of strategy he poses is the reliability of attrition in the face of more complex and sophisticated approaches that are, invariably "too clever" for the real world: "Complex strategizing is like active stock picking: It is risky, offers high potential return, but requires exceptional people-a Warren Buffet or a Bismarck-to work. Attrition is like indexing: It works slowly but surely if the underlying trend-a rising market, or a superior military power position-is favorable." (Richard Betts, "Is Strategy an Illusion?" *International Security*, [Cambridge, MA: MIT Press, Fall 2000].)

Finally, Cathal Nolan's Opus, *The Allure of Battle*, concludes that attrition is practically the only victory mechanism evident in the history of warfare: "Exhaustion of morale and matériel rather than finality through battles marks the endgame of many wars. Even in most wars. Almost always in wars among the major powers in any era. … In each case, strategic losses came after protracted attritional wars against enemies who refused to accept those earlier tactical outcomes as decisive in the greater conflict." (Cathal Nolan, *The Allure of Battle: A History of How Wars Have Been Won and Lost*, [New York, NY: Oxford University Press, 2019].)

Countless other examples abound if one is willing to stray outside the Marine Corps canon.

2. Headquarters Marine Corps, *MCDP 1, Warfighting*, (Washington, DC: 1997).

3. Amos Fox, "A Solution Looking for a Problem: Illuminating Misconceptions in Maneuver-Warfare Doctrine," *Armor*, (Fall 2017), available at https://www.benning.army.mil.

4. Department of the Army, *Army Doctrine Publication (ADP) 3-0, Operations,* (Washington, DC: Government Publishing Office, 2019).

5. "A Solution Looking for a Problem: Illuminating Misconceptions in Maneuver-Warfare Doctrine."

6. Ibid.

7. Nathan Jennings, Amos Fox, and Adam Taliaferro, "The US Army is Wrong on Future War," *Modern Warfare Institute*, (December 2018), available at https://mwi.usma.edu.

8. Wayne Hughes Jr., "Naval Maneuver Warfare," *Naval War College Review*, (Newport, RI: Naval War College, Summer 1997).

9. "A Solution Looking for a Problem: Illuminating Misconceptions in Maneuver-Warfare Doctrine."

10. "The Fantasy of MCDP-1."

11. Even on longer timelines, the replacement of lost resources has an attritional drain on a nation's ability to sustain a conflict. Every new artillery tube represents money and metal not expended on another weapon system. And every dollar spent on military resources is one unavailable for investment in the economic well-being of a nation. Indeed, this is why attrition is so decisive throughout history.

12. This is to say nothing of forming appropriate measures of performance or effectiveness for attritional or positional methods that the commander believes to be MW. The double-speak that *MCDP 1* encourages results in commanders misunderstanding the battlespace because the questions they ask about it are not moored in reality.

The Russian Invasion of Ukraine

Maneuverist Paper No. 22: Part II: The mental and moral realms

by Marinus

When considered as purely physical phenomena, the operations conducted by Russian ground forces in Ukraine in 2022 present a puzzling picture. In the north of Ukraine, Russian battalion tactical groups overran a great deal of territory but made no attempts to convert temporary occupation into permanent possession. Indeed, after spending five weeks in that region, they left as rapidly as they had arrived. In the south, the similarly rapid entry of Russian ground forces led to the establishment of Russian garrisons and the planting of Russian political, economic, and cultural institutions. In the third theater of the war, rapid movements of the type that characterized Russian operations on the northern and southern fronts rarely occurred. Instead, Russian formations in eastern Ukraine conducted artillery-intensive assaults to capture relatively small pieces of ground.

One way to shed a little light upon this conundrum is to treat Russian operations on each of the three major fronts of the war as a distinct campaign. Further illumination is provided by the realization that each of these campaigns followed a model that had been part of the Russian operational repertoire for a very long time. Such a scheme, however, fails to explain why the Russian leadership applied particular models to particular sets of operations. Resolving that question requires an examination of the mental and moral purposes served by each of these three campaigns.

Raids in the North

American Marines have long used the term "raid" to describe an enterprise in which a small force moves swiftly to a particular location, completes a discrete mission, and withdraws as quickly as it can.[1] To Russian soldiers, however, the linguistic cousin of that word (*reyd*) carries a somewhat different meaning. Where the travel performed by the team conducting a raid is nothing more than a means of reaching particular points on the map, the movement of the frequently larger forces conducting a *reyd* creates significant operational effects. That is, in the course of moving along various highways and byways, they confuse enemy commanders, disrupt enemy logistics, and deprive enemy governments of the legitimacy that comes from uncontested control of their own territory. Similarly, where each phase of a present-day American raid necessarily follows a detailed script, a *reyd* is a more open-ended enterprise that can be adjusted to exploit new opportunities, avoid new dangers, or serve new purposes.

The term *reyd* found its way into the Russian military lexicon in the late 19th century by theorists who noted the similarities between the independent cavalry operations of

U.S. Air Force F-35 Lightning II, and F-16 Fighting Falcon aircraft forward deployed to NATO's east flank in response to Russia's invasion of Ukraine. (Photo by Senior Airman Ali Stewart.)

the American Civil War and the already well-established Russian practice of sending mobile columns, often composed of Cossacks, on extended excursions through enemy territory.[2] An early example of such excursions is provided by the exploits of the column led by Alexander Chernyshev during the Napoleonic Wars. In September of 1813, this force of some 2,300 horsemen and two light field guns made a 400-mile circuit through enemy territory. At the middle point of this bold enterprise, this column occupied, for two days, the city of Kassel, then serving as the capital of one of the satellite states of the French Empire. Fear of a repetition of this embarrassment convinced Napoleon to detail two army corps to garrison Dresden, then the seat of government of another one of his dependencies.[3] As a result, when Napoleon encountered the combined forces of his enemies at the Battle of Leipzig, his already outnumbered *Grande Armée* was much smaller than it would otherwise have been.

In 2022, the many battalion tactical groups that moved deeply into northern Ukraine during the first few days of the Russian invasion made no attempt to re-enact the occupation of Leipzig. Rather, they bypassed all of the larger cities in their path and, on the rare occasions when they found themselves in a smaller city, occupation rarely lasted for more than a few hours. Nonetheless, the fast-moving Russian columns created, on a much larger scale, an effect similar to the one that resulted from Chernyshev's raid of 1813. That is, they convinced the Ukrainians to weaken their main field army, then fighting in the Donbass region, to bolster the defenses of distant cities.

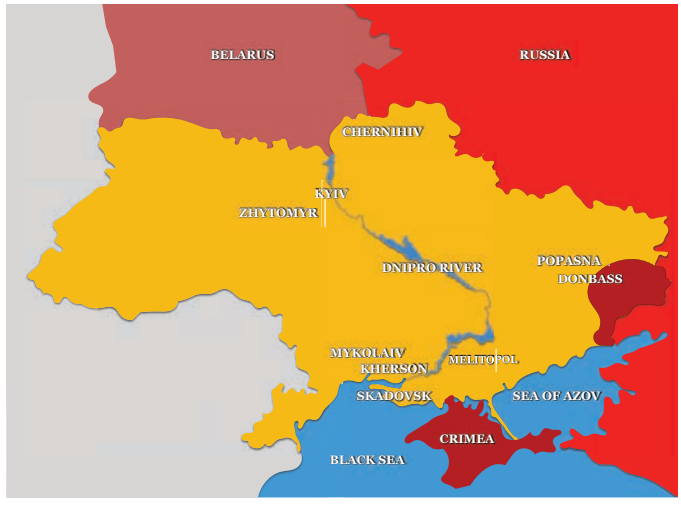
Rapid Occupation in the South

In terms of speed and distance traveled, Russian operations in the area between the southern seacoast of Ukraine and the Dnipro River resembled the raids conducted in the north. They differed, however, in the handling of cities. Where Russian columns on either side of Kyiv avoided large urban areas whenever they could, their counterparts in the south took permanent possession of comparable cities. In some instances, such as the ship-to-objective maneuver that began in the Sea of Azov and ended in Melitopol, the conquest of cities took place during the first few days of the Russian invasion. In others, such as the town of Skadovsk, the Russians waited several weeks before seizing areas and engaging local defense forces they had ignored during their initial advance.

In the immediate aftermath of their arrival, the Russian commanders who took charge of urban areas in the south followed the same policy as their counterparts in the north. That is, they allowed the local representatives of the Ukrainian state to perform their duties and, in many instances, to continue to fly the flag of their country on public buildings.[4] It was not long, however, before Russian civil servants took control of the local government, replaced the flags on buildings, and set in motion the replacement of Ukrainian institutions, whether banks or cell phone companies, with Russian ones.[5]

Like the model of the *reyd*, the paradigm of campaigns that combined rapid military occupation with thoroughgoing political transformation had been part of the Russian military culture for quite some time. Thus, when explaining the concept for operations on the southern front, Russian commanders were able to point to any one of a number of similar enterprises conducted by the Soviet state in the four decades that followed the Soviet occupation of eastern Poland in 1939. (These included the conquest of the countries of Estonia, Latvia, and Lithuania in 1940; the suppression of reformist governments in Hungary and Czechoslovakia during the Cold War, and the invasion of Afghanistan in 1979.)[6]

While some Russian formations in the south consolidated control over conquered territory, others conducted raids in the vicinity of the city of Mykolaiv. Like their larger counterparts on the northern front, these encouraged the Ukrainian leadership to devote to the defense of cities forces that might otherwise have been used in the fight for the Donbass region. (In this instance, the cities in question included the ports of Mykolaiv and Odessa.) At the same time, the raids in the northern portion of the southern front created a broad "no man's land" between areas that had been occupied by Russian forces and those entirely under the control of the Ukrainian government.



Ukraine and the surrounding area of interest. *(Photo provided by author.)*

Stalingrad in the East

Russian operations in the north and south of Ukraine made very little use of field artillery. This was partially a matter of logistics. (Whether raiding in the north or rapidly occupying in the south, the Russian columns lacked the means to bring up large numbers of shells and rockets.) The absence of cannonades in those campaigns, however, had more to do with ends than means. In the north, Russian reluctance to conduct bombardments stemmed from a desire to avoid antagonizing the local people, nearly all of whom, for reasons of language and ethnicity, tended to support the Ukrainian state. In the south, the Russian policy of avoiding the use of field artillery served the similarly political purpose of preserving the lives and property of communities in which many people identified as "Russian" and many more spoke Russian as their native language.

In the east, however, the Russians conducted bombardments that, in terms of both duration and intensity, rivaled those of the great artillery contests of the world wars of the twentieth century. Made possible by short, secure, and extraordinarily redundant supply lines, these bombardments served three purposes. First, they confined Ukrainian troops into their fortifications, depriving them of the ability to do anything other than remain in place. Second, they inflicted a large number of casualties, whether physical or caused by the psychological effects of imprisonment, impotence, and proximity to large numbers of earth-shaking explosions. Third, when conducted for a sufficient period of time, which was often measured in weeks, the bombardment of a given fortification invariably resulted in either the withdrawal of its defenders or their surrender.

We can glean some sense of the scale of the Russian bombardments in the east of Ukraine by comparing the struggle for the town of Popasna (18 March-7 May 2022) with the battle of Iwo Jima (19 February-26 March 1945.) At Iwo Jima, American Marines fought for five weeks to annihilate the defenders of eight square miles of skillfully fortified ground. At Popasna, Russian gunners bombarded trench systems built into the ridges and ravines of a comparable area for eight weeks before the Ukrainian leadership decided to withdraw its forces from the town.

The capture of real estate by artillery, in turn, contributed to the creation of the encirclements that Russians call "cauldrons" (*kotly*). Like so much in Russian military theory, this concept builds upon an idea borrowed from the German tradition of maneuver warfare: the "battle cauldron" (*Schlachtkessel*.) However, where the Germans sought to create and exploit their cauldrons as quickly as possible, Russian cauldrons could be either rapid and surprising or slow and seemingly inevitable. Indeed, the successful Soviet offensives of the Second World War, such as the one that resulted in the destruction of the German Sixth Army at Stalingrad, made extensive use of cauldrons of both types.

Freedom from the desire to create cauldrons as quickly as possible relieved the Russians fighting in eastern Ukraine from the need to hold any particular piece of ground. Thus, when faced with a determined Ukrainian attack, the Russians often withdrew their tank and infantry units from the contested terrain. In this way, they both reduced danger to their own troops and created situations, however brief, in which the Ukrainian attackers faced Russian shells and rockets without the benefit of shelter. To put things another way, the Russians viewed such "encore bombardments" not merely as an acceptable use of ordnance but also as opportunities to inflict additional casualties while engaging in "conspicuous consumption" of artillery ammunition.

In the spring of 1917, German forces on the Western Front used comparable tactics to create situations in which French troops advancing down the rear slopes of recently captured ridges were caught in the open by the fire of field artillery and machineguns. The effect of this experience on French morale was such that infantrymen in fifty French divisions engaged in acts of "collective indiscipline," the motto for which was, "we will hold, but we refuse to attack."[7] (In May of 2022, several videos appeared on the internet in which people claiming to be Ukrainian soldiers fighting in the Donbass region explained that, while they were willing to defend their positions, they had resolved to disobey any orders that called for them to advance.)

Resolving the Paradox

In the early days of the maneuver warfare debate, maneuverists often presented their preferred philosophy as the logical opposite of "firepower/attrition warfare." Indeed, as late as 2013, the anonymous authors of the "Attritionist Letters" used this dichotomy as a framework for their critique of practices at odds with the spirit of maneuver warfare. In the Russian campaigns in Ukraine, however, a set of operations made mostly of movement complemented one composed chiefly of cannonades.

One way to resolve this apparent paradox is to characterize the raids of the first five weeks of the war as a grand deception that, while working little in the way of direct destruction, made possible the subsequent attrition of the Ukrainian armed forces. In particular, the threat posed by the raids delayed the movement of Ukrainian forces into the main theater of the war until the Russians had deployed the artillery units, secured the transporting network, and accumulated the stocks of ammunition needed to conduct a long series of big bombardments. This delay also ensured that, when the Ukrainians did deploy additional formations to the Donbass region, the movement of such forces, and the supplies needed to sustain them, had been rendered much more difficult by the ruin wrought upon the Ukrainian rail network by long-range guided missiles. In other words, the Russians conducted a brief campaign of maneuver in the north in order to set the stage for a longer, and, ultimately, more important, campaign of attrition in the east.

From the start, Russian propaganda insisted that the "special military operation" in Ukraine served three purposes: the protection of the two pro-Russian protostates, "demilitarization," and "denazification."

The stark contrast between the types of warfare waged by Russian forces in different parts of Ukraine reinforced the message at the heart of Russian information operations. From the start, Russian propaganda insisted that the "special military operation" in Ukraine served three purposes: the protection of the two pro-Russian protostates, "demilitarization," and "denazification." All three of these goals required the infliction of heavy losses upon Ukrainian formations

fighting in the Donbass. None, however, depended upon the occupation of parts of Ukraine where the vast majority of people spoke the Ukrainian language, embraced a Ukrainian ethnic identity, and supported the Ukrainian state. Indeed, the sustained occupation of such places by Russian forces would have supported the proposition that Russia was trying to conquer all of Ukraine.

The Russian campaign in the south served direct political aims. That is, it served to incorporate territories inhabited by a large number of ethnic Russians into the "Russian World." At the same time, the rapid occupation of cities like Kherson and Melitopol enhanced the deceptive power of operations conducted in the north by suggesting the possibility that the columns on either side of Kyiv might attempt to do the same to cities like Chernihiv and Zhytomyr. Similarly, the raids conducted north of Kherson raised the possibility that the Russians might attempt the occupation of additional cities, the most important of which was Odessa.[8]

Guided Missiles

The Russian program of guided missile strikes, conducted in parallel to the three ground campaigns, created a number of moral effects favorable to the Russian war effort. The most important of these resulted from the avoidance of collateral damage that resulted, not only from the extraordinary precision of the weapons used but also from the judicious choice of targets. Thus, Russia's enemies found it hard to characterize strikes against fuel and ammunition depots, which were necessarily located at some distance from places where civilians lived and worked, as anything other than attacks on military installations.

Likewise, the Russian effort to disrupt traffic on the Ukrainian rail system could have included attacks against the power generating stations that provide electricity to both civilian communities and trains. Such attacks, however, would have resulted in much loss of life among the people working in those plants as well a great deal of suffering in places deprived of power. Instead, the Russians chose to direct their missiles at traction substations, the remotely located transformers that converted electricity from the general grid into forms used to move trains.[9]

There were times, however, when missile strikes against "dual use" facilities gave the impression that the Russians had, in fact, targeted purely civilian facilities. The most egregious example of such a mistake was the attack, carried out on 1 March 2022, upon the main television tower in Kyiv. Whether or not there was any truth in the Russian claim that the tower had been used for military purposes, the attack on an iconic structure that had long been associated with a purely civilian purpose did much to reduce the advantages achieved by the overall Russian policy of limiting missile strikes to obvious military targets.[10]

The Challenge

The three ground campaigns conducted by the Russians in Ukraine in 2022 owed much to traditional models. At the same time, the program of missile strikes exploited a capability that was nothing short of revolutionary. Whether new or old, however, these component efforts were conducted in a way that demonstrated profound appreciation of all three realms in which wars are waged. That is, the Russians rarely forgot that, in addition to being a physical struggle, war is both a mental contest and a moral argument.

The Russian invasion of Ukraine may mark the start of a new cold war, a "long twilight struggle" comparable to the one that ended with the collapse of the Soviet Empire more than three decades ago. If that is the case, then we will face an adversary who, while drawing much of value from the Soviet military tradition, has been liberated from both the brutality inherent in the legacy of Lenin and the blinders imposed by Marxism. What would be even worse, we may find ourselves fighting disciples of John R. Boyd.

Notes

1. Headquarters Marine Corps, *MCWP 3-43.1, Raid Operations,* (Washington, DC: 1993).

2. For the adoption of the concept of the "raid" by the Russian Army of the late nineteenth century, see Karl Kraft von Hohenlohe-Ingelfingen (Neville Lloyd Walford, translator), *Letters on Cavalry,* (London: E. Stanford, 1893); and Frederick Chenevix Trench, *Cavalry in Modern Wars,* (London: Keegan, Paul, Trench, and Company, 1884).

3. For a brief account of this *reyd*, which was led by Alexander Chernyshev, see Michael Adams, *Napoleon and Russia,* (London: Bloomsbury, 2006).

4. John Reed and Polina Ivanova, "Residents of Ukraine's Fallen Cities Regroup under Russian Occupation," *The Financial Times*, (March 2022), available at https://www.ft.com.

5. Adam Taylor, "Shift to Ruble in Kherson Fuels Concerns about Russia's Aims in Occupied Region," *The Washington Post*, (May 2022), available at https://www.washingtonpost.com.

5. David M. Glantz, "Excerpts on Soviet 1938–40 Operations from *The History of Warfare, Military Art, and Military Science*, a 1977 Textbook of the Military Academy of the General Staff of the USSR Armed Forces," *The Journal of Slavic Military Studies*, (Milton Park: Routledge, March 1993).

6. The classic work on the French mutinies of 1917 is Richard M. Watt, *Dare Call it Treason*, (New York, NY: Simon and Schuster, 1963).

7. Michael Schwirtz, "Anxiety Grows in Odessa as Russians Advance in Southern Ukraine," *The New York Times*, (March 2022), available at https://www.nytimes.com.

8. Staff, "Russia Bombs Five Railway Stations in Central and Western Ukraine," *The Guardian*, (April 2022), available at https://www.theguardian.com.

9. For an example of the many stories that characterized the 1 March 2022 television tower strike as an attack on civilian infrastructure, see Abraham Mashie, "US Air Force Discusses Tactics with Ukrainian Air Force as Russian Advance Stalls," *Air Force Magazine*, (March 2022), available at https://www.airforcemag.com.

Modernizing MARADMINs and MCOs

by Capt Jeanluc K. Currie

I was thinking the other day about how many of the problems in the Marine Corps (or any organization) are self-imposed—Clausewitz's internal friction. For example, I often spend a significant portion of my day concocting creative solutions to conflicting orders and regulations or reconciling regulations with software systems that are not agile enough to reflect reality. This was never clearer than during the early stages of the COVID-19 pandemic.

On the positive side, from my vantage point as an inspector-instructor on independent duty, the Marine Corps acted in a relatively swift manner to provide guidance in an ambiguous situation. However, this guidance constantly changed as Center for Disease Control recommendations and public policy altered in response to more data and clearer interpretations of that data.

For those of us in Marine Forces Reserve, MARADMINS and exercise orders changed frequently. Higher headquarters often passed guidance via email, which is a narrow communication stream in a dynamic situation. To make matters more confusing, these documents often referenced a number of other regulations and orders. Getting to the source took significant time and effort.

I found myself thinking, "*What if Marine Corps Orders and MARADMINS were housed on a website and readable in a format like Wikipedia?*"

The Solution

No one needs a class on Max Weber to understand that bureaucracies thrive on written documentation.[1] However, what can we do when that information is so vast and voluminous that it becomes overwhelming—almost to the point of uselessness?

For open-source regulations found on *marines.mil*, major subordinate command directives, battalion directives, and so on, I propose the Marine Corps move to a wiki-like system.[2] Information would be available to readers in a simpler, hyperlinked format hosted on a web server: every reference hyperlinked, orders available with a click, and information streamlined.

There are obvious challenges to making this happen. First, allocating the appropriate funding given the DOD's acquisition process. Second, the software and infrastructure challenge of creating the website structure and setting up servers to host the information. Third, the practical challenges of maintenance and upkeep of such a site. While the first two are important, they are, in essence, nested problems. With an adequate amount of funding, the hardware, software, and personnel expertise to create the system would follow.

Instead, let us take a brief look at this sort of system in practice and the advantages to be gained.

>Capt Currie's bio was unavailable.

The Solution in Practice

Two distinct advantages: agility and scalability. In our current system, updating and publishing orders is a time-intensive, laborious process. At various levels, there are also record-keeping challenges (i.e. the new S-1 cannot find the .doc version of the last battalion commander's policy on *whatever*—leading to unnecessarily wasted effort in tracking these documents down or recreating them.) A wiki system creates a central repository that allows for updates on an as-needed basis. Expired orders could still be archived on web pages that comply with record disposition requirements. Updating these orders simply requires granting editing permissions to certain individuals.

A wiki system lends itself to scalability. Lower-level commands can nest and hyperlink all directives within higher command orders. Navigating from a battalion order to a division order to a SECNAV order is simply a click or two away.

In Summary

This solution does not solve all our problems nor does it eliminate all internal friction. A step that takes advantage of the lessons learned during that crisis by making the bureaucracy a bit more agile and scalable seems like a win.

Notes

1. Wikipedia him. Max Weber proposed the "rational-legal" model of bureaucracy, explaining the functioning, benefits, and weaknesses of industrial-era bureaucracies.

2. A wiki is a website that allows collaborative editing of content and structure by users. I say "wiki-like" because it would not be a wiki-pure system. Editing functions would be restricted to designated administrative sections. The vast majority of users would be readers, not editors.

On Killing Remotely

reviewed by LtCol John F. Griffin (Ret)

ON KILLING REMOTELY: The Psychology of Killing with Drones. By LtCol Wayne Phelps. New York, NY: Little, Brown and Company, 2021.
ISBN: 978-0316628297, 326 pp.

This book is not about drones. If you are willing to enter it with an open mind, this book will challenge what you think you know and what you believe.

This book should be on every Service or combatant command reading list at the NCO and junior-officer level. For one, it is an enjoyable read. Phelps draws you in by telling stories, making comparisons, and drawing connections that are tangible, understandable, and that occasionally make you laugh. Yet, simultaneously, this book is backed by rigorous research derived from extensive interviews and numerous sources. It is well researched, insightful, and applicable to a much greater audience than the UAS community.

Certainly, as one might expect, this book will educate the reader on the different types of UAS platforms, how they are each employed, how the teams are trained, constructed, and deployed, as well as other educational lessons about the UAS community. In addition, Phelps takes on lots of challenging questions—such as: If we are using drones against our Nation's adversaries, are we at war? He engages in discussions about *jus ad bellum* and *jus ad bello* (justification and the conduct of war). Are UAS crews flying from bases in the United States legal enemy combatants targetable by our adversaries? Drone warfare is changing the character of war, but is it changing the nature of warfare? He discusses why the employment of drones and remote split operations saves money, lives, and has its own intrinsic political value. He is fair and transparent about the internal challenges of his community and does not overstate the value UAS brings to a conflict. He also leads the readers through a myriad of other wide-ranging, yet applicable and valuable, discussions.

Furthermore, this book will help break down barriers and judgment zones and the competition that exists among the different MOSs. I wish I had read it earlier in my career. I would have been far less judgmental and have recognized sooner that your MOS does not matter—if you serve, if you wear a uniform, you are a warrior. This book educates the reader in understanding why a UAS pilot or analyst who is not forward deployed but is still engaged in the act of killing suffers in ways both similar and different to the rest of us. This is a critically important conversation and applicable to today because we remain in a moment where the character of war is continuing to evolve.

A German philosopher, Arthur Schopenhauer, is attributed with saying, "All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident." The application and value in the use of UAS are no longer in question. Its value to warfare is self-evident. So much so, that our adversaries are experimenting with the cost of tactical, commercial off-the-shelf drones as a proven, viable, asymmetric threat. However, this book is equally germane to today's service members because we should learn from our past and consider those warfighters who are now fighting and competing every day in space, cyberspace, and the electromagnetic spectrum. Just as Phelps suggests throughout history, any time we introduce new warfare technology, it is somehow viewed as less chivalrous. Yet, the character of warfare continues to evolve. Now as we look to the next great conflict, the opening salvo must be fought in the information environment. If we do not learn to change the way we think about warfare and warriors, in the great American tradition, we will lose the opening battle. With warfare in the information environment, we do not have geography to buy us time and space to recover, regenerate, and redeploy. No. If we lose the opening salvo in the next major conflict in the information environment, we might be suing for peace at the end of the first week.

Phelps will challenge what you think you know and challenge your beliefs.

USMC

>LtCol Griffin is a retired Infantry Officer. Since retiring, he taught at the U.S. Naval War College focusing his research on maritime information warfighting. He now works for the National Security Innovation Network (a DOD program office) assigned to Northeastern University where he looks to connect the research at Northeastern and the innovation in the local Boston entrepreneurial ecosystem with DOD challenges.

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Editorial Policy and Writers' Guidelines

Our basic policy is to fulfill the stated purpose of the *Marine Corps Gazette* by providing a forum for open discussion and a free exchange of ideas relating to the U.S. Marine Corps and military and national defense issues, particularly as they affect the Corps.

The Board of Governors of the Marine Corps Association has given the authority to approve manuscripts for publication to the editor and the Editorial Advisory Panel. Editorial Advisory Panel members are listed on the *Gazette*'s masthead in each issue. The panel, which normally meets as required, represents a cross section of Marines by professional interest, experience, age, rank, and gender. The panel judges all writing contests. A simple majority rules in its decisions. Material submitted for publication is accepted or rejected based on the assessment of the editor. The *Gazette* welcomes material in the following categories:

- **Commentary on Published Material**: The best commentary can be made at the end of the article on the online version of the *Gazette* at https://www.mca-marines.org/gazette. Comments can also normally appear as letters (see below) 3 months after published material. BE BRIEF.
- **Letters**: Limit to 300 words or less and DOUBLE SPACE. Email submissions to gazette@mca-marines.org are preferred. As in most magazines, letters to the editor are an important clue as to how well or poorly ideas are being received. Letters are an excellent way to correct factual mistakes, reinforce ideas, outline opposing points of view, identify problems, and suggest factors or important considerations that have been overlooked in previous *Gazette* articles. The best letters are sharply focused on one or two specific points.
- **Feature Articles**: Normally 2,000 to 5,000 words, dealing with topics of major significance. Manuscripts should be DOUBLE SPACED. Ideas must be backed up by hard facts. Evidence must be presented to support logical conclusions. In the case of articles that criticize, constructive suggestions are sought. Footnotes are not required except for direct quotations, but a list of any source materials used is helpful. Use the *Chicago Manual of Style* for all citations.
- **Ideas & Issues**: Short articles, normally 750 to 1,500 words. This section can include the full gamut of professional topics so long as treatment of the subject is brief and concise. Again, DOUBLE SPACE all manuscripts.
- **Book Reviews**: Prefer 300 to 750 words and DOUBLE SPACED. Book reviews should answer the question: "This book is worth a Marine's time to read because…" Please be sure to include the book's author, publisher (including city), year of publication, number of pages, and the cost of the book.

Timeline: We aim to respond to your submission within 45 days; please do not query until that time has passed. If your submission is accepted for publication, please keep in mind that we schedule our line-up four to six months in advance, that we align our subject matter to specific monthly themes, and that we have limited space available. Therefore, it is not possible to provide a specific date of publication. However, we will do our best to publish your article as soon as possible, and the Senior Editor will contact you once your article is slated. If you prefer to have your article published online, please let us know upon its acceptance.

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