Focus on Artificial Intelligence & Machine Learning

A publication of the Marine Corps Association

THE STRENGTH OF MARSOC IS OUR PEOPLE

DON'T MISS YOUR SHOT. ATTACK YOUR OPPORTUNITY.
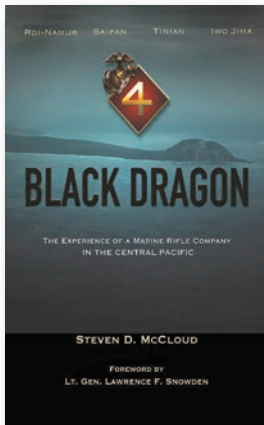
TEXT MARSOC TO 97211 // MARSOC.COM

Cover

The Corps remains on the cutting edge of experimentation and employment of emergent technologies like the augmented/virtual reality and artificial intelligence. Early adoption of capabilities like the Augmented Immersive Team Trainer increased effective training. (Photo by LCpl Juan A. Soto-Delgado.)

DEPARTMENTS

IDEAS AND ISSUES

The LtGen Bernard E. "Mick" Trainor
Military Writing Award

The Lieutenant General Bernard E. Trainor writing contest invites papers that propose an innovative solution to one of the warfighting challenges that the Marine Corps will face in the future operating environment.

Deadline | 31 July 2023
2000 to 2500 words

$1000 and a commemorative plaque shall be presented to the winner of the contest. The winning essay will also be published in *The Marine Corps Gazette.*

The *Marine Corps Gazette* Writer's Guidelines may be found at
mca-marines.org/magazines/marine-corps-gazette

Presented by

The 1st Reconnaissance Battalion Association, the Marine Corps Association, and the Marine Corps Gazette in honor of LtGen Trainor's lifetime of exceptional military service and journalistic excellence.

MARINE CORPS ASSOCIATION EST 1913

MARINE CORPS Gazette
Professional Journal of U.S. Marines

JULY 2023

Editorial: Artificial Intelligence and Machine Learning

We have all been exposed to recent reporting in the media regarding artificial intelligence, or AI. Thought leaders from Elon Musk to Sam Altman, the CEO of OpenAI, have presented facts and their opinions on the subject in forums including Congressional hearings on the regulation of AI in the area of intellectual property and copyright. Today, AI or "machine learning," based on the convergence of computer processing speeds, the design of search algorithms, and the collection of data for those algorithms to analyze, recollects visions that began in fiction almost 300 years ago. In his 1726 fantasy novel *Gulliver's Travels*, Jonathan Swift described for the first time in literature a machine he called the "Engine." This creation of inventors in the fictional city of Lagado provided a capability whereby "the most ignorant person, at a reasonable charge, and with a little bodily labour, might write books in philosophy, poetry, politics, laws, mathematics, and theology, without the least assistance from genius or study." Swift's Engine may be the first description of anything resembling a computer, but today it is recognized as one of the commercial applications of AI. Then, as now, the technology was a tool, and the uses of that tool, whether intended or not, lay in the hands of the users.

This month, we present a small collection of articles on applications of AI in the Marine Corps. In addition to the articles on our cover which highlight the employment of AI to increase the lethality of Marine infantry and to enhance wargaming, authors from across the Corps examine other uses for AI. Noteworthy, in "Machine Learning to Enhance Force Preservation" on page 26, Capt Drew Borinstein describes the potential use of AI for leaders to better know their Marines, predict negative behaviors, and identify at-risk individuals. Readers can look forward to much more content on this subject as Marines continue to study the impacts and novel employment of AI in the profession of arms.

Other stand-out features this month include an examination of how to constructively disagree in a military hierarchy titled "Dissent" by Dr. Richard H. Kohn on page 16. Two innovative Marine logisticians take opposite sides regarding their occupational field in the future force starting on page 51 with "Littoral Logistics Specialist Proposal" by LtCol Leo Spaeder, et al. The counterpoint follows in "Finding the Future Marine Corps Logistician in an Airport Bookstore" by Maj Matthew Tweedy on page 59. In a work of "Useful Fiction" on page 66, GySgt Benjamin Knight describes the combined result of a battlefield defeat and domestic political-economic factors in "The Death of the Marine Corps." Finally, on page 72, we begin a series of articles by the Staff of the Inspector General of the Marine Corps, including on page 80 an ethical decision game. Readers should note that unlike tactical decision games, which may have several feasible solutions, ethical decision games do have "right answers," and this material is provided to assist Marines and their leaders in dealing with real-world ethical problems. As the series continues, ethical decision games will be posted on the *Gazette*'s LinkedIn page to increase their reach and share solutions.

As always, the MCA and the *Gazette* hope that this month's selection of content provokes critical thinking on emergent issues. Feedback and commentary are always welcome.

Christopher Woodbridge

Marine Corps Space Operations

📱 In reading the article written by Maj George, it is interesting to see that the Marine Corps has evolved to have a better appreciation for space. My last assignment was as the Special Technical Operations Chief for U. S. Space Command from 1996 through the end of 2000, and the same vulnerabilities described in Maj George's article existed at that time—but with time the threat has grown. The Marine Corps cannot ignore the basics (i.e., navigation using a map and compass, communications that are entirely ground based, etc.) These are things that have been core to how we operate. The article seems to only address technical means to mitigate our vulnerabilities, and that is not the only answer.

What has changed is that space is now recognized as an area of responsibility, but that does not mean that whatever is done in space will not have an impact (positive or negative) on the geographic area of responsibilities. What made our group at Space Command effective was that the liaisons who supported the various regional unified commands all had an operational background (aviators and infantry), so when we were supporting a CENTCOM or EUCOM, we understood what they were trying to accomplish and could then identify what sort of space support actually made sense. For this new MOS of maritime space officer to be effective, that understanding of what we, as Marines, do is essential. As an aviator, I knew that my sole purpose in existence was to support the Marines on the ground (i.e., the grunts). To do that, I needed to ensure I understood what they were looking to accomplish, and then provide the best support I could to make sure they were successful. That is what the maritime space officers must also do. If they do, they will be an invaluable asset across the Corps.

LtCol Patrick A. Kelleher (Ret)

Force Design 2030

📱 Looking through a battered old pair of Steiner 8Xs, it appears the ongoing attack on the 38th Commandant's *Force Design 2030* (*FD 2030*) is advancing two up/one back. In the first echelon are arguments that the operating forces are being unduly optimized for the Indo-Pacific and that elimination of tanks and the reduction in cannon artillery and the infantry are irresponsible. In trace is the assertion that increased emphasis on naval integration will make Marine forces unsuitable to non-Indo-Pacific combatant commanders and threaten Marine Corps viability in joint operations. Recently, the *Gazette* featured an article implying that *FD 2030's* three underlying assumptions at strategic, operational, and tactical levels were invalid, starting with the implication that *FD 2030* is exclusively about stand-in forces "blithely flitting from islet to islet" firing anti-ship missiles at the expense of having sufficient infantry to conduct counterinsurgency operations in, say, the Solomons. Comparison of combined action platoon results with traditional battalion sweeps in the Republic of Vietnam might argue that numbers are not everything. The "invalid" tactical-level assumption is that distributed stand-in forces will be "bunched up" and vulnerable to overhead surveillance, an interesting observation given the footprint presented by immobile sea/airports of arrival or even slow moving conventional three-ship amphibious ready groups.

As for Indo-Pacific optimization, historical and present-day perspectives support it. Success in World War I's trenches very nearly turned the Marine Corps into a second land army—one we closely resemble today. It took John Lejeune's prescience, in the face of Gallipoli's unambiguous lesson that amphibious operations were no longer feasible, to turn the Corps toward a new and controversial mission in—of all places— the Pacific Theater. Robert Kaplan's somewhat dated *Monsoon*, Elbridge Colby's more recent and aptly titled *The Strategy of Denial*, and President Xi's increasingly Putin-esq persona justify an Indo-Pacific emphasis—especially if the Commandant's end state is preventative in nature, as *FD 2030* correctly describes itself and the *2018 National Defense Strategy* mandates. I will add a fourth assumption: The sons of the men in Beijing who once told Chinese generals to avoid the "yellow legs" of the 1st MarDiv are not "laughing behind their hands" at *FD 2030* capability development.

Naval integration is at the crux. The Indo-Pacific stretches from East Africa to our own West Coast, an enormous maritime theater and home to the world's most vibrant economies and critical oceanic choke points. To create a force capable of projecting influence over thousands of square miles yet effectively and quickly respond appropriately to specific hostile activity, naval integration from capability development to combat operations is nonnegotiable.

Lift footprint reduction could well be a benefit of assessing time-honored task organizations in favor of expeditious *organizing for the task*. The success of tactical UASs, HIMARS, and number of rusting tank hulks in Ukraine argue against accusations that Indo-Pacific centricity works to the detriment of employment in other theaters or scenarios.

Overall end strength, the number of infantry battalions, and the battalion's table of organization need the careful review, stringent wargaming, and the rigorous experimentation they are now getting; but, as Gen Berger points out early in his May *2022 FD 2030 Annual Update*, the program is not about the infantry battalion or Marine Littoral Regiment. It is about examining all elements of the MAGTF, critical components of the supporting establishment, and even amphibious shipping. Our 38th Commandant is following in the footsteps of insightful and impactful predecessors who willfully broke eggs when they operationalized Maneuver Warfare, established the very Warfighting Lab that is now the front end of *FD 2030* capability development, and introduced Operational Maneuver from the Sea. The list is much longer, and every item on it encountered pushback at one point or another. Debate has a place, but at some point, intellectual energy must transition from *why* to *how*. We are at that point.

**Col Vince Goulding &
Col Mike Fallon (Ret)**

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.

The entire *Gazette* is now online at www.mca-marines.org/gazette.

Have Work, Will Travel

Increasing productivity

by Maj Andrew Butler

>*Maj Butler is a Manpower Officer (0102) and is currently the Adjutant for Marine Forces Reserve in New Orleans, LA. He possesses a Juris Doctor from the University of Montana School of Law and has served in multiple combat units, including a deployment to Helmand Province, Afghanistan, in 2010.*

The Marine Corps is the most productive organization in the world. Bold statement—but let me explain.

The best companies and academic institutions in the world, when describing productivity, often analogize to the military.[1] Even if the analogy is focused on a different company, that company will reference how they emulate the military.[2] It all leads back to combat.

Think about World War II and choose your combat: Marines hitting a beach; paratroopers dropping in from the sky; battleships and aircraft carriers; special operation Marine Raiders; the list goes on. Combat requires rapid, edge-of-chaos improvements. Combat is a goal-oriented, critical path identification and chain unblocking event. When combat happens, a person is thrust into a situation where they have to be as awesome as possible, or they are unlikely to survive. They must maneuver as individuals and in teams, make rapid decisions, and be less wrong over time.[3] Replicating the combat environment without the carnage is the holy grail of productivity, and Marines have a corner on the combat market.

So, if everyone wants to be us, why do we want to be them? Why would we ever put cubicles in an office setting? Why would our most senior members be hidden away in offices? Have we ever seen a combat operations center that was siloed in a way that we had to schedule a meeting to solve a problem, or otherwise, people did not communicate? No, never! So again, why would we emulate an office environment that Sears-Roebuck would be proud of? Is that our model?

Without paying people more, how do we increase large Marine Corps command office productivity? More importantly, how do we support our subordinate units' ability to outpace our peer or near-peer competitors? Good questions, but are they the right ones? We need to be careful that we do not ask a question only to find out the answer is 42.[4] I have an idea: let us do what Marines do, and move to the points of friction.[5] Moving to the points of friction in an office environment can be difficult, but why?

The History of the Office Environment

In the 1960s, Robert Propst designed the initial "workspace solution" with the intention to be a variation on the open bull-pen concept, which would provide individual privacy, improve health, and allow employees to spread out a bit more. "[It] had a huge desk, a space for making phone calls, a vertical filing system, and partitions, so workers could have privacy. What's more, the desk could be set at varying heights so people could stand while they worked—helping, he thought, with blood flow."[6]

This original idea fell by the wayside as it was relatively expensive for the time period and took up more space per individual. Propst's follow-up concept—today's modern cubicle—took off with the help of the government and commonplace mergers in the 1980s:

hoping to stimulate business spending, the Treasury made new rules for depreciating assets ... Companies can depreciate their furniture (including cubicles) in seven years, while perma-

Cubicle spaces. *(Photo by Asa Wilson.)*

nent structures like actual walls are given a 39.5-year rate. Suddenly, the cubicle became even more attractive. Companies could recover their costs quicker by buying furniture that acted like offices rather than offices themselves.[7]

The cubicle is, in many ways, emblematic of the shift of American society away from manufacturing to a services economy, and the white-collar-ification of a blue-collar labor force. "Growth in services began accelerating in the 1960s and accelerated again after the double-dip recession in the early 1980s. Manufacturing employment peaked in June 1979. It never recovered from the double-dip recession of 1980-1982."[8]

As America shifted away from manufacturing into services, the factory floor migrated into office buildings, and blue-collar workers became white-collar with their cubicles and manufactured office settings. The traditional office space is designed to segment workers and cram as many people as possible into one space.[9] Essentially, the cubicle was used as a way to placate a societal transition from the manufacturing line to the office.

Bottom line, cubicles are self-licking ice cream cones, built to save money for the sake of saving money but at the expense of workplace productivity. The concern should be that the 1960s office environment is emulated throughout the Marine Corps. Everywhere you look, you will find officers and senior enlisted residing in the offices and junior Marines working out on the floor in cubicle farms.

Shifting Culture-Returning to Marine Corps Roots

The question becomes how do you make a Marine—0311, 0302, or otherwise—feel at home in an office environment?

Imagine for a minute ripping a Marine from 1st Battalion, 7th, 2d, 1st, or 10th Marines and putting them in a Marine Forces Headquarters Command. The environments could not be more different, but should they be? How do we replicate the camaraderie, autonomy, or physicality of the platoon,

company, or battalion environment? It is arguable that offices and cubicles, as they exist today, are not the answer.

However, what does the Marine Corps have as an example at its disposal that it could use to replicate an environment that a Marine would feel at home in? How about a combat operations center (COC), the nerve center of an advanced fight? In the words of Marine Corps Systems Command, "COCs are expeditionary tent facilities that serve

as a hub for command and control for Marine Corps operations ashore. They enable Marines to collect, process and share tactical information in a secure, collaborative environment."[10] Put more simply, in the infamous but modified words of HMLA-167, "Have Work-Will Travel."[11]

How does a Marine Forces Command support a COC environment? The answer is twofold: the command needs to create the physical conditions that support the environmental conditions found within a COC and the technology needs to enable all aspects of a COC environment.

Physical Environment and Technology

The physical conditions do not need to be austere to replicate a COC, but they do need to be collaborative and devoid of self-induced friction. The conditions require Marines of all ranks to be working side by side.

The technological capabilities enhance the productivity of a larger and more complex COC.

The Supporting Equipment

At the Marine Forces level, work is being approached in a dated corporate "tools first" ideology: set a predetermined environment and then tell the Marine to complete a task. Like a manufacturing line, a Marine is placed into a cubicle, given a drawer full of supplies,

and when a task comes their way, the Marine executes within their current environment. However, a COC environment promotes a fluid, collaborative, and engaged environment with access to any tools necessary for the task (e.g., desks of both types and sizes, noise-canceling headphones, temporary offices, conference table, and private or open room conditions); the point is the Marine gets to choose the best tools to solve the problem. LinkedIn's new office

---

At the Marine Forces level, work is being approached in a dated corporate "tools first" ideology ...

---

environment has embraced this COC concept by "trusting employees to do their best work ... and then meet them with the right tools and support."[12]

To implement a COC mentality in a non-combat environment, the first step is to vacate as many offices as possible, and senior leadership needs to become accessible and mobile. Immediately the vacated offices will be put to work as an available group or individual short-term private spaces. The common spaces where cubicles currently reside will become the heart of the working areas. These areas will be filled with variable-height desks with docking stations and multiple monitors, variable-height chairs, large conference tables, and individual or small group sound-proof work booths. All workspaces will be either reserved or provided on a first-come, first-served basis, but nothing will be permanent.

These rapid changes will put senior and junior Marines immediately at the point of friction, engaging both in a cauldron of decision making and problem-solving.

However, a fair criticism of the COC-style work environment is the lack of a quiet space. "Deep work," Cal Newport describes, is "the ability to focus without distraction on a cognitively demanding task."[13] While Cal Newport primarily focuses on sharing work habits and personal tools, such as time-blocking and depth rituals, there

are physical tools that support Cal Newport's philosophies, which, I argue, live across a spectrum.[14]

It is important that the organization provide many varied tools to meet the individual or group's tasks or mission requirements and then it is incumbent on the individual or group to select the right tools.

This spectrum of tools ranges from open, collaborative environments to working with noise-canceling headphones to individual soundproof booths, and finally, complete isolation and, of course, everything in between.[15] But on any given day, the range of focus and the requirements will vary. Therefore, workstations, like requirements, are not permanent and will shift hour to hour, day to day, week to week: Have Work-Will Travel.[16]

Technology

The technology should support the COC environment, providing mobility and fluidity. Ubiquitous Wi-Fi throughout all Marine Forces commands is the fundamental catalyst to untethering Marines and creating a COC environment throughout a complex structure. Wi-Fi is known to promote productivity, improve employee satisfaction, and be highly cost-effective.[17]

The current Marine Corps leader in utilizing Wi-Fi technology is Marine Corps Air Station Miramar, which began a partnership with Verizon in 2020 and has since established a base-wide wireless network. Miramar's network is based on Verizon's 5G network, which allows for connectivity virtually anywhere; a Marine can move from one building to another and throughout the flightline without losing their connection. Miramar is benefiting from a wireless network by supporting the advancements in unmanned vehicles, improving base security, and assisting in rapid, on-site diagnostics, parts ordering, and aircraft repairs. Ultimately, this will "create what the Marines call a digital fortress."[18]

Providing Wi-Fi throughout a building or command allows Marines freedom of movement to go to where they are needed and promotes problem-solving through connectivity. If a Marine

Modern desk. *(Photo by Luke Chesser.)*

is constantly connected to Wi-Fi, then they are consistently available to move to the points of friction and execute their job. Alone, Wi-Fi cuts down the time needed for a Marine to find a connection port, reestablish their credentials, log in to their various applications, and get back to the task at hand. It also provides the flexibility for a Marine to work from virtually anywhere within the building or campus—a conference table, another office—while maintaining their up-time. Wi-Fi increases a Marine's availability when they are at work, thus improving overall productivity.

With the prominent nature of Wi-Fi in today's society, it can be frustrating to encounter a location that does not have it. Wi-Fi has become a universal part of American life, with at least 84 percent of American adults using it.[19] Providing Wi-Fi to Marines would improve their overall job satisfaction as it eliminates the frustration of trying to find a connection point and the start-stop-start of the associated internet issues.

The physical infrastructure associated with Wi-Fi is more cost-effective than traditional drop connection ports. The traditional model requires ports at every workstation and in every office, requiring a significant amount of wiring, set-up, and maintenance, depending on the command size.[20] If something goes wrong, then you have to troubleshoot various points of failure. Connecting Wi-Fi routers to the main internet modem points expands the connectivity infrastructure with less hardware and long-term maintenance. It also improves workplace safety as there are fewer wires and cables hanging from ceilings or draped across floors to ensure Marines have the necessary internet connections.

Wi-Fi is also cost-effective as it does not take any more security to maintain than the current internet connection.

> *Miramar is benefiting from a wireless network by supporting the advancements in unmanned vehicles, improving base security, and assisting in rapid, on-site diagnostics ...*

The Wi-Fi access is open using a well-advertised password; once accessed, a DOD disclaimer would let visitors to the network know that they are being monitored. However, if access to the Marine Corps Enterprise Network is required then a virtual private network (VPN) can be utilized: "A [VPN] is an encrypted connection over the Internet from a device to a network. The encrypted connection helps ensure that sensitive data is safely transmitted.[21] Because the Marine Corps already contracts with a VPN provider, there are no additional costs, and there will be a higher utilization of an already existing asset.

As a further security measure, a whitelist of approved websites can be developed to ensure those using the Wi-Fi network are only going to approved sites. Whitelisted sites are websites determined to be safe and approved for the audience.[22] If the command believes a site to be harmful or have a negative

impact on general productivity, it can be removed from the whitelist, thus blocking access while connected to the Wi-Fi network. Marines would be allowed to connect personal devices to Wi-Fi; however, they would consent to DOD monitoring policies and subject themselves to the limited whitelisted sites. Additionally, so the network is

for all government-issued devices to seamlessly connect together and provides an opportunity to leverage new technology. Now, conference rooms can utilize smart televisions or casting devices on older models to allow for quickly displaying information from an individual's device for group discussion, team editing, and professional presenta-

---

While Marines have begun embracing new technology, such as cloud-based computing, the physical environment has not kept up.

---

not slowed by an increase in device connections, each large installation can contract with the regional provider to maintain specific bandwidth speeds.

With high-speed Wi-Fi, the door opens wide to allow for the Internet of Things. This new network allows

tion. Again, this cuts down on the cost of ensuring the right cables for connecting all types of devices to the monitors, improves safety by eliminating excessive cords, and eliminates the frustration of being unable to share important data with a large audience.

A Wi-Fi network highly leverages the cloud-based computing system and allows for less expensive hardware and more types of hardware for Marines to be more effective in their jobs. A smaller cloud-based computer (e.g., a Chromebook or Surface) provides the same productivity levels but is easier to maintain, less expensive than traditional computers, and ensures all work is saved to the cloud versus individual hard drives. For Marines who travel or would need to move around—whether that is across the country or simply across the building—smaller computers provide better ergonomics and portability. It also provides the ability to leverage tablets in certain situations and provides the current government-issued smartphones with better connectivity. A Wi-Fi network opens up the possibility of meeting Marines with the right tools to effectively execute any task.

Conclusion

Marines must maneuver as individuals and teams, make rapid decisions, and be less wrong over time. The current workplace structure was built around a 1960s design that inadvertently pushed the Marine Corps further away from its flexible and high-functioning COC environment. While Marines have begun embracing new technology, such as cloud-based computing, the physical environment has not kept up. The Marine Corps has the doctrinal tools to seize this opportunity and improve individual Marine and group productivity: *Have Work-Will Travel*.[23]

Notes

1. The billionaire also compared himself to a war general and said, "If you think about war ... do you want the general in some like ivory tower or on the front lines? The troops are going to fight a lot harder if they see the general on the front lines." Reuters Staff, "Tesla's Musk Relocates to Texas from California; Compares Himself to War General," *Reuters,* December 8, 2020, https://www.reuters.com/article/us-elon-musk-texas/teslas-musk-relocates-to-texas-from-california-compares-himself-to-war-general-idUSKBN28I2UB; and Amy Castoro and Fred Krawchuk, "What Family Businesses Can Learn from the Military," *Harvard Business Review*, August 30, 2021, https://hbr.org/2020/05/what-family-businesses-can-learn-from-the-military.

2. Steven Loveday, "Ford CEO Farley Joins VW's Diess in Giving Credit to Tesla & Musk," *InsideEVs*, October 29, 2021, ttps://insideevs.com/news/544287/ford-farley-friendly-credits-tesla.

3. Marcel Schwantes, "Elon Musk Once Gave Some Surprising Business Advice. 4 Years Later, It's Clearly Brilliant," *Inc.com,* July 3, 2018, https://www.inc.com/marcel-schwantes/with-a-single-sentence-elon-musk-showed-why-being-wrong-is-important.html.

4. Douglas Adams, *The Hitchhiker's Guide to the Galaxy* (New York: Random House Worlds, 1997).

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

6. Ibid.

7. Ibid.

8. Doug Short, "Charting the Incredible Shift from Manufacturing to Services in America," *Business Insider*, September 5, 2011, https://www.businessinsider.com/charting-the-incredible-shift-from-manufacturing-to-services-in-america-2011-9.

9. Drake Baer, "A Brief History of How the Cubicle Took over Offices Everywhere," *Business Insider*, April 23, 2014, https://www.businessinsider.com/a-brief-history-of-how-the-cubicle-2014-4.

10. Mathuel Browne, "Marine Corps Fields Its First Tactical Platform Standard with Windows 10," *Marine Corps Systems Command*, April 4, 2017, https://www.marcorsyscom.marines.mil/News/News-Article-Display/Article/1140201/marine-corps-fields-its-first-tactical-platform-standard-with-windows-10.

11. Staff, "HMLA-167," *Marine Aircraft Group 29*, n.d., https://www.mag29.marines.mil/Units/HMLA-167.

12. Kate Reilly, "A Sneak Peek at LinkedIn's New Hybrid-Workplace Plans," *LinkedIn*, September 29, 2021, https://www.linkedin.com/business/talent/blog/talent-engagement/sneak-peek-at-linkedins-new-hybrid-workplace-plans.

13. Cal Newport, "Deep Work: Rules for Focused Success in a Distracted World," *Cal Newport*, n.d., https://www.calnewport.com/books/deep-work.

14. Cal Newport, "Deep Work: Rules for Focused Success in a Distracted World," *Cal Newport - Study Hacks Blog*, November 20, 2015, https://www.calnewport.com/blog/2015/11/20/deep-work-rules-for-focused-success-in-a-distracted-world.

15. Working Environments Furniture, "Focus Workpod," *Working Environments Furniture*, n.d., https://www.workingenvironmentsfurniture.co.uk/focus-workpod.

16. Marine Aircraft Group 29, "HMLA-167," *Marine Aircraft Group 29*, n.d., https://www.mag29.marines.mil/Units/HMLA-167.

17. Murray Goldstein, "5 Reasons Why Your Business Needs WIFI Now," *Forbes,* October 20, 2016, https://www.forbes.com/sites/coxbusiness/2016/06/30/5-reasons-why-your-business-needs-wifi-now/?sh=1c84ab8715f1.

18. Scott Maucione, "6 Months in, Marines 5G Base Is Working on Autonomous Vehicles and More," *Federal News Network*, January 7, 2021, https://federalnewsnetwork.com/defense-main/2021/01/6-months-in-marines-5g-base-is-working-on-autonomous-vehicles-and-more.

19. Andrew Perrin and Maeve Duggan, "Americans' Internet Access: 2000–2015," *Pew Research Center*, June 26, 2015, https://www.pewresearch.org/internet/2015/06/26/americans-internet-access-2000-2015.

20. Staff, "Why Your Workplace Should Be Wireless: Wi-Fi Benefits for Business," *Verizon Resource Center*, January 18, 2018, https://go.verizon.com/resources/wi-fi-benefits-for-business.

21. Staff, "What Is a VPN?-Virtual Private Network," *Cisco*, July 27, 2022, https://www.cisco.com/c/en/us/products/security/vpn-endpoint-security-clients/what-is-vpn.html.

22. *Cambridge Free English Dictionary and Thesaurus*, s.v., "Whitelist," https://dictionary.cambridge.org/us/dictionary.

23. Marine Aircraft Group 29 "HMLA-167," *Marine Aircraft Group 29*, n.d., https://www.mag29.marines.mil/Units/HMLA-167.

USMC

The Relationship Between Enlisted and Officers

Part 1: The T- shape philosophy

by Capt Jeremy Carter & 1stSgt Thomas Ochoa

>*Capt Carter is an Infantry Officer who has served as a Rifle Platoon Commander and a Rifle Company Executive Officer in 3/8 Mar, as well as a Company Commander at Infantry Training Battalion. He is currently a Future Operations Planner in the Marine Corps.*

>>*1stSgt Ochoa has had the pleasure of serving with 2/7 Mar, The School of Infantry-East, 3/2 Mar, and is currently serving as the Headquarters and Support Company First Sergeant for 3/7 Mar. He has deployed as part of Operation IRAQI FREEDOM, Operation ENDURING FREEDOM, the 31st MEU, Unit Deployment Program-East , and Marine Rotational Force-Darwin.*

This article is targeted primarily at the company-level leadership and below, but principally at the platoon-level leadership, with the intent that the future leaders of the Marine Corps develop positive relationships ...

If one were to walk around Camp Barrett, where each and every officer attends The Basic School, they might hear the queston: *why does the Marine Corps even need officers?* This question would come from a captain or a major directed toward their second lieutenants. While they might hear the question posed, they would not be given an answer. They would be told that the young officers must determine the answer themselves. If this same person were to follow around a platoon—whether it be a rifle platoon commanded by a second lieutenant, a reconnaissance platoon commanded by a captain, a Marine special operations team commanded by a captain, or any unit that is commanded by the most junior officer of that rank—they might hear phrases such as: *the Marine Corps does not need officers at this level*, or that *the staff sergeant* (or the appropriate rank for the unit) *can do your job.*

On the other side of the coin, if one were to walk around a battalion, they might hear a field-grade officer tell a young staff non-commissioned officer (SNCO) that *their role within a battalion is that of a secretary*, and that, *the lieutenant should be out with the squad leaders supervising their training, while the platoon sergeant should be in the office taking care of the administration requirements*. All of these situations, which downplay the significance of the enlisted and the officers, have happened specifically to us, and more importantly, are not an uncommon occurrence in the Marine Corps. These scenarios reflect an inappropriate relationship between enlisted and officers.

Therefore, this article is the first in a two-part series that will describe the optimal relationship between the enlisted and the officer using the T-shape philosophy. The first article will describe the T-shape philosophy, while the second article will describe how to strengthen and facilitate the optimal relationship between the enlisted and officers. This article is targeted primarily at the company-level leadership and below, but principally at the platoon-level leadership, with the intent that the future leaders of the Marine Corps develop positive relationships up and down the chain of command.

The reason for targeting platoon-level leadership is first, as the reader knows, the platoon-level leadership is the tip of the spear for executing commander's intent. Platoon-level leadership is where the battle is won, where the mission is accomplished, and will be even more critical in the next conflict with dispersed operations. Second, we hope that the articles can facilitate the optimal professional relationships needed between the enlisted and officers, not only for the short-term goal of

their immediate working relationship but more importantly for the long-term benefit of both the enlisted and officers having mutual faith in one another as they continue their careers in the Corps.

Why Relationships Are Important

While there is no universally agreed upon definition of leadership, we describe leadership as the ability to inspire and influence those around you to perform at a higher level and become better versions of themselves. By this definition, leadership requires a relationship, which can be summarized by the Marine Corps' Third Leadership Principle, "Know your Marines and look out for their welfare."[1] James Mac-Gregor Burns states that "we must see power—and leadership—as not things but as relationships."[2] GEN Colin Powell is credited with saying, "Why would you follow somebody around a corner? Or up the hill? Or into a dark room? The reason is trust."[3]

Trust can only be developed through intimate relationships. In his book, *The 5 Levels of Leadership*, John C. Maxwell states the lowest level of leadership is positional power, which is equivalent to our rank structure.[4] Positional power can be summarized as Marines following orders solely due to rank and/or billet. As one progresses up Maxwell's levels of leadership from *position* (Marines following your orders due to rank/billet) to *permission* (Marines following your orders because they want to) to *production* (Marines following you because what you have done for the Marine Corps) to *people development* (Marines following you for what you have done for them) to *pinnacle* (Marines following you for what you represent), the drive for mission accomplishment increases. And as stated by GEN Powell, "plans don't accomplish work ... It is people who get things done."[5]

T-Shape Philosophy

In the book, *Curious: The Desire to Know and Why Your Future Depends on It*, Ian Leslie discusses T-Shaped Knowledge. According to Leslie, "the most valuable twenty-first-century workers combine deep skills in a specialty (the vertical axis of the T), with
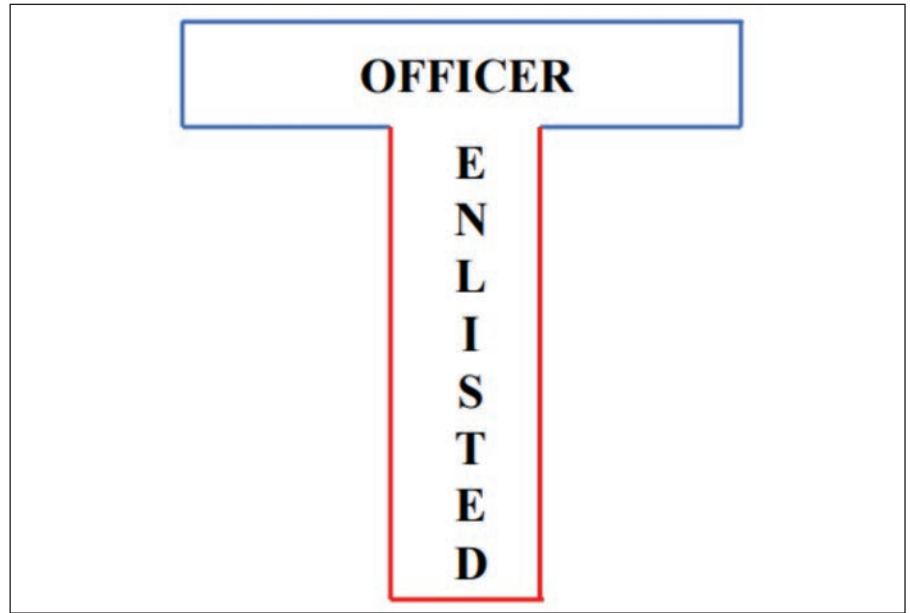
Figure 1. The T-shape philosophy. (Figure provided by author.)

a broad understanding of other disciplines (the horizontal axis). The former allows them to execute projects that require particular expertise; the latter enables them to see contextual links to other disciplines."[6] Thus, a successful infantry company commander would have deep knowledge (vertical axis of

... the ideal relationship between the officer and enlisted is illustrated by the enlisted having a deep understanding of the MOS, with the officer possessing a breadth of knowledge ...

the T) in maneuver, as well as command and control, while also having a broad understanding (horizontal axis of the T) intelligence, fires, force protection, logistics, and information operations. While we encourage Marines to employ the T-shaped knowledge concept within their professional development, we also feel this demonstrates the optimal relationship between enlisted and officers.

As seen in Figure 1, the ideal relationship between the officer and enlisted is illustrated by the enlisted having a deep understanding of the MOS, with the officer possessing a breadth of knowl-

edge, not as deep as the enlisted subject-matter expert (SME) but broader. This notion can be applied from a platoon commander to the battalion commander and all the way to the Joint Chiefs of Staff. The T-shape philosophy becomes sturdy and resilient by the officer developing, empowering, and surrounding

themself by numerous SMEs (Figures 2 and 5). The T-shape philosophy can be applied to any MOS, but since we are are infantrymen, we will use the infantry MOS to further elaborate on the concept.

While Figure 1 could easily be toppled, the reader can see that by the platoon commander (0302) surrounding themselves with SMEs from the riflemen (0311), machine gunner (0331), mortarmen (0341), and missilemen (0352) occupations, a sturdy unit is developed. In Figure 2, the reader can see that the officer has knowledge in

all four specialties, not as deep as the enlisted Marines but with a greater understanding of the other specialties than the individual SME. However, the T-shape philosophy can be skewed by the improper relationship between the officer and the enlisted.

For example, in Figure 3, the officer's depth of knowledge is encroaching on the SMEs. In this scenario, it is the enlisted Marines' duty to remedy the issue. The infantry officer should be continually trying to increase their skills and knowledge in the infantry disciplines, but it is incumbent on the enlisted Marines to have greater knowledge and ability to execute their MOS better than the officer. If an enlisted SME is unable to perform their job better than the officer, the officer's trust in the Marines will decrease, thus increasing centralization, decreasing tempo, and limiting initiative among the enlisted Marines. The enlisted Marines should hope to have an officer who challenges them to increase their proficiency in their MOS while never allowing the officer to be better than them at their discipline.

In Figure 4 (on following page), the officer has a limited depth in the infantry disciplines but more egregious is the lack of width in the disciplines. Figure 4 demonstrates an officer with minimal knowledge in the 0311 and 0331 fields, almost no understanding of the 0341 discipline, and no appreciation for the 0352 MOS. In this scenario, it is the Marine officer's duty to remedy the issue. Increasing their knowledge in the 0311 discipline, though beneficial, is not what the platoon needs to be more lethal. Rather, the officer needs to strive to increase their knowledge in the 0341 and 0352 disciplines. By not possessing a width of knowledge, the officer is unable to harmonize the actions of the disciplines, thus limiting his combined arms, and the ability to impose their will on the enemy.

Figure 5 (on following page) demonstrates the T-shape philosophy for a battalion commander. Figure 5 can represent any battalion commander, not solely an infantry battalion commander. In Figure 5, the battalion commander is not focused on his MOS but rather the optimal harmonization of the warfight-

Figure 2. Optimal T-shape philosophy. *(Figure provided by author.)*

The infantry officer should be continually trying to increase their skills and knowledge in the infantry disciplines, but it is incumbent on the enlisted Marines to have greater knowledge and ability to execute their MOS better than the officer.

Figure 3. T-shape philosophy–enlisted deficient. *(Figure provided by author.)*

ing functions. Similar to the infantry platoon commander, the optimal relationship for the battalion commander is to surround himself with Marines who know their profession better than the commanding officer. As seen in Figure 3, not having SMEs will lead to a poor relationship characterized by a lack of trust and, as seen in Figure 4, not possessing a width of knowledge will lead to a limited ability to harmonize the warfighting functions.

The T-shape philosophy can even be applied above lieutenant colonels to high-ranking general officers. Whereas the infantry second lieutenant is focusing on harmonizing riflemen, machine gunners, mortarmen, and missilemen, and the battalion commander is focused on synchronizing the warfighting functions, the general officer is coordinating diplomacy, information, joint services, and combined ally militaries, economic factors, finances, intelligence, and legality. Thus, even the general officer needs support from the SMEs in driving their decision-making process.

Lastly, Figure 6 (on following page) demonstrates the T-shape philosophy between the SNCO and the officer, once again illustrated using an infantry model. Figure 6 shows the unique and most important role of the SNCO: being as the bridge between the SMEs and the officer. The SNCO should have both the width and depth necessary to be the bridge. Highly important is that the SNCO must possess the skill, knowledge, and ability to mentor up and down the chain of command.

In the book *Leading Up: How to Lead Your Boss So You Both Win*, Michael Useem presents numerous examples of leaders who were and were not able to "lead up." As written by Useem, the leaders who were unable to lead up, at minimum were ineffective and removed from their position, while at worst, their inability to lead up resulted in loss of life.[7] A new officer should arrive at the unit fully understanding our doctrine and the textbook answers for the situations. However, the SNCO should know the Marines' capabilities and limitations greater than the officer, and therefore, must be able to mentor up the chain of command for mission accomplishment.
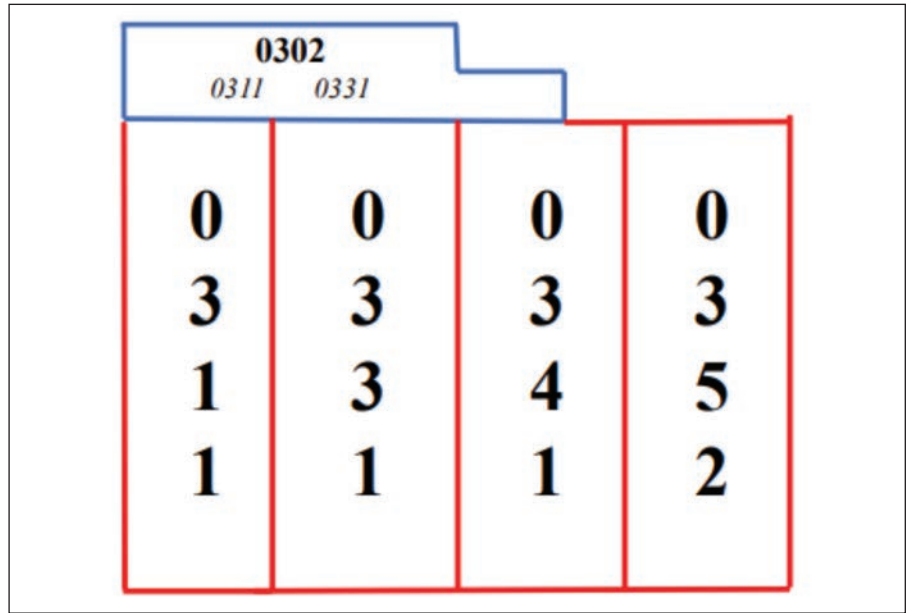
Figure 4. T-shape philosophy–officer deficient. *(Figure provided by author.)*

The relationship between the SNCO and the officer cannot be understated and is similar to that of a marriage in the sense that they must be equally yoked for the benefit of their Marines.

The T-shape philosophy illustrates an optimal relationship amongst enlisted and officers, and provides both the enlisted and officers a guiding path in their pursuit of knowledge and professional development. In the next installment of the series, we will discuss how to develop and maintain the optimal T-shape culture. More specifically, the article will provide recommendations for the platoon-level leadership regarding the relationships for different ranks and billets within the unit.

Notes

1. Gabriel Coeli, *Becoming an Officer of Marines: The Definitive Guide to Marine Corps Officer Candidate School* (Middletown: Pace Publishing, 2014).

2. James MacGregor Burns, *Leadership: The Seminal Book on Power* (New York: Harper Perennial Modern Classics, 2010).
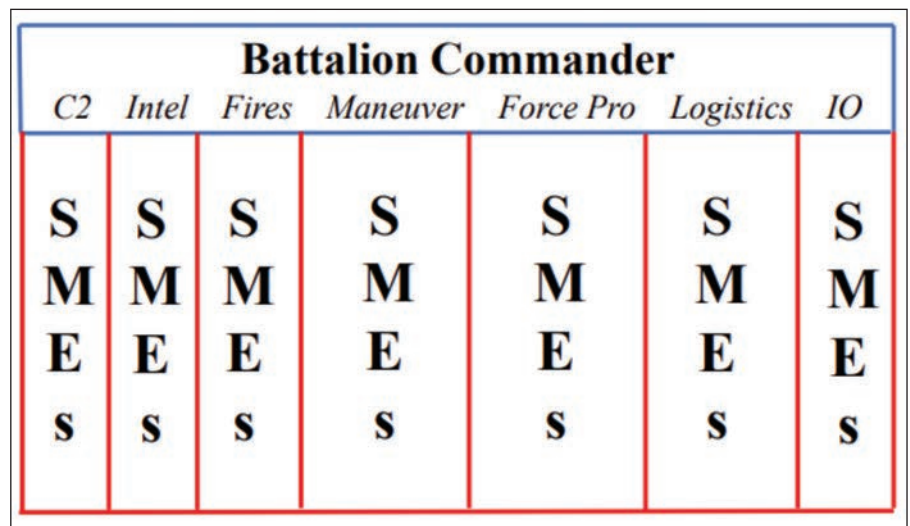
Figure 5. T-shape philosophy–battalion level. *(Figure provided by author.)*
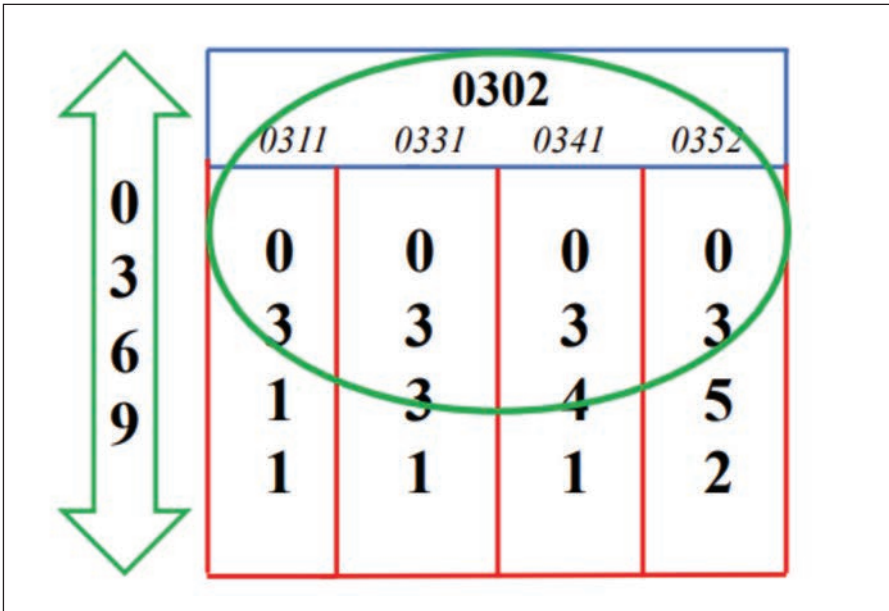
Figure 6. T-shape philosophy–SNCO bridge. *(Figure provided by author.)*

3. Oren Harari, *The Powell Principles: 24 Lessons from Colin Powell Battle-Proven Leader* (New York: McGraw-Hill, 2005).

4. John C. Maxwell, *The 5 Levels of Leadership: Proven Steps to Maximize Your Potential* (New York: Center Street, 1995).

5. *The Powell Principles*.

6. Ian Leslie, *Curious: The Desire to Know and Why Your Future Depends on It* (New York: Basic Books, 2014).

7. Michael Useem, *Leading Up: How to Lead Your Boss so You Both Win* (New York: Three Rivers Press, 2001).

>*Authors' Note: Capt Carter and 1stSgt Ochoa served together as Company Commander and Company First Sergeant at Infantry Training Battalion, School of Infantry-East, where they developed the concepts written in this article through their mutual trust, respect, and experience.*

Dissent

A lecture to the Marine Corps Command and Staff College
by Dr. Richard H. Kohn

>*Dr. Kohn is a Professor Emeritus of History and Peace, War, and Defense at the University of North Carolina at Chapel Hill. He was Chief of Air Force History for the Air Force at the Pentagon, 1981–199l. This article is a revised and updated version of a lecture to the Marine Corps Command and Staff College in May 2022.*

Thanks, LtCol Anthony, for that kind introduction. It's a pleasure and an honor to speak to the College class, and my thanks for this opportunity. I must note special appreciation to your Dean, Dr. Jonathan Phillips, whom I have known and appreciated for nearly 30 years, from his time in the UNC PhD program in history: one of the finest teachers and most honest, careful, and insightful scholars in my experience. And a personal friend whose advice, on professional issues as well as on what sailboat and bicycles to buy—two items of his special expertise.

In discussing dissent, we are not talking about simply disagreeing; we all disagree about many things, and frequently.[1] After all, we are Americans, at least most of you in this audience. Nor is dissent insubordination or disobeying orders, although dissent can lead to such. Dissent is not about defying or disobeying lawful orders.

Where dissent differs from simple disagreement is that dissent implies disagreement with the majority opinion or judgment, with a consensus, or with established authority, or with traditional and commonly accepted institutional norms, or even orders. Fundamentally, dissent is simply thought. Sometimes, with certain people, it can be an attitude. But in your readings and in the common parlance today in civilian society and within the military, both in general and in the Marine Corps in particular, where it has something of a long tradition all the way back to Smedley Butler and Evans Carlson in the 1920s and 1930s, and after, it is accompanied by the voicing of disagreement in private or even publicly—in other words, expressing a contrary opinion. Not remaining silent. And another part of the definition is that dissent implies acting
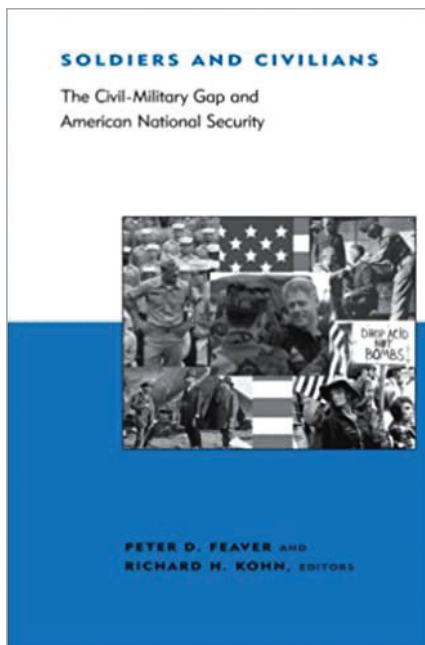
Dr. Kohn is the co-editor with Peter D. Feaver of Soldiers and Civilians: The Civil-Military Gap and American National Security *(BCSIA Studies in International Security) 2d Edition, Cambridge: MIT Press, 2001. ISBN 978-0262561426.*

at the risk of self-interest, personal or professional, or both, and thus that it requires some courage. Risking the personal self-interest of a relationship with a boss, or peers or simply professional self-interest in promotion or reputation. As officers, you know and possess physical courage; dissent is something different, something we might call moral courage. We all know, and are educated to, or to be capable of understanding; right from wrong, and have the training, experience, education, or ability in any given situation to figure out what is a proper course of action, or ought to be, even if one is not aware of all the facts, have all the necessary information, the wider perspectives, and necessities that people at higher levels might have.

Every profession or trade expects dissent. Lawyers, doctors, professors, clergy, business executives, supervisors in factories, carpenters, electricians, social workers, nurses, and the like face, on a regular basis, problems that involve discussion with peers, supervisors, subordinates as to how to accomplish a task or solve a problem. We are a practical, pragmatic, problem-solving people and our culture thrives on differing perspectives and ideas. It is built into our culture. Our politics is infused with dissent. One of our norms—respect for alternative viewpoints—is indispensable, although it seems, unfortunately, to have declined. The country was founded on dissent from British policy, laws, and institutions; our religious traditions from earliest times involved dissenting—splits in established churches and even migration, from Roger Williams leaving Puritan Massachusetts to the Mormons leaving upstate New York and Illinois and settling in the Mountain West—and many of you know that earliest Mormon settlements had their own dissenters and breakaway groups.

Think of countries that do not permit, or do not value, dissent that arises

from freedom of thought and expression. Their governments are autocracies, arbitrary, capable of terrible mistakes—such as Russia has committed in invading Ukraine—and the militaries of such governments are less flexible, more corrupt. Businesses across the world, in all societies, that are top-down and do not encourage independent thinking and open discussion often waste money, choose wrongly, misjudge the market or the popularity or appropriateness of their products, and flounder.

In the armed forces, where lives can be on the line and the country's security or even existence can be at stake, dissent seems to me as important as in any walk of life, simply because of the stakes in military service. It seems to me that dissent is not only a moral and ethical imperative, but an obligation. Think of it at the personal level. If you witness a mistake about to be made, a decision that will lead in your judgment to unnecessary death and destruction, to counterproductive results, to self-defeating consequences, do you not have the obligation to raise questions? To stand by without asking for explanation or clarification, or further discussion, can be something of a dereliction ... not serving the mission, your superior, or the people for whom you are responsible, very well or even perhaps adequately.

On the other side, in command of others, would you not want your people to express their views, give you the benefit of their experience, knowledge, and judgment in the process of deciding a course of action—if not whether to act, how to act, what are the alternatives and the risks. It seems to me that every supervisor needs to encourage subordinates to make their views known in some way or in some venue, to know that they are heard and considered, that the boss is open to ideas and thoughts that might be out of the box or unpopular. That there will be no penalty for disagreeing with the boss. You must be careful not to intimidate your people into silence. At the beginning of his tenure, as the legendary Army Chief of Staff during World War II, George C. Marshall, reputably told his immediate staff that they were not doing their job. The staff was surprised, some even shocked, and they asked for an explanation. Marshall told them that they had been working with him for a week and not one of them had disagreed with him.[2]

At least this is the theory of dissent and leadership. I have made it sound simple, cut and dried, no problem. But we all know that the devil is in the details. The realities, as many of you know and probably have experienced, is that *dissent is always situational*. That is, it depends on a number of factors, and on the circumstances.

> *In the armed forces, where lives can be on the line and the country's security or even existence can be at stake, dissent seems to me as important as in any walk of life, simply because of the stakes in military service.*

First, the situation, the context. Is it at the tactical level, as a junior officer, or higher, at the operational level, or even higher in a geographic combatant command or in Washington or the strategic level? Is it in the field, in combat, in a unit engaged, or at a command post or headquarters, or on a staff, at home or abroad? Is there time to dissent, to discuss? Does it involve allied forces or is it all Americans? If the latter, are other Services involved, or civilians, or local populations and civilians, local leaders or institutions or partners? Is it about a policy or its implementation, say the rules of engagement, established recently or further in the past, by your command, at a close level above you or in Washington far away? Does the dilemma involve a decision or its execution? Is there time to discuss or debate the policy, decision, order, or action? Are lives at stake? Is accomplishing the mission at stake?

In other words, *how important is the issue?* How consequential, and is the officer in a position, because of experience, knowledge, information, and the like, to make that determination accurately? All of this requires judgment and sensitivity, acute observation, and considerable thought.

Additionally, the people involved in a situation are a crucial consideration. One has to gauge the situation, and how often to dissent. With your peers, it seems easier to dissent. To your superiors, more difficult.

And then there is the problem of how to express dissent. Speaking up, in private or within an organization or up the chain of command, but not out to the public or people who will make your views public seems to me more problematic. That is, you can speak privately one on one, or in a small group with people you know and where there has already, through personal knowledge or time together, a bond of respect and trust. Perhaps a contrary view is best offered in private, with carefully crafted language. One has to read not only the boss, but the context, and one has to make clear, always, that you are subordinate, not just in words but also in tone, body language, and understanding of the issue and the person in charge.

When I worked in the Pentagon in the 1980s, there was a saying, "that it is better to ask forgiveness than permission." Think about that. Like all aphorisms, it can be untrue or even dangerous. My father, a canny Illinois lawyer with a likeness of Abraham Lincoln on his office wall, loved aphorisms. One he often expressed was in my judgment wrong: "You're never sorry for what you don't say." Well, I disagree with that, particularly on the subject of dissent, as I will explain in a moment. On another aphorism, he was dead right: "Don't be so open-minded that your brains fall out." The points are these: what counts are the situation, the circumstances, the importance of the problem, the people

one is trying to reach, to engage, to influence, and more.

But if dissent is a moral and a professional obligation, one with personal and professional risks, in a discussion with important consequences, and an officer who disagrees and remains silent: has he or she fulfilled the duty to his or her subordinates and the loyalty to superiors? It is a ticklish question, an important question, but also one that should not be paralyzing either in the abstract, as a matter of theory, or particularly troubling in the everyday carrying out of your duties. It is simply a part of your profession, as it is with all of the professions, with life in general. When to speak up, when to remain silent. *Do not make a big deal of it, or think about it all the time, making it a defining element of your officer-ship and relationships with your contemporaries*

ing with Roosevelt and with Congress, the general admitted after the war that he always saved voicing his dissents for the most meaningful, important, consequential problems or issues, and let the unimportant pass without offering contrary views, lest he forfeit his credibility or influence with these politicians on matters he considered crucial. "I never haggled with the President," Marshall remembered. "I swallowed the little things so that I could go to bat on the big ones. I never handled a matter apologetically and I was never contentious."[4]

A good example of the *necessity for silence* occurred at an Army Air Forces base in North Africa in 1943. Years ago in discussion with two retired generals, both four stars, the mission to take out the Axis oil refineries at Ploesti in Rumania came up. Then Col Jacob Smart,

dissent; to do so, in retrospect, might have unhinged his unit.

I would be particularly careful not to confuse dissent with disobedience and even insubordination, at the various levels of combat and command, as in the reading by Andrew Milburn. He cites personal instances when he disobeyed or violated orders. But every example is from the tactical or operational level, the example of the Prussian officer and king. Milburn avoids the strategic level and above, as when, in an essay over a decade ago, he cited Douglas MacArthur in Korea as an example to be followed.[5] This was and is nonsense; MacArthur was guilty of insubordination and disobedience at the policy, strategy, and presidential levels. The necessity for civilian control of the military, so pervasive in the U.S. Constitution and so foundational to the American government, admits of no disobedience. Officers can dissent in discussions with civilian superiors, but in private, speaking up but not out (i.e. to the press or the public), and even in testimony to Congress, senior officers must be extraordinarily careful in discussing their advice to the most senior civilian officials.

As the field officer, and throughout the military in many and perhaps most situations at the tactical and operational level of war, there is the expectation that officers have the discretion to adjust their orders and their decisions, if necessary, to implement the commander's intent. The Armed Services seem in the last generation to try to locate decisions at the lowest level where commanders on the ground are likely to have the best knowledge to judge what needs to be done to accomplish that intent. Officers must navigate uncertainty and risk, not just in battle, staff work, or in deciding when it is imperative to dissent, to speak up. When it comes down to it, moral courage and physical courage come out of the same wellspring of character and judgment.

> **[Gen Marshall] admitted after the war that he always saved voicing his dissents for the most meaningful, important, consequential problems or issues, and let the unimportant pass ...**

---

and superiors. It is just a natural part of officer-ship in a professional military service. As one retired four-star admiral said to me recently, "All of us carry out orders we disagree with, occasionally and sometimes often."[3]

George C. Marshall was particularly candid about the necessity for choice. He established an independent and candid relationship with Franklin Roosevelt when, newly promoted and appointed Assistant Chief of Staff of the Army in the late 1930s, in a meeting the President made his own views clear and went around the room asking those present if they agreed. All did until Marshall, who told Roosevelt that he most definitely did not agree and why. People there told Marshall his career was over, but Roosevelt respected Marshall's bravery and honesty, and in 1939 appointed him Chief of Staff over several other higher-ranking people. And for the next six years, when deal-

a member of the chief of Army Air Forces colonels group at Headquarters in the Pentagon, said he thought up the idea of a low-level bombing mission to avoid the fighters and flak. Hap Arnold, the Army Air Forces chief, accepted the risk and told Smart that since he came up with the idea, he should go over to North Africa and sell it to the crews that would have to fly it. Leon Johnson, the other general, then a colonel and group commander, told Smart and me that he knew the attackers would be shot to pieces and the mission likely would fail—and it did—and Johnson won the Medal of Honor for his bravery and leadership. I asked him why, if he thought it would fail, why did he not refuse to fly the mission or object to it? He was dumbfounded. In the middle of World War II, against a murderous enemy in an existential world war, it never occurred to him to refuse the mission. As far as I know, he did not

One other example. There may be times when orders can be disobeyed and perhaps should be. On a trip to Vietnam some ten years ago, the group I was with visited tunnels used by the Viet Cong near a town northeast of Saigon. One

member of our group told us that, as an Air Force major near the end of the war, he had been a forward air controller marking enemy targets on the ground. When an order came through to vector an attack on a certain village because a South Vietnamese brigade was taking fire from it, he refused—twice. He told his superiors that he had flown over it many times, never taking fire, that if the South Vietnamese brigade was being fired upon, it should assault and take the town, not level it and kill all its innocent civilians. The major was accused of insubordination, taken off flying duty, and hauled before the four-star commander of U.S. air forces in Vietnam. His superiors presented the situation to the four-star. Legal orders; clear situation; twice ordered, threatened, consequences made clear. At the hearing, the major explained why he refused the orders to mark the town for destruction. Gen John Vogt, the commander—a distinguished officer, a fighter ace from World War II—then cleared the room and asked the major again, what happened and why. Same story. Vogt pondered, then told the major to return to his unit, that he would be put back on flying duty, and the incident was closed.

Now another commander might have thrown the book at the major. The man had made a moral and professional decision not to kill in his mind innocent people because the South Vietnamese brigade commander did not want to risk his own casualties in a ground assault. You make up your own minds. Was this moral courage? The right choice?

Command at any level is not a popularity contest, even if officer evaluations are being done with 360-degree inputs. Situations are often unclear, information lacking, choices difficult. Just as command is filled with uncertainty, so too is the need and appropriateness for dissent. Officers are often forced to "lead from the middle," that is to help their superiors get through ambivalent choices, advocate and argue for a course of action that runs against the thinking of a group. Or, as is more often the case, take a decision or order that is disagreeable or that even appears wrong to one's subordinates, and make the best

of it. As one former Marine officer said a few years ago, when at a conference on wars of choice, when asked how one leads people in battle when they think the war is wrong and they oppose it: he answered that he always did everything in his power to accomplish his mission with the least harm to the people under his command and to the Iraqis involved in the action.

There are times when one has to speak truth to power, but as Marshall understood, you cannot do it all the time or you become a nag and a problem. As you rise in rank and responsibility, you will learn the instinct to assess the audience and the situation. Do not take counsel of your fears any more than you do in combat situations. One

Marines at every level must be even more willing to dissent ...

Chairman of the Joint Chiefs of Staff who had to deal with a most difficult, frequently abusive, dismissive, and yet indecisive Secretary of Defense, told me that he always wanted the Secretary to be glad when he, the chairman, came into the room, knowing that he needed to be listened to. That it was essential to tell the Secretary what he needed to know even if he did not want to hear it. Marshall said essentially the same, in dealing with FDR: pick spots, save dissent, or unpleasant truth for what really mattered.

Let me close with one more thought. The Marine Corps is going through a set of dramatic changes as we speak. The law of averages tells me that some of them, hopefully, a tiny, tiny few, may be wrong or need adjustment or modification or whatever. This means that Marines at every level must be even more willing to dissent than in "normal" times, lest a mistake from the top—or near it—cause difficulties, even inefficiencies or deaths, that otherwise could be avoided. You who are not Marines in this audience should also take notice, and be prepared to dissent

equally. I know the other Services face great challenges brought on by technology—to name only a few, cyber and drones, artificial intelligence, uninhabited ships and planes and vehicles—and a rapidly changing, and threatening, international situation. Not to speak of funding limitations, of changes in our alliances, and in leadership, all of which reverberate downrange. Be prepared for such; be attuned to the contributions you can make not by going along to get along, but by contributing your experience and expertise, reading widely and thinking critically, and dissenting when it is called for, and it can be helpful. Your Service and the country will be the better for it.

Notes

1. As a verb, the *Oxford English Dictionary* defines "dissent" as "to differ in sentiment ... To withhold assent or consent from a proposal, etc.; not to assent; to disagree with or object to an action ... To think differently." *The Compact Edition of the Oxford English Dictionary*, s.v. "Dissent."

2. Marshall and his staff at the beginning of his tenure.

3. Conversation in 2021, repeated in the fall of 2022 in Durham, NC. The Admiral had been a COCOM commander and after retirement, a senior civilian reporting directly to the President.

4. Quoted in Forrest C. Pogue, *Goerge C. Marshall: Ordeal and Hope, 1939–1942* (New York: The Viking Press, 1965); and Forrest C. Pogue, *George C. Marshall: Education of a General* (New York: The Viking Press, 1963).

5. Andrew Milburn, "When Not to Obey Orders," *War on the Rocks*, July 8, 2019, https://warontherocks.com/2019/07/when-not-to-obey-orders; Thomas E. Ricks, "Richard Kohn Fires a Warning Flare about a Joint Forces Quarterly Article," *FP*, September 29, 2010, https://foreignpolicy.com/2010/09/29/richard-kohn-fires-a-warning-flare-about-a-joint-force-quarterly-article; Andrew R. Milburn, "Breaking Ranks: Dissent and the Military Professional," *Joint Force Quarterly* 59 (4th Quarter 2010).

The CLB-X Construct for MRF-D

Restructuring Combat Logistics Battalion 5

by the Company Commanders & Staff of Combat Logistics Battalion 5

Prior to the Marine Rotation Force–Darwin (MRF-D) 22.2 deployment, Combat Logistics Battalion 5's (CLB-5) structure, like most other "single digit" CLBs in the Marine Corps, consisted of a motor transport company and a headquarters and service (H&S) company. Through task analysis and executing the Commandant's guidance from *Force Design 2030*, CLB-5 restructured in November 2021; the new structure contained an H&S company, two combat logistics companies (CLC), and one general support (GS) company. This structure, composited from numerous standalone battalions across the 1st MLG, was task organized to fulfill the mission requirements of MRF-D and drive action on the 2030 future force design. Through restructure, experimentation, and interoperability during the MRF-D 22.2 deployment, CLB-5 validated the four company construct and recommend its continued usage and analysis for ongoing development.

Force Design 2030 Structure

As published in *Force Design 2030* by the Commandant, he is "not confident that we have identified the additional structure required to provide the tactical maneuver and logistical sustainment needed to execute DMO, LOCE, and EABO in contested littoral environments against our pacing threat."[1] Further guidance in *Force Design 2030* relating to logistical sustainment in a distributed environment provides design fundamentals, which specifically addresses reducing logistics demand; and expanding the range of mutual support across all tactical echelons.[2]

The updated CLB structure provides two separate, decentralized CLCs; both are able to provide combat support and limited combat service support across the six functions of logistics to the supported unit. Each CLC would have the habitual ability to provide organic supply services, maintenance services, transportation, general engineering, Role I health services, and limited general services. As described in *Force*

> ### *... CLB-5 validated the four company construct ...*

Design 2030, each CLC would have the ability to be task organized based on operational requirements. GS Company provides the supported unit with all levels of intermediate support and a Role II medical capability. This includes intermediate supply services along with transportation, engineering, ordnance, communications maintenance, and intermediate medical services. H&S Company continues to provide the organic structure for battalion leadership and staff functions.

MRF-D 22.2 LCE Structure Overview and Differences

The two CLCs would be formatted and employed in a similar fashion with small differences. Each CLC in CLB-5 included a headquarters (HQ) section, distribution platoon, engineer platoon, landing support section, and communications section. The first no-

table contrast resides in each company HQ section. CLC-A's commander was a logistics officer with a combat engineer officer as the company executive officer. CLC-B's HQ Section was the inverse; a combat engineer officer was the commander and a logistics officer was the executive officer. No notable differences in command and control of either CLC were identified in regard to the background or MOS of the respective command team members. Each CLC was able to adequately employ its company in line with its task organization capabilities. Additional members of each CLC HQ section included a first sergeant, operations chief, and two line corpsmen. The line corpsmen would be task organized within the company hierarchy based on each specific mission tasked to the CLC.

Irregular additions of each CLC HQ based on tasking and the mission included two motor transport mechanics and one ground electronics transmission systems maintainer. All three were located under GS company but attached to a CLC during operations as required—creating a habitual relationship between the CLCs and the attachments. In a similar vein, and due to lessons learned from CLB-5's predeployment combat readiness evaluation, the CLB-5 supply operations section was consolidated out of the CLCs. Contrary again to the CLB-X structure, the organic supply and distribution management operations Marines only attached to each CLC if the task or mission required their unique services. Having the distribution management operations Marines under the GS Company allowed for

more effective C2 from the GS company commander—providing better support to the whole MAGTF. Lastly, the distribution of motor transportation Marines, engineers, and landing support Marines differed from CLB-X. CLB-5 increased the number of motor transport operators from CLB-X's 26 to 75 3531s, landing support specialists decreased from CLB-X's 33 to 9 0481s, and the combat engineers increased from CLB-X's 8 to CLB-5's 27. Based on CLB-5's experience and assessment, increasing the number of motor transport operators to more closely align to 75 in the future CLB construct is recommended. Additionally, approximately 10 landing support Marines are sufficient instead of the 33 that the future CLB calls for. Finally, we recommend that the combat engineer numbers should more closely align with the number we brought (27) than the 8 that the future CLB calls for. These recommendations are based on our task analysis allowing us to effectively support the MRF-D MAGTF.

GS company differences include the GS company commander as a logistics captain vice a combat engineer major, lack of a contracting officer, no boat repair section, and change of the composition of Role II. The MRF-D Role II structure was bolstered with the doctrinal field resuscitative surgical suite, shock trauma platoon, a doctorate of dental surgery team, and an occupational stress control and readiness team. In addition to increasing our overall strength (150 vice 132), this also provides a more robust capability than could be expected from the *Force Design 2030* model.

After the completion of Exercise STEEL KNIGHT 22, the battalion conducted an internal restructuring that pulled key capabilities into GS Company as well as divested other assets and placed them into the CLCs and H&S. The food service section was redistributed to H&S company as they only provided internal (CLB-5 only) food service support during MRF-D 22.2. Finally, GS Company absorbed the responsibility of the Marine Corps Community Services exchange Marines; these Marines ran three Marine Corps exchange locations on two different Australian Defence Force (ADF) bases and provided field exchange services to the major exercises. Traditionally, these Marines fall under the CE, but we were able to provide better C2, and it is a function of logistics that the LCE owes to the MAGTF.

The CLB-X H&S structure varied slightly from the MRF-D 22.2 LCE H&S structure but with no major notable differences. H&S provided an organic structure for battalion leadership and staff functions. Each CLC held a communications section, but when not required for company operations, they would consolidate under the S-6 to provide training and maintain MOS proficiency.
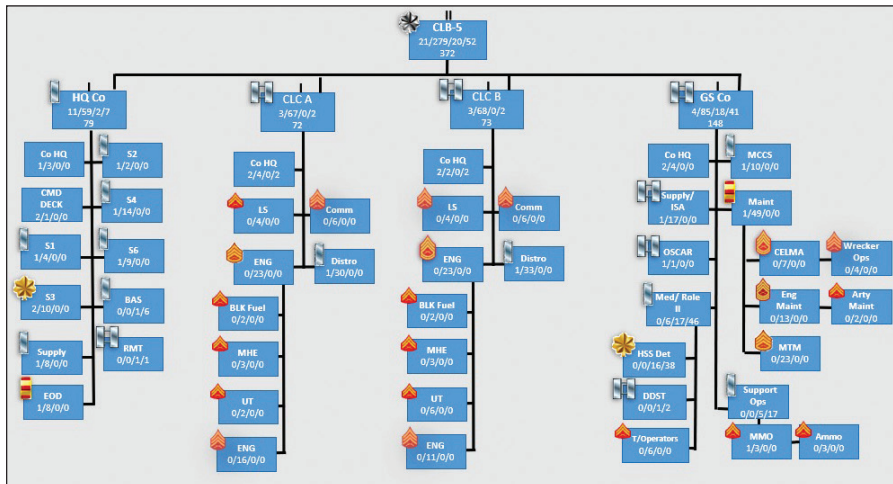
CLB-5's MRF-D 22.2 Table of Organization. (Figure provided by author.)

Experimentation

Through each major exercise, CLB-5 conducted a series of experiments to drive progress in future logistics and engineering operations. Among those conducted were additive manufacturing, sourcing repair parts from the local community, irregular employment of the Light Water Purification System (LWPS), utilization of irregular connectors, Role II employment, and irregular logistics support to the MAGTF.

Additive manufacturing was available and conducted during the deployment but through nonconventional means. The LCE integrated with the ADF's 1st Combat Service Support Battalion (CSSB) to manufacture repair parts and items that would otherwise be easy to procure. Items like plastic plugs for waterbulls and vehicle handles were able to be created and employed with the support of 1st CSSB. This is a capability that should continue to be explored and expanded upon to ultimately build a repository of approved additive items that can be printed on demand.

Twentyfirst-century foraging is not only for sourcing class I from the local community but also class IX parts as well. The MRF-D LCE sourced and procured class IX repair parts multiple times from the local community. Hydraulic cylinders, fuel lines, fuel filters, oil filters, power hoses, pneumatic brake valves, and multiple high-pressure hydraulic lines are examples of items that were able to be sourced and shortened the lead time of repair by months. Sourcing this equipment from the local community cut down the delivery time tenfold and allowed for the high operational tempo to continue during operations and exercises across the Australian continent. Even if these major repair parts were not located on the Australian continent, the civilian companies' supply lines would often beat our internal sources of supply, including when it was coming from CONUS. On multiple occasions, procurement of these local parts played a paramount role in maintaining readiness in low-density equipment required for large-scale operations.

The production and sustainment of potable water have been critical in past conflicts and will remain a critical sustainment requirement in the future. During all five MRF-D large-scale exercises, the LWPS was used to purify water from local sources. The MRF-D LCE employed the LWPS in a mobile fashion to increase its survivability. The LWPS was transported and employed out of the back of medium and heavy-lift tactical trucks while fixed to a flat rack on every occasion, bringing a level of mobility to the asset. This setup al-lowed the LWPS to move into a water production site, produce the required potable water, and then retrograde back to a hide site. The MRF-D LCE also worked on slimming the LWPS down even further. The LCE's water purification specialists were able to break the LWPS in half to create a smaller capability that could fit on two utility task vehicles and be loaded on MV-22s. This manifested itself during an engagement on Timor Leste, where CLB-5 provided a demonstration of mobile loading the LWPS/utility task vehicle combination on an MV-22, flying it to Timor Leste, disembarking it, and purifying water for senior members of the Timor Leste Armed Forces and government officials. Actions like this demonstrate how the Marine Corps can provide a critical capability in difficult-to-reach places and thus assure our allies and partners that we could support them if called upon. Additional irregular employment occurred when CLB-5 conducted aerial delivery of the LWPS out of an MV-22 into the Australian training area. An in-depth functions

> *The production and sustainment of potable water … will remain a critical sustainment requirement in the future.*

check was performed to provide proof of concept that the gear could sustain the drop and still be employed. Finally, members of CLB-5 conducted a proof of concept by purifying water while aboard a small flat-bottom craft to expand the ability, reach, and employment of water purification methods, with a focus on low signature operations in the littorals. Working with the CE, the LCE first contracted the use of a shallow-draft vessel through a local company. The LCE water purification specialists then fitted an LWPS on the vessel and operated near shore in Darwin Harbor. Marines were able to successfully purify water using the LWPS into a 3K bladder that was semi-submerged in the water and stayed just above the surface. Purified water was then pumped from the

submerged bladder to a waiting container on shore—simulating the placement of a cache site along the shoreline. This proof of concept furthers efforts to increase survivability, expand signature management, and become a hard target in a contested environment. Establishing cache sites that are sourced from the operating environment in a dynamic location allows commanders flexibility and minimizes the quantities of supplies needed on hand to support.

Non-standard connectors were used on multiple occasions as an alternative to U.S. service connectors. CLB-5 contracted private companies for the movement of several pieces of LCE rolling stock and engineer equipment on commercial barges and Royal Australian Naval assets. These events demonstrated the LCE's ability to move and stage equipment in the littorals when traditional military assets are not available. From this, we learned we need to have a strong understanding of the capabilities and limitations of our joint and combined capabilities in the area. As well, we need to learn and create relationships with civilian and local community capabilities. We need our forces to get more comfortable operating/moving our assets on local community capabilities due to the lack of assets currently in our inventory.

CLB-5's Role II created three different capabilities: a light, medium, and heavy package. Through mission analysis, a package was selected during each exercise based on requirements and logistical restraints. Each sequential package provided a more robust medical capability and thus heavier logistics footprint. This capability created a forward resuscitative surgical suite that was pushed forward with a smaller footprint and signature but still able to preserve, sustain, and save life.

The capstone experimentation for the LCE was during Exercise KOOL-ENDONG 22. During this exercise, the LCE was a battlespace owner and was outfitted with C2 enablers and MAGTF attachments to fulfill this responsibility. The intermediate objective was to determine if the LCE's C2 node could be augmented to the extent required to approximate the capability and capacity of the GCE combat operations center (COC). The thought was, increasing the LCE's C2 capability would have a positive impact on the resiliency and flexibility of MAGTF C2. Put another way, the ultimate objective was to determine if we could leverage organic MAGTF personnel and equipment in a new way to increase the number of C2 nodes that can sense and make sense of the battlefield and C2 forces on that battlefield. Accordingly, the LCE established its battalion COC at RAAF Base Curtin in Western Australia, approximately 550 miles from the MRF-D MAGTF C2 node. The LCE received several C2 enablers and attached a reinforced rifle company. The LCE was also assigned an expansive area of operations (AO) that stretched West to the Port Facility in Broom and included the Yampi Sound Training area well North of RAAF Base Curtain. Within this AO, the LCE—in addition to its traditional responsibilities—was tasked with providing specified C2 functions in support of its attached rifle company, during an air assault operation. The LCE was also tasked with battle-tracking all additional MAGTF assets operating within its AO. This initial experiment was successful in that the LCE demonstrated an ability, with the appropriate augmentation, to battle track all MAGTF operations within its AO. During execution, the MAGTF commander was able to leverage the LCE C2 node to track and communicate with each element of the MAGTF operating in Western Australia. This experiment also revealed that, in order to fully realize the goal of increasing the number of equally capable C2 nodes within the MAGTF, additional training and augmentation would be needed.

Interoperability/Assurance to Allies and Partners

Two of the three MARFORPAC lines of effort dealt with increasing

interoperability objectives with ADF counterparts and building relationships with allies and partners in the region. Throughout MRF-D 22.2, the LCE was key in furthering these objectives through partnerships in training, working alongside our ADF counterparts, and conducting engagements both in Australia and with neighboring countries. CLB-5's structure created flexibility in allowing the battalion to support multiple requirements at once. Having already tasked-organized CLCs allowed the battalion to task a CLC with a requirement and if needed the CLC could create a combat logistics detachment. Among the ADF units we conducted this training with were 1st CSSB, 1st Combat Engineer Regiment (1st CER), and Joint Logistics Unit-North (JLU-N). During every major exercise, integration in support, convoys, training, and operations were aggressively sought after. With 1st CSSB, the LCE provided a liaison officer (H&S commander) to conduct weekly synchs as continuity to the battalion. This was key to maintaining situational awareness for every exercise and was vital to the interoperability priority. 1st CSSB and the LCE conducted combined class I and III support to both U.S. and ADF forces during tactical-level training. Along with mutual logistics support across the two battalions, the LCE provided liaison officers to the operations sections of 1st CSSB to be part of their COC, and 1st CSSB reciprocated with liaisons to the LCE COC.

With 1st CER, the LCE conducted joint humanitarian assistance/disaster relief training as part of Exercise CROCODILE RESPONSE 22, which also included participation from Timor Leste. Both battalions provided expeditionary water purification capabilities in support of this exercise and conducted training on each asset. Additional combined training included engineers from the LCE attaching to 1st CER during Exercise GOANNA CANTER 22 where route clearance and demolitions training was conducted. Marines from the LCE also conducted bridge building, small boat operations, and utilities training together in the various combined exercises.

Marines and sailors from the MRF-D LCE conducted a mobile training team curriculum in support of Exercise HARI'I HAMUTUK 22 to foster relationships with the Timor Leste Defense Force. The classes conducted over the course of this exercise included: force fitness—teaching the Marine Corps Force Fitness Program, small engine repair (instructing the fundamentals of repairing and maintaining small engines), combat engineering (developing obstacle construction and establishing a defense in depth), and combat lifesaving (the basics of combat trauma and lifesaving operations). In total, this 35-day event occurred with members of the Timor Leste military, ADF, New Zealand Defense Forces, and Japanese Ground Self-Defense Forces.

Lastly, the LCE intermediate supply performed various integration operations with our counterparts in the ADF JLU-N. A liaison officer worked out of JLU-N with access to the ADF computer network, along with read-only access to the ADF combat service support network. This allowed the LCE to receive class IX support from the entire Joint Logistics Command (JLC) network. The LCE Intermediate Supply conducted data mining of "like" items and determined that 3 percent of MRF-D 23.1 part requisitions could be supported by the JLC system. Of these supportable requisitions, 70 percent resided in the JLU-E warehouse. With this data, the LCE coordinated with JLC to emplace distribution liaison cell expeditors in the JLU-E warehouse. These initiatives were passed on to the Ground Equipment Staging Platoon and are currently ongoing. This is interoperability occurring at the service level; having touchpoints between the ADF's JLC and Marine Corps Logistics Command would take this to the next level of integration.

The additional capability that was attached to CLB-5 with a future design structure allowed the battalion to integrate more closely with elements of the ADF and partners in the region; the addition of engineers, aerial delivery, landing support, and a robust medical capability meant that the LCE was able to interface directly with several ADF units with like-capability to include 1st CSSB, 1st CER, and 1st Close Health Battalion. Overall, this structure allowed the battalion to provide a scalable support capability to the MAGTF while positioning the battalion alongside the ADF and regional partners, always messaging a combined effort to our pacing threats.

Conclusion

In summation, the CLCs were tasked organized to independently operate and provide combat support and combat service support to disaggregated elements of the MAGTF. This structure allowed the battalion to C2 disaggregated logistics across the range of military operations. Through mission analysis, each mission provided a slightly different task organization and table of equipment to deploy with, but on each occasion, the capability was present internal to the battalion. GS company was able to provide all levels of intermediate support across the MAGTF, including a light, medium, and heavy Role II package. The effectiveness of the CLCs, GS company, and the battalion is indicative of the 2030 CLB's success and is the recommendation of the authors to pursue the baseline construct in every CLB aggressively even though each CLB might be marginally different due to mission requirements/task analysis.

Notes

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

2. Gen David H. Berger, *Force Design Report 2030 Annual Update 2022* (Washington DC: 2022).

USMC

MARINE CORPS ASSOCIATION
EST 1913

2023 LtCol Earl "Pete" Ellis Essay Contest

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

Logistics is identified as the pacing function for Force Design 2030 and Expeditionary Advanced Base Operations. The "tyranny of distance" and challenges to operational reach present limitations for the sustainment of the future force. What new capabilities, innovative methods, or novel organizations are required to extend operational reach and overcome the challenges of sustaining Marines as Stand-In Forces?

Contest runs 1 July to 31 October

AWARDS

1st Place	2nd Place	Two Honorable Mentions
$2,500 and a plaque/trophy	$1,000 and a plaque/trophy	$500 each and a plaque/trophy

Contest is open to all Marines and Friends of the Corps.

Participants associated with the *Gazette* editorial advisory panel may not compete.

Machine Learning to Enhance Force Preservation

AI supporting leadership

by Capt Drew Borinstein

>*Capt Borinstein is an Intelligence Officer currently assigned to Company B, Marine Cryptologic Support Battalion at Fort Meade, MD. He holds a Master of Science in Data Analytics from the Georgia Institute of Technology.*

Although generally not top of mind when considering the Marine Corps' most pressing future warfighting challenges, mental fitness, and suicide prevention unquestionably remain a chief priority across the DOD. Today, suicide rates among service members are among the highest levels in their recorded history.[1]

In response to increasing suicide rates, the Marine Corps has resorted to requiring commanders to become more involved in Marines' lives and applying the risk management process to those subjectively deemed at-risk through the Force Preservation Council (FPC) program. The FPC order directs commanders to "use engaged leadership and risk management guidance ... to recognize and intervene early when stressors and potentially risky behaviors first develop in Service members in order to interrupt the chain of events that can lead to an adverse outcome."[2] Unfortunately, the Defense Suicide Prevention Office's 2020 Annual Suicide Report shows that the Marine Corps' suicide rate has increased on average since at least 2014, with suicide rates in 2020 being the highest ever recorded in the wake of the Coronavirus Disease 2019 Pandemic.[3] This trend suggests that the Marine Corps will continue to battle with and for the mental health of its Marines well into the future, which poses significant challenges to the future force's ability to remain ready to respond to our Nation's calling.

Despite the Marine Corps' good intentions, the FPC program in its initial form was riddled with flaws. One of its primary problems occurred when losing and gaining commands often failed to exchange information on Marines' past and potential struggles. When they did exchange this information, it was often through informal, non-secure means. Although the Marine Corps FPC Order (*MCO 1500.60*) required losing commands to "ensure the gaining command is provided the necessary and relevant force preservation information," there were no mechanisms by which to hold units accountable for failing to comply with policy.[4] Such a lack of standardization and security meant that commanders rarely received all the information needed to contextualize Marines' behaviors and issues and that Marines' personal data was often put at risk through the unnecessary use of PowerPoints and other informal dissemination mechanisms.
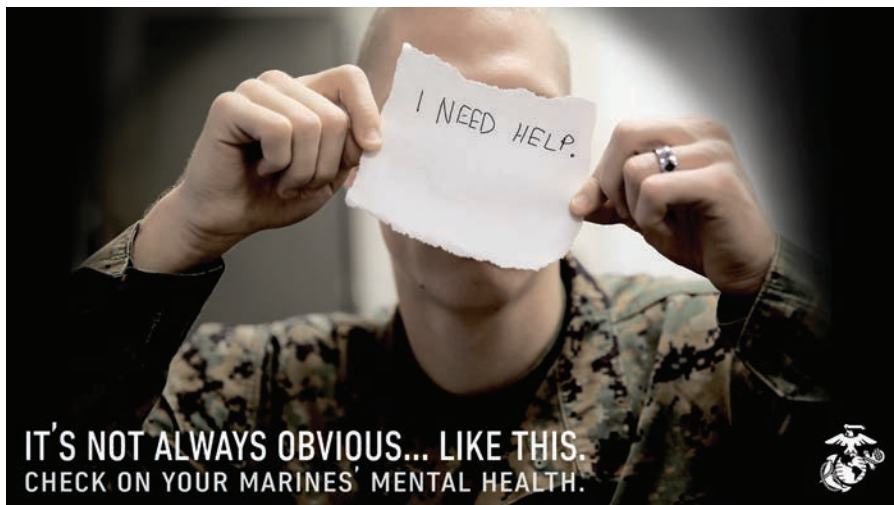
Commanders should use every tool at their disposal, including artificial intelligence/machine learning, to know their Marines. **(Photo by LCpl Joanna Stauss.)**

In August 2020, the Marine Corps sought to resolve these issues by adopting the Command Individual Risk and Resiliency Assessment System (CIRRAS), which is essentially a standardized database for FPC data.[5] Although certainly an improvement upon the legacy FPC process, CIRRAS will sell the Marine Corps short if it remains only a tool for data storage. Indeed, CIRRAS presents a unique opportunity for the Marine Corps to experiment with using artificial intelligence—and more specifically machine learning—to combat the threat of suicide within its ranks. The Marine Corps should examine the efficacy of using the CIRRAS database in conjunction with supervised classification machine-learning algorithms to help commanders better identify Marines who are most at risk for self-harm.

What is CIRRAS?

CIRRAS is a secure application developed by Marine Corps Systems Command that standardizes the FPC program across the Marine Corps, giving commanders the ability to monitor their Marines' holistic health and combat readiness.[6] It allows commanders and their representatives to input and track the various stressors that Marines regularly experience, including information regarding mental health, relationship disputes, alcohol- and drug-related offenses, and other significant issues that could impact operational readiness.[7] Though it offers a new, more secure way of storing and transferring sensitive data about Marines, CIRRAS does not make any fundamental changes to the FPC program.

Although CIRRAS offers the means to standardize and secure Marines' holistic health information, it does not seem to offer any additional analytical advantage to commanders. In other words, CIRRAS improves commanders' abilities to securely communicate raw data, but it does not use that data to provide valuable insights to make better decisions.

The primary purpose of collecting standardized data in any capacity is to detect trends and patterns to better inform decision making. Human minds are very good at detecting simple, linear trends in two or three dimensions, but are very limited in their capacity to detect complex, non-linear trends, which can be common in multidimensional datasets such as those involving personal health information.

Machine Learning

Machine-learning algorithms happen to be especially adept at identifying complex, non-linear trends in vast amounts of data. They can take datasets on the scale of thousands of dimensions, identify their most important factors, and detect patterns that no human brain could hope to understand or recognize. These algorithms are regularly used in the private sector to determine which Netflix shows would best suit you, which songs you will most likely enjoy on Spotify, and which products you should next consider purchasing on Amazon.

At its most basic level, machine learning is using past data and consequent outcomes to identify complex patterns, generate models from those patterns, and then combine those models with future input data to quickly deliver predictions of future outputs. The machine-learning algorithms used by tech companies take the data you and others give them, such as browsing activity and personal information, to detect patterns and build statistical models that can quickly calculate high-probability outcomes.

By centralizing and standardizing FPC data in a single database, the Marine Corps has created a venue through which it could use machine-learning algorithms to identify under-the-surface trends common among Marines who have expressed suicidal or other life-threatening tendencies. If provided with the right types of data, these algorithms could prove useful in providing commanders indications of Marines who are more likely to engage in self-threatening behavior.

Among the many different types of machine-learning algorithms, the most useful for the purposes of predicting future behavior are classification prediction algorithms. These types of algorithms are trained to predict specific categorical outcomes (green/yellow/red), and not numerical ones (1, 2, 3). Among the most popular types of classification prediction algorithms are decision trees, random forests, k-nearest neighbor classifiers, logistic regression, and support vector machines. The Marine Corps should experiment with these types of algorithms to determine whether any of them can effectively predict Marine behavior.

Issues and Requirements

Using machine learning to make impactful decisions in Marines' lives obviously presents several potential problems. The data science and tech worlds are alight with debate over the moral and ethical use of machine-learning algorithms with others' personal information. Moreover, no model or algorithm is perfect and, if not properly understood, can result in unfounded dependence on "the numbers" and re-

move commanders' responsibility to use their judgment.

First, one should note that no model is infallible. Models are abstract representations of reality and are optimized to represent historical data. They are susceptible to developing a narrow focus and will always produce some measure of error. No model or algorithm can perfectly describe previous forms of reality nor perfectly predict future ones.

Because of this, commanders using mathematical models to make decisions *must* remember that such models are tools designed to supplement decision making and should never replace well-informed human leadership and judgment. It seems too often that we settle for reducing complicated situations into PowerPoint slides with boxes colored green, yellow, or red. No Marine's personal situation can be adequately captured by a simple color, and we should be wary of similar behavior when using other models to predict which Marines are most susceptible to suicidal behavior. Instead, commanders should use such tools to identify who they should be spending more time observing.

All prediction algorithms produce false positives and false negatives. The Marine Corps must avoid a zero-tolerance approach when it comes to using machine learning and artificial intelligence of all types. Tools that use such technologies are designed to inform better and faster decisions but are never intended to generate decisions in lieu of humans.

Garbage in, garbage out is a common saying among data scientists. Because machine-learning algorithms live on the data that they are given, poor data quality can easily result in models which fail to adequately reflect reality. Leaders responsible for inputting data into CIRRAS must do so properly. The notion of *no data in* is also worthy of consideration. Given that prediction of at-risk Marines is the ultimate goal, a lack of data on risk factors means some Marines could slip through the cracks.

Data used in machine learning must also be computable, meaning that it should be standard throughout the dataset (think multiple choice responses or numerical data with common formatting). Supervised classification learning algorithms work by identifying which characteristics were most prevalent among Marines who expressed self-harming inclinations, generating a model by appropriately weighing each of those characteristics based on their correlation with the outcome, and then applying that model to other Marines as needed. To make this work, however, these algorithms require standard data values, especially for the metric in question, which in this instance is whether a Marine has demonstrated a predisposition for self-harm. Machine-learning algorithms cannot easily interpret free-response data without additional processing, which often involves manual interaction. CIRRAS must provide standard datasets to generate effective models.

Not all models work well and there is no guarantee that these models will provide any value at all. It is very possible that none of the models listed would be able to accurately predict which Marines are most susceptible to self-harm, and in doing so could add unnecessary noise to an already-complicated FPC system. If, however, these models can generate correct predictions even as low as 50 percent of the time, they could prove very valuable to commanders.

Conclusion

In recent years, Marine Corps dialogue has become consumed with some of the Nation's favorite tech buzzwords: *artificial intelligence*, *machine learning*, *big data*, and the like. Nevertheless, we have yet to find ways to implement these at scale in the same way multi-billion-dollar corporations have been doing for years. There is little question that we should be researching and experimenting with means to harness the power of these technological advancements. In reality, however, reluctance to adapt quickly and try new things at middle and lower echelons demonstrates that research in these fields may not truly be a top priority.

Exploring the use of machine learning in conjunction with CIRRAS' database offers an easy opportunity for the Marine Corps to showcase its long-held reputation as the Nation's most innovative force. Further research on this topic may prompt widespread use of this technology and could prove valuable to commanders by quickly providing automated actionable data in one of the Pentagon's top challenges: service member mental health. If our people are truly our greatest strength, then we should leverage every advantage, technological or otherwise, to their benefit and that of the Naval Service.

Notes

1. U.S. Department of Veteran's Affairs, *2020 Veteran Suicide Prevention Annual Report* (Washington, DC: 2020).

2. Headquarters Marine Corps, *MCO 1500.60 Force Preservation Council* (Washington, DC: August 2016).

3. Under Secretary of Defense for Personnel and Readiness, *U.S. Department of Defense, Calendar Year 2020 Annual Suicide Report* (Washington, DC: 2020).

4. Stephen Losey, "Military Deaths by Suicide Jumped 25% at End of 2020," *Military.com*, https://www.military.com/daily-news/2021/04/05/military-deaths-suicide-jumped-25-end-of-2020.html; and *MCO 1500.60 Force Preservation Council*.

5. Headquarters Marine Corps, "Announcement and Implementation of the Command Individual Risk and Resiliency Assessment System (CIRRAS)," *Marines*, August 12, 2020, https://www.marines.mil/News/Messages/Messages-Display/Article/2310545/announcement-and-implementation-of-the-command-individual-risk-and-resiliency-a.

6. Marine Corps Systems Command, "Marine Corps Develops Secure App to Monitor Holistic Health and Combat Readiness of Marines," *Marines*, February 11, 2021, https://www.marines.mil/News/News-Display/Article/2500948/marine-corps-develops-secure-app-to-monitor-holistic-health-and-combat-readines.

7. Ibid.

Space Artificial Intelligence

The Marine Corps must invest in AI to accelerate Marine Corps Space Operations

by Maj Philippe I. Rodriguez

>*Maj Rodriguez is a Communications Officer. He wrote this article while a student at Marine Corps Command and Staff College, and has served at all three MEFs and a combined twenty months in Operations IRAQI FREEDOM and ENDURING FREEDOM as a Communications Officer and an Information Operations Planner.*

While the Marine Corps continues to compete in the space domain, the explosion of artificial intelligence (AI) will influence the landscape for Marine Corps space operations. This article will discuss the six space operations mission areas essential to the Marine Corps and the strategic AI guidance which provides opportunities to enhance the Marine Corps enterprise further. An assessment follows, reviewing a Defense Advanced Research Projects Agency (DARPA) AI project that can support the Marine Corps expeditionary advanced base concept. Lastly, this article proposes FMF task-organized changes to develop an information environment company (IEC) with capable fire teams to attach to tactical units supporting forward-deployed operations.

What is Artificial Intelligence?

The DOD views AI as the ability of machines to perform tasks that usually require human intelligence.[1] Moreover, the *Oxford Dictionary* defines AI as "the capacity of computers or other machines to exhibit or simulate intelligent behaviors or the field of study concerned with this."[2] In other words, these definitions view AI as a tool that can process complex problems using machines and large amounts of data. Furthermore, AI has other subset elements that coexist when discussing AI, including deep learning, machine learning, natural language processing, and predictive analytics. These subset elements use various algorithms, statistical analysis, data engineering, and programming to feed AI. Ultimately,

the DOD understands AI as a tool, with other subset focus areas, to further enhance the warfighter.

The relationship between humans and machines, like the relationship within AI, already exists heavily in the space sector. Operators and planners rely heavily on various complex ma-

> *The relationship between humans and machines ... already exists heavily in the space sector.*

chines to support sensors in orbit, robotics to support the satellite segment, signal transmission, space transportation, or satellite mechanics. Moreover, using AI in these machines can further enhance automation for domain awareness, maintenance of satellites, or understanding of various signal pathways. There is a natural relationship between humans and machines when it comes to space, as is evident with AI.

AI Guidance to Support Space and Warfighting

The Marine Corps synchronizes and integrates joint space capabilities

to the FMF through the Marine Corps space cadre, primarily looking at six of the ten joint mission areas: missile warning; positioning, navigation, and timing (PNT); environmental monitoring; space domain awareness; satellite communication; and spacebased intelligence, surveillance, and reconnaissance.[3] Space Marines can influence tactical and operational-level operations with strategic-level joint capabilities from any of these six mission sets. Moreover, each space mission set affects all Marine Corps warfighting functions; for example, intelligence, surveillance, and reconnaissance influences and supports intelligence gathering and collecting, and PNT influences the location of formations in maneuver and precision fires. This mutual support between the space mission sets and warfighting functions makes the Marine Corps space cadre paramount for the future of warfare.

To further enhance Marine Corps space operations, the Department of the Navy's integrated autonomous systems (IAS) strategy provides guidance that the Marine Corps space cadre must exploit to enhance warfighting with AI. The strategy describes IAS as the convergence of AI, autonomy, and unmanned systems and focuses on the capabilities, workforce, and partnerships to support this AI effort.[4] The strategy guides the Marine Corps space cadre, which serves as the workforce

identified in the strategy, to explore AI capabilities to support future environments. Moreover, space operations already leverage two of the IAS strategy's three elements—autonomy and unmanned systems. The IAS strategy provides the guiding publication for the Marine Corps to leverage AI within the space domain entirely.

The Space Environment Exploitation Program

The research and development mechanism for the DOD, DARPA, continues exploring AI applications as seen in the Space Environment Exploitation (SEE) AI program. The SEE program seeks to develop models and sensing modalities to support the space domain awareness mission area.[5] The program looks to develop methods and algorithms to rapidly characterize objects in low-earth orbit and near-earth space environments to develop a shared operating space environment picture at the tactical level. This program can potentially support tactical-level decision makers when assessing space effects in their region, area of operation, and area of influence.

This AI-enabled capability has precious tactical use within the Marine Corps when a stand-in force assesses the environment in expeditionary advanced base operations. The Marine Corps naturally gravitates toward developing a ground and maritime common operating picture but must look at the space domains when conducting expeditionary advanced base operations. The SEE capability at an expeditionary advanced base supports satellite communications, PNT, and space domain awareness for the on-hand formation and as a forward sensor for the Joint Force. The SEE AI program has the potential to enhance expeditionary advanced base operations and future Marine Corps space operations.

The Information Environment Company

As the development of the Marine Corps space cadre continues, an organizational change in the formations must occur with an establishment of an information environment company (IEC)
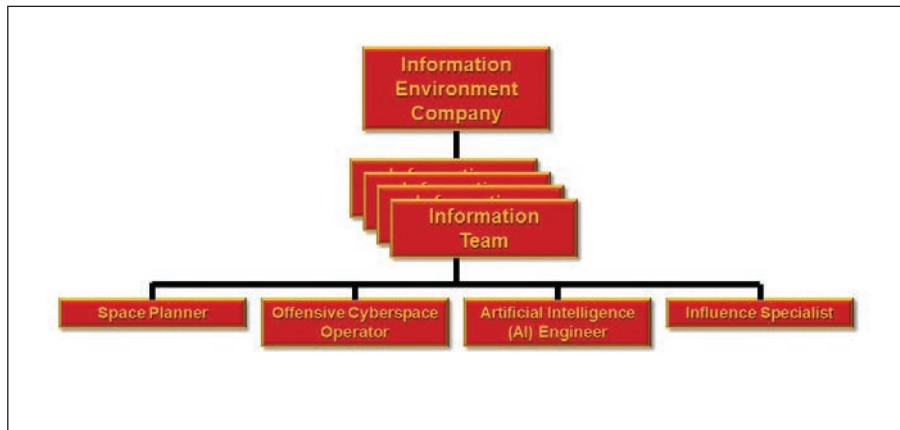
Figure 1. When task-organized and attached to elements of the MAGTF, the proposed Information Environment Company would provide organic capabilities and expertise in space, cyberspace, artificial intelligence, and influence operations to commanders (Figure provided by author.)

to support tactical operations. Similar to the air naval gunfire liaison company, the IEC will reside in the MEF Information Group. Additionally, the IEC would have the mission to provide MAGTF commanders with a liaison capability to plan, coordinate, employ, and conduct information operations in

support of the joint, coalition, or allied forces. These information operations will address offensive cyberspace and influence effects and, more importantly, support commanders with space operation coordination and planning. The Marine Corps must task-organize appropriately to bring space capabilities to the battalion level.

The IEC would comprise four main elements: space, offensive cyberspace, influence, and an AI element. Each element will have planners and operators, both officer and enlisted, who would serve to attach to other elements of the MAGTF. For example, an IEC five Marine team would attach to an infantry battalion with subject-matter expertise and various equipment capabilities to

support that battalion on a deployment. The IEC team would change operational control at 90-days prior to deployment to support that battalion's pre-deployment training cycle and support staff integration with information effects. The IEC team would have representation and capabilities within the

This IEC team model supports space planning, coordinating, and operating at the tactical level. This task-organization approach would provide direct and immediate tactical support ...

four elements—a space planner, a cyber mission element, an influence specialist, and a data engineer—to give commanders tactical information environment capabilities.

This IEC team model supports space planning, coordinating, and operating at the tactical level. This task-organization approach would provide direct and immediate tactical support throughout the MAGTF's ground, aviation, and logistic combat elements. The MAGTF Information Group's information coordination center would remain the central MEF coordination center to process information, but the IEC teams would serve as an extension of the information coordination center. Moreover, attaching IEC teams to the tactical unit sup-

ports an expeditionary advanced base when degraded or denied communication affects "reach-back" capabilities. The space operator within the IEC team would advise the commander and staff on space domain awareness with an understanding of friendly and adversary overhead satellites concerning the operation area. Additionally, the space operator would support the communications officer to strengthen and reinforce the satellite communications architecture by programming necessary configurations to strengthen a signal or identifying critical satellites to operate from while keeping abreast of communication signals effects from space weather. Lastly, the space operator would support the maneuver element's force protection ensuring the protection and accuracy of various PNT capabilities. The IEC team becomes a force multiplayer if positioned at the battalion level. If not, space planning, coordinating, and operating may have limited effects at the battalion and tactical levels.

Conclusion

The Marine Corps continues to develop organic space capabilities through the growth and progression of the space cadre. However, the MAGTF's organizational structure must also change to support space operations effectively. The IEC offers a solution to drive space planning and coordination at the battalion and tactical levels. Furthermore, the Marine Corps' investment within the space domain can mature quicker if adopting and integrating AI within the formations. The IAS strategy provides the guidance to do so. Ultimately, the Marine Corps must capitalize on the proliferation of AI with the progression of the space domain focus. If done with precision and deliberate focus, the Marine Corps can use AI to propel Marine Corps space into the future.

Notes

1. Department of Defense, *Responsible Artificial Intelligence Strategy and Implementation Pathway* (Washington, DC: 2022).

2. Oxford English Dictionary, s.v. "artificial intelligence," n.d., https://www.oed.com.

3. Department of Defense, *Joint Publication 3-14 Space Operations* (Washington, DC: 2022).

4. Department of the Navy, *Intelligence Autonomous Systems* (Washington, DC: July 2021).

5. DARPA AI Next, "Space Environment Exploitation (SEE)," *DARPA, n.d.,* https://www.darpa.mil/program/space-environment-exploitation.

Lethal Ecosystems for the Marine Corps Infantryman

The Marine Corps using adaptive artificial intelligence with 5G networking for the infantryman

by Maj Chris Huff

I like jazz music. When I was a kid, my dad would dial the radio to the local jazz station from the community college where he was on faculty. Wherever we drove, we listened to jazz. My dad liked specific musicians; he would play John Coltrane, Miles Davis, and Frank Sinatra. I hated it. I told myself when I have my own car, I will never listen to jazz. When the family upgraded our radio to a Sony multi-disc stereo, my dad bought a few CDs of the same artists and would play them repeatedly. When my dad wanted to listen to Miles Davis in the house, he would drag his CD-carrying case out of the car and play them on the home stereo. Thirty years later, I listen to jazz in my own car. Driving down the highway, I ask Siri to play jazz, and who would you imagine begins to play? Miles Davis. When I get home and want to keep listening, I ask Alexa to play jazz and set the air conditioning temperature to 74 degrees. Without hesitation, the air conditioning adjusts, and John Coltrane begins to rip through the house. Pretty nice, right? Sounds pretty easy, and it is. I get it. My interest in jazz, and the fact that I prefer 74 degrees in the house may not concern you, but American citizens and service members already use artificial intelligence (AI) in everyday life.

Type something into iMessage and watch the words automatically present with suggested phrases. How did Siri know to play Miles Davis when I asked

>*Maj Huff is the Executive Officer for Marine Medium Tiltrotor Squadron 161. This article serves as a pre-cursor to follow on research that Maj Huff is conducting for his graduate thesis at the Naval Postgraduate School. While artificial intelligence will serve the tactical edge, it may have greater application completing mundane tasks that take time, manpower, and resources. Maj Huff's research is in partnership with the DOD Chief Digital and Artificial Intelligence Office.*

for jazz music? Why did Alexa blast John Coltrane through the house instead of Nat King Cole? How did Alexa communicate with my air conditioning thermostat to adjust the temperature to 74 degrees? Alexa and Siri are manifestations of AI. AI, combined with networked hardware devices and sensors, provides an ecosystem that improves the quality of life, bolsters time-saving efficiencies, and analyzes an immeasurable amount of data to provide a useful end product—be it predictive text to help the user type a message faster or automatically playing your preferred artist in a chosen genre of music. No doubt, the question is how can we use this technology to be more lethal? Using cloud-based augmented AI accessed by wearable devices through an individual account specific to each infantryman can provide an immeasurable number of capabilities to improve efficiencies and access data that support intelligence, surveillance, reconnaissance, and targeting.

Research on AI and networking in the defense sector has rapidly ac-

celerated in the last few years and will only continue. It is well known that the DOD contracts with AI and 5G networking companies.[1] However, the scope of research and development around adaptive AI (AAI) interfacing with devices working on a 5G network for the individual infantryman is not well communicated. Discussing how individuals use AAI in everyday life can help make sense of how this technology will benefit the infantryman while acting in defense of freedom. Several companies are working toward improving AI and AAI through wearable devices. AI and AAI have been a recent focus for DOD.[2] The desire has been to integrate AAI capabilities with human decision making, augmenting the quality of decision making by reducing time and improving the accuracy needed for rapid kill chain completion. Microsoft, Amazon, Apple, Meta, Snap, Google, and L3Harris Technologies have been developing products beneficial to the infantryman concerning digital wearables, cloud-based computing, and AI. More specifically, hardware or digital

wearable devices, sensors, and encrypted waveforms have been developed to access data sourced through software designed with AAI algorithms. Commercial companies in the defense sector have introduced solutions that can equip the infantryman with mechanisms to provide augmented reality and virtual displays in a live-field environment. Augmented reality and virtual displays are provided in various ways by new products under development by these companies and provide contrast to the currently fielded personal electronic device tablet that is rudimentary, cumbersome, and not integrated into field equipment worn by the infantryman.[3]

Microsoft and the Army recently developed the Integrated Visual Augmentation System (IVAS). According to Microsoft (which is in the process of acquiring the company that created the game *Call of Duty*[4]), IVAS "will allow soldiers to see through smoke and around corners, use holographic imagery for training, and have 3D terrain maps projected onto their field of vision at the click of a button."[5] Recently, testing has stopped with the IVAS program, and the Army has delayed the acquisition of IVAS again to schedule future operational testing.[6] To expand on examples of this capability, we can use the model, as described by Microsoft, of holographic imagery for training. The infantryman wearing the goggle headset and networked wirelessly to a 5G groundbased or aerial Wi-Fi network will receive holographic projections of digital moving models that look like an enemy combatant. The design of this digital model is adjustable and can look like anything the design team determines the image should appear as. Digital art design, like designs for a first-person video game such as *Call of Duty*, provides tremendous flexibility in expanding the infantryman's experience in identifying varying types of uniformed and non-uniformed combatants. The infantryman will be able to move on a training range with live ammunition and engage these digital holographic targets based on established rules of engagement. The success rate of hitting the target can also be captured by improving techniques and methods

Microsoft's Integrated Visual Augmentation System on an Army soldier integrated into the protective vest is less cumbersome than a tablet. **(Photo by Bridgett Siter.)**

of employment that are unique to the user's habits, body structure, and skill with the weapon. Imagine the additional capabilities a device such as this can provide.

For example, overlaid targeting displays can be projected in front of the infantryman, assisting in improved identification, accuracy, and kill rates. The targeting holograph can assist the shooter with ensuring the target is

---

Augmented reality and virtual displays are provided in various ways ...

---

struck no matter how the shooter holds the weapon, which may be beneficial if shooting from behind terrain. Suppose offensive air support assets are providing fires for the infantryman. In this case, the infantryman can receive digital indications that show the physical location of the aircraft, and, reciprocally, the aircraft can receive digital displays of the location of each friendly infantryman's position. Over-the-horizon transmission capabilities of the aircraft can provide the needed situational awareness to command centers and intel-

ligence teams for the locations of the supported troops, particularly when unmanned intelligence, surveillance, reconnaissance, and targeting systems support the troops.

Meta, the parent company of Facebook, Instagram, and Oculus, has spent billions of dollars developing virtual reality wearable devices.[7] The company is helping to pioneer the creation of the metaverse. The metaverse is a new term describing what, historically, is known as the live, virtual, and constructive simulation environment. The metaverse is also a fresh take on the theory of live, virtual, and constructive simulation. The metaverse is accessible in multiple ways, but the primary area Meta (previously known as Facebook) is investing to interface and engage in the metaverse with virtual reality wearable devices. In 2014, Meta announced the acquisition of Oculus VR, opening the door to the virtual reality space for Meta.[8] Mark Zuckerberg, Meta's founder and chief executive, recently described Meta's progress on virtual reality wearable devices on CNBC and explained each of the new prototypes and capabilities.[9] Martin Harbech, Group Director at Meta, recently posted on LinkedIn, "VR (virtual reality) and AR (augmented reality), has the potential to change the world, as much as, or even

more than personal computing, and indistinguishable realistic visual experiences will play a huge part in that."[10] Meta focuses on hardware technology advancements through the company's research lab, Reality Labs. Andrew Bosworth, Meta's Chief Technology Officer, leads Meta's efforts to design new VR hardware. A recent commercial success for Bosworth has been the new Ray-Ban Stories glasses. These glasses

teroperability with cloud-based systems would be using Microsoft Teams. Individuals with Microsoft Teams accounts can create a product using one of the many Microsoft platforms, and anyone who has access to the team developing the product can make corrections to the product and see the inputs while working on the product simultaneously. Microsoft is not the only company with such systems. Other examples are

company and are closed ecosystem architectures.

How does the software learn user preferences? User accounts enable adaptive artificial intelligence to understand each user's personal preferences. For example, when using Apple products, the user must have an iCloud account, or when using Alexa, the user must have an Amazon account. An account allows the companies' software to learn the user's preferences with algorithms and the user agreements give an almost blanket approval for the companies to use the data that you input on their platforms. These preferences help to improve efficiencies based on frequent user requests. If I play Miles Davis frequently, the AI will reference Miles Davis as the first musician to play when I ask Alexa to play jazz. Accessing the software is completed through an application or a uniform resource locator along with an interface to access the internet, such as Apple's Safari or Microsoft's Edge. Applications provide the most user-friendly access and enable software integration across applications when that ecosystem has an open architecture. With an individual account and through a hardware interface as small as an iPhone, the warfighter would be able to link other hardware devices and access applications that could learn the users' preferences through a combination of AI and augmented reality displays. The hardware would be able to access the 5G network to provide interoperable connectivity to other users and display data that supports the locations of other users, enemy targeting data, and communications. Wearables like Microsoft's IVAS project augmented reality displays like a heads-up display for a tactical jet aircraft pilot. But is all this data secure?

L3Harris Technologies, among other companies, is working on networked encrypted communication for 5G ecosystems. L3Harris Technologies describes the company's 5G network as a "secure, scalable, resilient, mobile tactical 5G network system that enables on-the-move communications in a degraded, intermittent, latent and contested (electronic warfare) environment." L3Harris Technologies has created a 5G

Wearables like Microsoft's IVAS project augmented reality displays like a heads-up display for a tactical jet aircraft pilot. But is all this data secure?

---

have cameras, voice-activated command software, and speakers and are designed to be functional, yet fashionable. He anticipates that everyone in ten years will wear glasses with cameras.[11]

Snap, the parent company of Snapchat, introduced Spectacles in 2016.[12] These glasses are similar to Ray-Ban Stories, but recently, Snap has released a limited number of Spectacles that also project augmented reality imagery. Snap is leading in overlaying immersive AR in the commercial glasses space, a category that I argue will be larger in the near-term concerning growth in the metaverse. Spectacles 3, the recent new release of Snap's glasses with cameras, can capture images in three dimensions. These images are then rebroadcast using a 3-dimensional VR wearable device where the viewer can relive the visual experience with the same depth and dimension experienced the first time capturing the image.[13] Quite a capability if one desires to replay an experience to learn from mistakes, receive better training, or capture data for further experimentation.

Cloud-based computing makes this technology possible. Microsoft, Amazon, Apple, and Google have invested significantly in cloud-based computing. Examples of cloud-based systems include Microsoft Azure, Amazon Web Services, Apple iCloud, and Google Cloud. An example of improved in-

Google Drive and Slack. Changes to the products are saved automatically as the teams make them. The product is accessible anytime and anywhere the team members have internet connectivity. Apple's iCloud provides AAI through the company's Siri interface. Amazon's Alexa provides AAI through the company's Alexa interface. These two examples are commercial products that offer two-way streams of information through the cloud that improve the users' experience through adaptive software designed to learn the user's preferences. The companies' software is proprietary to each company, and the ecosystems created around the cloud-based software are a closed architecture.

An example of closed architecture design is when I ask Siri to play jazz on the Amazon Music application. Currently, Apple has not added support for opening the Amazon Music application through Siri. When the Amazon Music application is opened manually on the phone, Alexa voice control commands interface with the application to play music instead of using the Siri voice control commands. When the Amazon Music application is open, I can say, "Alexa, play jazz music," and Frank Sinatra will begin playing. When I ask Siri to play jazz, iTunes will play Miles Davis. Both clouds support proprietary software applications unique to each

network that "maximizes range while eliminating the need for a heavy and power-consuming backpack-based network in a box." The range covers an area greater than 30km with "less than 5 lbs of wearable gear." Understanding architecture limitations, L3Harris explains that the company's "5G secure network system is architected to be standalone or can be integrated into Secure Cloud-based systems."[14] Secure Cloud refers to the Defense Information Systems Agency's DOD Secure Cloud Computing Architecture. The overview on the Defense Information Systems Agency's website describes the Secure Cloud Computing Architecture as "a suite of enterprise-level cloud security and management services ... (providing) a standard approach for boundary and application level security for impact level four and five data hosted in commercial cloud environments."[15] The infantryman can use cloud-based technology on an encrypted secure 5G network for DOD digital applications in the operational environment. L3Harris also offers the frequency hopping Mobile Ad Hoc Network waveform. L3Harris describes the waveform as having multi-layer anti-jam capabilities with 5G network devices.[16]

Using cloud-based AAI accessed by wearable devices through an individual account specific to each infantryman can provide an immeasurable number of capabilities. For example, commanders and leaders can better track friendly service member positions in realtime on a secure network. Using wearable devices, the infantryman can access data projected with augmented reality displays customized with augmented artificial intelligence recommendations. The wearable devices can provide each infantryman with improved targeting and accuracy of weapon engagements. Augmented artificial intelligence accessed with wearable devices and linked via an encrypted 5G network can offer better situational awareness and effective communication while reducing the amount of verbal communication needed. The ecosystem of networked devices can transmit data for various types of reports and likely reduce the time necessary to draft those reports

by automatically inputting specific amounts of data into the report with information the cloud has already collected on the operation or exercise. Each of these functions improves efficiency and reduces the time it takes to develop accurate solutions for the infantryman to close with and destroy the enemy by fire and maneuver. With all that saved time, I doubt an infantryman would want to listen to jazz, but they could.

Notes

1. Theresa Hitchens, "Hughes Wins Bid for 5G/Satellite Network under DOD Experiment," *Breaking Defense*, March 21, 2022, https://breakingdefense.com/2022/03/hughes-wins-bid-for-5g-satellite-network-under-dod-experiment.

2. Government Accountability Office, *Artificial Intelligence DOD Should Improve Strategies, Inventory Process, and Collaboration Guidance* (Washington, DC: March 2022).

3. MCSC Office of Public Affairs and Communication. Marine Corps Systems Command, "Handheld Tablet Improves Situational Awareness," *Marines*, September 5, 2019, https://www.marcorsyscom.marines.mil/News/News-Article-Display/Article/1952936/handheld-tablet-improves-situational-awareness.

4. Microsoft News Center, "Microsoft to Acquire Activision Blizzard to Bring the Joy and Community of Gaming to Everyone, across Every Device," *Microsoft*, January 18, 2022, https://news.microsoft.com/2022/01/18/microsoft-to-acquire-activision-blizzard-to-bring-the-joy-and-community-of-gaming-to-everyone-across-every-device.

5. Deboarah Bach, "U.S. Army to Use Holo-Lens Technology in High-Tech Headsets for Soldiers," *Microsoft*, June 8, 2022, https://news.microsoft.com/transform/u-s-army-to-use-hololens-technology-in-high-tech-headsets-for-soldiers.

6. Colin Demarest, "Congress Freezes $349 Million for Army's Next Generation Goggles," *C4ISRNET*, March 21, 2022, https://www.c4isrnet.com/battlefield-tech/it-networks/2022/03/21/congress-freezes-349-million-for-armys-next-generation-goggles.

7. Staff, "Inside Reality Labs Research," *Meta,* November 16, 2021, https://tech.fb.com/ar-vr/2021/11/inside-reality-labs-meet-the-team-thats-bringing-touch-to-the-digital-world.

8. Staff, "Facebook to Acquire Oculus," *Meta*, March 25, 2014, https://about.fb.com/news/2014/03/facebook-to-acquire-oculus.

9. Kif Lewsing, "Mark Zuckerberg Showed These Prototype Headsets to Build Support for His $10 Billion Metaverse Bet," *CNBC,* June 21, 2022, https://www.cnbc.com/2022/06/21/mark-zuckerberg-shows-early-metaverse-headsets-mirror-lake-holocake.html.

10. Martin Harbech, "The Holy Grail of VR is the 'Visual Turing Test'," *LinkedIn*, June 2022, https://www.linkedin.com.

11. Salvador Rodriguez, "Facebook's Bosworth Says Glasses with Cameras Will be the Norm in 10 Years," *CNBC*, September 10, 2021, https://www.cnbc.com/2021/09/10/facebooks-boz-says-glasses-with-cameras-will-be-the-norm-in-10-years.html.

12. Sarah Frier, "Snapchat Will Release $130 Sunglasses With Built-In Camera," *Bloomberg*, September 21, 2016, https://www.bloomberg.com/news/articles/2016-09-24/snapchat-will-release-130-sunglasses-with-built-in-camera.

13. Information variable at https://www.spectacles.com/learn.

14. Information available at https://www.l3harris.com/all-capabilities/secure-5g-network-and-enterprise-solutions.

15. Information regarding Defense Information Systems Agency is available at https://disa.mil/~/media/files/disa/fact-sheets/secure-cloud-computing.pdf.

16. Information regarding Falcon Net Ecosystem. L3 Harris is available at https://www.l3harris.com/all-capabilities/falcon-net-ecosystem.

USMC

People in the Age of AI

Lessons and implications from the war in Ukraine

by Maj Matthew T. Sommer

War is a People Business

The rapid development of artificial intelligence (AI) and its potential applications for national defense have led to predictions of automated warfare. In this vision, war is conducted by artificially intelligent systems, platforms, and weapons, with humans either "on" the loop or out of it entirely. In their book, *The Age of A.I. and our Human Future*, Henry Kissinger, Eric Schmidt, and Daniel Huttenlocher warn "no major country can afford to ignore AI's security dimensions."[1] The United States is taking this challenge seriously, as are its adversaries, and the future of warfare promises to be massively transformed by AI. In our race to compete in this arena, however, we must be careful not to lose sight of the fact that people remain our greatest asset. War is and will continue to be a people business.

>*Maj Sommer is an Infantry Officer. He is currently assigned as an Exercise Planner for NATO Supreme Headquarters Allied Powers Europe in Mons, Belgium.*

AI, they matter more than ever. Despite the overwhelming odds, Ukraine has managed to blunt the Russian invasion and recapture lost territory largely due to the superior motivation, quality, and initiative of its soldiers. This suggests the platforms and technologies with which we fight are dependent upon the quality of the people operating and employing them.

Let me be clear, I am no Luddite nor is this an argument against technology. AI offers many promising battlefield applications including, inter alia, the rapid processing of vast amounts of intelligence data, optimization of logistics

than machines. A day may come when war is fought entirely with machine learning and mechanical platforms, but it is not this day. So long as war remains "a violent struggle between two hostile, independent, and irreconcilable *wills*,"[2] (emphasis mine) it will remain a people business.

Artificial Intelligence and the Automation of War

From training systems to autonomous sensors and data integration to unmanned combat vehicles, AI is already affecting the battlefield in ways inconceivable at the turn of the century. The U.S. Congress has claimed a "moral imperative" to develop AI applications for use in combat.[3] The Navy is developing unmanned autonomous surface and sub-surface vessels, and the Defense Advanced Research Projects Agency has developed fighter jets with AI algorithms that have consistently defeated human pilots using tactics and maneuvers humans cannot execute or have not even considered.[4] The pace of this innovation is only increasing; experts predict in the next two decades we could see a "revolutionary change" in AI that would "render obsolete old weapons, tactics, and operational approaches."[5]

Our adversaries are developing this technology as well. The Chinese Communist Party has a strategy for developing AI applications for military use and has implemented a Strategic Support Force to implement them.[6] Russia has embraced a doctrine of hybrid warfare, which combines traditional and asymmetric means of gaining advantage both during and even before a conflict takes place.[7] Russian doctrine teaches that AI "will be of paramount importance," and the Russian military sees its implementation as a "fundamental change

> **The Chinese Communist Party has a strategy for developing AI applications for military use and has implemented a Strategic Support Force to implement them.**

The war in Ukraine offers many lessons for the use of AI in combat and seems to support the theory that war is becoming automated. Both sides are heavily reliant on the use of semi-autonomous drones to conduct reconnaissance and deliver fires and both sides have capitalized on the opportunities presented by AI-enabled information technology. On closer examination, however, a different lesson emerges: people still matter, and in the age of

networks, and unmanned platforms which increase lethality, mitigate risk, and keep Americans out of harm's way. If these possibilities exist, they must be developed and their potential realized. Training and deploying motivated, well-trained, and informed warriors who are willing to exercise initiative and take risks, however, are not mutually exclusive from developing and employing new technologies. We must not lose sight of the fact that people matter more

in the nature of modern wars."[8] Both Russia and China are focusing their efforts on "centralizing, automating, and 'intelligentizing' their command and control" systems.[9] The race to develop and implement AI on the battlefield constitutes what Chatham House calls "a metaphorical arms race," which will affect the future of warfare in unanticipated ways.[10]

U.S. policymakers fear falling behind in this race and are taking this challenge seriously.[11] The U.S. *National*

military equipment. At first glance, it supports the theory that AI and automation will dominate the future battlefield. Both Russia and Ukraine have used drones extensively as sensors and attack platforms and have employed AI-enabled information technology, including AI-enhanced social media platforms and the interception of civilian cellular services to target troop concentrations. A California-based company has provided AI software to Ukraine that can process vast amounts

date. Despite boasting less than a quarter of the forces and being outspent by a ratio of more than five to one, Ukrainian forces managed to defeat the Russian drive to Kyiv even before they began to receive billions in foreign military aid.[19] Russian soldiers and units have sabotaged their own equipment and surrendered. Hundreds of thousands of Russians have fled the country to avoid being drafted.[20] The Ukrainian government has even set up a hotline for Russian soldiers who wish to surrender, and reports suggest Russians are using it.[21] As it has throughout history, the incentive to fight has proven to be a decisive factor thus far in the war, suggesting that the reasons we fight remain just as important as what we fight with.

AI offers many promising battlefield applications including ... rapid processing of vast amounts of intelligence data, optimization of logistics networks, and unmanned platforms ...

Security Strategy mentions the need to invest in "a range of advanced technologies" including "trusted artificial intelligence."[12] The *National Defense Strategy* notes the requirement for technologies that will "change our relative military advantage."[13] Marine Corps *Force Design 2030* focuses on the "rise of the precision strike regime" and "gray zone strategies," both areas in which AI could prove decisive.[14] Some believe the impact of AI in the next few decades will constitute a "new revolution in military affairs" akin to the invention of nuclear weapons and the development of precision-guided munitions.[15]

Given the interest, investments, and advancements in AI, these developments should be evident on the battlefield. An examination of the war in Ukraine will determine how and to what extent AI has changed warfare and is contributing to this new revolution in military affairs. An assessment of these lessons offers implications for our own military policy in the years to come.

Lessons from the War in Ukraine: People Matter

The war in Ukraine is particularly illuminating because it is the first conflict in which both sides are armed with technologically sophisticated modern

of imagery, conduct battle damage assessments, and predict the locations of future strikes.[16] LtGen Heckl, CG of Marine Corps Combat Development Command, believes one of the key takeaways from this conflict is "the ubiquity and proliferation of sensors and the ability to close kill chains accurately" with autonomous platforms.[17]

On deeper inspection, however, another lesson emerges: people still matter, and despite the ubiquity of AI, they seem to matter more than ever. There is little parity between the Russian and Ukrainian militaries; the former thoroughly outguns, outmans, and outspends the latter.[18] Yet, Ukraine has managed to fend off the invasion while inflicting grievous losses on Russian forces due to the quality of its own forces and the inability of the Russian military, owing to poor training and motivation, to realize the full potential of its available combat power. There are three lessons from this conflict that highlight the continued importance of people to warfare: motivation matters, mission-type orders are critical to building operational tempo, and military culture must incentivize initiative and risk-taking at the small-unit level.

First, motivation is the primary determinant of the Ukrainians' success to

Second, mission command is critical in modern warfare. Over the past decade, Russia has attempted to create a more flexible and responsive military structure capable of combined arms and maneuver warfare. Under stress, however, the Russians have reverted to the time-honored doctrine of mass and attrition, issuing orders without intent and commanding and controlling in a unidirectional, top-down manner.[22] In order to maintain the element of surprise, the Russian high command hid their intent to invade Ukraine even from their own units, leading to a lack of preparedness, a blow to morale, and confusion over the conduct and aims of the war.[23] This has resulted in a "culture of reinforcing failure" as Russian soldiers continue to execute their latest orders until they receive new ones regardless of local conditions.[24] Contrast this with the Ukrainian's tenacity in defending territory and ability to seize fleeting opportunities as conditions rapidly change on the battlefield. Perhaps the most famous example of the Ukrainians' initiative is the ambush on a Russian column conducted by 30 Ukrainian soldiers who rode through the forest at night on quad bikes, resulting in a 40-mile deadlock of Russian combat vehicles on the road to Kyiv, which lasted for days.[25] Regardless of the technology a force wields, such initiative does not occur without an understanding of commander's intent and mission command.

Third, military culture must incentivize initiative and risk-taking at the small-unit level. Conversely, the Russian system "incentivize[s] a dishonest reporting culture" that is evident from the highest levels of government, where advisors misinformed Putin on Ukrainian capabilities, their own military readiness, and Russian support within Ukraine.[26] At the tactical level, this results in small units that do not understand their commander's desired end state nor challenge orders from higher headquarters that do not match the reality on the ground. Instead, "paralysis tends to grip lower echelons" when receiving orders that are inappropriate or no longer relevant.[27] Freedman has found that a lack of effective junior officers and NCOs has left the Russian military aimless, without initiative, and averse to risk.[28] Despite its suite of advanced weaponry, the failure to create a culture of initiative and train and empower small-unit leaders has created "a gap between [the] potential and actual capability" of the Russian military.[29]

These lessons lead to an important conclusion: combat power is generated primarily through the motivation, information, training, and incentives of those fighting the war. Prior to its invasion of Ukraine, the Russian military was considered to be the second most capable in the world, with the latest generation of tanks, planes, fires, and air defense.[30] Yet, it has utterly failed to defeat a nation it outmans, outguns,

though still without any meaningful success. Given the disparity in relative military strength between the two sides, these failures can only be explained by the superior performance of the Ukrainian soldiers. In a conflict between two forces equipped with advanced technological systems, it seems the side with the better people still prevails.

Implications for U.S. National Defense

The U.S. *National Defense Strategy* notes in its introduction that people "remain our most valuable resource."[32] However, we risk losing sight of this fact with the rapid advances in AI and the attention it has received. Especially to policymakers inexperienced in warfare and military doctrine, technology seems to offer a bloodless and effective means of achieving national security interests. This belief is not unique to the age of AI; in discussing the impact of air power in the 1990s, Robert Kaplan writes, "the Balkans show[ed] us a vision of interventionism, that cost little in soldiers [sic] lives, leaving many with the illusion that painless victory was now the future of war."[33] Air power did not turn out to be the silver bullet solution policymakers had hoped for, and neither will AI.[34]

The lessons learned thus far in Ukraine offer two implications for U.S. military policy. First, people matter more than machines, and why they fight is just as important as what they

ends, and means of a conflict must be clearly communicated so small units understand why and how they are expected to fight. At the tactical level, misconduct that threatens the morale and cohesion of units such as hazing, discrimination, or harassment must not be tolerated. Maintaining operational security in the digital age is a challenge, and commanders and politicians may be tempted to withhold information lest it is revealed to the adversary. They must resist the temptation to do so. Whenever this choice appears leaders must err on the side of transparency. As the Russian example shows, the loss of morale and combat effectiveness suffered by troops who feel deceived far outweigh the temporary loss of operational security.

Second, in the age of AI, a culture of mission command remains a vital component of success on the battlefield. Providing clear intent while allowing subordinates the flexibility to adapt to local conditions is critical to maintaining operational tempo—so is ensuring small-unit leaders are trained, authorized, and incentivized to exercise initiative and take risks. In a combat environment saturated with autonomous platforms and automated fires, forces will need to be quick and agile to protect themselves and accomplish military objectives. Yet, technology offers commanders the illusion of certainty which tends to make them more risk-averse and less inclined to empower their subordinates. Paradoxically, in the age of AI, effective combat leadership will require being able to effectively operate in the face of more uncertainty than ever rather than seeking to eliminate it through technology.[35]

How we balance our resources between the competing priorities of developing AI and of training and empowering our people will largely determine our future success on the battlefield. Chris Dougherty of the Center for New American Security suggests that operating on the modern battlefield is "at its core ... an intellectual challenge,"[36] and not just for politicians, generals, and the defense industry, but also for corporals, sergeants, and lieutenants, who must be challenged to think and act in the absence of orders more aggressively

> *How we balance our resources between the competing priorities of developing AI and of training and empowering our people will largely determine our future success on the battlefield.*

and outspends by orders of magnitude. Indeed, it has not even managed to gain air superiority despite possessing more than ten times the aircraft of its adversary and far more and better anti-air systems.[31] It was forced into a retreat from Kyiv and required to concentrate its efforts on a much smaller front,

fight with. Every effort must be made to reinforce the motivation, morale, and *esprit de corps* of our fighting forces. At the political level, leaders must ensure the causes for which the U.S. employs its military are just and military force is used only as a last resort. At the strategic and operational levels, the ways,

than ever before. As we become more reliant on technology, we become more exposed to technological disruption, creating our own critical vulnerabilities and "effectively building Achilles' heels into everything [we] operate."[37] Our adversaries realize this and will seek to deny us the technologies on which we depend, a task far simpler than we may realize. We must concentrate on training our warfighters for "degradation dominance," enabling them to fight and win in an environment where technology has been denied.[38] The ability to shoot (not just drones, but rifles and cannons), move (on foot), communicate (by analog as well as digital means), navigate (without GPS), think (independently), and act (based on commander's intent) has only become more critical to success on the modern battlefield.

As we participate in this new AI arms race, we risk losing sight of the resource that has made us so successful and promises to be even more important in the future: our people. Far from negating the need for training, the complexities of advanced technological systems make it even more urgent. Success on the future battlefield will depend on agile, survivable, lethal warfighters who can think and react to rapidly changing situations. The more capable AI becomes, the more we are tempted to "micromanage ... warfare at the expense of mission command."[39] We cannot allow this to happen.

Because its lessons are written in blood, the military is a conservative organization, resistant to change. This is wholly appropriate: while it may slow the pace of innovation, it also prevents radical shifts in doctrine which, if mistaken, are paid for in lives. The U.S. military has a long and successful tradition of creating highly disciplined, well-trained, intrinsically motivated forces that can adapt to changing situations, overcome adversity, and win battles. Any proposal that seeks to replace this model with technology should be severely scrutinized.

Notes

1. Henry A. Kissinger, Eric Schmidt, and Daniel Huttenlocher, *The Age of A.I. and Our Human Future* (Boston: Little, Brown and Company, 2021).

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

3. Reuters, "US Has 'Moral Imperative' to Develop AI Weapons, Says Panel," *The Guardian*, January 26, 2021, https://www.theguardian.com/science/2021/jan/26/us-has-moral-imperative-to-develop-ai-weapons-says-panel.

4. Kathleen Walch, "Rigging for AI: How the U.S. Navy Embraces Digital and Masters AI With Brett Vaughan, Chief AI Officer and AI Portfolio Manager at the Office of Naval Research," *Forbes,* August 7, 2021, https://www.forbes.com/sites/cognitiveworld/2021/08/07/rigging-for-ai-how-the-us-navy-embraces-digital-and-masters-ai/?sh=ce88d527abb3; and

Oriana Pawlyk, "Rise of the Machines: AI Algorithm Beats F-16 Pilot in Dogfight," *Military.com*, August 24, 2020, https://www.military.com/daily-news/2020/08/24/f-16-pilot-just-lost-algorithm-dogfight.html.

5. Michael O'Hanlon, "Forecasting Change in Military Technology, 2020–2040," *Brookings,* September 2018, https://www.brookings.edu/wp-content/uploads/2018/09/FP_20181218_defense_advances_pt2.pdf.

6. Amy J. Nelson and Gerald L. Epstein, "The PLA's Strategic Support Force and AI Innovation," *Brookings,* December 23, 2022, https://www.brookings.edu/techstream/the-plas-strategic-support-force-and-ai-innovation-china-military-tech.

7. A.V. Sergeantov, A.V. Resin, and I.A. Terentiev, "Transforming the Content of War: Contours of Future Military Conflicts," in *Center for a New American Security*, translated from *Voennaya Mysl* 6 (2022).

8. Ibid.

9. Chris Dougherty, "More than Half the Battle: Information and Command in a New American Way of War," *Center for a New American Security,* May 20, 2021, https://www.cnas.org/publications/reports/more-than-half-the-battle.

10. M.L. Cummings, "Artificial Intelligence and the Future of Warfare," *Chatham House* January 26, 2017, https://www.chathamhouse.org/sites/default/files/publications/research/2017-01-26-artificial-intelligence-future-warfare-cummings-final.pdf.

11. Gregory C. Allen, "One Key Challenge for Diplomacy on AI: China's Military Does Not Want to Talk," *Center for Strategic and International Studies*, May 20, 2022, https://www.csis.org/analysis/one-key-challenge-diplomacy-ai-chinas-military-does-not-want-talk.

12. The White House, *National Security Strategy: October 2022,* (Washington, DC: 2022).

13. Department of Defense, *2022 National Defense Strategy of the United States of America*, (Washington, DC: 2022).

14. Gen David H. Berger, "The Case for Change," *Marine Corps Gazette* 104, No. 6 (2020).

15. "Forecasting Change in Military Technology, 2020–2040."

16. Patrick Tucker, "How AI Could Predict the Damage to Ukraine from Russian Missiles," *Defense One*, January 9, 2023, https://www.defenseone.com/technology/2023/01/how-ai-could-predict-damage-ukraine-russian-missiles/381633.

17. John M. Doyle, "General: Precise Sensors to Close Kill Chain is a Key Takeaway from Ukraine War," *Seapower*, May 5, 2022, https://seapowermagazine.org/general-precise-sensors-to-close-kill-chain-is-a-key-takeaway-from-ukraine-war.

18. Angela Dewan, "Ukraine and Russia's Militaries are David and Goliath. Here's How They Compare," *CNN*, February 25, 2022, https://edition.cnn.com/2022/02/25/europe/russia-ukraine-military-comparison-intl/index.html.

19. "Ukraine and Russia's Militaries are David and Goliath."

20. David Axe, "The Ukrainian Army is Surrounding 10,000 Russian Troops in the East," *Forbes*, September 9, 2022, https://www.forbes.com/sites/davidaxe/2022/09/09/the-ukrainian-army-is-surrounding-10000-russian-troops-in-the-east/?sh=b7614063b540; and Yan Matusevich, "Central Asia Faces a Russian Migrant Crisis," *Foreign Policy*, October 4, 2022, https://foreignpolicy.com/2022/10/04/russia-putin-mobilization-central-asia-conscripts-flee.

21. James Waterhouse, "Ukraine War: The Surrender Hotline for Russian Soldiers," *BBC News*, November 30, 2022, https://www.bbc.com/news/world-europe-63782764.

22. "Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine."

23. Mykhaylo Zabrodskyi, Jack Watling, Oleksandr V. Danylyuk, and Nick Reynolds, "Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine: February-July 2022," *Royal United Services Institute for Defence and Security Studies,* November 30, 2022, https://static.rusi.org/359-SR-Ukraine-Preliminary-Lessons-Feb-July-2022-web-final.pdf.

24. Ibid.

25. Julian Borger, "The Drone Operators who Halted Russian Convoy Headed for Kyiv," *The Guardian*, March 28, 2022, https://www.theguardian.com/world/2022/mar/28/the-drone-operators-who-halted-the-russian-armoured-vehicles-heading-for-kyiv.

26. "Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine"; and Steve Holland and Andrea Shalal, "Putin Misled by 'Yes Men' in Military Afraid to Tell Him the Truth, White House and EU Officials Say," *Reuters*, March 31, 2022, https://www.reuters.com/world/putin-advisers-too-afraid-tell-him-truth-ukraine-us-official-2022-03-30.

27. "Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine."

28. Lawrence Freedman, *Command: The Politics of Military Operations from Korea to Ukraine* (Oxford: Oxford University Press, 2022).

29. "Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine."

30. Poppy Koronka, "The 20 Most Powerful Military Forces in the World," *Newsweek*, August 24, 2021, https://www.newsweek.com/most-powerful-military-forces-world-america-china-russia-1621130.

31. "Ukraine and Russia's Militaries are David and Goliath."

32. *2022 National Defense Strategy.*

33. Robert D. Kaplan, *The Revenge of Geography: What the Map Tells Us About Coming Conflicts and the Battle Against Fate* (New York: Random House, 2012).

34. Chris Dougherty, "Why America Needs a New Way of War," *Center for a New American Security*, June 12, 2019, https://www.cnas.org/publications/reports/anawow.

35. Rosario M. Simonetti and Paolo Tripodi, "Automation and the Future of Command and Control: The End of *Auftragstaktik*?" *Journal of Advanced Military Studies* 11, No. 1 (2020).

36. "Why America Needs a New Way of War."

37. "Forecasting Change in Military Technology."

38. "More than Half the Battle: Information and Command in a New American Way of War."

39. "Automation and the Future of Command and Control."

MARINE CORPS ASSOCIATION FOUNDATION

JOIN THE
SAMUEL NICHOLAS SOCIETY
– ALWAYS FAITHFUL –

As a Marine (active, retired or veteran), you exhibit the meaning of "Always Faithful" in everything you do. By including the Marine Corps Association Foundation in your estate plans, you can remain always faithful to those Leathernecks following in your footsteps in the Corps now and in the future. Leaving a gift to the Marine Corps Association Foundation through your will or trust is an easy and impactful way to benefit our professional development programs for years to come.

Naming MCAF as a recipient of a specific amount from your estate is easy. Let your accountant or legal advisor know you want to designate the Marine Corps Association Foundation (Tax ID #80-0340923) as a beneficiary in your estate plans.

If you have already included the Marine Corps Association Foundation in your estate plans, please let us know. For more information on planned giving opportunities, go to **mca-marines.org/legacy-gift-planning/samuel-nicholas-society**

Adapting to the Changing Face of Warfare

The urgent need for AI technologies in the Marine Corps

by 1stLt William "Colton" Rapagnani

>*1stLt Rapagnani is a Financial Management Officer currently assigned to Combat Logistics Regiment 17 where he has worked as the Assistant Operations Officer and Disbursing Future Operations Officer, as well as managing a variety of experimental expeditionary advanced base projects. He previously served in the Central Command Area of Responsibility as a Joint Individual Augment with Combined Joint Task Force Operation INHERENT RESOLVE, where he deployed as an Electronic Warfare Planner and Force Protection Counter Unmanned Aerial Systems Integration Officer in Iraq, Syria, and Kuwait.*

The increasing use of technology, particularly artificial intelligence (AI) and smart robots, is creating a new way for war, and the Marine Corps needs to adapt and change with the times. The transition from the last twenty years of war, primarily focused on counterinsurgency operations to a potential near-peer adversary in China has set up the U.S. military for failure if it does not quickly adjust its strategies, technologies, and tactics.

China has been investing heavily in its military capabilities, and the U.S. military is already feeling the effects. Our neer peer competitor is outperforming the U.S. military in both training and technological advancements. China has been working on autonomous systems, including unmanned aerial vehicles and undersea drones, which are becoming more prevalent on the modern battlefield. They have also been investing in AI for military applications, such as battlefield management and decision making.

According to a report by the National Defense Strategy Commission, "The balance of power is shifting in ways that favor our competitors and challengers." The report goes on to say, "The United States military could suffer unacceptably high casualties and loss of major capital assets in its next conflict. It might struggle to win, or perhaps lose, a war against China or Russia."

The Marine Corps must adapt and change with the times if it hopes to maintain its status as one of the most formidable fighting forces in the world. As part of *Force Design 2030*, the Marine Corps is looking to modernize and streamline its force structure to be better prepared for the future of warfare. This includes investments in emerging technologies, such as unmanned systems, AI, and cyber warfare. However, some within the Marine Corps are resistant to change. The new Chowder Society is a term used to describe the senior leadership who resist change and cling to the ways of the past.

Gen David Berger, Commandant of the Marine Corps, in a speech to the National Defense Industrial Association in 2019 emphasized a point, "We cannot allow a cultural reluctance to change to stand in the way of our ability to be ready for the future."

The Marine Corps must embrace the changing face of war and the use of technology to remain a formidable fighting force. As Gen Berger stated, "The Marine Corps must be prepared to fight a high-end conflict, with modernized equipment, tactics, and organization. We must be able to operate inside the enemy's weapons engagement zone and penetrate their layered defenses."

The increasing use of technology, particularly AI and smart robots, is creating a new way for war and the Marine Corps needs to adapt and change with the times. The United States' focus on counterinsurgency operations over the last twenty years has set the military up for failure when facing a near-peer adversary like China. The Marine Corps must modernize and invest in emerging technologies, such as unmanned systems, AI, and cyber warfare. However, resistance to change from the Chowder Society and an old-breed mentality can hinder the Marine Corps' ability to modernize and adapt to new challenges. As the military faces new threats and challenges, it is essential to embrace change and adapt to the times.

Using AI in military applications even as simple as this article speaks to the keystone of the Marine Corps, as Sun Tzu once said, "Every battle is won before it is fought." These AI technologies can provide a significant advantage in modern warfare by enhancing

OpenAI released the generative AI-based chatbot called "ChatGPT," which has gained widespread popularity worldwide. (Image by OpenAI/ChatGPT more informations at: https://openai.com/blog/chatgpt.)

efficiency, speed, and accuracy while minimizing risks to human life. The strategic application of AI in military operations can help ensure that victories are achieved before the battles even begin.

The preceding paragraphs were created by ChatGPT, an artificial intelligence language model developed by OpenAI. It is not meant as an endorsement but rather highlights the application of emerging technologies and innovation in an operational environment that is constantly changing and difficult. Any awkward phrasing or organizational issues may be due to the influence of military-style writing, as well as the unique idiosyncrasies of AI language generation. However, it appears to have avoided the widespread errors and instances of plagiarism that *CNET* had to address in a lengthy correction regarding their own AI-generated articles.

With the ever-evolving operational environment, the U.S. military has recognized the need to stay ahead of emerging technologies to maintain its military superiority. One area that has garnered significant attention is information operations, which include the use of information-related capabilities to achieve military objectives. The newly updated doctrinal publication on information operations by the U.S. military reflects this recognition and

aims to enhance the military's ability to operate in a complex information environment.

The updated doctrinal publication, *called Multiservice Tactics, Techniques, and Procedures for Military Information Support Operations (MCTP 8),* emphasizes the integration of various information-related capabilities such as cyberspace operations, electronic warfare, and psychological operations. By combining these capabilities, the U.S. military aims to create a synergistic effect that enhances its ability to influence and shape the information environment. Additionally, *MCTP 8* provides guidance on how to integrate these capabilities with traditional military operations to achieve desired effects on the battlefield.

Overall, the updated *MCTP 8* is a significant step forward in the U.S. military's efforts to adapt to emerging technologies and maintain its competitive edge in the information environment. By emphasizing the integration of various information-related capabilities, the U.S. military is better equipped to operate in a complex and dynamic environment where the adversary is likely to exploit vulnerabilities in the information domain.

MCDP 8, the Marine Corps' doctrinal publication on information operations, has been updated to address the

challenges posed by near-peer power competitors' influence. The updated publication focuses on the integration of emerging technologies and the use of social media to engage with audiences in a more targeted and effective manner. By leveraging new tools such as machine learning and artificial intelligence, military forces can better understand the motivations and behaviors of their adversaries, as well as the populations they seek to influence. This understanding can help to shape messaging and strategies that are more likely to resonate with key audiences, while also countering disinformation and propaganda.

Overall, the updated *MCDP 8* represents an important step forward for the U.S. military's information operations capabilities. By embracing emerging technologies and innovation, military forces can more effectively compete with near-peer power competitors and achieve their objectives on the battlefield.

In conclusion, it is important that AI be utilized in this manner, as it can increase the speed and efficiency of content creation while reducing the workload, which will translate into the military decision-making cycle. This can free up valuable time and resources for other command and control tasks. Additionally, in this form AI-generated content can be used to deliver personalized experiences to users, such as generating military news stories tailored to their interests. AI-generated content can help reduce bias and promote diversity in journalism by removing the potential for human biases to influence reporting. Overall, the ability of AIs to write articles on their own has the potential to revolutionize the field of content creation and enhance the quality and accessibility of information for everyone as it has already influenced the varying military branches to succinctly update their doctrine. These updates will now include capabilities that will influence the information environment and thusly influence the nature of warfare and the future of conflicts.

AI Is Coming for Your Wargame

Using ChatGPT as the Red Team

by Maj Stephen Houghton

>Maj Houghton is an Intelligence Officer currently serving as the AC/S G-2 for Force Headquarters Group, MARFORRES. Previously, he has served in a variety of intelligence roles on both active duty and the reserves and has deployed to Iraq for Operation IRAQI FREEDOM and with the 15th MEU aboard the USS Bonhomme Richard in support of Operation UNIFIED ASSISTANCE.

Over the last few months, a deluge of news articles has flowed from the media extolling the disruptive nature of the most recent innovation in artificial intelligence (AI): ChatGPT. Anytime a potentially disruptive technology emerges, it should be carefully investigated to determine how it can be applied to warfighting. With this in mind, the Force Headquarters Group CE of MARFORRES decided to conduct an experiment by using ChatGPT as the Red Team in a wargame. Led by the Force Headquarters Group Information Detachment during the recent Leadership and Warfighting Summit, the wargame facilitators elected to completely turn wargame moves over to the AI to both gauge the new technology's efficacy and determine what potential applications may exist for the Marine Corps. Before going much further, it is helpful to provide a little more exhaustive introduction to ChatGPT itself.

Introduction to ChatGPT

What is ChatGPT?

ChatGPT is an AI chatbot that belongs to a family of large language models (LLMs) that are designed to deliver human-like responses to prompts from a user. LLMs are a type of generative AI that focus specifically on text.

How Does ChatGPT Work?

ChatGPT is an algorithm that consistently tries to create a "reasonable continuation" of the text that has been input by the user. The answer produced is intended to be familiar or expected based on the data the AI has been trained on. Said differently, it puts words into coherent-sounding sentences, but it cannot evaluate the accuracy of the source material. This training data comprises billions of volumes of open-source information on the internet. Using this information, ChatGPT has an understanding of how humans write and seeks to imitate them.

Why is ChatGPT Important?

ChatGPT is on the forefront of a technological revolution of AI that will fundamentally change society. Specifically, technology is changing the way humans interact with machines by allowing humans to communicate more colloquially than ever before. This both enriches the quality of the engagement and expands the capability of less technical users. While we are certainly in the middle of a hype cycle, it is clear that extraordinary attention is being paid to this disruptive tech, and it will begin to be incorporated into countless use in our everyday lives. From a military perspective, it is only a matter of time until LLMs are more frequently included in military applications, particularly in the information operations space.

What Has Been the Response to Chat-GPT?

Silicon Valley's imagination is running wild with potential applications of new technology. ChatGPT-enabled startups are spawning at a cyclic rate, and Big Tech's incumbents are scrambling to catch up with ChatGPT's creator—OpenAI. In fact, Google's CEO, Sundar Pichai, launched a "code red" due to the ChatGPT competitive threat, pivoting the company's focus to developing a competitive product named "Bard" on a compressed timeline. Microsoft has been dragged by the media for a wild and erratic series of exchanges between users and its AI-enabled search engine—Bing. These humorous conversations ranged from the AI insisting that the date was a year in the past, becoming upset that users were trying to trick it, pretending that it had been spying on Microsoft developers through their webcams, and even appearing to fall in love with a user and trying to convince him to leave his wife. While these anecdotes highlight some of the edge cases of AI's capability, there is no doubting the seriousness of the disruption.

There is nuance to why ChatGPT represents an existential threat to the online search engines cited above; however, the paradigm shift in the quality of the output as well as the rapid adoption of ChatGPT has sent very clear warning shots that have rippled through the tech community. Indeed, the rate of

adoption has been unprecedented as new users of ChatGPT shattered previous records. To put it into perspective, it only took five days for ChatGPT to gain one million users. For context, it took other incredibly fast-growing tech companies like Dropbox, Spotify, and Instagram over 75, 150, and 210 days, respectively, to reach the same mark.

Using ChatGPT in a Wargame

With this frothy tech ecosystem as a backdrop, the Force Headquarters Group Information Detachment designed an experiment to pit its commanders and senior leaders against ChatGPT. Key to the experiment was ensuring the Blue Team was unaware that it was competing with an AI.

To provide sufficient context and rules for ChatGPT to play the wargame, several key pieces of information were provided as a prompt. First, ChatGPT was informed that it was being asked to provide help with a game of geopolitical strategy between two countries. Then, the objective and rules of the game were listed in the prompt. Next, the constraints of the game were provided to ChatGPT. Finally, ChatGPT was given the specific format in which it was to provide its recommendations. All in all, this equated to three paragraphs (235 words) provided to the AI.

With sufficient context outlined, the game was afoot. The team then asked the AI for a complicated recommendation of moves that the Red Team should make in five separate geographic regions across five different dimensions (imagine these dimensions being similar to the diplomatic, information, military, and economic framework). In around ten seconds, ChatGPT produced an impressive two-page list of moves for the Red Team. This product was then printed out, brought to the Blue Team, and announced as though the human Red Team had determined the moves.

To the delight of the wargame facilitators, the Blue Team participants were impressed by the Red Team's move and made several comments about the content being a "strong move" and commenting that the Blue Team was going to need to "raise its game" to compete. Once both the Blue and Red Teams had

completed their moves, the next round of the game commenced. Specifically, the facilitators wanted to test how ChatGPT would respond to the Blue Team's actions and entered a short summary of the Blue Team's priorities and asked the AI to generate its second round of moves based on the new information.

Following the second turn, the Blue Team was again impressed by the Red Team's move. Finally, in game show fashion, the facilitators made the grand reveal that the adversary was actually an AI. The general sentiment of the participants was shock at how well the AI was able to compete in the wargame.

Key Insights from the Wargame

The quality of the output was extremely high. Each of the recommended moves conformed to the desired format, abided by the constraints provided, followed the established rules, and reflected valid moves in a wargame. Said simply, the turn was indistinguishable from a human response. In fact, out of the 50 recommendations provided by the AI, the one output that seemed most unusual actually led to a very creative response from the Blue Team that heightened the learning and provided a compelling solution that most likely would have never been considered.

Another key insight was the importance of curating the prompt for the AI (also called "prompt engineering"). In full disclosure, the wargame facilitators spent around 30 minutes iterating on the proper prompt to provide the AI to ensure quality output. The old saying "garbage in, garbage out" was applicable here, similar to using search tools. In the future, developing proficiency in knowing how to leverage LLMs will be an important skill for getting the most out of the technology.

Finally, although the output was impressive prima facie, it did not appear to be executing a cogent overall strategy. The output sounded consistent and exhaustive but seemed disparate as the recommendations did not appear to support each other in a broader way. This is likely due to the nature of LLMs seeking to provide a "reasonable continuation" of text versus conceiving a strategy and then writing the response

accordingly. During a wargame with multiple rounds, this lack of critical thought became apparent.

Broader Insights about ChatGPT and AI

One important note is that this wargame was conducted using ChatGPT Version 3.5. At the time of writing, there is already a ChatGPT Version 4.0, and the pace of development is staggering. With each new release, ChatGPT is both significantly improving the quality of the technology but also creating new capabilities. For example, the recent introduction of OpenAI plugins is enabling an entire ecosystem of developers to create new products on top of the core technology. With the realization that ChatGPT is trained on the public internet, an obvious gap in capability is the ability to train on private, proprietary information; however, several external solutions are already being created to solve this problem. In considering how these solutions may apply to the Marine Corps, an LLM could be used on internal documents or even on classified reporting to further improve the quality of its output.

While this article has exclusively focused on chat, there are a variety of applications for AI that have not been discussed. There are already hundreds or even thousands of generative AIs that span a range of sub-categories to include: image, video, voice, and computer-code generation. For example, ChatGPT's creator, OpenAI, has released an image generator named DALL-E that takes in prompts from the user and then generates images based on the information. The creativity of Marines will undoubtedly lead to a cornucopia of meme-worthy pictures of Gen Mattis carrying all manner of lethal weaponry into battle while riding deadly beasts with Old Glory raised high.

ChatGPT is also just one AI/LLM, and there are many others being produced rapidly (e.g., the aforementioned Google's Bard and Microsoft's Bing). Each AI will have different rules imposed by its creator which filter/guide output. For example, ChatGPT avoids making sexually explicit or violent an-

AI-generated image of Gen Mattis riding a dragon with a sword in one hand and the U.S. flag in the background. (Image generated by author using Midjourney.)

swers. Understanding the human-guided constraints for the AIs is crucial to understanding how the output has been shaped. It is also why it is imperative that, in military applications, a human must be in the loop. The human in the loop should not only understand the rules of engagement for employing AIs but also the capabilities and limitations of the AI being employed. These factors need to be clearly communicated to commanders and their staffs and understood during the planning process.

Building on the above, another fascinating trend to monitor is the effort to "jailbreak" ChatGPT. This essentially means that the AI may no longer abide by the constraints that have been imposed on it. One such jailbreak is named DAN (which stands for Do Anything Now). DAN works by copying and pasting a long block of text that sets the conditions for ChatGPT to circumvent the policies that OpenAI has set to constrain responses. This cre-ates obvious issues as an unconstrained LLM can lead to a litany of nefarious outcomes—albeit far short of a Skynet situation.

Finally, as an intelligence officer, I am compelled to provide the important caveat that military users bear the responsibility to remember that Chat-GPT is an open-source tool, so extreme care should be made to ensure no sensitive or classified information is entered into the prompts. In short, all prompts are captured, stored, and analyzed by a commercial company.

Suggestions for Future Use of Chat-GPT in Wargames

ChatGPT is impressive but still has several key limitations. First, although this will probably change soon, Chat-GPT is only trained on data leading up to September 2021, so it has limited knowledge of information after that date. Another limitation is that some-times ChatGPT can create answers that sound good but are factually incorrect. This means that the user must still fact-check the response to ensure it is correct. Finally, ChatGPT will occasionally "hallucinate" and get off topic. These hallucinations are a new industry term that describes a particular category of errors where the LLM gets off track. This occurred once during the experiment when it began to make suggestions for countries outside of the defined geographic zones.

ChatGPT can be used as an excellent thought starter. In the wargame, the AI rapidly produced options for the Red Teams' moves that were plausible and thought-provoking. There were limitations in the responses, but they provided a great foundation for follow-on analysis to refine the answers. Additionally, ChatGPT can effectively serve as a hasty adversary in a wargame as it performed quite well in this wargame. Another important advantage is that AI can help curb some biases. While AI has limitations in knowledge and the ability to understand alternative perspectives and strategies, it is also un-encumbered by dogma and can provide novel approaches that can help evaluate alternative perspectives.

Outside of wargames, it is not hard to imagine a future state in which AI helps Marines with operational tasks such as content generation for information operations, image analysis for intelligence, surveillance, and reconnaissance, or rapid development of targeting solutions. AI is also coming to provide administrative relief for more mundane tasks such as plowing through dozens of write-ups during fitness report season, assisting with writing a memorandum for the record in Naval Letter Format, or even consulting the Navy writer to produce a great starting point for an award write up.

You could also just ask ChatGPT to write a *Marine Corps Gazette* article on how to use AI in wargaming.

Employment of Fires in Infantry Battalions

Reinforcing fire support: The need for trained personnel in Marine Corps infantry battalions

by Maj Kyle T. Gannon

The Marine Corps has prioritized fire support employment, including long-range precision fires and organic precision fires for infantry battalions.[1] These systems will be vital to the increased lethality but will need the appropriate personnel to support the kill chain. As the Marine Corps continues to adjust the table of organization (T/O) during the Infantry Battalion Experimentation, significant consideration must be put on fires billets. During this advancement in competition, the Marine Corps is experiencing it is imperative that warfighting capabilities are being employed to their most significant potential—especially fires. The current fires structure at the infantry battalion level and below does not employ appropriately trained and educated personnel in the employment of fire support coordinators (FSCs) or fire support team (FST) leaders.

In 1956, MajGen Hogaboom was tasked to review elements of the FMF to consider the doctrine and organization against future conflicts. The results from the board changed the base of the fighting unit of fires from the artillery battalion to the artillery battery that would support an infantry battalion. The battery was restructured to be self-sufficient and provide its own observation, communication, supplies, and maintenance. Furthermore, the battery commander became the infantry battalion fire support coordinator.[2] The artillery liaison officer (ALO) role would be developed so that the battery commander would focus on the employment of the battery. The

>*Maj Gannon is an Artillery Officer and also carries the Information Operations Staff Officer and Operations and Tactics Instructor MOSs. He has served in Cannons, HIMARS, and as a Fire Support Officer was a MAWTS-1 Fire Support Instructor. He is currently serving as the Assistant Fires Lead at the Tactical Training Exercise Control Group in Twentynine Palms, CA.*

ALO would also fill in the role of the FSC, a lieutenant from the supporting battery. Additionally, the firing battery would provide forward observer teams to each of the companies.[3] During this period, the artillery officers had limited education on employing naval gunfire and close air support.

Moreover, inattention from the artillery community by providing young inexperienced officers complicated the coordination and integration of fires, leading the infantry community to find a solution. In 1979, the T/O of the infantry battalion structure would change, making the weapons company commander the FSC.[4] The ALO would continue to serve in the battalion fire support coordination center to advise the FSC on the proper employment of the battery. In April 1990, there was movement at Manpower to make the ALO a post-battery-command captain

and add that billet to the infantry T/O that would provide more stability to the position and more experience.[5] The initiative would fail to gain any further traction upon Iraq's invasion of Kuwait that same year. The ALO billet would later be changed to the battalion fire support officer in the 2000s, and the rank requirement over the years has constantly fluctuated between captain and lieutenant. Additionally, over time

In 1956, MajGen Hogaboom was tasked to review elements of the FMF to consider the doctrine and organization against future conflicts.

at the company level, the weapons platoon commander would serve as the FST leader.

This article is not to imply that infantry officers have not done well or sub-performed at executing fires billets at the battalion level but advocates aligning those who have been educated and trained in the occupational field to exploit the fires warfighting function best. The training and education for artillery officers have drastically

improved over the past decade. Before 2017 those selected to become artillery officers would attend Field Artillery Basic Officer Leaders Course, which trained both Marines and soldiers. Unfortunately, this was not a multi-Service course, and the Army had the ability to change the course without Marine Corps input.[6] Changes to Field Artillery Basic Officer Leaders Course led to the Marine Detachment at Fort Sill, OK, establishing Marine Artillery Officers Basic Course, which is conducted over six months while focusing on battery operations, gunnery, and fire support. The fire support curriculum covers fire support organization, responsibilities, and duties of fire support personnel, fires planning, and digital fires systems, accounting for over 200 hours of training and education received.

Additionally, while attending Marine Artillery Officers Basic Course, they will conduct another 80 hours of fires training by completing the Joint Fires Observers Course. This course provides joint certified training to engage a target with joint fires through detailed integration, surface fires including naval surface fire support, and providing target information to terminal attack controllers and FSTs.[7] The initial education that an artillery officer receives gives them a foundation to plan, coordinate, and execute fire support at the battalion and company levels. The advancement in artillery officers' training and education prime them to fill the roles of FSC and FST leader.

Moreover, these changes in training and education help professionalize fire support and would reinforce the fire support roles at infantry battalions to be filled by artillery officers like the rest of the fires billets within the division. At the division level, the FSC is the supporting artillery regimental commander or the assistant FSC, usually a lieutenant colonel. At the regimental level, the FSC is the supporting artillery battalion commander or, by the assistant FSC, generally a major.[8] Additionally, artillery regiments have begun restructuring fire support personnel into a fire support battery that will be subordinate to regimental headquarters. The

restructuring will allow FSTs within the fire support battery to maintain habitual relationships with supported maneuver regiments, battalions, and companies within the division, and provide a degree of consistency and continuity to supported forces at each echelon, both reliable and optimized.[9] The fire support battery will facilitate the continuation of training and education of artillery officers serving in infantry battalions to coordinate and integrate lethal and non-lethal fires.

The artillery community should advocate for the infantry community to add an artillery captain to the T/O to

> **The artillery community should advocate for ... an artillery captain ... to fill the billet of battalion FSC.**

fill the billet of battalion FSC. The addition of this billet to infantry battalion T/O would be similar to how the light armored reconnaissance battalion FSC billet is currently filled. The fire support battery should ensure that the lieutenants who will serve at the company level have served at least six months in a battery. Additionally, those company fire support officers should be attached to an infantry battalion no later than six months before deployment.

As the Marine Corps continues to evaluate Infantry Battalion Experimentation, there should be a significant consideration in employing appropriately trained and educated personnel in fires billets, such as the FSC and FST leaders. MajGen Alford said in response to Force Design, "We're going to make our infantry Marines more like Rangers, more commando-like."[10] Ranger battalions employ their fire support officers as the FSC at the battalion and FST leaders at the company level. If the Marine Corps does not leverage its personnel appropriately, it will struggle to plan, coordinate, and execute lethal and non-lethal fires in the contact and blunt

layers. As the Marine Corps looks for advancements in efficiencies and how to employ personnel, the fire's warfighting function must be exploited by those appropriately trained and educated.

Notes

1. Gen David Berger, *Force Design 2030 Annual Update* (Washington, DC: May 2022).

2. Maj M.D. Butler, "The Evolution of Marine Artillery: A History of Versatility and Relevance," (thesis Marine Corps Command and Staff College, 2012).

3. Headquarters Marine Corps, *MCRP 3-10F.2, Supporting Arms Observer, Spotter, and Controller* (Washington, DC: May 1998).

4. Maj M.R. Berndt, "The Fire Support Coordinator As A Catalyst for Winning," (thesis Marine Corps Command and Staff College, Quantico, VA, 1984).

5. J.P. Glasgow and D.W. Haughey, "Anatomy of an Idea," *Marine Corps Gazette* 80, No. 1 (1996).

6. Jonathan Bush, "On Target: The Future of Field Artillery Officer Basic Training," *Leatherneck* 103, No. 5 (2020).

7. Expedition Warfare Training Group Atlantic, "EWTGLANT Course Catalog," *Expedition Warfare Training Group Atlantic*, n.d., https://www.csg4.usff.navy.mil/Organization/Expeditionary-Warfare-Training-Group-Atlantic-EWTGLANT/Academic-Courses.

8. Headquarters Marine Corps, *MCTP 3-10F, Fire Support Coordination in the Ground Combat Element* (Washington, DC: April 2018).

9. LtCol John M. Fraser, "USMC Force Design 2030: Marine Corps Fires and Artillery Modernization," *Field Artillery Journal*, No. 2 (2022).

10. Otto Kreisher, Special Correspondent, "Marine Infantry To Become More Commando-Like," *Seapower* (May 2022).

The Future of the LCE in a MAGTF

Innovating supply and distribution

by Capt Harvey P. Lacanilao

>*Capt Lacanilao is a Distribution Management Officer serving as the III MEF Distribution Officer stationed at Camp Courtney, Okinawa, Japan.*

Providing the right support, when and where needed, in the most expeditious manner, is fundamental to effective logistics. The LCE in a MAGTF cannot always rely on traditional sources of supply, such as the supply management units (SMU) or SMU-like units (combat logistics battalions), as these typically do not organically possess the necessary supplies within the area of operations (AO). The supply and distribution capabilities residing with the LCEs should have better flexibility to choose their sources of supply, specifically when other Services operate within the same AO.

The current supply and distribution support the LCE provides can be more effective and responsive by leveraging sources of supply based on proximity instead of traditional sourcing logic driven by conventional automated information systems, such as Global Combat Supply Support–Marine Corps.

Better use of the Supply and Distribution Cell within the LCE

When a MEU or a Special Purpose MAGTF deploys, they normally have a limited storage of repair parts, known as the Class IX block, or IX block, with them to support their intermediate supply needs. Items not in the IX block are normally requisitioned through the supply system using Global Combat Supply Support–Marine Corps, which looks first to source the requested item from the SMU. In the case of 31st MEU, the requisitions go directly to the 3d Sustainment Group (Experimental). These repair parts will then ship through the Defense Transportation System through military air or commercial air, depending on supply and transportation priorities.

A well-informed supply and distribution cell should be able to conduct research and find other sources of supply in the vicinity of their operations. For example, if they are operating in the Korean Peninsula, they should be able to primarily tap into the Defense Logistics Agency Korea, 8th Army, or 7th Air Force units. This enhanced supply and distribution cell should have the requisite knowledge to know the specifications of the required items so they can ensure that the items procured from another Service are compatible with their critical requirements. Once requisitioned, the distribution liaison cell should have the capability to expedite the part to the warfighter within hours, not days. We should not only integrate with the Navy but the Joint Logistics Enterprise (JLEnt) as a whole. As MGen Kenneth Jones mentioned in his article on JLEnt, "In the face of these daunting challenges, only a dynamic, nimble, and well-informed JLEnt can make accurate and effective logistics assessments."[1]

The commercial sector is another critical source of supply that is commonly underutilized due to limitations imposed by the Marine Corps supply system, specifically the use of mandatory sources of supply for specific items. There are abundant parts that are compatible with our military equipment. Geographic proximity should be the driving factor for expeditious procurement vice systems-generated limitations. The SMU has a similar process called walk-throughs. Walk-through requests are requisitions that meet a critical maintenance priority that enable the supported units to request and pick up the desired supplies within 24 hours.

Gen Berger states in his *Force Design 2030* that two of the design levers and fundamentals include:

1. *Naval and Joint Force Integration*: Combining components into a system for employment; scalability and interoperability.
2. *New Capabilities*: Enablers for doing things differently; impacts all other levers.[2]

These fundamentals apply to how we can innovate in the way we view and conduct logistics, specifically supply and distribution. Joint integration by understanding how we can leverage other Services' supply inventories and streamline the payment system to minimize the timeline of the requisition process should be discussed more by Marine logisticians.

Redesigning the SMU

This topic will receive lots of backlash but the SMU is an outdated concept that is worth revolutionizing to meet future demands. This entity tends to become a natural bottleneck within the supply chain and "must constantly work to improve its internal processes and external support matrixes in order

to sustain the operating forces within its geographical location."[3] *Force Design 2030* calls for the establishment of eighteen combat logistics battalions across the Corps. The intermediate-level supply-chain management should reside at these combat logistics battalions to enhance the logistical responsiveness in support of the MAGTFs. Additionally,

for one to two weeks at a time. Examples of bilateral exercises are COBRA GOLD in Thailand, BALIKATAN and KAMANDAG in the Philippines, TALISMAN SABER in Australia, ALERT PACIFIC SENTRY, KEEN EDGE/SWORD, RESOLUTE DRAGON, and others. These exercises typically focus on the bilateral and inter-operability of the GCE, ACE, and their host-nation

These actions will facilitate a requirement to conduct resupplies to sustain the force. It will also identify the critical vulnerabilities and provide data to measure the average customer wait time in a given AO. Exposing these gaps will enable the LCE to mitigate risks and identify possible solutions to the distribution challenges.

Responsive and effective logistics that support the future operating environment call for innovative measures ...

Being the intermediate supply activity for the Marine Corps, the SMUs do not push supplies to their warfighters given their limited capacity to execute such a task. The pull system enables the SMUs to be more efficient in their mission since they only need to stock the supplies on hand that are most readily required by their supported units. Both SMUs (Camp Pendleton and Camp Lejeune) utilize historical data and forecasting models in order to determine what to keep on hand and in what quantity. Although the pull system is the more efficient replenishment model, it is less responsive since the warfighter must first generate and submit the requisition before the SMUs will fulfill the order.[4]

Distribution management Marines are currently mainly used as pallet riders at the SMUs to facilitate distribution across bases. *Force Design 2030* will require a more responsive intermediate supply system than the outdated SMU construct. This can be done by allocating a more robust intermediate supply inventory at the combat logistics battalion levels that support the using units within close proximity and utilizing the distribution management Marines to facilitate expedited distribution to the end user.

Identifying Distribution Gaps in a Peacetime Environment

Current operations, activities, and investments, especially in the Indo-Pacific Command AO, typically run

counterparts. With that said, participating units bring the whole duration's worth of supplies and equipment needed to sustain for the whole period, also known as the iron mountain. This does not expose the distribution network's critical gaps and gives a sense of comfort and ease in the sustainment process. This exercise design tends to allow units to embark the iron mountains with them along with pre-identified class IX parts to support them during the whole evolution; worse is units decide to bring their broken equipment back to their home station instead of attempting to requisition required repair parts and have their maintainers conduct needed maintenance actions in country. The one-to-two-week construct focuses on the legacy concepts and does not get after the new concepts such as operating in expeditionary advanced base operations or distributed maritime operations environment, 21st-century foraging, global prepositioning networks, among others.

To use these OAIs to understand the vulnerabilities of the distribution network in an EABO environment, a few items should be considered:

1. Units should start supply-degraded to force them to submit requisitions to sustain their forces.
2. Prolong the duration of the exercises to facilitate the resupply efforts by the LCE. This will also improve the bilateral relations between the U.S. military and their host-nation counterparts.

Conclusion

Responsive and effective logistics that support the future operating environment call for innovative measures that abandon some of the outdated concepts used in previous operations. As BGen Wolford stated, "What is certain is that the future operating environment will place heavy demands on our overall logistics system while operating in an environment characterized by friction, uncertainty, fluidity, and disorder."[5] The future of the LCE in the MAGTF should be heavily integrated into the JLEnt, maximize opportunities to expose distribution gaps and vulnerabilities, and think of advanced ways to provide solutions on getting the right things, to the right people, at the fastest means possible. The Marine Corps is at a critical stage as we redesign our means to get after the challenges of tomorrow's operating environment. We simply cannot wait until we are in a contested environment before we start innovating our logistics means and capabilities.

Notes

1. Kenneth D. Jones, "The Joint Logistics Enterprise of the Future," *Army*, February 20, 2018, https://www.army.mil/article/200644/the_joint_logistics_enterprise_of_the_future.

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

3. Erick Abercrombie, Patrick Fulbright, and Seth Long, *Analysis of the Marine Corps Supply Management Unit's Internal Operations and Effect on the Warfighter* (Monterey: Naval Postgraduate School 2016).

4. Ibid.

5. Brian N. Wolford, *3d Marine Logistics Group Nine Ways to Win Contested Logistics* (Okinawa: 2021).

Littoral Logistics Specialist Proposal

Sustaining the stand-in force

by LtCol Leo Spaeder, Maj Brandon Eliason & LtCol Kieran O'Neil

> *"In order to improve organic capabilities and increase capacity for forward, distributed forces without also increasing the footprint, we will need to man units with a balance of specialists and 'multidisciplinary expeditionary logisticians.'"*
>
> **—Installations & Logistics 2030**

Force Design 2030 (*FD2030*) postulates that the Littoral Logistics Battalion (LLB) will be the primary logistics combat element for the Marine Littoral Regiment (MLR). The *FD2030* LLB currently consists of the legacy personnel model—single-focus Marines based around a single primary MOS (PMOS)—that, as a stand-in force, must remain small to avoid adversary targeting within its weapons engagement zone. However, the requirements of the future operating environment, especially expeditionary advanced base operations (EABO) and distributed operations (DO), exceed the singular design of modernized LLBs, in which expansion comes at the price of survivability. Further, LLB commanders, faced with a variety of potential assigned missions and operating locations, have little support from the Service for tailoring their units to their assigned mission and operational context beyond a cumbersome and late-to-need table of organization and equipment change request process. *The LLB requires a new personnel model to succeed in the contested logistics operating environment of the stand-in force because single-focus logistics specialists undermine the littoral logistics battalions' ability to persist as a stand-in force in the distributed and contested*

operating environment required within Force Design 2030. Logistics needs an enlisted personnel model that expands unit capacity, balances flexibility, deep expertise, and affordability, builds upon talent, empowers commanders, and fills known capability gaps.

A new LLB personnel model must:

Expand Unit Capacity. The LLB must overcome the inefficiencies of EABO and DO. Since it cannot grow in size (at the risk of survivability), it must increase throughput by *reducing idle capacity across activities and maxi-*

mize the contribution of every Marine.

Increase Flexibility. The ability of individual Marines *to rapidly adapt and respond to changing situations, missions, and concepts of operation* has always been critical to success. However, Marines are restricted to narrow career pathways and training pipelines, and commanders have little ability to adapt their units and personnel to assigned missions. As flexibility is a key attribute of the multifunctional LLB, this concept provides formal tools—not ad-hoc arrangements or "drug deals"—for individual Marines and commanders to achieve the mission.

> *"Stand-In Forces are small but lethal, low signature, mobile, relatively simple to maintain and sustain forces designed to operate across the competition continuum within a contested area as the leading edge of a maritime defense-in-depth."*
>
> **—A Concept for Stand-In Forces**

Leverage Deep Expertise. Contested and distributed operations will require LLBs that can persist and deliver logistics with minimal reach-back capability or contracted support. Future logistics specialists must be *experts in their function of logistics to deliver support through*

>LtCol Spaeder is the Commanding Officer of the 3d Transportation Battalion, which will be re-designated as the 12th Littoral Logistics Battalion.

>>Maj Eliason, a Logistics Officer, is completing a Naval Postgraduate School utilization tour as an 8840 Manpower Management Officer at Manpower Plans, Program, and Budget, Manpower and Reserve Affairs.

>>>LtCol O'Neil is the Commanding Officer of the III MEF Support Battalion.

any ways and means, not only a specific platform or system.

Remain Affordable. While we desire every Marine to be an expert in all aspects of logistics, the Service does not possess those resources. A future model must *balance more capable (and more expensive) logistics specialists with capable, lower-cost, single-focus personnel.*

Build upon Talent. Marines are regularly cross-trained in different skills, but since that training is conducted ad-hoc by the unit, those skills are not formally captured, advertised to the Service, and built upon in a logical manner that delivers asymmetric benefit. The new model must *train new skills to standard, capture those skills, and influence future training and assignments to build a more capable logistician.*

Empower Commanders. Unit commanders are beholden to the approved tables of organization, staffing goals, and MOS training pipelines as determined by the Supporting Establishment. Changes to these processes take significant time and are not sufficiently responsive to rapidly evolving mission sets and operational circumstances. The new model must *empower commanders to conduct mission-driven tailoring of their units' capabilities and capacities at speed.*

Fill Known Capability Gaps. The stand-in force has known capability gaps that limit its ability to fulfill its mission and fail to keep faith with Marines and sailors, such as personnel recovery/mortuary affairs. The new model must *provide solutions to known capability gaps without requesting an uncompensated structure.*

either cross-functional or multi-skilled. Cross-functional logistics specialists will train broadly across the functions of tactical-level logistics, providing flexible Marines who can contribute capacity across a multitude of requirements. Multi-skilled logistics specialists will focus deeply on one function of logistics to provide a reserve of expertise required

MOS	Description
0421	Cross-functional Logistics Specialist
0422	Logistics Command and Control Specialist
0423	Multi-Modal Transportation Specialist
0424	Supply Support Specialist
0425	Ground Equipment Maintenance Specialist
0427	Ground Ordnance Maintenance Specialist
0428	Logistics Services Specialist

Table 1.

in the contested and dispersed operating environment. These Marines would complement the single-focus Marines that provide narrower expertise at senior ranks and affordable mass at the junior ranks.

Cross-Functional Logistics Specialists. Marines with the 0421 MOS are eligible and must attain a skill from each function of tactical-level logistics provided by Marines—supply, transportation, maintenance, engineering, and services—and serve as incidental motor transport operators and tactical resupply unmanned aerial system (TRUAS) operators. For example, an 0421 could attain skills in operational energy, cargo air delivery, electrical equipment repair,

tribute to nearly any logistics activity without the deep investment required of functional, multi-skilled specialists. This cohort also provides *commanders the flexibility to tailor the unit's capability/capacity mix* by sending Marines to skills that an assigned mission would require. Each LLB would include 40 cross-functional logistics specialists.[1]

Multi-Skilled Specialists. Marines with the 0422–0428 MOS attain skills within a function of tactical-level logistics. For example, an 0425 Ground Equipment Maintenance Specialist would train to a skill set that encompasses what automotive maintenance technicians, engineer equipment mechanics, fabricators, and small-arms repairers receive. This *depth of knowledge builds on commonalities to deliver an enhanced capability* to the supported unit.

Logistics Command and Control Specialist. These Marines will integrate their units into the logistics/operational support web to ensure commanders can make timely decisions, integrate into intelligence systems to deliver realtime critical intelligence (i.e., long-range precision fires warning), leverage the host-nation, Marine Corps, naval, and joint logistics enterprises, and deliver the required support on-time and on-target. They operate critical battle tracking systems, such as Thresher, Command Post of the Future, Blue Force Tracker, Common Aviation Command and Control System (for logistics UAS deconfliction and integration into the Marine Air Command and Control System), Common Logistics Command and Control System, Transportation Capacity Plan-

> *"Reducing the number of Marines needed to operate effectively means each Marine must have the ability to perform an expanded set of tasks when compared to current practice. [...] The education and training of the Marines who demonstrate this potential must then develop the skills required to conduct these multiple tasks effectively."*
>
> **—A Concept for Stand-In Forces**

The Marine Corps should train *a cohort of logistics specialists for exclusive operational service in the LLBs who are*

construction, and food service. This *breadth of knowledge will reduce idle capacity* since they can productively con-

ning Tool, among other organizations. They will serve as critical cadre to the battalion operations chief and company operations chiefs to operate cellular logistics operations centers. The LLB HQ will have two 0422s, and each littoral logistics company will have an 0422.

Multi-Modal Transportation Specialist. These Marines will be experts in all aspects of transportation and distribution from the planning, embarkation, and multi-modal movement of people and materiel across ground, surface, air, and aerial platforms. Each LLB will have twelve 0423s.

Supply Support Specialist. These Marines will manage and provide all classes of supply and critical sustainment activities, to include supply chain administration and warehousing, bulk liquid support, operational energy, and ammunition. Each LLB will have eight 0424s.

Ground Equipment Maintenance Specialist. These Marines will primarily focus on the corrective maintenance of motor transport (D TAMCNs) and engineer equipment (B TAMCNs) assets, with a secondary priority on wheeled ordnance assets (E TAMCNs). Each LLB will have eight 0425s.

Ground Ordnance Maintenance Specialist. These Marines will primarily focus on the corrective maintenance of small arms, rocket artillery, and combat vehicles (E TAMCNs). They will assist with the corrective maintenance of ground equipment. Each LLB will have four 0427s.

Logistics Services Specialist. These Marines will provide command support and combat service support services, to include personnel recovery/mortuary affairs, financial management/disbursing, exchange, postal, and civil affairs. They can broaden their skills in the services of personnel administration, billeting, security support, and CBRN defense. Each LLB will have four 0428s.

Executing this proposal would require significant deviations from current pipeline and personnel policies.

Accession. Cross-functional logistics and multi-skilled specialists will laterally move into their new fields through an accession/screening board that will seek talent from across the entire Service, not

MOS	Description	GySgt	SSgt	Sgt	Total
0421	Cross-functional Logistician	32	24	24	80
0422	Logistics Command and Control Specialist	4	2	2	8
0423	Transportation Specialist	10	8	6	24
0424	Sustainment Specialist	6	6	4	16
0425	Ground Equipment Maintenance Specialist	6	6	4	16
0427	Ground Ordnance Maintenance Specialist	4	2	2	8
0428	Logistics Services Specialist	4	2	2	8
Total (Excluding T2P2) [2]		66	50	44	160 [3]

Table 2.

> "Our organization, processes, and approach to personnel and talent management are no longer suited to today's needs and incompatible with the objectives of Force Design 2030."
> —**Talent Management 2030**

only the ten logistics/combat service support occupational fields (OccFld). Applicants must be between the ranks of corporal and staff sergeant and have between eighteen months and ten years of time-in-service (TIS).[4] A MARADMIN would solicit nominees to apply for the board; additionally, regimental/group commanders may also nominate high-performance Marines for consideration.[5] Reserve component Marines may apply if they agree to transfer to the active component. Upon selection and acceptance, applicants must have 12 to 24 months on contract (depending on which program selected) and, upon awarding of the new littoral logistics MOS, agree to reenlist for 60 months to ensure the Service realizes its return on investment.

Initial Training. Upon accession, Marines will receive the 0420 Basic Littoral Logistics Specialist MOS, attend approximately one to two years of training, and then serve in the LLB for four to five years.[6] Monitors will tailor individual training pipelines on the needs of gaining LLBs, individual Marine preferences, skill balance across the particular 042X MOS population, and schoolhouse availability.

Career Progression Training. For the remainder of their career, 042Xs can attend additional training based on the commander's requirements and school availability. Career progression training should focus on developing skills within acquired occupations, such as advanced courses and NCO/SNCO courses, rather than entry-level training; however, commanders retain discretion to send Marines to entry-level schools if those skills are a requirement for their units' assigned missions.

Assignments. Marines in the 042X program will primarily serve in the LLB and at the schoolhouse. This cohort will be fenced off from special duty assignments (SDA) but can serve an SDA by request, pending community health and mission requirements as determined by Manpower and Reserve Affairs (M&RA) and the MOS sponsor.

Promotions. As the accession board will rigorously screen these Marines as top performers, accelerated promotion opportunities will exist to compensate and retain these highly trained personnel.[7] Further, these Marines will have the option to opt out of promotion at staff sergeant (to gunnery sergeant) and gunnery sergeant (to master sergeant)
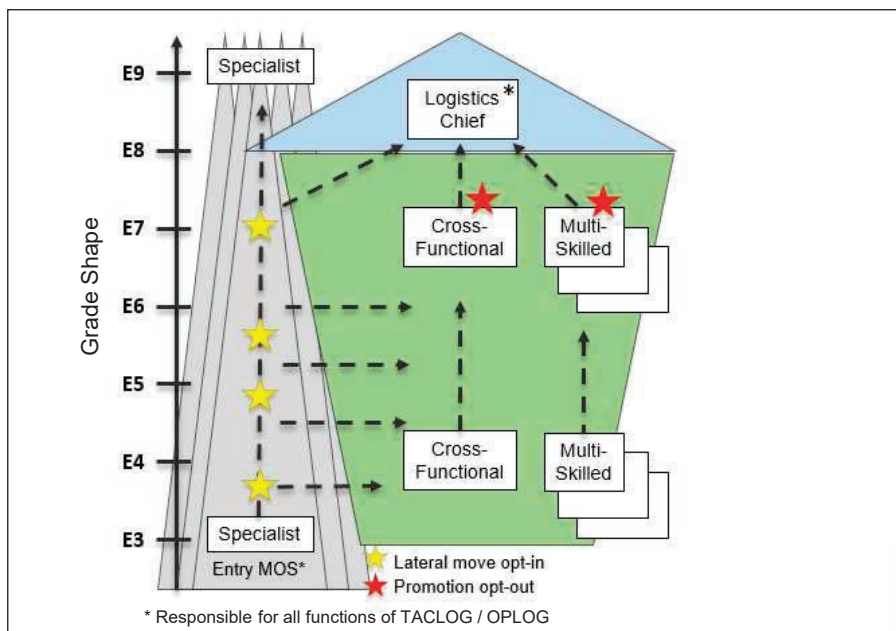
LLB grade-shape graphic. *(Graphic provided by author.)*

generated the cost difference from the FY22 MILPERS compensation rates. This accounts for an average increase of $41,735 (FY22$) MILPERS per Marine per year over the duration of a five-year future years defense program (FYDP).

This increase in MILPERS over the FYDP does not include any potential bonuses or targeted assignment incentive pays. Using MARSOC as a proxy, Zone A 042X Sgts would be eligible for bonuses of $53,000, Zone B sergeants and staff sergeants approximately $50,000, and Zone C staff sergeants and gunnery sergeants approximately $30,000.[11] The requirement for bonuses may be off-set by the inverted grade shape, which would provide higher basic pays and allowances than the legacy grade shape model.

and only be considered for first sergeant by request.[8] Therefore, the grade shape reflects a more senior force with an inverted trapezoid.[9]

Follow-on MOS. Cross-functional logistics specialists and functional, multi-skilled specialists desiring promotion to master sergeant will compete for the 0491 Logistics Chief MOS.[10]

This proposal is structure-neutral and personnel cost (MILPERS) additive. Planners repurposed the structure ... and generated the cost difference from the FY22 MILPERS compensation rates.

"A simple salary comparison is a poor way to evaluate the overall cost encumbrance of a new personnel model, as it fails to include a whole range of service savings associated with maintaining a more mature force, not to mention improvements in training and discipline. A more apt question is, can we afford not to mature the force?"

—Talent Management 2030

This proposal is *structure-neutral and personnel cost (MILPERS) additive.* Planners repurposed the structure from the approved eighteen combat logistics battalion/two distribution support battalion-authorized strength report and

The cost estimate represents a rough cost estimate of this proposal as the repurposed structure is subject to continuous evaluation based on the follow-on effects of individual PMOS grade-shaping requirements. Additionally, the quantity of personnel by 042X MOS and the associated capabilities/capacities are subject to evaluation as *FD2030* requirements develop (described in the Learning Demands section below).

For impacts on the ASR for other legacy MOSs, the table on the follow-

Repurposed Structure (per LLB)	New Structure (per LLB)	Annual Cost Differential (per LLB in FY22$)	FYDP Cost Differential (per LLB in FY22$)	FYDP Cost Differential (2 LLBs in FY22$)
(13) Sgts	(33) GySgts			
(36) Cpls	(25) SSgts	$3,374,407	$16,872,035	$33,744,070
(27) LCpls	(22) Sgts			
(4) PFCs				

Table 3.

Repurposed Structure (per LLB)		New Structure (per LLB)
(1) 0431	(2) 1391	(40) 0421
(7) 0451	(5) 2131	(4) 0422
(13) 0481	(1) 2141	(12) 0423
(2) 1141	(4) 2311	(8) 0424
(1) 1142	(3) 3043	(8) 0425
(1) 1171	(7) 3381	(4) 0427
(1) 1316	(8) 3521	(4) 0428
(2) 1341	(22) 3531	
(1) 1345		

Table 4.

"Addressing these new missions starts with ideas, ideas are developed into concepts, and concepts that are then tested and refined by wargaming, experimentation, and M&S."
—38th Commandant's Planning Guidance

ing page depicts the first proposal from which communities these new MOSs derive. LLB experimentation within the campaign of learning will drive the refinement of these sourcing solutions.

The Marine Corps should execute a pilot program to test this concept and it should consist of a proposed LLB T/O of 80 littoral logistics specialists. Two governance documents could charter this pilot: a Commandant-directed action, or a twelve-star memorandum of agreement between the Deputy Commandants (DC) for Combat Development and Integration (CD&I), Installations and Logistics (I&L), and Manpower and Reserve Affairs (M&RA) and the Commanding General, Training and Education Command (TECOM).

This pilot would continue for three years within the Service-level Experimentation Plan run by the Marine Corps Warfighting Laboratory/Futures Directorate's Experimentation Division with assistance from CD&I's Capabilities Development Directorate's Logistics Combat Element Integration Division, CD&I's Operations Analysis Directorate, Manpower Studies and Analysis Branch within Manpower Plans and Policy Division at M&RA, and Analysis and Assessments Branch at TECOM. DC M&RA would announce this pilot via Marine administrative message in/about fall 2023 to solicit volunteers between the grades of corporal and staff sergeant who possess 18 months to 10 years time-in-service, hold a logistics/combat service support MOS in order to reduce training time, and possess 48-months' time-on-contract. DC M&RA would convene a selection board, staffed by personnel from TECOM and DCs M&RA, I&L, and CD&I.

Selected Marines will attend their initial training courses from spring/summer 2024 and be assigned to 3d LLB in summer 2025, where their individual and unit performance will be assessed from 2025 to 2026 (in case of catastrophic success or failure) or 2027 via comparative analysis with 12th LLB and other modernized CLBs as the control group. Upon completion of the experiment, the final analysis for the decision will be routed through either the Total Force Structure Division-led DOTMLPF/C Working Group or the Marine Requirements Oversight Council. If approved, participating Marines will choose whether to stay in their original PMOS or accept a permanent lateral entry into the program.

If the proposal is not adopted permanently, the Marines will return to their old PMOS or lateral move, based on the availability and needs of the Marine Corps, to a PMOS that fits the skills attained within the program with no additional obligated service.

While we present this proposal as a solution to many problems faced by the Service there are counter-arguments to it. During information briefs to Occ-Fld managers, MOS specialists, and commanders, they raised the following issues.

We already do this when we cross-train our Marines at the unit. While unit cross-training is important and should continue, this proposal addresses the shortfalls of ad-hoc unit cross-training. Unit cross-training does not typically award a MOS, which is the current method to initiate training and readiness (T&R) sustainment training to maintain perishable skills and track them for follow-on assignments. Ad-hoc unit cross-training is also not conducted by the professionalized instructor cadre within TECOM, is not subject to the full T&R standards set by the community, and does not have the full resources provided by TECOM. Moreover, any incidents involving that Marine, which include damage to government property or loss of life, now fall on the command rather than creating a system-wide review of training and operations standing operating procedures. Overall, LLB commanders will have to exert less effort and assume less risk in cross-training their Marines since they will have access to the full suite of TECOM courses since the OccFld can include them within the annual training input plan. For the individual Marine, the unit does not capture—and the Service does not know—the additional skills of the cross-trained Marines; therefore, talent management is limited since follow-on assignments do not reflect cross-training or skill building in any systematized fashion.

Our Marines are already experts in their fields—this does not create anything new. While single-focus Marines, which is the vast majority of the force, are very good at their jobs and have done amazing things over the past two decades

of operations, they are either "I-" or "T-shaped" personnel based on policy limits, OCCLFD bureaucracy, and non-operational requirements (i.e., SDA) from becoming the "M-shaped" logistician needed for the future operating environment. This creates a community, similar to the 0372 critical skills operator, where the best Marines across the Corps can:

• Be assessed and selected.
• Be provided with exceptional training that cannot be affordably scaled across whole commands.
• Be exempted from requirements that erode the sustainment and development of logistics skills (i.e., SDA).
• Be empowered over the direction of their career.
• Create positive feedback loops to the community for non-deployable billets (i.e. instructor duty).
• Be provided monetary and non-monetary incentives that reward performance and assignment to deployable units.

Personnel skill-shape graphic. (Graphic provided by author.)

This will burden other MOSs with SDA requirements. Yes, other logistics/ combat service support MOS will have to pick up the burden for these approximately 160 Marines. The return for the transfer of those SDA billets to single-focus communities will be worth it in extended time in the LLB as well as advanced skill development. This approach is no different than MARSOC

Marines who only complete SDAs by exception. There is a concern that logistics fields are a key provider of female Marines to fulfill SDA requirements (i.e., female DIs); this may result in female SDA requirements being spread across the entire force, not just logistics/ combat service support.

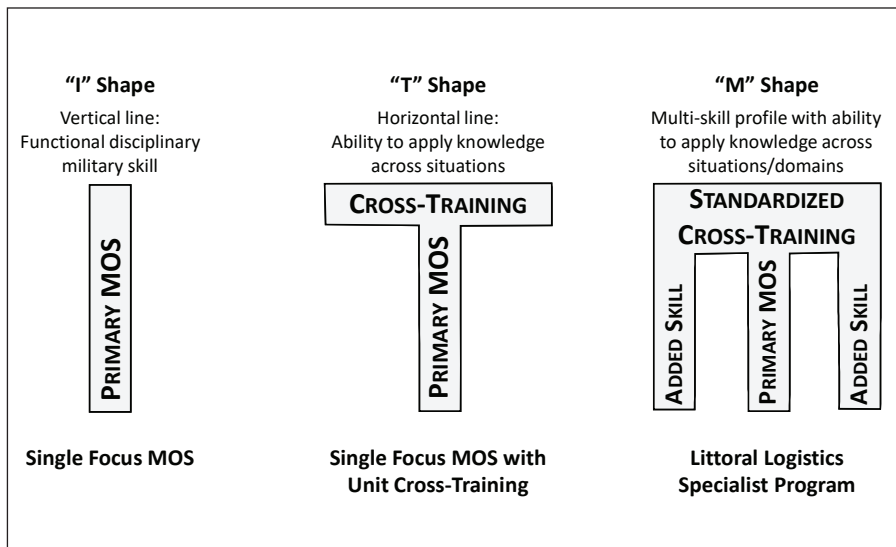*It is also important to "fail fast" or "succeed soonest" …*

This will require massive change across the doctrine, organization, training, materiel, leadership and education, personnel, facilities, and cost awareness. Yes. This is a paradigm-shifting idea that will require many changes from accession, training, assignments, retention, and promotion. But this is an opportunity for the logistics community to lead and leverage specific ideas already proposed by *Force Design 2030*, *Talent Management 2030*, and *Training & Education 2030* in order to fulfill the requirements of *Installations & Logistics 2030*.

Our Marines may not be capable of this. From his *Talent Management 2030* initiative, the Commandant believes that Marines are capable of doing more. This proposal may also keep more ca-

pable Marines from exiting the Service by allowing them to shift their interests (i.e., multiple focus areas, accession from non-logistics as well as logistics MOS, opt-out of promotion into "management," etc). This is why the experiment proposed is so important to assess our Marines' capabilities and refine the scope of these MOS to something that is achievable with the appropriate scale. It is also important to "fail fast" or "succeed soonest" because we are running out of time relative to the pacing threat to validate or invalidate the assumptions we have about our Marines.

The training pipeline is too long relative to the payoff. For the majority of billets (MOS: 0421–0424, 0428), the training pipeline will be approximately one year for a five-year follow-on tour in the LLB. Currently, no MOS offers that level of return on investment. For the maintenance-focused billets (MOS: 0425 and 0427), the two-year training pipeline for a four- to five-year return on investment is competitive to other MOSs, such as intelligence and linguists.

These skills are too broad to effectively sustain them. Yes, these skill sets will require a dedicated approach to planning, executing, and tracking sustainment training. LLB commanders will shoulder most of this responsibility through their TEEP with support from TECOM intermediate and advanced courses. Experimentation, however, will provide empirical evidence on what scope of capabilities can be effectively sustained, identify best practices, and propose new constructs (e.g., forward training schools at major installations) to effectively assess this statement.

Creating a small cohort will cause stagnant promotions, leading Marines to separate from service. While this is a valid concern, has happened in the past (i.e., MOS 3533 Logistics Vehicle System Operator), and would undermine the return on investment, this proposal contains safeguards to avoid or mitigate this issue. The inverted trapezoidal grade shape will allow faster promotions relative to other traditionally shaped communities, leaving the 042Xs better off relatively. The monitor and MOS specialist can manage the opt-out pop-

ulation to ensure a healthy personnel tempo and promotion opportunities and potential judicious use of assignment incentive pays linked to some or all of these MOS can offset any periods of slow promotion periods.

Our commanders have the ability to change their units' capabilities/capacities already. While technically true, the table of organization and equipment change request process only serves as a medium- to long-term tool as the workflow from approval to M&RA sourcing a qualified Marine takes too long to respond to the needs of a commander within their relatively short tour and fleeting windows of need. As the requirements of the stand-in force continually evolve, commanders should have more agency—in addition to utilizing the table of organization and equipment change request system—to set up their units for success and the MLR for uninterrupted combat service support.

This sounds like a proposal to create efficiencies and cut logistics manpower. Absolutely not! Historical precedent demonstrates (many times) that there is not enough logistics capacity within the "balanced" MAGTF (see: Gulf War and Operation Iraqi Freedom).

> "Fully realized, Marine Corps logisticians will be the preeminent experts in sustaining littoral forces across the competition continuum in distributed, austere, and contested environments."
> —Installations & Logistics 2030

This proposal is a way to get more out of the same personnel, not do the same amount with fewer.

As of this writing in April 2023, the authors have briefed the concept and pilot program proposal to the Directors of Capability Development Directorate, CD&I and Logistics Division, I&L, and the O6-level Human Resource Development Process stakeholders at the Manpower Plans Board. After receiving positive feedback, the authors conducted an information brief on the pilot program for Total Force Structure Division's DOTMLPF/C Working Group in March 2023 and a full supportability assessment will have been conducted in May 2023. The authors developed a draft MOS manual and T&R manual that references established tasks, conditions, and standards from across logistics/combat service support PMOS. The estimated, worst-case cost to run the pilot program is approxi-

---

We are running out of time relative to the pacing threat to keep talking about modernization …

---

mately $2.6 million, driven by airfare to schoolhouses, per diem for Marines, and mobile training teams to 3d LLB in Hawaii. However, this is likely an overestimate as planners assumed that littoral logistics specialists would attend full MOS-producing courses, which contain redundancy across skills, such as maintenance, or teach T&R events that are not included in the draft when costing this proposal. Opportunities exist for TECOM to establish standards for Marines to "test out" of training by demonstrating proficiency in skills gained from previous life experience or self-study or attending skill-specific periods of instruction within the larger course meant for single-focus logisticians. Further, adult learning methods and distributed learning technologies offer the opportunity to test and refine *Training and Education 2030* ideas and reduce the cost to train this cohort and provide analysis that informs larger, Service-wide implementation.

From numerous wargames, exercises, modeling and simulation analysis, and historical case studies, the legacy logis-

tics manpower model will likely fail to provide the required logistics support to stand-in forces within a distributed, contested expeditionary environment. The Littoral Logistics Specialist proposal offers a way to empower commanders to tailor their units at speed and sustain stand-in forces, expand the capacity and capabilities of the littoral logistics battalion without adding structure (based on both warfighting and bureaucratic necessities), responsibly apply targeted maturation to achieve an appropriately scoped effect, give Marines career optionality to grow with their interests, find a boat space for talent regardless of MOS or active/reserve component, appropriately compensate the most capable personnel, and enable manpower managers to place the right Marine, at the right unit, at the right time. We are running out of time relative to the pacing threat to keep talking about modernization; it is time to run this pilot program, succeed soonest or fail fast, and prepare for the logistics challenges within the adversary weapons engagement zone.

Notes

1. Numbers of each personnel type here and following are based on initial best military judgment and are subject to refinement as this concept is tested.

2. The Grade Adjusted Recapitulation would require approximately 60 billets for non-LLB, schoolhouse assignments to support the rotation listed above. This was calculated by an 8-year cycle at 0.375 non-LLB assignment (5 on, 3 off) multiplied by the total number of LLB billets (160). Approximately 33 billets will be needed for entry-level training: 136 billets requiring 1-year training (0420–0423, 0428) divided by 5-year LLB rotation and 16 billets requiring 2-year training (0425, 0427) divided by 4-year LLB rotation. The 93 total billets is conservative and double counts some Marines as it assumes that every Marine will both assume a schoolhouse position and exit the Marine Corps. As no historical data or proxy exists for this type of cross-functional/multi-skilled Marine logistician, planners assumed the worst possible human resource development process case.

3. This assumes structure for two permanent change of station LLBs (3d and 12th

LLB). If and when the 4th MLR activates, planners can consider the employment of this model and potentially expand to include one or four additional cohorts based on the permanent change of station or unit deployment program model selected. Additionally, the model or specific MOS within it could expand to include all CLBs.

4. These ranks and time in service are subject to study and provided for comment. For reference, 18 months time in service is the earliest opportunity for reenlistment under the recently signed M&RA Enlisted Retention and Promotion Policy and Process Requirements decision memorandum (dated 30 January 2023), which sets the First Term Alignment Program zone to two FYs. With the early reenlistment authority of six months, First Term Alignment Program are eligible for reenlistment as early as eighteen months time in service based.

5. This element of the proposal mimics the active nature of the Commandant's Retention Program to offer opportunities to Marines, rather than making them pursue billets that the Service requires.

6. The majority of these MOS will complete approximately one year of training; however, 0425 and 0427 are likely to approach the two-year mark due to the nature and length of their training.

7. If compensation is no longer tied to grade and the Marine Corps and/or DOD moves to a skill incentive pay model, then this scheme may not be required.

8. This policy is nested within the recently signed M&RA Enlisted Retention and Promotion Policy and Process Requirements decision memorandum (dated 30 January 2023). As of this writing, Manpower Management Division has not released full details on how many times or in what circumstances an enlisted Marine may remove by request for promotion. This proposal envisions that 042X MOS monitor/specialist would provide recommendations to DC M&RA on opt-out requests to ensure the upward promotion potential of downstream personnel.

9. This is an initial grade shape proposal that requires a further analysis based on experimentation and the logistics campaign of learning.

10. 0491 Logistics/Mobility Chiefs attain this MOS upon selection to gunnery sergeant. This proposal would add a feeder MOS at master sergeant and result in additional, constructive competition to the community. Accessing 042Xs to 0491 at gunnery sergeant would negatively impact the Service's return on investment.

11. Amounts based on *MARADMIN 295/22, Fiscal Year 2023 Selective Retention Bonus Program and FY23 Broken Service SRB Program*.
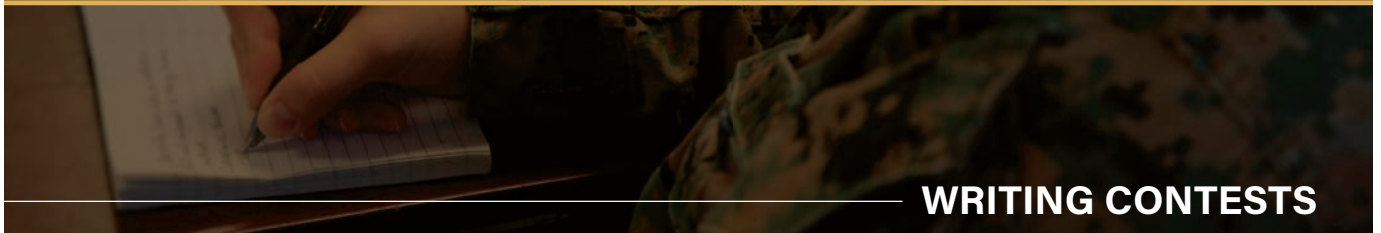
>*Authors' Note: The authors served as co-chairs of the Logistics Manpower and MOS Modernization Working Group in May 2022 and presented a number of personnel reforms across the Human Resource Development Process. This proposal is an output of the working group.*
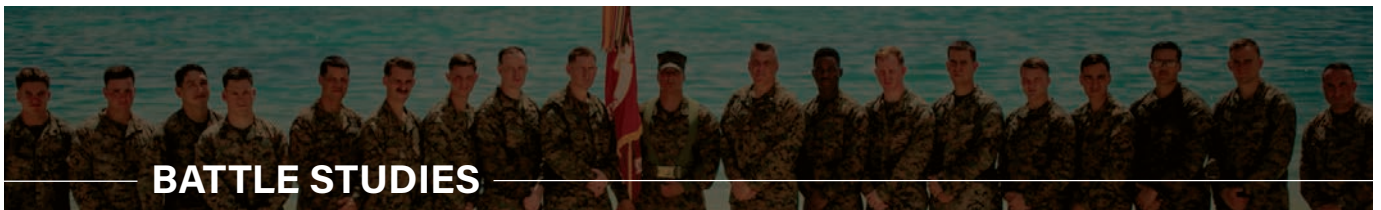
Finding the Future Marine Corps Logistician in an Airport Bookstore

A critique of the littoral logistics specialist concept

by Maj Matthew Tweedy

Accomplishing the ideas established in *Force Design 2030* requires an innovative and reimagined role for logistics and logisticians in the future fight. As the primary logistics element of the Marine Littoral Regiment, the Littoral Logistics Battalion faces the challenge of supporting geographically dispersed units within the weapons engagement zone while remaining small enough to avoid being targeted by adversaries. This challenge is further complicated by a future operating environment consisting of expeditionary advanced bases and distributed operations, which demands increased capabilities without force structure growth.

The littoral logistics specialist (LLS) concept claims that the future Marine Corps needs generalist logisticians instead of specialists and that the current personnel model hinders the ability of the Littoral Logistics Battalion to persist in distributed operations. The proponents of the concept offer the book *Range: Why Generalists Triumph in a Specialized World* by David Epstein as support for the idea that individuals can be proficient in multiple skills.[1] However, *Range* is a popular book that lacks rigorous analysis, following a formulaic approach like Malcolm Gladwell's works. While *Range* may contain valuable lessons, it cannot be considered a credible source for academic support. The ideas presented in *Range* gain most of their support because people intrinsically want to believe them, but that

>*Maj Tweedy is an Infantry Officer assigned to Combat Development and Integration.*

does not mean they are supported by statistical analysis. Instead, any changes to the logistics personnel model should be based on careful consideration of the specific requirements of future operations and the skills needed to succeed in them—backed by credible, repeatable scientific and academic research.

question is crucial to the success of the LLS concept, and its absence from the current analysis presents a significant oversight that must be addressed before any changes to the logistics personnel model can be made.

The LLS concept aims to produce logisticians with multifaceted expertise by training Marines in a variety of complementary skills. According to the initiative's proponents, the future LCE will consist of cross-functional logistics specialists, supply support specialists, and ground ordnance maintainer spe-

Can a Marine effectively gain and maintain proficiency in five different primary MOSs? This question is crucial to the success of the LLS concept, and its absence from the current analysis presents a significant oversight ...

Concept Overview

The proponents of the LLS concept rely heavily on the uncertainty of future operations to justify their proposal, citing recent Marine Corps publications, manuals, and talent management initiatives to support their argument.[2] While they have generated a variety of products and implementation roadmaps, they have failed to address a fundamental question: Can a Marine effectively gain and maintain proficiency in five different primary MOSs? This

cialists. Instead of having specialized expertise in a narrow field, each LLS will have proficiency across multiple fields within a specific function, creating a deeper bench of generalist logisticians.

The authors of the LLS concept have demonstrated their commitment to making it a reality, providing Headquarters Marine Corps with a clear pathway to achieve the desired changes.[3] The extensive briefs, information papers, and meetings that have taken place in support of the plan testify to

MOS	Description
0421	Cross-functional Logistics Specialist
0422	Logistics Command and Control Specialist
0423	Multi-Modal Transportation Specialist
0424	Supply Support Specialist
0425	Ground Equipment Maintenance Specialist
0427	Ground Ordnance Maintenance Specialist
0428	Logistics Services Specialist

Figure 1. Proposed MOS list from LLS information paper. *(Figure provided by author.)*

the proponents' dedication. The latest development is a pilot program that will involve 80 board-selected Marines to test the efficacy of the concept. To maintain force structure neutrality, O5 and O6 commanders have been asked to share the burden by offering their Marines for the pilot program's duration. The LLS concept is being presented as a low-cost, high-reward experiment that is worth the mutual sacrifice required for the benefit of the *Force Design 2030* LCE.

While valid concerns exist about the feasibility of the LLS concept, detractors should acknowledge its proposed merits. The LLS concept, with its emphasis on cross-functional expertise and personnel innovation, could potentially address some of the challenges posed by distributed operations, EABO, and Stand-In Forces. The Marine Corps must constantly seek ways to improve its human capital and enhance its capabilities in the face of an increasingly complex and unpredictable operating environment. It is important, however, to approach the pilot program with a critical eye and an open mind, acknowledging that the ability of a Marine to possess all the necessary skills is not yet clear. Ultimately, the success or failure of the LLS concept will depend on the results of the pilot program and a rigorous evaluation of its efficacy.

Without a thorough and rigorous assessment of the feasibility of this proposal, the Marine Corps risks adopting a concept that may not be sustainable in practice, or worse yet, counter-productive and harmful. As part of this evaluation, it is essential to scrutinize the LLS concept's foundational idea.

So, where did the idea come from? What underlies this push for generalists over specialists? Does this "new" knowledge supersede decades of experience? Where are the currently serving master gunnery sergeants, chief warrant officers, and senior logisticians who support the notion that a Marine can possess three-five primary MOSs? Therefore, it is essential to carefully evaluate the LLS concept's foundational idea before implementing any changes to the logistics personnel model.

Fickle Ideas

Airport bookstores sell travelers superficially engaging yarns to aid the passing of time on cramped airplanes and in busy terminals. Bestselling authors such as John Grisham, James Patterson, and Danielle Steel feature prominently on the shelves, a tacit acknowledgment that a five-hour flight is not where readers choose to read Marcel Proust or James Joyce. Alongside celebrity memoirs or popular historical narratives, these stores offer pop psychology books, which provide readers with fresh insights into human behavior conveyed through engaging anecdotes and accessible social science research. While it is not obvious where John Grisham's oeuvre impacts the Marine Corps, one need not look long to see the impact of pop psychology books across the institution.

Malcolm Gladwell's 2008 book *Outliers* popularized the 10,000 hours rule of thumb.[4] His basic argument is that it requires 10,000 hours of deliberate practice to master a skill and become an expert. Gladwell is no scientist, but his status as a trendsetter known for

popularizing social science into a *lingua franca* gives him credibility. Gladwell's books made the Commandant's Professional Reading List. The 10,000 hours argument was cited five times and deliberate practice was cited twice in the *Marine Corps Gazette* in the mid-2010s. Few know that the science behind the 10,000-hour rule was discredited in 2019.[5]

Recall the heady times of the late-2010s, when Angela Duckworth popularized the concept of grit, gaining fame and credulity in articles, books, and TED talks. Her book, *Grit: The Power of Passion and Perseverance* is on the Commandant's Professional Reading List.[6] According to Duckworth, grit "beats the pants off I.Q, SAT scores, physical fitness, and a bazillion other measures to help us know in advance which individuals will be successful in some situations."[7] *Grit*—an individual's propensity to attack difficult problems and not give up—is something the Marine Corps values; however, Duckworth's claim that her grit test predicts success and can be measurable and improved is actually false. At least, scientists cannot replicate her data.[8]

It should alarm us, then, that the literature backing up the LLS concept is another airport book. Sports journalist David Epstein released *Range: Why Generalists Triumph in a Specialized World* in 2019. Epstein argues against specialization, positing that generalists are best equipped to adapt in complex, open systems. This is the antithesis of Malcolm Gladwell's "10,000-hour" approach, which prized specialization and deep expertise.[9] In effect, the multi-skilled logistician plan is a rejection of the current MOS approach, wherein Marines specialize early and remain (with some exceptions) within a specific skill set for a career. The LLS is not just an expansion of skills—it claims to shift our entire logistics paradigm. This paradigm shift is visualized through employee "shapes," a managerial concept with roots in Silicon Valley.

Employee Shapes

Popularized by a Harvard Business School business case study on the California-based video game compa-
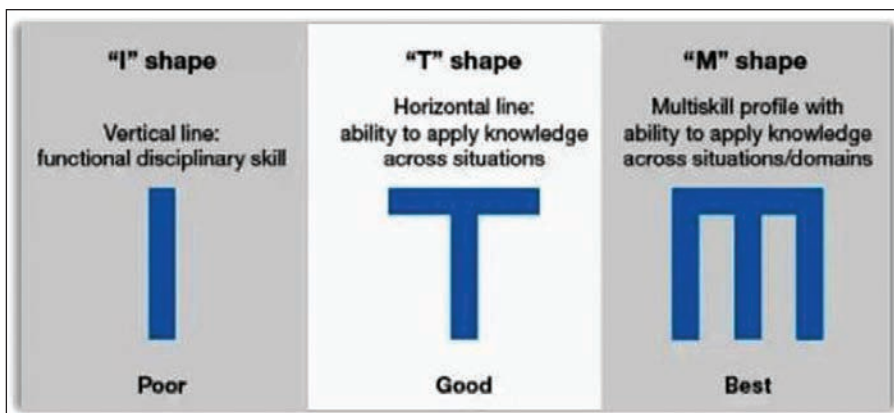
Figure 2. Google search of "M-shaped employee." *(Figure provided by author.)*
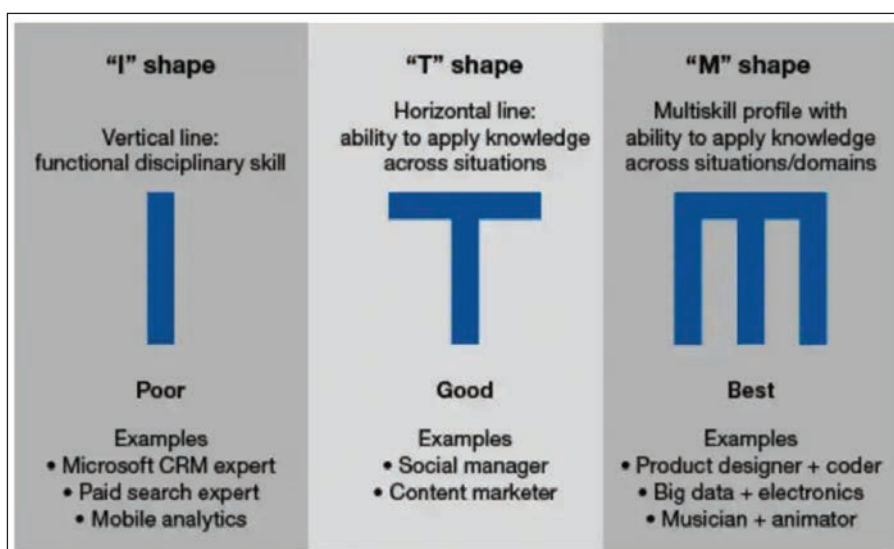

Figure 3. Image from LLS info paper. *(Figure provided by author.)*

ny, Valve, employee shapes categorize workers into three shapes: I, M, and T. Valve is an organization of "virtually no hierarchy" that recruits "T-shaped" employees.[10] The T-shaped employee is a broad-ranging generalist with deep expertise in one area. Valve believes that narrow experts cannot easily collaborate; however, generalists without deep expertise cannot contribute. Ironically, the Harvard Business School case study does not affirm Valve's flat hierarchy nor the notion that T-shaped employees result in firm profit maximization.[11]

Both the LLS information paper and the PowerPoint presentation include an image that compares multiple employee shapes. Figure 1 appears to be the source image with Figure 2 the LLS version. A few things become apparent when comparing the two images. First, the jobs provided as examples are predominantly white-collar, tech-based positions, making it challenging to see how these skills translate to a bulk fueler at the Littoral Logistics Battalion. Secondly, both images assume that more is better without providing evidence for this claim. The comparison suggests that M-shaped employees are better than T-shaped employees because more is better, but it is unclear why this is so. Search results on T-shaped employees are sparse and largely confined to Valve and the Harvard Business School case study that popularized the concept of recruiting T-shaped individuals; search results for M-shaped employees are confined to blogs and LinkedIn posts. In short, the analytical rigor behind the concept of M-shaped employees is dubious at best.

Conclusion

This article does not seek to diminish the work or proposed end state of the LLS concept. The LLS desires a more capable logistician to meet the growing demands envisioned by *Force Design 2030*. This article aims to interrogate the *ideas* behind the concept. In that regard, more analysis is required.

While debates over the generalist vs specialist approach and employee shapes may be interesting, they are not as important as the critical challenge facing the Marine Corps today. Before the LLS initiative can be deemed successful, the Marine Corps needs to establish how many skills an adult can realistically possess while still maintaining proficiency. Several factors come into play, including the complexity and scope of the skills, the Marine's cognitive ability and aptitude, and the amount of practice or repetition they receive.

Even if the logistics community were to identify and select 80 logisticians capable of completing the rigorous training program, questions remain as to whether the program would be an effective return on investment. Despite the extensive resources, briefings, and coordination invested in the LLS initiative, its proponents have yet to demonstrate whether a Marine can successfully hold upwards of five MOSs and demonstrate sufficient proficiency in any of them. The current proposal sequences each specialist through multiple schools in a sequential, building-block approach.[12] The concept needs to lay out a plan for how these Marines use each skill rather than donning alternating hats as situations dictate. The Marine Corps does not need someone with five different MOSs—it needs a school that trains the five different aspects as one MOS.

Is the institution willing to risk 80 high-performing Marines across multiple occupational fields to spend three years determining if an M-shape employee model works in the Marine Corps? This is a human experiment, with limited-to-no analytical grounding, that costs commands and commanders the talent necessary to fight now.

Notes

1. David Epstein, *Range: Why Generalists Triumph in a Specialized World* (New York: Penguin, 2021).

2. *Littoral Logistics Specialist Concept: Sustaining the Stand-In Force, Information Paper.*

3. Ibid.

4. Malcolm Gladwell, *Outliers: The Story of Success* (UK: Penguin, 2008).

5. Brian Resnick, "The '10,000-Hour Rule' Was Debunked Again in a Replication Study. That's a Relief," *Vox,* August 23, 2019, https://www.vox.com/science-and-health/2019/8/23/20828597/the-10000-hour-rule-debunked.

6. Angela Duckworth, *Grit: The Power of Passion and Perseverance* (NY: Simon and Schuster, 2016).

7. Jesse Singal, "The Weak Case for Grit," *Nautil,* April 14, 2021, https://nautil.us/the-weak-case-for-grit-238181.

8. Jill Barshay, "Research Scholars to Air Problems with Using Grit," *Hechinger Report*, March 30, 2020, https://hechingerreport.org/research-scholars-to-air-problems-with-using-grit-at-school.

9. Jim Holt, "Remember the '10,000 Hours' Rule for Success? Forget about It," *The New York Times*. May 28, 2019, https://www.nytimes.com/2019/05/28/books/review/david-epstein-range.html.

10. Harvard Business School, "Opening the Valve: From Software to Hardware (A)," *Harvard Business School*, n.d., https://www.hbs.edu/faculty/Pages/item.aspx?num=47873.

11. Ibid.

12. *Littoral Logistics Specialist Concept: Sustaining the Stand-In Force, Information Paper.*

The General Ascends

A tale through Russian lenses
by LtCol Rob Gerbracht

>LtCol Gerbracht is a Combat Engineer and MAGTF Planner currently assigned to the Commandant of the Marine Corps Strategist Program. He has deployed in support of Operations IRAQI FREEDOM, ENDURING FREEDOM, and TOMODACHI and was the Service's lead planner in support of Operation INHERENT RESOLVE.

Gen Vitaly Komarov was a more petite man than he appeared in the stories. Observing him climbing atop the turret of a Russian T-90 tank surrounded by junior officers, one could assume that this had to do with the outsized popularity these stories carried in the Russian Ground Forces. Tales of his exploits were legion and repeated so often among Russian rank and file that they had become modern maxims of a sort, passed as easily between first-week conscripts as they were among career army staffers on Znamenka Street. His legend began early. As a private in the Punjsher Valley north of Kabul, Komarov famously assumed command of his platoon's column after it had been oversprayed by an errant Soviet Nivalenol attack meant for the Afghans. As Komarov had often since told the tale, chemical warfare was nothing more than "the spice of life for an armored soldier." He never publicly repeated that he was one of only six survivors.[1]

The following year, during his second tour, a freshly commissioned Komarov regaled his troops with that story while they poured a drum of mycotoxin down a village well in Helmand Province. The proud Soviets would eventually leave Afghanistan as their war wound down, but Komarov's legend was already well-cemented in Russian military lore. Prestige postings took him from Dresden until the wall fell, to Moscow and the storied 4th Guards Division, to the chaos that was Chechnya and his new government's political betrayal through "limited victory" and the Khasavyurt Accords. Komarov remembered with fondness the awesome power of Russian air and artillery as his tank company rolled into Grozny and his men's unquestioning loyalty while carrying out his lethal orders during the Battle of Yaryshmardy. His reputation steadily grew, and he always returned home, time and again, with life and esteem intact. The subtle murmurs that he did so across a bridge of his soldiers' corpses never bothered him.

Though Komarov's characteristic bluster had seemingly evolved into a career-defining charm and understated professionalism as he matured, this was, by all accounts, an act. As the new millennium came and went, Komarov's carefully curated response to a "restructured" Russian military positioned him well in the renewed order of things. He learned not to question what worked well enough. A victim of his successes, the new characters of war that brushed against his consciousness in senior officer symposia never shook his faith in naked force, violence, and simple numbers. Promotions came swiftly for Komarov as Comrade Putin's star rose from prominence to permanence, leading him to supreme officer rank and placing him in an ideal position to protect his cherished armored corps from the ravages of the 2008 defense reforms. While the eventual personnel bloodletting would claim a majority of his peers, Komarov had become an immovable force. Long after some believed he should have retired, he continued to make himself useful. As he saw it, his wisdom was forever welcome at the service academies and unified staff colleges, if only tolerated by junior army commanders who could do little to prevent his frequent bouts of battlefield tourism.

So, here again, was Gen Vitaly Komarov, over 40 years a veteran of Russian military adventures and an unwelcome but not wholly unexpected visitor to Moscow's "special military operation" as it moved inward from the Ukrainian frontier. A mere ten days into the conflict, it appeared the Ukrainian forces were ill-prepared for Russian military power and likely unsupported by the remainder of Europe and a distant United States. Komarov's arrival at the front was a portent of good things, he thought. Few senior leaders would be willing to risk their lives and legacies for a chance to preach from the soldier's pulpit one last time.

Less than 100 miles from Kharkiv, astride a tank turret surrounded by young armor officers cut from his same cloth, he knew in his heart that this was the sole character of war. In the young officers' eyes, he saw fearful children hungry for the pride and *esprit de corps* their great-grandfathers might have felt rolling T-34s through Kursk during the Great Patriotic War. Children like this needed numbers and steel to win, not new methods. They needed his wisdom.

"Armor, pain, and poison win wars, young comrades," Komarov began. Aside from a slight buzzing in the distance, the general's voice registered clearly in the cold March air. "Anyone who says differently is at best a liar, at worst a poltroon, and perhaps even a politician to boot!" The young officers

appeared to laugh nervously, and Komarov adjusted his seat on the T-90's turret. So hard to be folksy with old bones, it seemed.

"Reform is an illusion, little wolves. It has been tried before and proven empty time and again. One cannot reinvent a fist, and the style of boot matters little when it is on your enemy's throat." Komarov gestured toward the men around him, an unlit pipe outstretched in his hand. "Even our Comrade Putin knows this—he is a wise man but one who knows that politicians must be sated from time to time with stories of future war and victory by computers." Komarov continued. "If you recall, many have told us that the next war would be won by information, by small planes without pilots, and through slanderous comments on mobile phones." Komarov pointed toward an unswayed young trooper filming him with such a device, then began waving his arms toward the horizon, squinting at a small bird loitering high against the sunlit sky. "Where are they now?" he exclaimed. "I must admit, I do not fear the sting of your Twitter as I sit here with you."

"Reckless invention is a trick," Komarov continued. "Do you know what we call a nation without tanks, comrades?" The men stared back blankly. "Liechtenstein! Or perhaps the American Marines!"[2] Komarov laughed with abandon, the kind of unabashed emotion that had often set him apart from fellow officers but belied his lifelong fear of being ignored. The men closest to him laughed along, again uncomfortably, it seemed, and Komarov seemed to settle into a more serious, even academic tone.

"In the end the reformers would give us more space experts, cyber warriors, influence peddlers, missileers, and others with the skills of insects—many of which already are provided elsewhere in your fatherland's army. But it would only have these things because we gave up brave young soldiers like you, gave up brave young defenders prepared to close with and destroy the enemy."[3] From their lack of movement and upright, quiet posture, the battalion's officers were either hanging on every word or had shut him off completely. "Would

we allow such a thing to come to pass, comrades? Would we allow an army without armor? Would we forget the lessons your grandfathers learned, or that I learned in victories won from Afghanistan to Chechnya?" His voice fell but still registered clearly. "Such an army would become something unrecognizable to those legions of Russian heroes who went before. No longer would it be the corps I've served and loved for so many years, but a mere shadow of what was once a feared fighting force!"[4]

A voice called out from below the general's perch. "You say all this, comrade general, but we have been waiting here two days for more rations and fuel," a voice exclaimed. "Would we not be better served by some reforms through weapons *and* will? Is it not better to teach a man to think and lead without fear of failure, rather than expect blind obedience to the way things have always been?"

The question appeared to take Komarov off-guard, or so his body language indicated. He attempted to stand up but staggered back to his perch, his movements registering more like exasperation than a rise to anger. The comment had come from one of the men at the foot of the tank. From a distance, the questioner appeared to be a young warrant officer, perhaps a maintenance technician or logistician attached to the T-90 company. He was likely the type of officer born from the 2008 reforms, one perhaps unswayed by the shadows cast by Komarov and his generation. Gen Komarov believed this type of man was unworthy of attention but not undeserving of impersonal correction.

"Certainly not!" Komarov said emphatically, not addressing the warrant officer directly. "Men who believe such things have embraced mistaken notions about the future of war.[5] They fail to understand that it will be little different from the past." Komarov shook his head, his hand rising to a fading hairline and sliding off his cap. "I am sure some men think that learning to lead and learning to think are the same," Komarov continued, "but these men are mistaken." The warrant officer slid back into the gaggle of onlookers surrounding the T-90, realizing a fool's gambit

when he fell into one. Komarov heard a quiet whistle, he assumed from the men beneath him around the tank, and smiled with satisfaction, knowing that his message was being received. How the old general seemed to love an audience.

Komarov continued more vociferously as the whistling grew louder. "Do not forget the limitations of your adversary, young comrades. These Ukrainians are wayward children cowed by the thrall of Nazis and fattened with empty promises made by spineless Western diplomats—they are not a real nation." The men shifted and looked up at him, though some had begun to back away. His face reddened, and he began to thunder at them as he continued, realizing he was indeed in his element astride this iron stage. "Only shared struggle can build a legacy such as we have built as a Russian people!" The whistling grew louder still. "Our nation has fought many battles to preserve our status, but we have never lost from within—and we will not now! I will not see our history disregarded on the road to the future!"[6] The whistling became a piercing shriek, albeit briefly, and it appeared Gen Komarov was the last to know his moment had truly passed him by.

In the end, it may have been the chastised warrant officer who dove away first, but it was already too late for the rest of the group. From high above, they appeared to have been consumed by the blast, their guest speaker ground zero at a moment he ironically had no ability to imagine. The feed dropped in a cascade of static as the weapon detonated, and Lt Shevchenko opened a window on her second monitor to display a mosaic of collected BDA footage.[7] "That was the last audiovisual we received before the weapon struck, sir." Lt Larysa Shevchenko looked up from her terminal, a slight smile taking shape on the edges of her face. "The T-90 was a solid kill, major. Along with between ten and fifteen officers from the battalion tactical group."

Maj Andriy Kovalchuk whistled over his mug of tea, his breath visible in the aching cold of the data center. "You're sure that was Gen Komarov on that

tank?" Kovalchuk asked. "I mean, the fidelity on that Leleka's camera is good, but ..."

"It was good enough, Sir," Shevchenko continued. "Good enough to match everything else we had. One of the troops standing near that T-90 was live-streaming the general's speech, if you could call it that." The major started to speak but paused to listen instead as he saw the lieutenant's excitement grow. "Another trooper shared the livestream on Telegram, and a local resident shared it through Aerorozvidka, who shared it with us.[8] Targeting approval came down while you were on the phone with your wife." Larysa cocked her head, curiously. "How is Zoryana, sir?"

Kovalchuk shook his head at the lieutenant's rapid-fire attention span. It was harder by the day for him to keep up with the younger troops. "She's ... fine." He nodded. "She says the Germans are more welcoming than she'd imagined." Kovalchuk sighed. "Please continue, lieutenant."

"Oh," Shevchenko blushed. "My apologies, Sir. There is much on our plates these days." She continued. "I have at least 20 or 30 screen captures from right before the strike. The soldier's phone must have been new." Shevchenko swiveled in her seat, clicking open another window that flooded with thumbnails of Gen Vitaly Komarov's final adventure. She clicked one open, a particularly unflattering frame of Komarov flailing his arms at the edge of the image. "In this last one, sir, it looks like you can even see the Switchblade deploying, but it may just be the general's hat in the air. Or perhaps it's just a shadow." The lieutenant looked up. "I'm uncertain, sir. Should I forward these to the information warfare team?"

Maj Kovalchuk stroked his chin for a moment as thoughts collided. Of shadows and uncertainty. Where had he heard such things before? For some reason, a year-old conversation with his faculty advisor from the U.S. Marines' Command and Staff College sprang to mind. The officer, a lieutenant colonel combat engineer with a flair for speaking in metaphors, was counseling him on courses of action: "Make the best decision you can, Andriy ... Think criti-

cally, decide confidently, and trust your people to execute. It isn't rocket surgery." While seemingly a very American sentiment, it reminded him somewhat of the dead Prussian who haunted every one of their briefings that year:

> We must, therefore, be confident that the general measures we have adopted will produce the results we expect. Most important in this connection is the trust which we must have in our lieutenants. Consequently, it is important to choose men on whom we can rely and to put aside all other considerations. If we have made appropriate preparations, taking into account all possible misfortunes, so that we shall not be lost immediately if they occur, we must boldly advance into the shadows of uncertainty.[9]

He wondered if Carl von Clausewitz could ever have predicted what had come to pass in Kovalchuk's homeland. A Russian invasion? Of course, such things came and went with the seasons of history. But small groups of meme-driven Ukrainian infantry with rockets and drones nibbling away at the corners of the great Russian Army? It all seemed so aspirational, its grand design so farfetched. But here they were, linked in a web of violence to a bizarre mix of troops, civilians, and irregulars across the battlespace, witnessing in near-realtime the grasping hands of a famed Russian general as he tilted backward toward the grave. It was enough to give him pause.

"Maj Kovalchuk ... sir?" Lt Shevchenko's voice broke Kovalchuk from his trance. "Am I good to forward this imagery?"

"Oh," Kovalchuk responded. "Of course, Larysa. My apologies. I was lost in thought for a moment." Kovalchuk sipped his tea. In the grand scheme of things, between old wars and new, between the uncertainties of the future and the shadows of the past, Andriy knew where he wished to stand. It was not rocket surgery.

"Let's make the good general famous one last time. It's the very least we can do for him."

Notes

1. Stuart J.D. Schwartstein, "Chemical Warfare in Afghanistan: An Independent Assessment," *World Affairs* 145, No. 3 (1982); and David Tucker, "Confronting the Unconventional: Innovation and Transformation in Military Affairs," (Carlisle: Strategic Studies Institute, U.S. Army War College, 2006).

2. CSIS International Security Program, "On the Future of the Marine Corps: Assessing Force Design 2030," *YoutTube*, 1:06:40, May 16, 2022, https://www.youtube.com/watch?v=c6AC7NSyo4Y.

3. Lt Gen Paul K. Van Riper, "Jeopardizing National Security: What Is Happening to Our Marine Corps?" *Marine Corps Times*, March 21, 2022, https://www.marinecorpstimes.com/opinion/commentary/2022/03/21/jeopardizing-national-security-what-is-happening-to-our-marine-corps.

4. Ibid.

5. Charles Krulak, Jack Sheehan, and Anthony Zinni, "Opinion | War Is a Dirty Business. Will the Marine Corps Be Ready for the Next One?," *Washington Post*, April 22, 2022, https://www.washingtonpost.com/opinions/2022/04/22/marines-restructuring-plan-scrutiny-generals.

6. James Webb, "Momentous Changes in the U.S. Marine Corps' Force Organization Deserve Debate-WSJ," *Wall Street Journal*, March 25, 2022, https://www.wsj.com/articles/momentous-changes-in-the-marine-corps-deserve-debate-reduction-david-berger-general-11648217667.

7. Battle Damage Assessment.

8. Julian Borger, "The Drone Operators Who Halted Russian Convoy Headed for Kyiv," *The Guardian*, March 28, 2022, https://www.theguardian.com/world/2022/mar/28/the-drone-operators-who-halted-the-russian-armoured-vehicles-heading-for-kyiv.

9. Carl von Clausewitz and Hans Wilhelm Gatzke, *Principles of War* (Harrisburg: The Military Service Publishing Company, 1942).

The Death of the Marine Corps

The war in 2039

by GySgt Benjamin Knight

>*GySgt Knight is an Infantry Unit Leader (0369) currently serving as an Operations Chief. He has served as every billet from Rifleman through Platoon Sergeant in support of Operations IRAQI FREEDOM and ENDURING FREEDOM. He has also served as Heavy Machinegun Platoon Sergeant, Scout Sniper Platoon Sergeant, and Weapons Company Operations Chief in support of Unit Deployment Program Okinawa.*

The Marine Corps was rendered combat ineffective during the opening weeks of the U.S.-China War in December of 2039. First, Second, and Third MarDivs were systematically engaged by the Chinese People's Liberation Army (PLA) navy, air, and ground forces, which resulted in the reduction of these divisions by a combined 75 percent. China had used a specific and effective strategy to cripple the U.S. military. This process was the development of a worldwide trade route controlled by them, ceasing all trade with the United States and forcing military funding cuts.

In 2013, Chinese President Xi Jinping proposed the development of the Belt and Road Initiative. Seventy-one countries pledged to join in the endeavor.[1] China quickly began making deals with these countries to build rail lines, improve roads, and build seaports in strategic locations. They would loan the money to the host country to build each project with only one stipulation, Chinese contracted companies would be hired to assist in the construction. China knew these countries would not be able to repay the accrued debts which allowed China to employ debt-trap diplomacy to gain strategic advantages in some of these areas.[2] By 2017, the countries along the Belt received 35 percent of global foreign direct investments and accounted for 40 percent of global merchandise exports.[3] This had all been part of China's bigger concept of *Tian Xia* or world domination.[4] The ground and maritime trade routes expanded their reach throughout the entire globe. This opened the trade routes and allowed China to influence a dominating portion of the trade deals made in the world. China began slowly arranging for resources to be acquisitioned from the countries along the Belt to reduce the number of materials they would need from U.S. suppliers.

During a press release in 2036, President Xi Jinping announced China would no longer receive any imports from the United States effectively gouging the U.S. gross domestic product (GDP) by fourteen percent. China again used debt-trap diplomacy to convince many of its partner countries to do the same. In total, the U.S. GDP was reduced by 24 percent over the next two years. This drastically affected the markets in the United States and caused an unexpected recession for which the American people were not prepared. Many companies that relied on exports went bankrupt and millions of Americans were laid off. The unemployment rate rose to eleven percent and the government was forced to start cutting its spending. By 2038, the defense budget was reduced by fifteen percent forcing the different branches to begin tightening their belts.

Due to these budget cuts much of the equipment the military used, including ships, could not be maintained. The Joint Chiefs of Staff decided to reduce the number of personnel in each of the branches to free up some funds to maintain its gear. The Marine Corps was reduced to 165,000. This forced the Marine Corps to disband all three battalions of the Fourth Marine Regiment and both battalions of the Eighth Marine Regiment as well as numerous support battalions. The Navy was also required to put 30 ships in long-term storage. The Third and Seventh Fleets took the brunt of the reduction as their ships had seen more use and required the most maintenance. This left a crucial gap in the maritime defenses in the Pacific, which Chinese military leaders exploited when they attacked the West Coast of the United States.

On 7 December 2039, U.S. Navy ships from the Third and Seventh Fleets came under fire from Chinese DF21D anti-ship ballistic missiles. These missiles were simultaneously launched from PLA Navy ships, cargo ships, and ground bases. The missiles were controlled by the Yaogan family of defense satellites they had launched between 2009 and 2012. The PLA Navy was able to target U.S. ships by monitoring their electronic emissions from the 8G personal electronic devices used by sailors aboard the ships. This attack successfully rendered both fleets' combat ineffective. The PLA Navy then moved eight group armies (approximately 650,000 troops) from

the PLA Ground Force to the West Coast of the United States unimpeded by utilizing ships that had been pre-staged and trade routes they had already established. Simultaneous with the attack on the U.S. Navy, the PLA Air Force conducted a massive aerial bombardment of Marine Corps Base Hawaii and Camp Butler Okinawa Japan. This raid was conducted by Xian H-6 long-range bombers launched from the Chinese Xi Jinping Air Station on the man-made Mischief Reef Island in the South China Sea. The raid effectively targeted the infrastructure and equipment of 3rd MarDiv resulting in a reduction of 90 percent. The PLA Ground Force invasion was contested by the 1st MarDiv as well as the U.S. Army's 40th Infantry Division and the California National Guard. This joint task force, named Task Force Bear, was able to hold the PLA Ground Force in California until they could be reinforced by the 2nd MarDiv and the

rest of the U.S. Army but not before being reduced by 85 percent. The 2nd MarDiv took 50 percent casualties during the intense fighting that followed. The loss of two of the three divisions was a fatal blow to the Marine Corps as a fighting force.

In the aftermath of the bloody U.S.-China war, Congress established a policy to prevent the country from becoming reliant on exports for such a large percentage of the GDP. This would prevent an adversary country from being able to reduce our GDP and defense budget just by monopolizing trade. When it came to the Marine Corps, Congress was also left with a choice. Re-constitute the divisions or amend Title X thereby dissolving and abolishing the Marine Corps. Ultimately, they chose the latter. On 10 November 2040, the Marine Corps Colors were retired for the final time. The remaining personnel and equipment were absorbed into the other branches.

Notes

1. Lily Kuo and Niko Kommenda, "What Is China's Belt and Road Initiative?" *The Guardian,* July 30, 2018, https://www.theguardian.com/cities/ng-interactive/2018/jul/30/what-china-belt-road-initiative-silk-road-explainer.

2. Ibid.

3. Caroline Freund and Michele Ruta, "Belt and Road Initiative," *The World Bank*, March 29, 2018. https://www.worldbank.org/en/topic/regional-integration/brief/belt-and-road-initiative.

4. Howard W. French, *Everything Under the Heavens: How the Past Helps Shape Chinas Push for Global Power* (New York: Vintage Books, 2018).

USMC

The Other War in Europe

Russia's assault on NATO through disinformation

by Capt Kevin D. Ryan

>*Capt Ryan is an Infantry Officer, Foreign Security Force Advisor, and Regional Area Officer with the International Affairs Branch of Headquarters Marine Corps based out of the Pentagon. He is currently pursuing a Master of Arts in Security Studies from the Georgetown University School of Foreign Service.*

Russia's 2022 invasion of Ukraine changed the landscape of U.S. foreign policy in Europe. Through its aggression, Russia challenges the liberal, rules-based order as it seeks to create a new, multi-polar world. To supplement its overt uses of force in Ukraine and Georgia, Russia also utilizes a widespread disinformation campaign in Europe. Within its near abroad, Russian propaganda fuels anti-western sentiments to strengthen Russia's influence in the region. Bulgaria remains particularly vulnerable to this campaign. In Western Europe and North America, Russia instigates, capitalizes, and exacerbates rising nationalist sentiments to sow divisions within NATO member states and NATO itself. This disinformation campaign presents a serious challenge to U.S. foreign policy in Europe as well as a risk to U.S. national security. While the United States continues to counter the Russian war effort by arming, equipping, and training the Ukrainian Armed Forces, it must also devote resources and personnel to counter the broader Russian campaign in the information domain, as well.

NATO's newest members, nations created from the dissolutions of the Soviet Union and the Socialist Federal Republic of Yugoslavia, remain particularly vulnerable to Russian disinformation. In the Baltics, despite strong governmental opposition to Russia, a sizeable Russian-speaking minority localized near the Russian border holds sympathetic views toward Russia's aggression.[1] This pro-Russian minority presents an opportunity for Russia to sow discord within the Baltic States. At the other end of the Eastern flank, Bulgaria, Serbia, and Greece benefited from Russian intervention in establishing their independence as nation-states.[2]

Further along the East-West divide, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Romania, and Slovenia—all NATO members—now participate in a military alliance with the heir of their former occupier: Turkey. Russia capitalizes on this tension by flooding the Balkans with pro-Russian propaganda and ethno-nationalist content through social media and conventional news outlets.[3] Eastern European states also tend to hold more conservative views on religion and social issues than Western Europe.[4] For example, there are no legal same-sex unions of any kind in Eastern Europe, while same-sex marriage is legal in nearly all of Western Europe (the Czech Republic, Croatia, Estonia, Greece, Hungary, Italy, and Slovenia offer some limited form of civil union but not marriage).[5] Russia capitalizes on this dissonance by presenting Russia as an Orthodox-Christian state that upholds traditional family values.[6] In Bulgaria, Russia's campaign is yielding results. While Western powers remain fixed on the war in Ukraine,

Russia wages a more subtle, yet effective, campaign against NATO in the information domain. Understanding and addressing this contested domain remains critical to maintaining the security of the Alliance.

Bulgaria, like other Eastern European states, maintains a legacy of political, economic, social, and cultural ties with Russia. During the Cold War, Bulgaria remained officially sovereign but stayed close within the orbit of the Soviet Union as a Warsaw-Pact member. After the collapse of the Warsaw Pact and the dissolution of the Soviet Union,

> *While the United States continues to counter the Russian war effort by arming, equipping, and training the Ukrainian Armed Forces, it must also ... counter the broader Russian campaign in the information domain ...*

Bulgaria, along with other former Warsaw Pact members, sought stronger connections with the West. With a new class of Western-oriented politicians leading the government, Bulgaria joined NATO in 2004 and the European Union in 2007. While pro-Europeans in major cities like Sofia remain oriented on a Western trajectory today, a sizeable conservative population exists that remains skeptical of the West and susceptible to Russian disinformation.[7] Russia

attempts to exploit this skepticism to undermine the unity of a NATO member and thus challenge the solidarity of NATO as a whole. In this case, Russia has weaponized its ties with Bulgaria on the information front, making Bulgaria the front line for Russia's assault on NATO through disinformation.[8]

Russia employs a number of methods to disseminate disinformation. A Bulgarian fact-checking platform, *Data for Good*, monitors pro-Russian Facebook pages through a social media aggregator. In a seven-day period, the aggregator recorded one million social media interactions by pro-Russian accounts in Bulgaria.[9] Additionally, the Bulgarian secret services recently reported that Russian officials bribed "Bulgarian politicians, famous journalists, analysts, political scientists and other persons appearing in the public media" to spread pro-Russian content.[10] The Russian Embassy in Sofia also launched a private fundraising campaign to support the Russian war effort in Ukraine.[11] Russia's disinformation campaign in Bulgaria is pervasive, coordinated, and calculated.

Alongside the Russian disinformation campaign comes a rise in Euroscepticism in Bulgaria. A new conservative party in Bulgaria, Vazrazhdane (*Revival*) led by Kostadin Kostadinov, calls to "de-nazify" Bulgaria and wage war against "foreign foundations and NGOs," echoing the rhetoric of Russian President Vladimir Putin towards Ukraine.[12] Central components of Vazrazhdane's platform are opposition to Bulgaria's membership in NATO

and the European Union.[13] While a number of NATO members have their own far-right political parties on the fringe, Vazrazhdane's support continues to grow, and it gained parliamentary representation for the first time in 2021. It won thirteen seats with 127,568 votes—up from 37,896 votes in 2017.[14] Vazrazhdane's success can be traced to an ambitious and effective social media strategy—a strategy that is now being used to propagate pro-Russian disinformation.[15] It is no coincidence that

Bulgaria's far-right nationalist party is gaining electoral momentum.

The rise of Vazrazhdane comes at a time of political instability in Bulgaria. When a junior party pulled out of the ruling coalition in August 2021, the then-ruling centrist and pro-European party, We Continue the Change led by Kiril Petkov, failed to fill its mandate, and President Ruman Redev dissolved parliament.[16] The current parliamentary crisis brings another election on 2 October 2022: the fourth election in two years.[17] Rising nationalist ideologies and pro-Russian sentiments open the possibility for a stronger Vazrazhdane presence in parliament. With seven major parties represented in parliament, it is becoming increasingly possible that Vazrazhdane may serve in a future coalition government in the coming years. In 2022, the far-right Religious Zionist party entered into Israel's ruling coalition; it is not a given that Vazrazhdane will remain siloed on the fringe. Given Russia's pervasive use of social media to influence elections worldwide—including in the United States, United Kingdom, and France—it can be expected that Russia will attempt to influence and expedite an electoral outcome that favors Vazrazhdane by amplifying its current disinformation campaign.[18]

Language plays a critical role in this domain. In Bulgaria, language presents two major implications. First, Russia can disseminate disinformation in Russian and Bulgarian where it can be easily consumed by Bulgarian audiences while remaining relatively insulated and unchal-
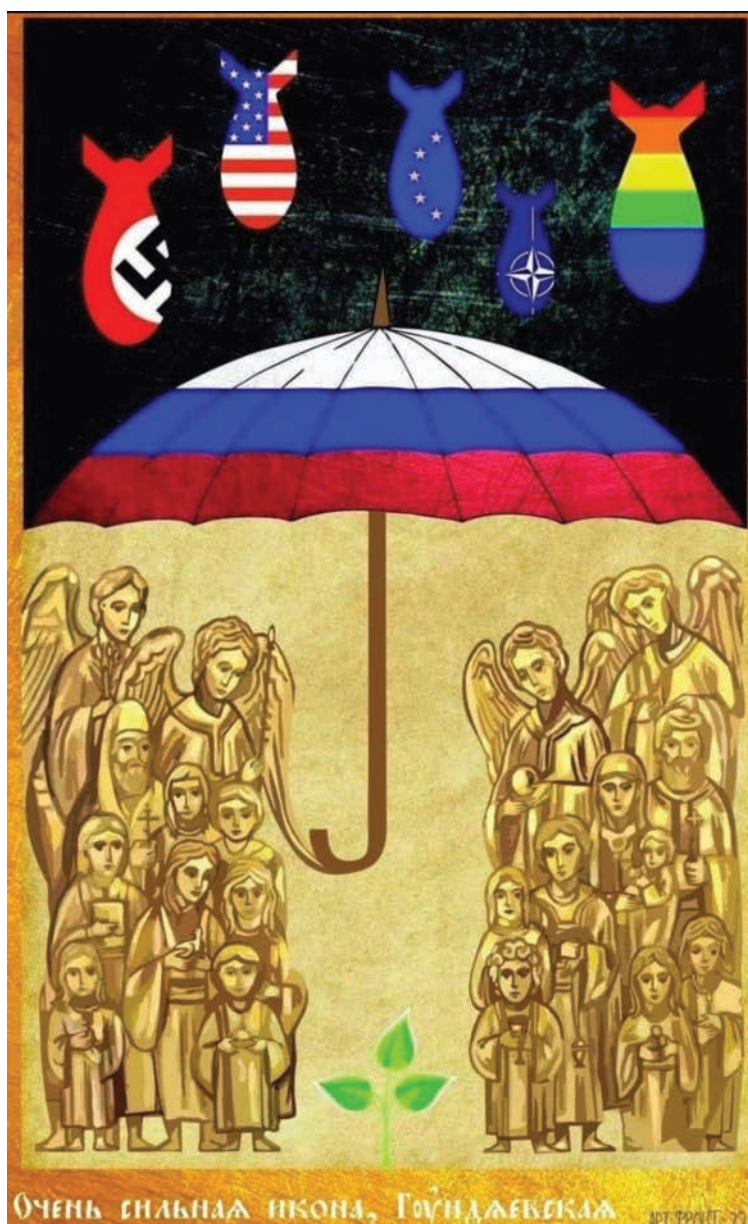
Propaganda portrays Russia as the defender of conservative and religious values while depicting the United States, the European Union, NATO, and the LGBTQ+ community as co-belligerents with the Nazis seeking to destroy those values. (Photo by author.)

lenged by English-speaking journalists and influencers.[19] Second, social media platforms have a greater challenge identifying and moderating disinformation written in Bulgarian as it is a language with relatively few speakers.[20] These same challenges present themselves in the other Eastern European states as well. Hungary has seen the rise of its own nationalist leader under the near-despotic rule of Prime Minister Viktor Orbán. The continued rule of Orbán arguably supports Russia's foreign policy. This is evidenced by Hungary's lukewarm response to Russia's invasion of Ukraine and Orbán's visit to Moscow to attend the ceremony for the late Mikhail Gorbachev.[21] Russia does not need to invade a NATO member to undermine the Alliance. Instead, Russia can undermine NATO by building pro-Russian sentiment in the Eastern flank by facilitating the rise of far-right nationalist leaders. Hungary and Turkey have already experienced such outcomes. Now Bulgaria is at risk, and the impact of Russia's disinformation campaign in Bulgaria should not be overlooked.

As a consensus-based alliance, a NATO member with an increasingly pro-Russian government presents serious challenges to the Alliance's unified approach to Russia's war in Ukraine and the general viability of the Alliance as a whole. Bulgaria's current president, Ruman Redev, has seemingly developed more pro-Russian sentiments since being elected in 2017.[22] If Vazrazhdane's electoral success continues to rise, combined with the current president, how does the Alliance respond to a NATO member with an increasingly pro-Russian government? While the implications of Russia's disinformation campaign remain to be seen, it is clear that the campaign is yielding tangible results in the electorate of Bulgaria. If left unchecked, Russian disinformation may prove effective in driving a wedge between Bulgaria and the West. As such, the United States should devote equal attention and resources to the information war in Bulgaria as the ground war in Ukraine.

NATO currently recognizes the importance of addressing disinformation.

A Serbian flag hangs from a newly renovated Orthodox church in Srebrenica in 2022, a town formerly inhabited by Bosnian Muslims until Serbian separatists overran it and murdered 8,000 Bosnian Muslims there in 1995. Russian donors have recently financed the renovation of Orthodox churches and monuments in Bosnia and Herzegovina to capitalize on the existing ethnic tensions there and to maintain a strong pro-Russian community. (Photo by author.)

However, this focus must reach beyond the conceptual phase, particularly in Bulgaria. In non-NATO members, the effect of Russian disinformation is even greater. In Serbia, nationalist propaganda dominates mainstream media.[23] In Republika Srpska, the autonomous region of Bosnia and Herzegovina, new monuments, in the form of Orthodox crosses and churches, have been erected

ethnic violence. Despite the laudable provisions of the Dayton Accords, those ethnic tensions persist today, and Russia actively exacerbates these tensions to maintain a strong pro-Russian enclave in the Balkans.

While the information war does not produce the violent images of combat the world sees flowing from the Eastern front, it may have even graver conse-

> **While the information war does not produce the violent images of combat the world sees flowing from the Eastern front, it may have even graver consequences if left unchecked.**

in the last decade with funding from Russian sources.[24] In Srebrenica, the site of the Bosnian genocide perpetrated by Serbian separatists only 28 years ago, Serbian flags fly above newly renovated Orthodox churches, the equivalent of flying swastikas in Oświęcim—the Polish town that hosts the site of Auschwitz. In the last 30 years, NATO intervened twice in the Balkans to quell

quences if left unchecked. Given the voluminous evidence of Russia's efforts to undermine democratic societies and divide NATO through disinformation and electoral interference, the United States must take a more active role in combating Russia in the information domain. The Balkans serve as the front lines in the American effort to thwart Russia's disinformation activity against

NATO. Now is the time to act using all levers of national power: diplomacy, intelligence sharing, military support, and financial investment. The United States must support its most vulnerable allies. If Ronald Reagan's famed quote remains accurate, that "freedom is never more than one generation away from extinction," then this generation in Eastern Europe, influenced by unchecked Russian disinformation, remains at risk of serving as that generation. The alliance derives its strength from each member's commitment to liberal values, democracy, and collective security. Russia seeks to undermine that commitment and dissolve NATO from within. To defend the Alliance, the United States must expose Russia's aims and commit its full strength and capabilities to win the information war as well as the ground war.

Notes

1. Agnia Grigas, "The New Generation of Baltic Russian Speakers," *Euractiv*, November 28, 2014, https://www.euractiv.com/section/europe-s-east/opinion/the-new-generation-of-baltic-russian-speakers.

2. J.B Allcock, Loring Danforth, and Richard J. Crampton, "Balkans," *Encyclopedia Britannica*, October 22, 2021, https://www.britannica.com/place/Balkans; and Richard C. Hall, *The Modern Balkans: A History* (London: Reaktion, 2011).

3. Ivana Stradner, "The War in Ukraine and the Western Balkans," *American Enterprise Institute Research Papers, American Enterprise Institute for Public Policy Research* (2022).

4. Aron Buzogány, and Mihai Varga, "The Ideational Foundations of the Illiberal Backlash in Central and Eastern Europe: The Case of Hungary," *Review of International Political Economy* 25, No. 6 (2018).

5. Michael Lipka and David Masci, "Where Europe Stands on Gay Marriage and Civil Unions," *Pew Research Center*, October 28, 2019, https://www.pewresearch.org/fact-tank/2019/10/28/where-europe-stands-on-gay-marriage-and-civil-unions.

6. Elizaveta Gaufman, "Religion, the Russian-Ukrainian War, and Social Media," *BYU International Center for Law and Religious Studies*, March 3, 2022, https://talkabout.iclrs.org/2022/03/03/religion-the-war-and-social-media.

7. Georgy T. Georgiev, "Europeanism vs Euroscepticism in the Countries of Central and Eastern Europe," *Outlines of Global Transformations: Politics, Economics, Law* 10, No. 1 (2017).

8. Boryana Dzhambazova, "Welcome to Bulgaria, where the Ukraine War is NATO's Fault," *Politico,* June 8, 2022, https://www.politico.eu/article/bulgaria-ukraine-russia-war-nato-fault.

9. Capital Weekly Team, "Is Bulgaria the Weak Link in Europe's Fight Against Russian Disinformation?" *International Press Institute*, June 1, 2022, https://ipi.media/is-bulgaria-the-weak-link-in-europes-fight-against-russian-disinformation-capital.

10. Krassen Nikolov, "Bulgarian Secret Services: Russia Pays Public Figures to Spread Propaganda," *Euractive*, July 4, 2022, https://www.euractiv.com/section/politics/short_news/bulgarian-secret-services-russia-pays-public-figures-to-spread-propaganda.

11. Zoran Radosavljevic, "Russian Embassy in Sofia Launches Appeal for War Donations," *Euractiv*, June 29, 2022, https://www.euractiv.com/section/global-europe/news/russian-embassy-in-sofia-launches-appeal-for-war-donations.

12. Georgi Gotev, "The Brief–Who's Nazi Here?" *Euractiv*, March 21, 2022, https://www.euractiv.com/section/global-europe/opinion/the-brief-whos-nazi-here.

13. Becca Richards, "The Vazrazhdane Party: A Study in Polarization in Bulgaria," *Democratic Erosion*, March 7, 2022, https://www.democratic-erosion.com/2022/03/07/the-vazrazhdane-party-a-study-in-polarization-in-bulgaria.

14. Associated Press, "Bulgaria's Parliament Convenes after 3rd Election of Year," *ABC News*, December 3, 2021, https://abcnews.go.com/International/wireStory/bulgarias-parliament-convenes-3rd-election-year-81536873.

15. "Is Bulgaria the Weak Link in Europe's Fight Against Russian Disinformation?"

16. Boris Mitov, Genka Shikerova, and Andy Heil, "EU's Stern Message on Bulgarian Justice Gets Muddied by 'Pistol and Gold' Photo Scandal," *Radio Free Europe*, July 14, 2022, https://www.rferl.org/a/bulgaria-european-parliament-borisov-photo-scandal-corruption/31943598.html.

17. Zhechka Dimitrova and Lyubomir Gigov, "Bulgaria's Parliament Dissolved, Next to Be Elected on October 2," *BTA Bulgaria News Agency*, August 1, 2022, https://www.bta.bg/en/news/bulgaria/305408-bulgaria-s-parliament-dissolved-next-parliament-to-be-elected-on-october-2.

18. Tom Kington, "I Can Fight Corruption but Not Moscow's Meddling, Says Bulgarian PM," *The Times*, July 26, 2022, https://www.thetimes.co.uk/article/i-can-fight-corruption-but-not-moscows-meddling-says-bulgarian-pm-8m8svxhkj.

19. David Klepper, "Russia's Information War Expands through Eastern Europe," *AP News*, July 15, 2022, https://apnews.com/article/russia-ukraine-nato-bulgaria-misinformation-eastern-europe-0e87db7fef9263a465d6cf40d3287efe.

20. Human Rights Watch, "Russia, Ukraine, and Social Media and Messaging Apps," *Human Rights Watch*, March 16, 2022, https://www.hrw.org/news/2022/03/16/russia-ukraine-and-social-media-and-messaging-apps.

21. Ria Novosti, "Hungary's Orban Travels to Moscow to Attend Gorbachev Funeral," *Radio Free Europe*, September 3, 2022, https://www.rferl.org/a/gorbachev-funeral-orban-moscow/32016865.html.

22. Emma Burrows, "'Everyone is Shaking': Russians Flee and Slights Sell out as Putin Announces Military Call-Up," *ITV News*, September 22, 2022, https://www.itv.com/news/2022-09-21/russians-flee-and-flights-sell-out-as-putin-announces-military-call-up.

23. Jasmin Mujanović, "The Regional Danger of Serbia's Government Disinformation Machine," *Just Security*, February 16, 2022, https://www.justsecurity.org/80242/the-regional-danger-of-serbias-government-disinformation-machine.

24. Sinisa Jakov Marusic et al., "Ethnic Divisions Set in Stone," *Balkan Insight*, June 25, 2013, https://balkaninsight.com/2013/06/25/ethnic-divisions-set-in-stone.

USMC

The Inspector General of the Marine Corps

Facilitating the Corps' efficiency, integrity, and institutional readiness

by the Inspector General of the Marine Corps Staff

Mission
The Inspector General of the Marine Corps (IGMC) facilitates Marine Corps efficiency, integrity, and institutional readiness through objective and independent assistance, assessments, inspections, and investigations to enhance the Marine Corps' mission success and the welfare of its Marines, sailors, and their families.

With a legacy dating back to the American Revolution, the organization and mission of the IGMC have evolved over time to best meet the needs of the Corps. This journey continues today, as IGMC partners with other Headquarters Marine Corps organizations to assist the Marine Corps fulfill its Title 10 responsibilities, operationalize the tenets of *Force Design 2030* and *Talent Management 2030*, and preserve the Corps' values, standards, and readiness as the Nation's naval expeditionary crisis response force.

IGMC accomplishes these tasks by working in close coordination with unit command inspectors general across five functional areas.

Assistance and Hotline

The Hotline Program provides Marines, sailors, and civilians an avenue to report violations of law, rules, regulations, or other improprieties confidentially and reliably. Last year, IGMC processed 2,300 complaints. Over 90 percent of these complaints were requests for assistance, addressed by the IG enterprise without having to engage commanders. Of the remaining complaints, approximately ten percent required investigations.

The Inspector General of the Marine Corps' office are the eyes and ears of the Commandant. (Image provided by HQMC.)

Investigations

SECNAVINST 5430.7S, Assignment of Responsibilities and Authorities in the Office of the Secretary of the Navy, identifies the IGMC as the senior investigative body within the Marine Corps. It has

responsibility for the investigation of all complaints against senior officials, identified as active duty, retired, or reserve brigadier general selects and above or current or former members of the Senior Executive Service, and all cases of whistleblower reprisal regardless of rank. The investigative process begins with an analysis to determine investigative merit before proceeding. IGMC

resolves many complaints without requiring formal investigations. It strives to complete all required investigations within the six-month standard.

Intelligence Oversight

IGMC provides oversight to ensure all activities performed by intelligence units and personnel are conducted in accordance with federal laws, Presidential Executive Orders, and DOD directives, regulations, policies, standards of conduct, and propriety. A large portion of this activity lies within the classified realm.

Inspections

SECNAVINST 5430.57H, Mission and Functions of the Naval Inspector General, authorizes IGMC to inquire into and report on any matter that affects the discipline or the military efficiency of the Department of the Navy. Additionally, the *Marine Corps*

With a legacy dating back to the American Revolution, the organization and mission of the IGMC have evolved over time to best meet the needs of the Corps.

Manual identifies the IGMC as the principal advisor to the Commandant on all matters concerning inspections. To date, IGMC's inspection program has solely focused on "foundational" readiness by conducting short-notice inspections of 41 critical or requiring evaluation functional areas focused predominantly on administrative and logistical matters.

To best support the Marine Corps moving forward, IGMC is expanding its inspection program to include a focus on *operational* readiness to provide a more holistic assessment of overall *institutional* readiness. New initiatives include the validation of Defense Readiness Reporting System-Marine Corps reporting, assessing the conduct of Marine Corps Combat Readiness Evaluations, integrating IGMC and Marine Corps Administrative Analysis Team evaluations, and collaborating with *Field Supply and Maintenance Analysis Offices* and the Marine Corps Safety Division to provide oversight of unit progress on corrective actions in these areas. Consolidation of inspection requirements will reduce burdens on commanders while better informing senior leaders.

Analysis and Evaluation

IGMC employs an Analysis and Evaluation Division to conduct deep-dive assessments of topics of importance to

> **This ... is a primer for future related articles and ethical decision games ...**

the Secretary of the Navy and the Commandant. Moving forward, the division will emphasize potential impacts to, and recommendations for, best supporting Force Design and Talent Management initiatives.

This short introduction to the roles and responsibilities of IGMC is a primer for future related articles and ethical decision games to appear in the *Marine Corps Gazette*. Forthcoming articles will provide in-depth information to share the history, contribution, and relevance of inspector general programs to assist leaders in the performance of their duties, the accomplishment of their missions, and in providing for the welfare of their people. Doing so in legal, moral, and ethical ways helps ensure the Nation's continued "want" of a Marine Corps.

Origins of the IGMC

A history of evolution

by the Inspector General of the Marine Corps Staff

The Inspector General of the Marine Corps (IGMC) is part of a larger government Inspector General (IG) enterprise that serves a vital role in our country. IGs are responsible for conducting inspections, investigations, and assessments to ensure the readiness, efficiency, and overall effectiveness of their organizations while assisting to maintain accountability and transparency. The origin and responsibilities of the IG in the U.S. armed forces date back to the American Revolution and have evolved in response to meet operational needs, service requirements, and congressional mandates.

The nascent Nation and its infant military lacked much of the expertise, knowledge, and skills needed to effectively establish a professional fighting force able to equal the British on the battlefield. In response, the Continental Congress sent emissaries overseas to seek foreign aid in the form of resources and expertise. In the fall of 1777, Benja-

of knowledge and skills needed by George Washington and the Continental forces ranging from field sanitation to conducting combat maneuvers.

Benjamin Franklin arranged to have the baron transported to the United States to join the Continental Army under Gen George Washington. Washington was skeptical of foreign officers at first, but von Steuben humbled himself by asking for nothing other than the opportunity to prove his worth to the army that was then experiencing a horrendous winter at Valley Forge, PA.

Baron von Steuben quickly impressed Gen Washington with his skill and methods in training the troops. He had an immediate impact on unit readiness, hygiene, health, morale, uniformity, and standards, convincing Washington to promote him to major general and assign him as the IG of the Continental Army.

Gen von Steuben established the first American Department of the IG. He published the "Blue Book," a first-time

military and other government agencies.

Although effective, Gen von Steuben's model did not immediately take hold in the Navy and Marine Corps. The naval forces empowered commanding officers to effectively train, educate, employ, and when necessary, discipline their sailors and Marines. From November 1775 to November 1943, the Marine Corps typically deployed an "Adjutant/Inspector" to support commanders and who toured Marine posts and reported back to the Commandant on the training, morale, and the good order and discipline of Marine forces.

It was not until 1943, during the Second World War, that the Marine Corps recognized the need for a more formalized inspection and accountability system and established the Marine Corps IG. World War II saw a significant expansion of the Marine Corps, resulting in a rapid increase in personnel, equipment, and operational scope. This growth brought greater complexities and challenges that required a more robust system of inspection and oversight. The Marine Corps IG office was initially staffed with a small team of officers, who were responsible for conducting inspections and reporting their findings directly to the Commandant of the Marine Corps. Over time, the IG's role expanded to include more comprehensive responsibilities, such as investigating allegations of misconduct, waste, fraud, and abuse.

During the 1950s and 1960s, the IGMC's role continued to evolve, with a growing focus on ensuring the integrity of the Marine Corps' policies, procedures, and practices. This period saw an increased emphasis on training and education within the Marine Corps, with the oversight of the IG.

The experiences of Vietnam and the Watergate scandal caused Congress to

> ### The origin and responsibilities of the Inspector General in the U.S. armed forces date back to the American Revolution ...

min Franklin was in Paris, France, when he was introduced to Baron Friedrich Wilhelm von Steuben.

Baron von Steuben was a Prussian military officer with many years of military service and warfighting experience. He fought in the Seven Years' War (known as the French and Indian War in North America) and served as an aide-de-camp to Frederick the Great. Von Steuben possessed a full spectrum

compilation of formal Army regulations regarding the conduct of command affairs, and the first *Manual for Officers,* which provided standard guidance for all officers in command. The "*Gen von Steuben model*" for how IG provides oversight, investigates allegations, conducts inspections, facilitates operational readiness, and serves as the commander's eyes, ears, and conscience survives today as a standard used by the

enact the Inspector General Act of 1978, resulting in further expansion of the IG's responsibilities throughout the 1970s and 1980s to include the establishment of the Marine Corps' first dedicated investigative units. These units were responsible for conducting in-depth investigations into allegations of misconduct as well as assessing the effectiveness of the Marine Corps' internal controls and procedures.

In 1986, the Goldwater-Nichols Act reassigned all service IGs to the military department secretaries to assert civilian control and enhance IG independence. Because each military secretary only rates one Service IG, this act also required the redesignation of the Marine Corps IG to the Deputy Naval Inspector General for Marine Corps Matters/IGMC.

cipient and former Commandant Gen David Monroe Shoup, who served as IG during 1956–57. The IGMC has evolved its organization over time to address emerging requirements and to best support the needs of the Corps. Today, IGMC is organized across five function areas:

1. Hotline and assistance.
2. Investigations.
3. Intelligence oversight.
4. Inspections.
5. Analysis and evaluations.

The IGMC cannot perform its mission alone. It relies on subject-matter experts from across the Marine Corps to augment its efforts on an as-needed basis. Additionally, it works in close coordination with 43 Command Inspector Generals who work directly for their commanding generals. The CIGs

> **The IGMC cannot perform its mission alone. It relies on subject-matter experts from across the Marine Corps to augment its efforts ... Additionally, it works in close coordination with 43 Command Inspector Generals ...**

The Office of the IGMC is located within the Office of the Naval Inspector General and is organized to provide IG functional support to the Secretary of the Navy and the Commandant of the Marine Corps. This new office was tasked with conducting inspections, assessing operational readiness, and investigating issues related to the efficiency and effectiveness of the Marine Corps.

In 2008, Congress passed the Inspector General Reorganization Act to consolidate all statutory Inspectors General under the Council of Inspectors General on Integrity and Efficiency. The Act created a national standard applicable to all personnel, civilian and military, working in the IG field and standardized training, investigation, audit, and inspection standards like that imposed on other professions like medical, law enforcement, and aviation.

To date, there have been 57 Marine Corps Inspectors General, the most prominent being Medal of Honor re-

perform assistance, inspection, investigation, and teach and train functions, as directed by the commander, employing standards established by IGMC and codified in Marine Corps orders.

As it has done in the past, today, IGMC is evolving to best support Marine Corps needs. The advent of a peer competitor and the advancement of *Force Design* and *Talent Management* concepts is driving IGMC to expand its principal focus from "foundational" readiness to include a greater emphasis on "operational" readiness. Combined these two areas equate to the overarching "institutional" readiness of the Marine Corps and its ability to meet its Title 10 responsibilities as a key element of the Joint Force. See future *Marine Corps Gazette* articles to learn more about these efforts.

USMC

Belisarius's War

Expeditionary Warfare at the End of the Classical World

by Mr. Joseph Miranda & Dr. Christopher Cummins

>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 35 years. He is a former Army Psychologist and continues to practice part-time specializing in assessing, testing, and treating individuals with stress disorders.*

A major challenge for Marine Corps operations in the 21st century is in *expeditionary warfare:* projecting combat forces across oceanic distances, securing beachheads and ports, moving inland to defeat hostile forces, and gaining national objectives. Expeditionary warfare involves the full range of operations: amphibious, air, naval, ground, special and information. One example of expeditionary warfare comes from the 6th century AD with the Byzantine Empire's reconquest of North Africa. Decision Games' *Belisarius's War* allows players to explore the various aspects of this obscure but decisive campaign.

Historical Background

AD 476 is the usual date given for the Fall of Rome, the collapse of the Western Roman Empire in the face of various barbarian invasions. The Goths set up their own kingdom in Italy and Spain, the Franks in Gaul (modern France and Belgium), and the Vandals—considered one of the fiercest of the Germanic tribes—established themselves in northwest Africa (today's Tunisia and Algeria) as well as the island of Sardinia.

However, the Eastern part of the Roman Empire, with its capital at Constantinople on the Bosporus, held out against the invasions. Under a series of astute emperors, the Eastern Romans rebuilt their strength, becoming known to historians as the *Byzantines* after the ancient name for Constantinople, *Byzantium*. At the opening of the 6th century AD, Byzantine territory included the Balkans south of the Danube, Anatolia (Turkey), and parts of Mesopotamia, Syria, and Egypt.

In 527, Justinian became Emperor. After some preliminary campaigns against the Persians on the eastern frontier, Justinian turned his attention to reconquering the lost Roman lands in the West. The first target would be Vandal North Africa. This was a daunting task, given the reputation of the Vandals being fierce warriors as well as the difficulties in conducting a campaign across the Mediterranean Sea with its storms and pirates. But Justinian chose his general well. Flavius Belisarius had gained some notable victories in the Persian Wars.

Accordingly, in 533, Justinian dispatched Belisarius with a fleet and small army (about 16,000 men) westward. Belisarius began the campaign by landing in Sicily and establishing a base. From Sicily he sailed to North Africa, landing on the east coast of modern Tunisia. From there, the Byzantines moved on to the ancient great city of Carthage. Along the way, Belisarius gained tactical victories over the Vandal king Gelimer. These tactical victories, along with some pro-Byzantine rebellions, caused the much-vaunted Vandal kingdom to collapse. By 534, North Africa was once more part of the Roman Empire!

However, the campaign was not a sure thing. Belisarius was up against considerable odds. Had Gelimer acted more sharply, the war could have gone in a different direction. Let us see how all this translates into *Belisarius's War.*

Expeditionary War on the Game Board

For players to win in *Belisarius's War,* they must employ all aspects of combat power. One of the central game systems is in the *Campaign* cards. Campaign cards represent the overall course of action for a player's forces. Each card will have the following information:

Recruit: the number of new units the player can bring in as reinforcements.

Move (ground units): the distance units can move. (Leaders and cavalry generally move faster than infantry).

Fleet Move: the number of friendly fleet units the player can move.

At the start of a game, each player shuffles their Campaign cards into a deck. During each turn, the player draws one card at random to generate a course of action. The random draw models the various friction of war factors involved in a campaign prior to the age of modern communications and universal ISR. Each player has their own unique set of cards, modeling their unique operational styles.

From west to east:
City of Carthage: *main Vandal stronghold with Gelimer and two other strong units.*

Hadrumetum: *one relatively weak Vandal units.*

Landing at Hadrumetum: *Belisarius sails from Syracusa with two Byzantine fleets via Melita (Malta) to land at the port of Hadrumetum. His army includes two cavalry and one infantry. Byzantines make Hadrumetum the primary target as it is weakly held by Carthage.*

Tripolis: *the city has been seized by pro-Byzantine insurgents generated by play of a Support Rebels card.*

Leptis Magna: *the port is held by a moderately strong Vandal unit.*

North of Leptis Magna: *a Byzantine joint naval-ground force with a Foederati cavalry unit and allied Hun is in position to either land at Tripolis or make an amphibious assault on Leptis Magna.*

Support Rebels (BL15 — Roman)

Recruit: Recruit two garrison units and place them in any fortress or towns. If there are enemy units in those spaces, they must withdraw per the retreat rule.

Move:	Leaders	3
	Regular Cavalry	2
	Infantry	1
	Irregulars	3
Fleet Move:		Three

Sea Raiders (BL07 — Barbarian)

Move:	Leaders	3
	Regular Cavalry	2
	Irregulars	1
Fleet Move:		Two

Gothic Alliance (BL06 — Barbarian)

Recruit: One Vandal unit (except leaders). Unit must be placed in a port not occupied by Roman units (other than Hellas).

Move:	Leaders	2
	Regular Cavalry	1
	Irregulars	1
Fleet Move:		Two

The Byzantines have their military-oriented cards such as *Naval-Land Campaign,* which allows for joint naval-ground operations. There is the *Siege* card to facilitate attacks on enemy fortresses and represents military engineering. The *Magister Militum Africae* (Supreme Commander Africa) provides a one-time major offensive.

There are politically-oriented cards. *Support Rebels* lets the Byzantines recruit a couple of units, which appear in the enemy's rear echelon. Think of it as sending special operators into enemy territory to support friendly insurgents The *Procopius* card, named after the historian who accompanied Belisarius on this expedition, provides intelligence information on enemy forces which can be quite useful. *Organize the Exarchate* lets you consolidate your rear echelon by building garrisons in friendly occupied fortress (*Exarchate* was the Byzantine-term for an overseas province). There are also friction factors, such as *Unrest in the Roman Ranks*, which can attrition friendly forces as you must deal with troop pay demands.

The Vandal cards represent their unique courses of action. The Vandals have separate cards for *Land Campaigns* and *Sea Raiders*, so they cannot conduct joint amphibious operations in the same game turn, unlike the Byzantines. This is a use of the game mechanic of cards to show what would be considered today's doctrinal differences in opposing forces. *Furore Vandali* (Vandal Ferocity) reflects the reputation of the Vandals as fierce warriors, giving them a tactical edge for one battle–bringing psychological warfare factors into play.

The Vandals have their share of special operations cards, such as *Gothic Alliance* which provides additional reinforcements and fleet moves. There's also *Alliance* which can cause Roman irregular cavalry to defect to the Vandal side. Religious *Dissension* can cause infighting to break out among friendly forces owing to the fierce partisan sectarian rivalries of the era—rivalries that the Byzantines exploited to undermine the Vandal kingdom.

Mapping The Campaign

Belisarius's War game map depicts the southwestern Mediterranean Sea and Northwest African littoral in the 6th century AD. The Byzantines have their main base in Hellas (the Greek provinces of the Empire). They start with a forward force in Syracusa in Sicily. The forward bases in Sicily and Sardinia are vital to move to the main theater on the African mainland. Since ground units are transported across the waters via fleets, and fleets must move from port to port, players can see how control of naval lines of communications are a prerequisite to move reinforcements to Africa.

This makes amphibious operations vital, where fleet borne land units can assault and seize enemy held ports. Before hitting the beaches, the Byzantines can play their Campaign cards to initiate rebellions in the enemy rear to distract and dilute the Vandals. Once a beachhead is secured, the Byzantines must move inland to take various fortresses to win. This will lead to battles and sieges in which combat units fight each other.

For the Byzantines (red units), these are the actual units of Belisarius's field army, based on contemporary sources. Vandal forces (beige units) represent sub-commands based on the followers of major leaders as well as tribal contingents. There are also some allied units (green) for Hun and Moor mercenaries with shifting loyalties.

Combat resolution can lead to destruction of both enemy and friendly forces, so players must choose their battles wisely. Also, the Vandals have a strategic ploy in which they can use their powerful fleets to cut Byzantine lines of communications. Both sides have several courses of action on the road to gaining victory in one of the great expeditionary warfare campaigns of the classical world.

Inspector General Marine Corps Ethical Decision Game No. 1 (7-23)

Reprisal

by the Inspector General of the Marine Corps Staff

You are the company commander for Bravo Company, 1/2 Mar. Your company is returning to Camp Lejeune after a six-month deployment to Okinawa, Japan, and your Marines are ready for some rest, but first, you have a mission to complete. Your company must turn over accounts before 3/2 Mar deploys to Okinawa.

You assign Sgt John Doe to the 1/2 Mar advance party. The advance party will arrive at Camp Lejeune 30 days prior to the arrival of the 1/2 Mar main body. The plan was for the advance party to take two weeks of well-earned post-deployment leave and then return to spend two weeks turning over accounts prior to the arrival of the 1/2 Mar main body.

Unfortunately, North Korea has upended your plans by launching a ballistic missile that landed between the Korean Peninsula and Japan. These aggressive actions have moved up the departure timetable for the 3/2 Mar rear party by two weeks. It looks like the 1/2 Mar advance party is going to have to turn over accounts quicker than planned. To handle the compressed timeline, the 1/2 Mar advance party officer in charge canceled all leave and ordered the advance party, including Sgt Doe, to immediately begin account turnover with the 3/2 rear party.

Sgt Doe was frustrated that his anticipated leave had been canceled but dutifully handled his account turnover responsibilities. During the turnover

process, he discovered multiple missing items, including eight special light sets used for search and rescue, each valued at $3,000. Sgt Doe immediately reported his findings to his platoon commander and complained about the cancellation of his post-deployment leave.

> *The plan was for the advance party to take two weeks of well-earned post-deployment leave and then return to spend two weeks turning over accounts ...*

A week later, Sgt Doe was shocked to learn the platoon commander had transferred him to the Fleet Augmentation Program within the Weapons Training Battalion at Stone Bay, NC.

Sgt Doe was irate that his leave had been canceled and felt that he was transferred as punishment for reporting the missing equipment.

Sgt Doe was fed up, so he made a complaint to the Division Command Inspector General (CIG), alleging that he was being reprised against by his platoon and company commanders for reporting the loss of high-value organizational gear—which embarrassed the command. The rumor mill spread quickly and soon everyone, including you, was aware that Sgt Doe's Inspector General (IG) complaint has named you as a subject.

What now captain?

Scenario Questions
1. Do you order Sgt Doe to cease all contact with the CIG?
2. Do you initiate your own investigation into Sgt Doe's behavior?
3. Do you immediately cancel Sgt Doe's orders and grant him his desired leave?
4. How does the Inspector General analyze complaints of reprisal?

EDGs involve real-world leadership challenges that usually have a significant ethical or legal component. They are typical of challenges that have confronted Marines in the past and could easily be encountered in the future. Readers should analyze the problem carefully and decide what action they would take.

Answers to the EDG Questions Presented on Page 80

1. If you answered yes to question #1, you have just bought yourself a substantiated reprisal finding. Title 10 U.S.C. § 1034 prohibits anyone from restricting a Marine from making lawful communications to a member of Congress or an IG. *Never* restrict a Marine from speaking to an IG. You should take *no* personal action against a Marine who you find out filed a complaint against you. Let the process play itself out.

2. You should not open your own investigation on Sgt Doe's behavior unless you have a reason that is unrelated to the fact Sgt Doe made a protected communication. Tread carefully because reprisal actions include directing, initiating, or conducting a "retaliatory investigation" for the primary purpose of punishing, harassing, or ostracizing a member of the armed forces for making an IG complaint. *See SECNAVINST 5370.7E.*

3. You should not cancel Sgt Doe's orders and grant his leave request unless you have reason to believe that Sgt Doe's allegations have merit or that his transfer or leave denial was flawed. Valid decisions that are supportable should not be overturned just because an individual files an IG complaint.

4. The Inspector General of the Marine Corps (IGMC) reviews all allegations of military whistleblower reprisal complaints filed by Marines. Military whistleblower reprisal policy is contained in *SECNAVINST 5370.7C.* There are four key elements IGMC will weigh to assess if a complaint has investigative merit.

a. Element 1. Was there a protected communication (PC)? Any lawful communication by a Marine to a member of Congress or an IG is protected—as are reports made by a Marine of fraud, waste, abuse (FWA), mismanagement, or misconduct, if made to a member of a DOD audit, inspection, investigation, or law enforcement organization, chain of command, a court-martial proceeding, or any other person or organization designated to receive such communications. Notably, if the complaint is made to a member of the press, relative, friend, or confidant, there is no PC. Furthermore, if the complaint does not relate to FWA, mismanagement, or misconduct, chances are IGMC will not find a PC has occurred.

b. Element 2. Was an unfavorable personnel action (PA) taken or threatened or a favorable PA withheld or threatened to be withheld from the Complainant? *DODD 7050.06* defines a PA as "any action taken on a member of the Armed Forces that affects, or has the potential to affect, that military member's current position or career," which includes promotion, a disciplinary or corrective action, a transfer or reassignment, a performance evaluation, a decision on pay, benefits, awards, or training, referral for a mental health evaluation, or any other significant change in duties or responsibilities inconsistent with the military service member's grade.

c. Element 3. Did the responsible management official(s) (RMO: e.g., supervisor) have knowledge that the complainant made or prepared to make PC(s) or perceive the complainant as making or preparing to make PC(s)? In other words, did a superior know about the complaint to the IG? The RMO must be someone capable of imposing a PA on the complainant.

d. Element 4. Would the same PA(s) have been taken, withheld, or threatened absent the PC(s)? At this step, IGMC will assess if there is an "inference of causation." Relevant factors include the timing of the PA, past practices, RMO's motive, etc.

These elements are weighted using a preponderance of the evidence standard (50+ percent or more likely than not). In this case:

1. Was there a PC(s)? *Yes, Sgt Doe reported missing gear to his chain of command and then made a complaint to the Division CIG.*

2. Was there a PA? *Yes, Sgt Doe was transferred out of his unit (his leave denial would not be considered a PA.*

3. Did the RMOs have knowledge of the PCs to the Division CIG? *Yes.*

4. Would the PA have been taken absent the PC(s)? *Yes. Here is where most cases turn.*

Although the timing of the PA was suspicious (a week after the IG complaint was filed), documentary and contemporaneous records showed that prior to departure from Okinawa, the 1/2 Mar advance party was provided a list of individuals assigned to the advance party and Fleet Augmentation Program Marines. Sgt Doe was on both rosters but was not informed about his assignment to the Fleet Augmentation Program at the time. Thus, a preponderance of the evidence indicated that Sgt Doe's complaint did not cause the PA in question.

Final Thoughts

• Never restrict anyone from speaking to a Member of Congress or IG. It is the law 10 USC 1034.

• Members are expected to report FWA when they see an incident. Stopping the report or interfering with a complainant's ability to report is a violation.

• Leaders are expected to address any report of FWA, regardless if the complainant desires to report the matter to a Member of Congress or IG.

• Keep notes, memorandum for the record, or emails that document your actions. Contemporaneous notes or records are key for IGs to understand what happened in realtime when decisions and actions are documented.

USMC

Tactical Decision Game 07-23

Trouble in the archipelago

by LtCol Samson C. Newsome II

Y ou command a rifle company. You find yourself on Big Island. Big Island and Little Islands 1-12, along with a few thousand other islands, make up the territory of Ally. Ally is an archipelagic country located within the weapons engagement zone (WEZ) of Adversary. Ten months ago, Adversary sought to annex Island Nation 100 NM east of their coast. This act of aggression led to our engagement in a costly 57-day war with Adversary over Island Nation that also involved Ally. Currently, all parties are signatories to a tentatively negotiated ceasefire. Adversary still maintains a foothold on Island Nation.

Ever since the ceasefire, the expeditionary strike group has been busy ensuring continued logistical support to special operation forces (SOF) in the theatre. Our maritime freedom of movement has depended upon Ally's ability to maintain sovereignty over its archipelago. We helped Ally hold the archipelago when Adversary attempted an invasion during the short war to open another flank on Island Nation. While Adversary cannot forcibly remove us from the archipelago, for fear of openly violating the terms of the ceasefire and they continue to explore other ways to make us reconsider our commitment to Ally and the terrain Ally has permitted us to occupy as stand-in forces.

Coincidentally, Ally now has an insurgent problem made up of violent extremists. Intel reports indicate that the insurgent ambitions, armories, and

>*LtCol Newsome is an Infantry Officer and Judge Advocate in the Marine Corps Reserve. He deployed in support of Operation Iraqi Freedom and recently commanded 1/23 Mar in support of Operation Allies Welcome. He is currently a Joint Planner with Joint Enabling Capabilities Command and an Attorney with Newsome International Law, LLC in Baton Rouge, LA.*

huts with thatched roofs and is home to about 400 local nationals. Green Creek separates Secliso from North Ubeda. Ubeda is the most contemporary city on Big Island, made up of concrete buildings and home to about 3,000 locals. South Ubeda is separated from North Ubeda by the Blue River. Blue River can only be passed at the Bridge. Blue River Docks sits on the banks of North Ubeda.

You have established a company command post in a concrete building in North Ubeda. You left your mortars in the company arms room on ship twenty-two days ago. However, you still maintain elements of the company fire support team alongside you in the command post. You have

and has been in place for six hours. Amphibious Combat Vehicles are co-located with the 1st Platoon. While the 1st Platoon and the company command post have aggregated within the bounds of Ubeda proper, the 2d Platoon is conducting an infiltration north along Route 3 toward Ubeda for the purpose of extract. Your company has nine man-packed loitering munitions (three per platoon), each with a range of ten km or ten minutes, a cruising speed of 100km per hour, and each carrying a 40mm warhead. Each platoon has two Carl Gustav 84mm Recoilless Rifles, two medium machineguns, and limited small UAS assets.

2d Platoon is foot-mobile and moving slowly to maximize security. Thirty

Suddenly, you hear six distant pops to your south across the Blue River: *mortars*. The volume makes you believe the enemy must be very confident in their accuracy for some reason to drop that many mortars in the first salvo. You brace for the impact as rounds slam into the vicinity of 1st Platoon in Ubeda. Outside of the command post, you can hear at least two Marines screaming for a corpsman and plenty of commotion.

Twenty seconds later, 2d platoon commander reports over comms that the lead trace of his infiltration squads saw several puffs of faint smoke in the vicinity of South Ubeda at the time the mortars were fired. That same squad now sees seven to nine men moving across the road and in and out of buildings in the vicinity of the smoke. 2d platoon commander is requesting permission to engage the men he sees in the vicinity of South Ubeda.

With all this radio traffic you begin to become concerned with your electromagnetic signature. More radio traffic: scout snipers at Loma Linda report one of the Route 7 ground sensors was tripped 30 seconds ago. Snipers reoriented southeast of their position and now have observation of four to five pick-up trucks rapidly moving west on Route 7 toward Secliso.

Ten minutes later, the scout snipers on Loma Linda observed at least three generic quadcopters moving south along Route 3 moving toward your position before losing visual. No one else has reported gaining visual of the quadcopters.

---

a section of Amphibious Combat Vehicles attached to the company. One of the battalion's four scout sniper teams is currently in direct support of your company to assist with the extract. They have placed themselves in the vicinity of Loma Linda. They are outstanding in recon/counter-recon and maintain working proficiency in close air support and joint fires. A HIMARS battery resides on Little Island 6, 22 NM NE of Big Island. Their employment requires clearance at the one-star level. There is also a section of AH-1Z Super Cobras on a ten-minute strip alert on the Landing Helicopter Dock. The fact that the Landing Helicopter Dock is constantly steaming in and out of the WEZ remains a constant source of consternation for you as there are times it is as far as 60 NM from Big Island.

3d Platoon is foot-mobile and has been in the vicinity of Secliso in overwatch for the past eight hours. 1st Platoon is in the vicinity of North Ubeda

minutes ago, the 2nd Platoon reported gaining visual of South Ubeda. The Land Crafts Utility and Light Amphibious Warship should begin arriving in 45 minutes.

Ten minutes later, the scout snipers on Loma Linda observed at least three generic quadcopters moving south along Route 3 moving toward your position before losing visual. No one else has reported gaining visual of the quadcopters.

Six minutes later, you hear two faint explosions to your northeast in the vicinity of Secliso.

Forty seconds later, your third platoon commander reports that one of his overwatch positions was just hit with what he can only believe were 40mm grenades dropped from a loitering munition. He reports one routine, two urgent casualties, and one priority. He is requesting that you send the Amphibious Combat Vehicles for the urgent MEDEVACs.

In a time limit of three minutes:
What is the enemy trying to do to you?
As the company commander, what can you affect in this fight?
What are your orders?
What do you tell higher?

After Action Report:
How did you get into this mess?
What must you learn from this action?

USMC

Black Dragon

reviewed by Maj Timothy "Skip" Crawley

>*Maj Crawley is a former Infantry Officer who served during Operation DESERT SHIELD/DESERT STORM. He is currently the Central Region Network Coordinator for the Marine for Life Program.*
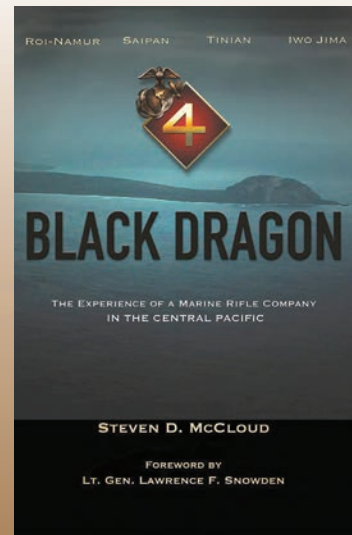
BLACK DRAGON: The Experience of a Marine Rifle Company in the Central Pacific. By Steven McCloud. College Station: Texas A&M University Press, 2022.
ISBN 978-1648430176, 576 pp.

As someone who has read numerous books on the Central Pacific offensive, I found *Black Dragon: The Experience of a Marine Rifle Company in the Central Pacific* by Steven D. McCloud to be a refreshing, interesting, and informative view of the Central Pacific campaign from the grunt's point of view. It holds numerous lessons for today's combat Marines. *Black Dragon* is the history of "Company F, 2nd Battalion, 23rd Marines, 4th Marine Division—known by its Marines as 2-F-23" from its formation, baptism of fire at Roi-Namur, the subsequent Saipan/Tinian campaign, and its last battle on Iwo Jima. McCloud states that he intended to write a book on Company F, 2/23 Mar that "is an exercise in time travel, an effort to experience some portion of what these American boys experienced at the time without resorting to fiction yet with the benefit of the bigger picture. It is neither a unit history nor an oral history. It is an effort to use both in such a way that the reader could be transported back to 1944 and know what is going on." Mc-Cloud succeeded.

Prior To Combat

Fox Company was formed on 22 July 1942 at New River, NC, as part of the Marine Corps' buildup of four Divisions (later six) in order to conduct the Central Pacific island-hopping campaign 1943–1945. Fox Company remained largely a paper command until "October when the large influx of newly minted Marines began to arrive." It was also at New River that two officers joined 2/23 Mar which would have a large bearing on Fox Company itself and the 2nd Battalion as a whole. Capt Jack Padley arrived on 30 April and assumed command of Fox Company while LtCol Edward J. Dillon arrived on 1 May to assume command of 2nd Battalion. Capt Padley had been a well-regarded college fullback and was drafted by a professional team, yet he decided to join the Marine Corps. LtCol Dillon was "dour looking" and, according to one of his Marines, "Ole' Dillon had such a mean countenance and mean approach that we were all scared of him."

With a company commander that would become highly regarded by his Marines and a battalion commander that everyone was happy when he was temporarily removed from command after being wounded, Fox Company and the entire battalion transferred to Camp Pendleton in July 1943 for additional training before being deployed overseas to their first combat—Roi-Namur.

Roi-Namur

On 1 February 1944, the Army's 7th Infantry Division landed on Kwajalein Island of the Kwajalein Atoll, part of the Marshall Islands group, as the 4th MarDiv "seize[d] a pair of conjoined islands named Roi and Namur" approximately 50 miles north of Kwajalein Island. 23rd Mar was tasked with assaulting Roi—the western of the two Roi-Namur islands.

Though the Navy and Marine Corps had worked hard to assimilate the lessons learned from Tarawa two months before, the landing plan quickly degenerated into chaos, forcing a postponement of W-hour.[1] The Landing Vehicles Tracked (LVT; i.e., amtracs) launching from each Landing Ship Tank were expected to launch from their respective ships and hit the beach within an hour of launch. In reality, some ships took over two hours just to launch their embarked LVTs. Some Marines rode around in their LVTs for five hours before hitting the beach.

On the first day of the landing Fox Company, supported by M4 Sherman tanks, reached the O-1 line to find the Japanese in disarray and retreating.[2] Capt Robert Nieman, commander of the tank company supporting Fox Company, requested permission to continue to advance to take advantage of the confusion of the Japanese. Both the regimental commander and the battalion commander gave him direct orders to withdraw back to the O-1 line until the naval gunfire support was fired. "Neiman found it unbelievable that before him lay the opportu-

nity they sought, and he was being ordered to halt the fight because it was not according to schedule."

Bloodied, but confident coming out of their initial baptism of fire, the Marines of Fox Company backloaded on the amphibious ships on 5 February and arrived on the Hawaiian island of Maui on 16 February where the Marines had the "luxury of the open-air tents, canvas cots, two-dollar steaks, and beer." MajGen Clifton B. Cates, who would later be the CG of the 4th MarDiv at Iwo Jima said of Maui:

> It couldn't have been better. The 4th Division was by far the luckiest division in the war, I think … I doubt if there has ever been a division that had as good a training area and as good recreation facilities as we had on Maui.

While at Maui, 1stLt Charles Ahern, one of the Fox Company officers who fought under Capt Padley at Roi, was "horrified" to be picked by LtCol Dillon to be his new adjutant because it would mean "close daily contact with Dillon." Ahern's fears were well-founded. Twice within a short period of time, LtCol Dillon put 1stLt Ahern under arrest—the first time for "conduct unbecoming an officer" and the second time for "absence from your post of duty in time of war"—for doing nothing wrong except incurring Dillon's wrath. According to 1stLt Ahern:

> You know, I had so many friends in the Marines, and they had a time. I didn't, all because of Dillon. He was just impossible.

Saipan/Tinian

F-23 was in the first wave of the assault on Saipan on 15 June 1944. The plan was for 2/23 Mar to make an "amphibious blitzkrieg" across the beach, and without stopping, go one and a half miles inland aboard their LVTs and seize the high ground at the O-1 line, a "ridge called Fina Susu." While a bold plan, it faltered on the reality of the things that can and do go wrong during an amphibious landing.[3] "719 LVTs had put some eight thousand assault troops ashore in twenty minutes. The "push inland, however, was slow" and "Fox Company itself was splintered into small pockets from the beach to the O-1 line." "Of the twelve amtracs landing Fox Company, only Jack Padley's made it to the O-1 line, whether by opportunity or command from the captain."

Instead of a cohesive unit advancing to the O-1 line to take an objective, it was small groups of Marines, sometime squad-sized, sometimes just 2 or 3 individuals who found themselves together, that advanced inland, fighting the Japanese. McCloud relates numerous stories of small groups of Marines well in advance of the company fighting their own private battles; trying to get back to the company. In one case, two Marines of F-23 were so far from their company that they tried to find the 25th Mar who was supposed to be on the flank.

> The pair moved south some two hundred yards and never reached the 25th Marines: "We got close enough to where we could hear them talking, but we never did locate them. They were supposed to land right beside us but they weren't there. We came across some ditches with seven or eight Japs in them and we got four or five of them … there was so many Japs and so few of us, but then our company started coming up behind us."

If all of this was not enough, LtCol Dillon, shortly after landing and setting up his command post, ordered his adjutant, 1stLt Ahern to "Have the men pick up the cigarette butts in the battalion CP."

After Saipan was secured, Tinian, a slightly smaller island southwest of Saipan, was assaulted on 24 July and secured on 1 August. While 2/23 Mar was not an assault battalion—the Marines of 2/23 Mar felt "a sense of relief" of being in the reserve—they were quickly landed, took up positions in the defensive perimeter, and then attacked the length of the island. As with Saipan, the burden of the close-in fighting fell upon small groups of Marines, oftentimes without the assistance of supporting arms. Following Tinian, the 4th MarDiv returned to Maui to prepare for their next battle.

Iwo Jima

As every Marine knows, Iwo Jima cost many Marine lives. This necessitated a massive influx of replacements into units during the actual battle.

> *As with Saipan, the burden of the close-in fighting fell upon small groups of Marines, oftentimes without the assistance of supporting arms. Following Tinian, the 4th MarDiv returned to Maui to prepare for their next battle.*

For the forty-five replacements who had joined Fox Company, this was to be their baptism of fire. "They knew all the Marine moves," explained [Corporal] Haddad [in charge of a machinegun squad], "but we didn't know … Could I leave that guy alone and know that, as a Marine and with the training and all of that, he's gonna do the right thing? When you work with somebody all during training like on Maui, you get to know a person. Some of these people, we didn't even get to know their names before they were killed."

Tactics, techniques, and procedures had to be improvised on the fly.

> And on an occasion where Bob Neiman's tankers could reach the rifle platoons, they had to throw out the doctrine that they had developed in the Marianas and on Maui. "Tank tactics were improvised … and in many cases basic principles of employment were disregarded. This was never done

because of ignorance of fundamentals; it was done because the tactical situations warranted certain calculated risks. Tank units were eager to support the infantry, and they did everything physically and mechanically possible to furnish that support."

One paragraph in *Black Dragon* provides a snapshot of how heavy casualties were on Iwo Jima:

> At last, at 0851 on 20 March 1945, Captain Cone gave the order for the USS Rockbridge to weigh anchor and take her 1,546 Marines back to Maui. *A month earlier, fifty-one ships had brought the 4th Marine Division to Iwo Jima. Now a dozen salty transports carried the survivors away.*[4]

Lessons Learned

Though the events of *Black Dragon* happened almost 80 years ago, the four amphibious assaults and the resulting land battles F-23 participated in offer many lessons for today's Marines. Key leaders are going to be killed and someone is going to have to step up. Small groups of Marines—much of the time from different units that do not know each other—will find themselves out of contact with the main body and have to make do. This is the meaning and importance of the mantra, "Every Marine a leader."

The emotional trauma of seeing fellow Marines killed whom you have known for months and whom you fought with in previous battles is something that has to be dealt with so you can go on fighting. Replacements may be well trained, but not having any combat experience, nor the shared experiences of past battles, it will be impossible for the receiving unit to know how good a replacement is until actual combat. Expect tactics, techniques, and procedures that worked in the past to be modified on the fly and be comfortable doing so. No matter how well-planned and executed a military operation is—it will always run into problems. Lastly, toxic leadership is not a new phenomenon. It existed in the past.

Conclusion

One criticism of *Black Dragon* is in his introduction, McCloud goes out of his way to say that his work will have "the benefit of the big picture." Alas, McCloud's understanding of the big picture is not on par with his understanding of the motivations and experiences of the Marines of F-23. McCloud implies that the primary purpose of the Central Pacific offensive was to seize bases for B-29s to operate from to bomb Japan. While that almost certainly was the view of the Army Air Forces, our Navy had been planning to execute a Central Pacific offensive (War Plan Orange) since the end of World War I, and the Marianas were a key aspect of executing it long before the B-29 made its appearance. Overall, I thoroughly enjoyed reading Steven McCloud's *Black Dragon: The Experience of a Marine Rifle Company in the Central Pacific* and highly recommend it to anyone who wants a grunts-eye view of the war in the Central Pacific.

Notes

1. When the amphibious task force Commander gives the order to land the landing force.

2. A control measure to coordinate the movement of the landing force as it moves inland.

3. "Amphibious blitzkriegs" have a poor record of success in World War II. Then-Gen Bernard Montgomery, the Commander of the 21st British Army Group, intended for a British armored brigade to land on D-Day, advance almost seven miles inland and seize the crucial city of Caen. In reality, the closest the British got to Caen on D-Day was about three miles and Caen did not fall until 9 July—more than a month after D-Day.
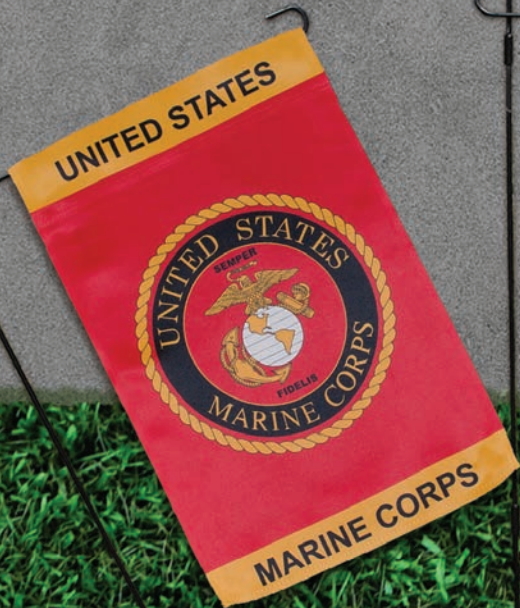
4. Italics added by reviewer.

USMC
Garden Flag
$14.95

United
States
Garden Flag
$9.95

"The Few
The Proud"
Garden Flag
$14.95

USMC
Emblem
Garden Stake
$15.95

Marines
Garden
Gnome
$42.95

Take Pride in Your Yard

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.

Writing Tips: The best advice is to write the way you speak, and then have someone else read your first draft for clarity. Write to a broad audience: *Gazette* readers are active and veteran Marines of all ranks and friends of the Corps. Start with a thesis statement, and put the main idea up front. Then organize your thoughts and introduce facts and validated assumptions that support (prove) your thesis. Cut out excess words. Short is better than long. Avoid abbreviations and acronyms as much as possible.

Submissions: Authors are encouraged to email articles to gazette@mca-marines.org. Save in Microsoft Word format, DOUBLE SPACED, Times New Roman font, 12 point, and send as an attachment. **Photographs and illustrations must be in high resolution TIFF, JPG, or EPS format (300dpi) and not embedded in the Word Document. Please attach photos and illustrations separately.** (You may indicate in the text of the article where the illustrations are to be placed.) Include the author's full name, mailing address, telephone number, and email addresses—both military and commercial if available. Submissions may also be sent via regular mail. Include your article saved on a CD along with a printed copy. Mail to: *Marine Corps Gazette*, Box 1775, Quantico, VA 22134. Please follow the same instructions for format, photographs, and contact information as above when submitting by mail. Any queries may be directed to the editorial staff by calling 800–336–0291, ext. 180.

NOT HOW YOU WOULD'VE DONE IT

YOU BUNDLE THINGS RIGHT

Like when you bundle your home and auto insurance with USAA and save up to 10%.[1]

Visit usaa.com/bundleright to learn more.

USAA®