Promise Unfulfilled
A Brief History of Educational Wargaming in the Marine Corps

Sebastian J. Bae and Major Ian T. Brown, USMC

Abstract: This article offers a comprehensive historical overview of educational wargaming in the U.S. Marine Corps and how it can evolve in the future. The tradition of leveraging wargames for educational and training purposes is deeply rooted in the Marine Corps. From humble beginnings at the Naval War College to Service-wide wargaming initiatives like TACWAR, the Marine Corps has always sought to develop the intellectual edge of its Marines through wargames. Yet, in successive decades, the Marine Corps has consistently struggled to maintain its wargaming efforts. This article concludes with recommendations on how to develop, expand, and evolve educational wargaming in the Marine Corps.

Keywords: wargaming, professional military education, tactical warfare, TACWAR, Naval War College, Lieutenant Colonel Earl H. Ellis

Buried in the "General Correspondence" section of Admiral William S. Sims's papers at the Library of Congress is a short and anonymously authored satirical poem, part of a collection of similar rhymes apparently composed for the amusement of dinner guests on some semiformal occasion

Sebastian J. Bae, a game designer and research analyst at the Center for Naval Analyses (CNA), works in wargaming, emerging technologies, the future of warfare, and strategy and doctrine. He also teaches a wargaming design course at Georgetown University, the U.S. Naval Academy, and Command and Staff College at Marine Corps University (MCU). Maj Ian T. Brown is a Sikorsky CH-53E Super Stallion pilot and currently serves as the operations officer for the Brute Krulak Center for Innovation and Future Warfare at MCU. He has instructed and written extensively on military history, maneuver warfare, and future war in both fiction and nonfiction venues. He is also the author of *A New Conception of War: John Boyd, the U.S. Marines, and Maneuver Warfare*, published by the Marine Corps University Press in 2018, which was added to the most recent iteration of the Commandant's Professional Reading Program.

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in the spring of 1913. The authors here learned of the poem by sheer happenstance, from another writer who was researching Sims's later career for an entirely separate project. Yet, despite its anonymity and obscurity, this epigram illuminates both the earliest engagements by the Marine Corps in the educational wargaming realm, as well as how impactful Marines could be when given wargaming as a learning tool. The poem reads as follows:

> There's a frisky marine they call Ellis
> Whose ability makes some folks jealous
> He's a soldier all right
> But a tactical blight.
> He can plot on the board
> So your fleet's always gored.
> He can hand you a whack
> From a torpedo attack,
> And with gleeful elation he'll quell us.[1]

The events cited in the poem do not appear in the various brief descriptions of the subject's life at that time.[2] The "frisky" Ellis is, of course, then-Major Earl H. Ellis, well known for his contributions to the amphibious warfare doctrine that would prove vital in digging Japanese forces out from their Pacific island holdings in World War II. The game in which Ellis "gored" his opponents was the *Tactical Game* used at the Naval War College in Newport, Rhode Island, and which received accolades from senior U.S. Navy leaders as equally vital in preparing naval officers for the challenges of the Pacific War.[3] Yet, the poem's very obscurity highlights a grimmer aspect of the relationship U.S. Marines would have with educational wargaming in the century that followed. Marines could learn, adapt to their opponents, and demonstrate enthusiasm and brilliance when they embraced the promise wargaming offered; too often, the Corps' institutional embrace slackened or vanished entirely, leaving the promise unfulfilled.

This article will review and assess the history of educational wargaming in the U.S. Marine Corps, from its tentative engagement before the Great War through today. It will also offer recommendations on how the Corps can institutionalize its embrace of educational wargaming, so that its use as a tool for honing Marines' minds against those of thinking human adversaries does not ebb and flow based on the whims of individual leaders. For the argument that the current Commandant of the Marine Corps, General David H. Berger, made in his 2019 *Commandant's Planning Guidance* (CPG) is one that has been true since Ellis gored enemy fleets more than a hundred years ago: "wargaming is . . . a set of tools for structured thinking about military problems within a competitive framework—in the presence of that 'thinking enemy'

who lies at the heart of our doctrinal understanding of war."[4] It is long past time that the Corps makes the value of this truth available to all its ranks; as collectively noted by America's maritime Service chiefs, the aggressive growth and modernization of revisionist naval powers is leveling the playing field in the materiel realm.[5] The cognitive realm is the last open to Marines for securing an asymmetric advantage against competitors—the promise offered by a vibrant culture of educational wargaming is one that can no longer be left on the shelf, unfulfilled.

The Beginning—The World at War

The Marine Corps' early historical relationship with wargaming was tangential to the U.S. Navy's significantly more robust wargaming culture, which developed in earnest near the end of the nineteenth century. The history of both the U.S. Naval War College and its adoption of wargaming as part of its curriculum has been exhaustively covered by others, though it is worth noting the relative speed with which the War College incorporated wargaming following its founding. Formally established in 1884, thanks to the efforts of naval reformers like Commodore Stephen B. Luce, it was only a few years later in 1889 that an old compatriot of Luce's, Captain William McCarty Little, ran the first "war problem"; from 1894 onward, the Naval War College was running wargames annually.[6] At first, these games simply filled a training void created by the fact that the Navy's relatively few ships were often scattered by operational commitments that could not be justifiably abrogated to give a few officers hands-on training time; on one rare occasion, Luce *was* able to assemble a fleet for some practical application, but bureaucratic in-fighting prevented a recurrence for many more years.[7] Following World War I, as concern about Japanese expansion in the Pacific grew and the U.S. Navy's hull count grew along with it, War College games would develop doctrine and tactics that fed directly into live exercises for validation or correction.[8]

As for the game itself, over the years it too evolved from Little's initial conception. Little initially introduced three different games conducted at different scales: the *Duel* was a one-on-one contest between ships, the *Fleet Tactical* game pitted two fleets against each other, and the *Strategic* game captured the movements of multiple fleets across a wide geographic area.[9] Players maneuvered ships represented by cardboard or celluloid strips across gridded playing areas in the first two cases; in the latter, given the scope of thousands of miles of open ocean, players used navigational charts instead.[10] In 1905, the War College discontinued the *Duel* but retained the other two; moreover, the 1905 rules revision recognized that the wargames had moved from being a stop-gap training device to a valuable tool that blended instruction and experimentation with real-world implications for the fleet.[11] In his study of the Navy's doctrinal

Figure 1. Naval War College gaming at its height: in 1934, the War College dedicated Pringle Hall as the center of wargaming on campus. The floor of the room is the gridded game board; the two black-and-white sticks in the foreground were used to measure gunnery and torpedo ranges, and the white objects in the center were templates for ship movement

Source: photo courtesy of Naval War College Museum, adapted by MCUP.

evolution during the first half of the twentieth century, Trent Hone explained this two-track learning system:

> During the war games, officers gained experience applying military principles to varied combat situations. Outside the simulations and using feedback from them, officers continually refined and improved the rules of the games as they gained experience handling ships and formations at sea.[12]

The game's physical proportions reflected the truth of Hone's characterization of this organic feedback mechanism: the college eventually replaced gridded sheets of paper with gridded playing boards filling whole rooms, and on the cusp of World War II, the "Maneuver Rules" encompassed everything from refueling at sea to fickle radio communications to the employment of the yet-unblooded carrier-borne aircraft.[13]

As for what the game offered to its players, Little noted that the key distinguishing factor of the wargame from other classes or map problems was "the existence of the enemy, a live, vigorous enemy in the next room waiting feverishly to take advantage of any of our mistakes, ever ready to puncture any visionary scheme, to haul us down to earth."[14] Admiral Sims—Ellis's mentor who also twice served as Naval War College president—said "no other service" in a naval officer's career could replace the priceless value of maneuvering fleets "on the

game board week after week . . . against a similar fleet representing a possible enemy."[15] Sims continued:

> In no other way can this training be had except by assembling about a game board a large body of experienced officers divided into two groups and "fighting" two great modern fleets against each other—not once, or a few times, but continually until the application of the correct principles becomes as rapid and as automatic as the plays of an expert football team.[16]

The cumulative result of this intensive, iterative educational method was exposure of a full generation of wartime naval leadership to myriad challenges imposed by a thinking enemy, with the requirement to think critically and decide rapidly; as Admiral Chester W. Nimitz observed, when war came "[it] had been reenacted in the game room . . . by so many people in so many different ways that nothing that happened during the war was a surprise."[17]

Where, in this remarkable environment, were the members of America's other naval Service: the Marines? Certainly they were not idle; as the Navy did following World War I, Marine Corps leaders also focused on the threat of looming conflict with Japan in the Pacific, with Ellis playing a key role in the early postwar years. Ellis's former brigade commander, General John A. Lejeune, had been appointed Commandant of the Marine Corps in 1920, and Lejeune was already moving to transform the Corps' role into a force that would "accompany the Fleet for operations ashore in support of the Fleet."[18] Lejeune tapped Ellis to develop a Corps-focused corollary plan to the Navy's own Pacific-centric War Plan Orange, which Ellis fleshed out into the now famous Operation Plan 712, "Advanced Base Force Operations in Micronesia."[19] In July 1921, General Lejeune approved Ellis's plan and decreed that it would shape future war planning, training, education, and force design across the Marine Corps.[20]

Marine leaders of Lejeune's tenure and after energetically implementing this vision in the two decades following his pronouncement, developing—despite resource and personnel shortages of all kinds in the lean interwar years—the framework for amphibious assault that would guide American landing operations in all theaters in World War II. Activities conducted by Marines during these years included participating in the Navy's fleet problems and Fleet landing exercises; performing field maneuvers at Civil War battlefields to test new equipment, weapons, and staff organization; integrating naval aviation into ground operations; reorganizing the Marine Corps Schools system; codifying amphibious assault doctrine in the *Tentative Manual for Landing Operations*; developing suitable landing craft to support amphibious operations; and reorganizing the Corps' force structure into a formal Fleet Marine Force (FMF)

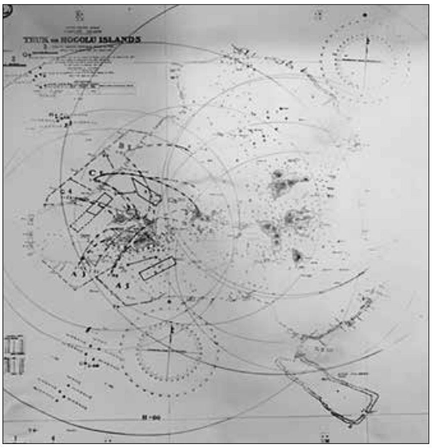
tailor-made to execute Lejeune's original goal of seizing and protecting advanced bases in support of the Navy's broader naval campaign.[21] This was an impressive list of institutional preparation for the conflict that in 1941 finally came to America's shores; oddly absent, especially given the increased cross-pollination of Navy and Marine Corps leaders in many of these activities, was any exercise similar to the Naval War College's wargame that might give Marine leaders the same cognitive advantages gained from repeatedly testing themselves against a thinking adversary.

This omission seems strange, given that the key Marine Corps leaders during this period were certainly aware of the War College's *Fleet Tactical* and *Strategic* wargames. Ellis's assignment at the War College was an outlier for officers of his junior grade, but starting in 1921, General Lejeune established a pattern of sending field-grade Marine officers to the Naval War College's planning staff on a regular basis.[22] It is possible that not every Marine officer so assigned had the opportunity to directly participate in a wargame, but some certainly did, such as then-colonel Thomas Holcomb, who later became Commandant in December 1936—he attended the senior course from June 1930–June 1931 and had a front-row seat for games that simulated naval actions in War Plan Orange.[23] One Colonel Arthur T. Marix was sufficiently aware of, and impressed by, the War College's game to argue in 1924 that it was "the next best thing to handling . . . actual fleets" and that the game "not only [developed] the players, but . . . actually [points] to new methods as well as eliminate[s] unsound ideas."[24]

Moreover, beginning in 1931, the Corps' Field Officers School in Quantico, Virginia, launched a series of yearly Advanced Base Problems that were done directly in conjunction with the Naval War College's own wargames.[25] Each of these problems looked at the defense or seizure of an advanced base inside the naval theater of operation then being examined by the War College's students. Poorly documented in the historiography of this era, the Advanced Base Problems are tantalizing as a potential hidden gem of Marine Corps wargaming, especially given their direct linkage with the Naval War College.

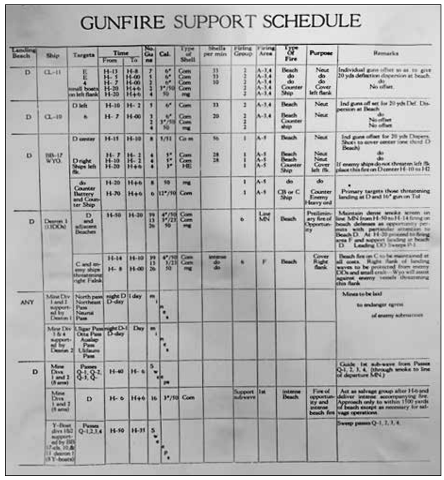
Yet, on examining the documents still available from those problems, the evidence shows that they were, at best, highly detailed planning exercises. This is not to gainsay the obvious value of detailed planning, and the level of detail in the final products generated by the analysis done in each Advanced Base Problem is truly impressive. Take the Advanced Base Problem II: Truk Area as an example—two independent teams of Marine officers developed their own solutions to the assigned problem, and each solution contained planning annexes such as intelligence assessments; task organization; operational landing schedules; landing craft requirements; food, water, and medical supply stocks; landing beach assignments; naval gunfire support schedules; allocation and scheduling of air support; hydrography and terrain analysis, and many other

Figure 2. Landing beaches, landing craft marshalling areas, and naval gunfire support positions from one of the solutions to Advanced Base Problem: Truk



Source: Historical Resources Branch, Marine Corps History Division, Quantico, VA.

Figure 3. Naval gunfire support schedule from one of the solutions to Advanced Base Problem: Truk



Source: Historical Resources Branch, Marine Corps History Division, Quantico, VA.

factors.[26] Moreover, it is fascinating to see the names of men like Clifton B. Cates, Oliver P. Smith, and Graves B. Erskine—who in later years would make their own marks on Marine Corps history—appear on the annex pages as student planners and presenters.[27]

However, one of the opening comments in the "Special Instructional Memorandum" that laid out the guidelines for solving the Truk scenario touched on both the value of conjoining Marine students with their War College counterparts and the unintentional admission that Marines were limiting the mechanics of solving the problem to planning:

> These contacts with the Naval War College are of inestimable value to both Schools and serve to establish methods and doctrines applicable to Landing Operations. Particularly do they illustrate the capabilities and limitations of the various units of the Fleet Marine Force, when employed in the seizure and defense of advanced bases. Similarly, the presentations demonstrate the preparation and planning so essential to success and the assistance required on the part of the Fleet or component parts thereof, in support of the FMF, when the latter is assigned a specific task.[28]

The hundreds of detailed pages covering planning factors in the solutions to the Advanced Base Problems were unarguably vital for the real-world seizure or defense of the islands analyzed. But there is no evidence that these problems

were "gamed" against an adversarial force of human opponents in the way the Navy's Fleet wargames were. Thus, it is fair to wonder, in the spirit of Colonel Marix's comment in 1924, what other FMF "capabilities and limitations" might have been illuminated during the conduct of the Advanced Base Problems had those units been countered by a free-thinking enemy, just as the Navy's ships were on the gridded floor of the War College's Pringle Hall.

Once fully engaged in World War II's Pacific theater, the Corps' training and educational foci naturally bent toward winning the issue at hand; once the war ended, Marines quickly shifted toward grappling with the new theoretical challenges of battle in the nuclear age, as well as the real-world crisis that exploded on the Korean Peninsula in 1950. As such, what little formal discourse on wargaming there had been within the Corps dried up, at least in print—though interestingly, Marine Corps Schools continued to execute the Advanced Base Problem series until at least the late 1950s. Ironically, the "Introductory Remarks" to one of the final problems captured both the continued recognized value of these detailed "what if" planning exercises and the enduring ghost of what more they might have accomplished:

> This [Advanced Base Problem or ABP] has often been criticized for reaching too far into the future. It has been said that it should be confined to current capabilities, and more in tune with the day to day activities of the operating forces. I submit that it is the rightful and proper function of the ABP to look into the future—state objectives—describe goals and to stimulate all of our thinking about what we must do; design; teach now in order that we will have a viable, reading, effective capability by the time 1962, 1972, or 1982 is a reality and not a 5, 10, or 20 year improbability.
>
> If we have destroyed any degree of complacency that may heretofore have existed as to the state of the amphibious art—present or future—if we cause you to disagree with us—to question, etc., then we have accomplished our purpose![29]

This intent echoed that of the Naval War College wargame, to imagine—as the War College did, with games that included nascent radio communication, radar, and carrier-borne aviation—how new technologies and concepts might function in future conflicts. But, to paraphrase Little and Marix, the Advanced Base Problems still lacked that one thing that distinguished an educational wargame from a map exercise; that key ingredient that developed the game players and pointed to new good ideas while challenging old bad ones; that force which, like no other, can truly destroy institutional complacency: a thinking, freely acting enemy. It would not be until 1960, with tensions peaking in the

Cold War, that Marines would attempt to develop an educational game that made such an enemy manifest.

Establishing Marine Corps Educational Wargaming

In 1960, the Corps established the Marine Corps Landing Force Development Center (MCLFDC) with the explicit mission of advancing the art of amphibious warfare. Within this expansive mandate a subordinate component of MCLFDC—the War Games Group, also later called the War Games Branch—was similarly tasked with developing and conducting wargames to explore and assess the art of amphibious warfare. The War Games Group consisted of planning, control, and playing sections and also acted as the official office of record for all Marine Corps wargaming. However, the MCLFDC principally focused on manual, rigidly adjudicated wargames for analysis and research.[30] This also included a Joint wargaming initiative with the Navy called the Navy-Marine Corps Amphibious War Game.[31]

MCLFDC's hallmark wargame was the *Landing Force War Game* (LFWG) that would later be adapted and integrated into a wider family of Marine Corps manual wargames. A double-blind design, the LFWG allowed teams to game maneuver, tactics, weapon systems, and intentions of the opposing force. Gameplay broke down into four broad steps: teams conducted planning, individual players issued mission orders to subordinate units, the white cell adjudicated combat and other actions, and players received feedback in various forms such as intelligence reports. While teams enjoyed relatively free play, most actions were rigidly adjudicated through an intricate system of rules, combat result tables (CRTs), and flow charts. The core strength of LFWG was its realism and attention to granular detail, aiming to replicate and reflect real-life processes and constraints on commanders in combat. This was further complemented by detailed weapons ranges, probabilities of detection, and the effects of combined arms operations. However, the heavy, granular design detail also proved cumbersome and tedious, requiring significant time dedicated to gameplay. For instance, replicating 24 hours of combat operations required roughly six months of gameplay.[32] Yet, despite its shortcomings, for decades the LFWG remained the central game platform for Marine Corps wargaming, both in education and analysis. The LFWG was even leveraged for Service-level wargames, as in November 1972 when the Corps conducted two LFWG-based wargames called Atlas I and Atlas II. These two wargames featured a Marine amphibious unit operating in the Straits of Gibraltar to examine how the Service could contribute to naval sea control.[33]

Analytical wargaming remained at the forefront of the Corps' priorities throughout the early years of MCLFDC's operation, reflecting the insecurities of a Service defending its relevance in a changing security environment. A

1965 student field study at the Amphibious Warfare School (AWS) describes MCLFDC as an analytical-focused wargaming organization, where "educational goals are secondary, almost incidental."[34] Nevertheless, a grassroots movement to leverage wargaming for educational and training purposes steadily grew in the Marine Corps Schools. In 1961, a small, unofficial wargaming group existed at the schools, though it remained an informal island lacking an official training mandate. Nevertheless, a growing number of Marines showed a willingness to explore wargaming as a tool for education. One of the earliest mentions of wargaming in a Marine Corps educational curriculum came from a student field study by Captain Jack E. Dausman at the Junior and Senior Schools. In "War Gaming as an Instructional Device in Teaching Tactical Principles to Marine Corps Officers," he advocated for the increased use of wargames, stressing their utility of direct engagement with complex problems. Dausman cited a map-based wargame by a Lieutenant Colonel Hale in 1961–62 as a gold standard Marine education could foster and build on. In this game, students could conduct both offensive and defensive operations over two to three days in conjunction with the normal schedule of lectures, command post exercises, and examinations.[35] The calls for further integration of educational wargaming increased in successive years. In 1964, Major David H. Wagner similarly explored the application of wargaming at AWS. He recommended conducting an official survey of how the curriculum could be adapted to incorporate wargaming. Moreover, he recommended leveraging the expertise and capabilities at the MCLFDC to foster this initiative.[36] In his field study, he pointedly concluded: "the advantages of war gaming technique on the learning process of the AWS would more than justify the time and effort involved to modify the curriculum."[37]

By 1965, the MCLFDC adapted its analytical LFWG into an educational edition, appropriately named the *Educational War Game*. The *Educational War Game* was a simplified and distilled version of the LFWG, boasting the same central mechanics and rules. It was intended to assist field commanders in training Marines, emphasizing staff procedures, decision making, and a competitive simulation of combat. Like the LFWG, the sequence of play broke down into several phases: issuing orders, white cell adjudication, and a feedback loop of reports. A blue and red team would issue a series of orders, which were in turn adjudicated by the control cell. The control cell relayed the resulting combat or related intelligence to the appropriate team in a variety of reports or even simulated radio traffic. Played on a 1:25,000 or 1:50,000 scale map, the opposing teams had no contact with each other. Teams needed to employ reconnaissance and maneuver to glean intelligence. Reflecting its analytical roots, the *Educational War Game* featured a heavily deterministic approach to combat, grounded in a series of CRTs and flow charts. For instance, ground combat required

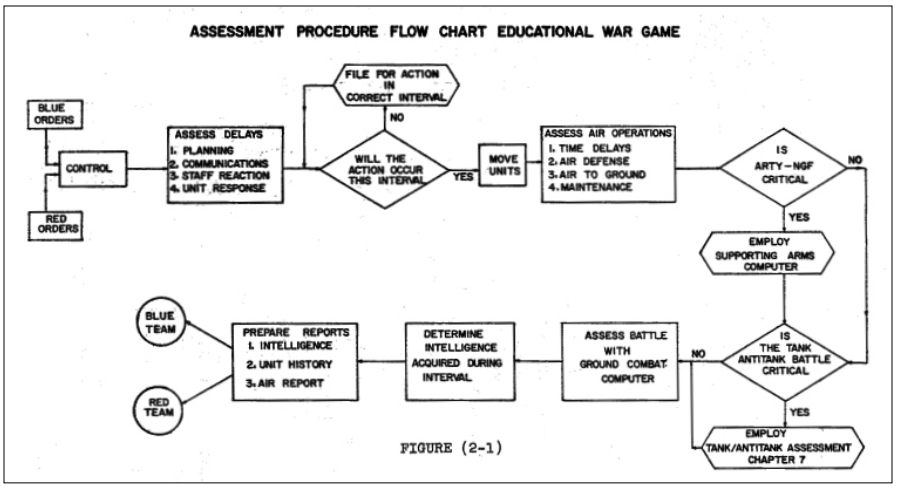
that the control cell use a Ground Combat Computer, a series of concentric circles in a double-faced dial. The control cell inputted factors like range, the combat power of units engaged, and supporting fires into the Ground Combat Computer, which produced an assessment on ground engagements including casualties. Yet, chance and probability were not wholly excluded from the game system. A random number table was used to determine the probability of certain events occurring, particularly incidents beyond the scope of the rigid game system.[38]

The *Educational War Game* offered several strengths as an educational tool. Like the LFWG, it admirably replicated staff procedures, processes, and considerations within the game mechanics. Commanders had to consume a variety of reports, operate under imperfect knowledge, and consider a wide spectrum of variables such as route trafficability and enemy weapon systems. Furthermore, the game system did not allow instantaneous orders but featured a table that outlined the delays between echelons—a communication between a platoon and regiment was delayed 10 minutes. This forced commanders to consider both space and time as their units, represented by unit markers on pins, maneuvered about the game map. Moreover, the *Educational War Game* incorporated a variety of capabilities in specific tables, such as naval gunfire, artillery support, and aerial reconnaissance.[39]

Like the LFWG, however, the *Educational War Game* was hampered by complicated rules and laborious gameplay. As shown in the figure below, the adjudication of actions in a turn involved a series of calculations, laden with CRTs and other tables. Unsurprisingly, this also required a significant time commitment to play through multiple game turns. Moreover, the wargame demanded a well-versed and capable control cell to manage the litany of adjudication requirements. The balance of fidelity to real-world operations and playability became a continuing theme in Marine Corps wargaming.[40] At the same time, the *Educational War Game*, despite its geographic modality, could not satisfy the myriad educational wargaming requirements across the Service. There was no single wargame solution to educating and training across all ranks and experience levels in the Corps. A student attending the Amphibious School in 1970 highlighted this point, arguing that the War Game Branch should provide additional support to professional military education to include training facilitators and develop a tailored Marine Amphibious Brigade-level (MAB) wargame.[41]

Moreover, the *Educational War Game* was not widely disseminated or implemented across the Service. Its intensive labor and time requirements hindered Service-wide application. Lamenting this state of affairs, in a 1973 article, Captain Douglas C. MacCaskill noted, "In my nine years in the Corps, I have never seen an attempt to train young officers, in the tactical profession, on the wargame board."[42] Shifting away from complex professional wargames, he ar-

Figure 4. Turn adjudication sequence for the *Educational War Game*



Source: the Educational War Game *(Quantico, VA: Marine Corps Landing Force Development Center, Marine Corps Schools, 1965), 2–10.*

gued for the use of commercial wargames, such as *Panzerblitz* (1970) by Avalon Hill and *Red Star-White Star* (1972) by Simulations Publications Incorporated (SPI). This philosophy of adapting commercial wargames for professional military education foreshadowed a pivotal shift in how the Corps approached educational wargaming in the years to follow.[43]

The Golden Age

Through the late 1970s and late 1990s, Marine Corps educational wargaming saw its high-water mark, benefiting from the complementary use of Service-designed and commercial wargames. Similarly, the 1970s represented the golden age of commercial board wargames, featuring a tsunami of game titles from companies like Avalon Hill and SPI that shaped a generation of wargamers. For most of the 1970s, SPI published the vast majority of commercial wargames, accounting for more than 50 percent of all wargames produced globally. The subsequent popularity and interest in manual wargames spurred other enduring initiatives such as the publication of *Strategy & Tactics* magazine and Origins, the first national civilian wargaming convention, both of which remain active today. Prior to this era, there was a stubborn gap between the professional study of arms and wargaming for entertainment. By 1974, that divide was steadily shrinking. A key example of this merger was the U.S. Army's embrace of SPI's *Firefight* wargame for tactical ground combat. The Marines followed suit in the 1980s when a new generation of wargame-minded officers would push it to the forefront of the Service's imagination.[44]

Colonel John C. Studt was the commanding officer of the 3d Marine Regiment, 1st Marine Brigade; he was also a board game hobbyist and emerged as one of the most vocal and energetic advocates for wargaming in the 1970s.[45] In 1976, he directed First Lieutenant I. L. Holdridge to develop and build a regimental-level wargame with the explicit purpose of training the regimental and battalion staffs against a thinking adversary. Holdridge modified an Army wargame called *Pegasus* to create a unique Marine version, *Pegasus II*. In its mechanics, *Pegasus II* blended a traditional command post exercise with a rigid map-based wargame. The sequence of gameplay was divided into three phases: decision, execution, and reporting, reminiscent of the *Educational War Game* and LFWG. Each phase was further divided into smaller segments. For instance, the execution stage was comprised of indirect fire, preplanned fire missions, and movement and close assault. In practice, participants were assigned to game players, representing maneuver units, command posts at the battalion and regimental levels, and higher headquarters. Each group issued orders to subordinate units or relayed information to higher echelons. This multilayered gameplay enabled concurrent training and simulated real-life processes. Players on both sides had to coordinate across groups, contend with logistical procedures, and ensure the flow of information between echelons. Most of all, the wargame spurred intense discussion about tactics, enemy capabilities, and the profession of arms to enhance teamwork and individual understanding. This practice of wargaming for training was institutionalized in the 3d Marines' Combat Simulation Center, based in its regimental classroom with accompanying duty officers.[46] This led to the tradition of 3d Marines adapting Army wargames for its own educational purposes.[47]

By 1981, the Marine Corps finally designed and established its own unique series of wargames, collectively referred to as TACWAR. Emulating the use of kriegspiel in Prussian regiments and building on the legacy of the LFWG and *Educational War Game*, this was the institution's first concerted effort to firmly establish a culture of wargaming across the Service. The TACWAR family of wargames consisted of four distinct but related titles: a company-level wargame called *TACWAR*; a battalion and Marine Amphibious Unit staff-level wargame called *STEELTHRUST*; a game aimed at regimental and MAB staffs called *LANDING FORCE*; and a strategic-level wargame for MAB and Marine Amphibious Force staffs called *WARFARE*. Designed by the Manual Wargames Project and supervised by the director of training at Headquarters Marine Corps and the Naval Training and Equipment Center, the TACWAR series sought to inculcate a robust gaming culture for all ranks. Ambitious in its vision, the Corps planned to issue 284 copies of *TACWAR* to units by 1983, hoping to equip every rifle company with a copy.[48]

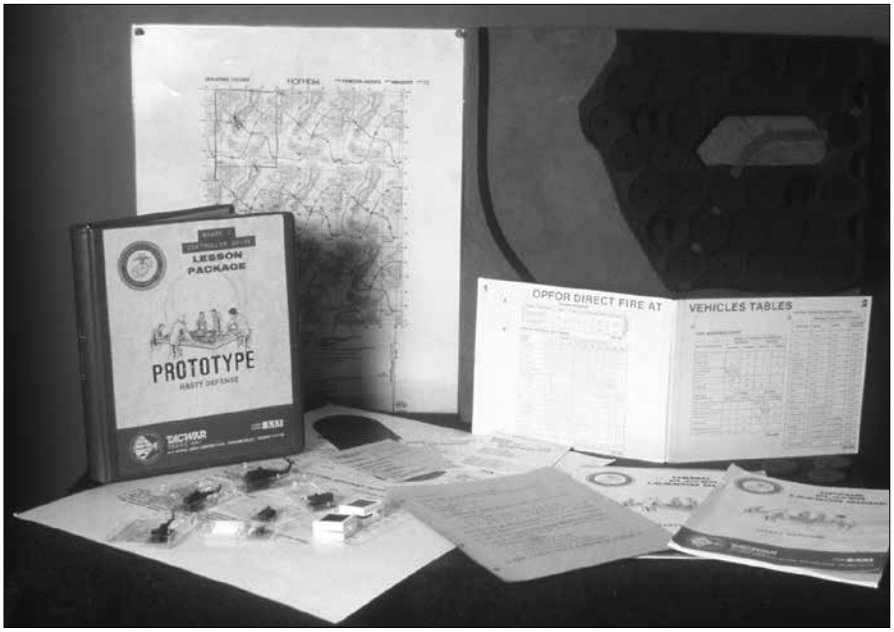
TACWAR represented a significant leap forward in the Corps' educational

wargaming effort, both in game design and institutionalization. Cognizant of the LFWG's shortcomings, the new wargames sought to better balance playability and fidelity. *TACWAR* generally reflected the structure of the *Educational War Game* from the 1960s, but it included several commercial game mechanics and features—the use of miniatures, time pulses to simulate simultaneous action, and basic and advanced rulesets for differing levels of player experience.[49] Moreover, by 1990, the TACWAR series offered three terrain modules: basic, amphibious, and desert.[50] Overall, *TACWAR* offered a comprehensive ecosystem for training and education across multiple echelons. Though each title was unique in format and intended demographics, the TACWAR system shared key characteristics: simulating the interactive dynamic between opposing sides, replicating the fog and friction of warfare, enhancing the decision making of players, and improving understanding of enemy tactics and capabilities.[51]

Unlike earlier piecemeal efforts to institutionalize wargaming in the Marine Corps, the TACWAR suite of wargames actually generated a widespread use of a game throughout the organization. By 1982, *TACWAR* was being used at the Basic School and Marine Staff Noncommissioned Officer (SNCO) Academy, and its employment proliferated through the 1990s.[52] Disappointingly, the bright start and ambitious vision for *TACWAR* later found itself tarnished by the mission creep in game design that regularly conflates a need for greater complexity to make a wargame realistic. Like its predecessors, as the Marine Corps later revised *TACWAR,* the complexity of the game series, time required to both learn and facilitate the games, and even physical space demands all increased.[53] Critics increasingly argued that the TACWAR series was too expensive and onerous to execute compared with earlier Marine Corps wargames.[54] Sadly, the revisions intended to make TACWAR a one-size-fits-all gaming platform instead, as Captain Stuart Bracken acerbically noted, saw it collapse under its own weight and largely abandoned by the late 1990s: "neglected at all levels . . . stacked like cordwood in warehouses . . . bogged down in its own procedures . . . so muddled with administrative minutiae that players soon become bored and their initial enthusiasm is lost."[55] This was an ominous sign that the golden age of Marine Corps educational wargaming was ebbing.

The 1980s also saw the advent of the Corps experimenting with computer-driven wargames, beginning with the Tactical Warfare Simulation, Evaluation, and Analysis System (TWSEAS). Leveraging a venerable, 25-year-old U.S. Navy fire control computer, TWSEAS was largely used as a command post exercise training tool. Its key advantages were an ability to provide realistic training from across multiple command echelons and computerized—hence more rapid—adjudication of combat results. Though imperfect, TWSEAS enabled consistent unit-level training at a minimal cost. Major Wesley M. Anderson

Figure 5. A sampling of *TACWAR* rules, CRTs, game components, and associated lessons package, c. 1986



Source: U.S. National Archives and Records Administration.

Figure 6. A team of Marines playing *TACWAR* (left), with white cell adjudicator (right)

Source: U.S. National Archives and Records Administration.

noted that Fleet Marine Force Pacific, through that decade alone, conducted more than 70 command post exercises using TWSEAS. The success of this first digital wargame framework drove the development of a second: the Marine Air Ground Task Force Tactical Warfare Simulation (MTWS). With the promise of improved hardware and software, MTWS was heralded as the bright successor to TWSEAS.[56] However, though still in use today, MTWS also slowly suffered the mission creep of *TACWAR*, becoming a niche capability requiring specialized contractors and significant communications network support.[57]

Concurrent with official efforts to institutionalize education wargaming, a movement led by several Marine officers to leverage the well-developed capabilities offered by commercial wargames took form. In a 1984 *Marine Corps Gazette* article, Lieutenant Colonel P. D. Reissner argued that commercial wargames—if used properly—provided the same fundamental educational value as games designed and promulgated by the Service. This was because both types of wargames, at their core, offered players a variety of problems to overcome; allowed them to practice decision making; and enabled iterative and experiential learning. Reissner concluded, "As training tools, the complex, sometimes slow games have as much value as the less complex, highly playable ones. Much depends on the training objective."[58] He cogently noted that purpose drove the form of a wargame; thus, the Service should not shackle itself to a narrow conception of game format or design. In that vein, Reissner recommended every Marine Corps division should maintain a varied library of commercial wargames, pairing each game with a reading list to further drive the gaming experience home. Reissner concluded his article with a table of wargames, coded by title, manufacturer, complexity, solitaire playability, playing time, lessons taught (according to training objectives), and recommendations for specific demographics. *Afrika Corps*, *Napoleon's Art of War*, *Fulda Gap*, and *Squad Leader* were among the titles included.[59]

Driven by the advancement of prolific commercial game designs and the advent of digital wargames, the Corps' embrace of commercial wargaming as a valued tool for professional military education (PME) accelerated at the end of the Cold War. In 1989, Captain Eric M. Walters published a review of several wargames—including exemplars of the era's top game designs like *Victory in the Pacific* and *Sixth Fleet: Modern Naval Combat in the Mediterranean* (1985)—highlighting their advantages and unique game mechanics.[60] Walters wrote extensively about educational wargaming throughout his career, constantly advocating for their value in learning military history—they were not childhood playthings, he argued, but when used well, serious instruments of study.[61] In a later 1990 *Gazette* article, Walters explained that the core utility of wargaming lay in its provision of experiential opportunities for players to practically engage with abstract concepts like the Corps' newly minted maneuver warfare philos-

ophy.[62] They stood alone in the promise offered to the military leader: "There is simply no other medium as powerful and yet as inexpensive that can so realistically test your military judgment and practical understanding of maneuver warfare."[63] Walters's writings on commercial games as educational tools inspired other liked-minded Marines, former and active duty, to provide recommendations of their own.[64] The prominence of the commercial gaming debate even led to a discussion on employing wargames to evaluate officers for command.[65]

Beyond promoting wargaming in its pages, the 1990s-era *Marine Corps Gazette* also gave its readers a practical forum for testing their decision-making skills with monthly tactical decision games (TDGs). The author of the first series of TDGs—Captain John F. Schmitt—was better known as the author of the *Warfighting*, Fleet Marine Force Manual (FMFM) 1, yet his TDG series also had a profound influence on the Service's conception of strategy, campaigning, and operational art. TDGs posed specific tactical or operational situations; *Gazette* readers were required to produce a solution within the time constraints of the scenario and submit that solution in writing to the *Gazette*'s editor. Unlike traditional manual wargames, TDGs presented the player with a one-move tactical problem or tactical puzzle. Nevertheless, the TDG tradition became ingrained into Marine Corps culture, used by a wide number of training and educational entities as a central vector for tactical decision making.[66] By 1994, Schmitt cemented this legacy with the publication of *Mastering Tactics: A Tactical Decision Games Workbook*, an extensive collection of TDGs for training and education.[67] However, as with *TACWAR* and the Corps' computerized games, as time went on *Mastering Tactics* and the later TDGs were not universally acclaimed. Critics argued the scenarios had become overladen with cumbersome and extraneous requirements. TDGs were supposed to be bounded tactical glimpses into a battle; thus, any extraneous details and requirements beyond the moment bogged down the player's thought process and risked them being mentally outmaneuvered.[68] Nevertheless, Schmitt's influence continued into the twenty-first century, both through his own writing on TDGs and tactical decision making and projects based on his work such as the 2003 *Design and Delivery of Tactical Decision Games* workbook.[69]

Discussion and execution of commercial wargames as a PME method was not restricted to the pages of the *Gazette*. Wargaming clubs and isolated communities of interest sprung up throughout the Corps, in many ways reminiscent of the kriegspiel clubs in the nineteenth century Prussian army. Captain Walters helped establish the Camp Pendleton Conflict Simulation Club—still in operation today—where civilians and active-duty Marines gathered to play a variety of games.[70] Another captain, Lance Clemens, founded a board wargaming club at Camp Hansen in Okinawa, Japan, in the early 1990s. These unofficial groups created a sense of community for wargamers in the Corps.[71] As

the golden age of Corps wargaming faded approaching the twenty-first century, these isolated yet enthusiastic grassroots initiatives were one of the few things to endure, shaping from the shadows those efforts extant in the Corps today.

Even in the deserts of Iraq on the eve of Operation Desert Storm (January 1991), Marines were using wargames to train and educate themselves. In 1991, 7th Regiment, 7th Marine Expeditionary Brigade (7th MEB), was readying itself for war with Iraqi dictator Saddam Hussein's Republican Guard. In its ranks was First Lieutenant Steve Dethlefsen, an intelligence officer and Scout Sniper Platoon commander. His unit was tasked with securing a company-size Iraqi position, dominated by a formidable triangle defense inspired by Soviet doctrine. To prepare his subordinates and fellow commanders, Dethlefsen employed *Advanced Squad Leader*, an iconic commercial wargame by Multi-Man Publishing and Avalon Hill. Adapting the game's *Code of Bushido* module, Dethlefsen and his peers rehearsed infantry tactics on the gameboard for a week. The results were sobering. Most of the participants employed doctrinal tactics, aiming to breach the broad side of the triangle defenses in a company-wide formation. All but one failed, with their cardboard Marines decimated by interlocking fields of Iraqi fire. However, Captain Sherman, commander of Company H of 3d Battalion, 9th Marines, devised a leapfrogging approach, where platoon-size elements breached the far side of the berm. Supported by mortars, smoke, and heavy weapons, successive platoons could breach the trenches and eliminate Iraqi defenses in detail via close combat. Of all the rehearsals, this proved the most effective. Ultimately, Task Force Ripper, reinforced by 1st Marine Expeditionary Force, deployed regiments supported by tanks and division-assets to seize the defensive positions. Yet, in those few instances where infantry seized the positions, the tactics rehearsed in *Advanced Squad Leader* proved invaluable.[72]

Two other developments marked the zenith of Marine Corps educational wargaming in the late twentieth century before decline settled in. The first came in 1997, when General Charles C. Krulak, 31st Commandant of the Marine Corps, issued *Marine Corps Order (MCO) 1500.55, Military Thinking and Decision Making Exercises*. The order made explicit the "imperative that all Marines make every effort to exercise and develop their decision-making abilities."[73] Radical and innovative in many ways, this relatively short MCO laid the groundwork for a number of unprecedented actions, such as the authorization to install and play approved computer-based wargames on government computers for educational purposes. Beyond that, *MCO 1500.55* promoted the use of TDGs, commercial wargames, and even recommended a catalog of approved computer-based wargames curated by the Marine Corps Modeling and Simulation Management Office (MCMSMO). Most radically, the order mandated that commanders at all levels use wargames to train and educate their subordinates.[74]

A key output of *MCO 1500.55* was *Marine Doom*, a military adaption of the popular commercial *Doom II* first-person shooter video game. Also released in 1997, *Marine Doom* was an instant hit, both within the Corps and without. At the cost of $49.95, Lieutenant Scott Barnett and Sergeant Dan Snyder, in collaboration with MCMSMO, coded a software patch to import Marine Corps weapons systems into *Doom*'s science-fiction landscape. *Marine Doom* was emblematic of a long Corps tradition of developing decision-making opportunities for its Marines in an era of lean military budgets.[75] Having secured appropriate copyright permissions, MCMSMO made *Marine Doom* available as a free download from the official Marine Corps website.[76] Unfortunately, a sequel project by Barnett and Synder, an adaption of the commercial video game *Quake* called *Battlesight Zero*, did not share the same amount of success.[77] Nevertheless, *Marine Doom* showed what could be done by leveraging commercial games for training and education.

In this spirit, in 1999, the Navy and Marine Corps Intelligence Training Center (NMITC) piloted *TacOps* in its curriculum for training ground intelligence officers.[78] Originally designed by retired Major I. L. Holdridge and published in 1994 by Battlefront.com, *TacOps* was a commercial tactical-level, combined arms digital wargame. With a solitaire and two-player mode, *TacOps* players could command modern U.S. forces with corresponding weapon systems, including Marine Corps units. Featuring a diverse set of scenarios, players could play myriad missions and units, ranging from companies to brigades, against a modern opposition force.[79] Typically, intelligence training mainly focused on the static generation of specific intelligence products. By using *TacOps*, the students could actually implement their intelligence products in the wargame's framework and see the outcomes of their work, for good or ill.[80] A 2000 Center for Naval Analyses (CNA) report highlighted the prospective value of using *TacOps* for training and education—such uses included threat evaluation and the development and refinement of the collection plan.[81] At the same time, *InfoChess*, a modified chess game with added layers of information warfare, was also introduced as a training tool for the Marine Air Ground Task Force Intelligence Officer course at NMITC.[82] Unfortunately, the experimentation with *TacOps* did not gain long-term traction, and it would not take long for the sudden onset of the Global War on Terrorism (GWOT) in 2001 to consume the Marine Corps' attention for a generation. The late decades of the twentieth century saw an unprecedented number of efforts to develop both educational wargames and a culture of wargaming throughout the Corps. These efforts included titles formally created by the institution, like *TACWAR* and *TacOps*; the adoption and adaptation of commercial tabletop board games; and exploration of the potential offered by the emerging medium of video games. Yet, despite the volume and enthusiasm of these specific programs, the Corps—

Figure 7. Table from the 2000 CNA report on *TacOps* and its potential uses in support of education

Table 3. Wargame attributes supporting specific mission skills and intelligence skills

Wargame attributes	Skills supported
Terrain system: effect on movement	Describe battlespace effects (IPB) - Analyze avenues of approach - Produce mobility overlays
Terrain system: effect on LOS and direct fires	Describe battlespace effects (IPB) - Analyze observation and fields of fire - Produce LOS overlays
Threat models and doctrinal behavior implementation	Evaluate the threat (IPB)
Ability to position Blue assets and acquire data according to detailed COA analysis and PIRs	Develop and refine the collection plan
Ability to "see" the plan executed - Detailed graphic display of game play	Compare planned execution to observed actual execution
Ability to cancel/change/issue orders to subordinates - Mutual execution/pause play system	Issue revised orders as required

Source: William D. Brobst and Alan C. Brown, Integrating Wargaming into the NMITC Curriculum: TacOps Demo *(Alexandria, VA: Center for Naval Analyses, 2000), 46.*

as a whole—could not successfully link them together to reach a critical mass that might endure past the billet timelines of the individuals driving them. It would be another two decades before wargaming again gained the attention of the highest Marine leadership.

A Generation of War and the Decline of Wargaming

As the ever-growing and competing priorities of the GWOT-dominated Service thinking, educational wargaming across the Marine Corps waned dramatically between the 2000s and mid-2010s. Immediate operational concerns in Afghanistan and Iraq absorbed institutional bandwidth. For many Marines, the Service was at war and had no time for games. This was an ironic perspective, given the decades just spent highlighting the ability of wargames to inculcate decision making and critical thinking across a broad population. Wargames were arguably precisely the type of tool a large organization would want to get as many of its members as possible ready for the difficult decisions required in a counterinsurgency environment. Analytical wargaming did continue with a renewed focus, as seen by the return of the Service's Title 10 wargame *Expeditionary Warrior* (EW).[83] But Title 10 games were inherently limited in their audience; for most Marines, the broad exposure to educational wargaming across the Corps was a shadow of its former self. Where it persisted, it was confined to small islands of excellence and limited to the energies devoted to it by a motivated individual. Institutionally prominent platforms like TACWAR, or popular and accessible games like *Marine Doom,* faded from memory.

New voices and initiatives periodically sought to fan the fading flame of educational wargaming. In 2000, Captain John C. Ketcherside wrote a review of the *Operational Art of War*, a computer-based, operational-level wargame. Echoing arguments made by Walters and others, Ketcherside extolled the wargame's realistic, well-researched table of organization and equipment for modern forces, along with its inclusion of weather, terrain, supply, and other factors. Though *Operational Art of War's* level of detail might seem daunting at first, Ketcherside argued that it nevertheless offered a unique training and educational opportunity for Marines. The scenario editor allowed players to create maps, tailor specific units, and customize the wargame's mechanics to specific training and learning objectives.[84] He concluded that "anyone with a personal or professional interest in operational-level warfare should have this game in their gear bag."[85]

Similarly, the early 2000s saw several Marines undertake—in the tradition of *Marine Doom*—the adaptation of the Close Combat series of digital wargames published by Atomic Games. Prior to this adaptation, Major Brendan B. McBreen used *Close Combat* throughout his infantry career to train and educate fellow Marines and inspire discussion on the profession of arms. In 2004, the Corps took this a step further. The *Close Combat* game engine became the platform for *Close Combat Marine,* which McBreen helped play-test and was officially released by the Marine Corps's Training and Education Command (TECOM) in 2004.[86] The *Marine Corps Gazette* included a copy of *Close Combat Marine* with accompanying workbook, authored by McBreen, in its issues for several months.[87] The wargame was later integrated into the 08104 course for staff noncommissioned officers (SNCOs) through the Marine Corps Institute. Like *Marine Doom, Close Combat Marine* aimed to cultivate small unit infantry tactical decision making while integrating the many advances in digital gaming and computing not available in 1997. It incorporated the essentials of close quarter combat: suppression, terrain, mutual support of fire, and a range of modern weapon and sensor capabilities. Its more robust game engine provided many more opportunities for variations in repetitive and iterative learning, new tactical challenges, and the complexities of the twenty-first century battlefield.[88] Despite the formal support of TECOM and the *Gazette, Close Combat Marine* did not achieve the staying power of the Corps' previous golden age wargames, overshadowed as it was by increasing Service preoccupation with the wars in Iraq and Afghanistan.[89]

Captain Ketcherside captured the disjointed and diminished state of this era's educational wargaming in a *Gazette* article that accompanied the same 2004 special issue that promoted *Close Combat Marine*. Ketcherside lamented that educational wargaming in the Marine Corps was characterized by "ignorance and apathy."[90] The Service's newfound passion for high-level, complex

analytical wargames provided virtually nothing of value for junior officers and noncommissioned officers. He argued that the Corps should return to its previously successful leveraging of commercial wargames like *Westfront*, citing the fruitful use of *Steel Panthers* by 1st Battalion, 6th Marines.[91] But this plea largely fell on deaf ears from 2004 through 2015. There were rare exceptions: one was the Case Method Project funded by the Marine Corps Foundation and led by Bruce Gudmundsson, a retired Marine major and professor of military history at the U.S. Army War College, with the assistance of Damien O'Connell.[92] The Case Method Project utilized decision-forcing cases (DFCs) to improve decision making across ranks. Several Marine Corps training and education entities adopted the DFCs so produced, including Enlisted Professional Military Education, The Basic School, and the Infantry Officer Course.[93] However, the majority of the Marine Corps lacked even these limited touchpoints with the critical thinking framework offered by wargaming.

This trend would not change until 2015, as the Corps drew down its presence in Iraq and Afghanistan, and concurrently several wargaming initiatives at Marine PME institutions stepped forward. The Marine Corps War College (MCWAR) emerged as an epicenter of educational gaming. In 2015, MCWAR began using *Darkest Hour*, a digital wargame focusing on statesmanship and theater-level military operations.[94] Dr. James Lacey, a professor of strategic studies at MCWAR, augmented this with several commercial wargames in his courses. Titles like *Diplomacy*, *Polis*, *Paths of Glory*, and the Next War series gave a renewed demonstration to senior Marine leaders of wargaming's value as a powerful experiential learning tool.[95] Marines were also taking stock of the continued advances in computer-based games—cloud-based communities like Steam, and highly detailed, real-time games like *Command: Modern Operations,* both offered opportunities for larger audiences to play each other simultaneously and a vastly more diverse array of weapons, systems, and scenarios than were available in the time of *Close Combat Marine.* A few educators even whispered about reviving the concept of a Commandant's Wargaming List.[96] As 2020 approached, the wargaming pendulum in the Marine Corps was swinging upward from its nadir once again.

A Promising Renaissance

After nearly two decades of relative neglect, the Corps is seeing a promising renaissance in educational wargaming. The watershed came from the 2019 *Commandant's Planning Guidance* (CPG) issued by General David Berger. General Berger identified an ominous gap "in the training and education of our leaders: practice in decision-making against a thinking enemy."[97] He then noted that "wargaming historically was invented to fill this gap, and we need to make far more aggressive use of it at all levels of training and education to give leaders the

necessary 'reps and sets' in realistic combat decision-making."[98] As with General Charles Krulak's efforts in 1997, wargaming in the Corps again had an official mandate at the highest level; and with the concurrent improvements in both digital and analog wargaming in the decades between the two commandants, Berger's directive both unleashed new initiatives and energized existing efforts.[99]

Given Berger's mandate, Marine Corps University (MCU) developed its own aggressive plan to create new educational wargaming opportunities and expand those that already existed in its curricula. MCWAR's games grew more robust and frequent in the years immediately following the release of the CPG. Dr. Lacey created an expansive global wargame campaign by linking together several titles from the Next War series to challenge students with simultaneous crises in eastern Europe, Taiwan, and the Korean Peninsula.[100] In 2021, another MCWAR professor, Colonel Brian W. Cole, leveraged Rand's *Hedgemony* wargame in his Joint warfare course. *Hedgemony* examines long-term strategic planning, force planning, management, and posture.[101]

Outside of formal PME curricula, MCU also created a force multiplier for educational wargaming with the chartering of the Brute Krulak Center for Innovation and Future Warfare in 2018. Granted an expansive mandate by the president of MCU for inculcating innovative approaches to problem-solving and critical thinking across MCU's schools, the Krulak Center both supported extant wargaming inside the schools and developed its own programs. This support took many different forms: supplying personnel to help facilitate school-led games, building its own library of computer and tabletop games available to all students, running an annual cross-school wargaming tournament, and creating a web-based wargaming resource page on MCU's PME portal The Landing.[102] One of the most fruitful supporting efforts under the aegis of the center was its Non-Resident Fellow program, which recruited several fellows with backgrounds in different types of wargaming. The network of fellows led to additional external partnerships, such as regular collaboration with the Georgetown University Wargaming Society (GUWS).[103] Among the center's many joint activities with GUWS was a unique open house/faculty development event in 2019. Georgetown graduate students brought original games created for a wargame design course taught by Sebastian J. Bae to the center, allowing MCU students, faculty, and staff to play them while learning more about wargame design and execution. This cross-pollination of wargaming initiatives executed at PME and civilian universities opened new possibilities for institutionalizing educational wargaming in unique ways across the Marine Corps.[104]

The nexus between the Krulak Center, GUWS, and Bae—a Non-Resident Fellow at the center—also bore fruit in the creation of a unique tactical-level educational game based on the emergent Marine Littoral Regiment (MLR) construct.[105] Entitled *Fleet Marine Force* (*FMF*) and set in the Indo-Pacific re-

Figure 8. Georgetown students conducting their original wargame, *Hellenic Struggle*, for MCU students at the Krulak Center

Source: photo courtesy Sebastian J. Bae.

gion, *FMF* allowed 2–10 players to explore future operating concepts, nascent technologies, and all-domain warfare. Customizable and intuitive, *FMF* is simple enough to learn the basics in half an hour, but it presents players with challenges in combat, concealment and signature management, logistics, and a vast array of Joint—and adversary—capabilities that Marine leaders can expect to encounter on future battlefields under the *Force Design 2030* and *Expeditionary Advanced Base Operations* concept.[106] In March 2021, *FMF* served as the capstone wargame for Expeditionary Warfare School (EWS). For two full days, all of the school's 16 conference groups sought to outthink, outmaneuver, outfight, and deceive that "thinking enemy"—in this case, their fellow students. As of 2021, a virtual version is available on *Tabletop Simulator* upon request and a small batch of print copies are currently being produced for select Marine Corps units.

The Corps has also devoted considerable effort in recent years to crafting its own original wargames again in the vein of the TACWAR series. In 2019, the Wargaming Division (WGD) of the Marine Corps Warfighting Lab, overseen by its then-director Colonel Tim Barrick, designed the Operational Wargame System (OWS), initially focused on future conflict in the Indo-Pacific theater. It was the WGD's goal to offer the OWS as a prolific and standardized wargaming system across the Corps.[107] *Assassin's Mace*—the first module of the OWS—is

Figure 9. EWS students playing *FMF* during a two-day capstone wargame

Source: photo courtesy Sebastian J. Bae.

a tabletop manual wargame in which players execute the operational art and Joint warfare across domains. The tabletop version was soon joined by a pilot VASSAL module in 2020, bringing the game to a wider Marine audience and enabling distributed gameplay; the latter feature proved unexpectedly useful as the COVID-19 pandemic caused significant disruption to normal PME routines later that year. In early 2021, the WGD prototyped a European module for the OWS called *Zapad* and has plans for additional theater-specific expansions. *Assassin's Mace* has been used not only in Marine Corps PME schools but in the PME institutions of other Services and in civilian universities as well—Marine Corps Command and Staff College, the School of Advanced Warfighting, the U.S. Army's Command and General Staff College, the Naval Academy, and Georgetown University have all implemented the game in their curricula.

Perhaps the most promising trend of this wargaming renaissance is that, despite the space devoted to it here, educational wargaming is blossoming across the force. A much more detailed rundown on MCU gaming efforts was recently published in the *Marine Corps Gazette*.[108] As noted above and in a recent article by Sebastian J. Bae and Major Paul M. Kearney, select operational Marine Corps units are exposing their Marines to wargaming, ranging from *FMF* to the simple commercial titles like *Memoir '44*; even the Corps' Recruiting Command is exploring the inherently competitive nature of wargames as a vector for recruit-

Figure 10. Midshipmen at the U.S. Naval Academy playing *Assassin's Mace* to enhance professional development

Source: photo courtesy Sebastian J. Bae.

ment.[109] Thus, the question today is not whether or not there is a resurgence in educational wargaming across the Marine Corps—it is there, and growing. The real question is whether this resurgence proves as transient as its predecessors or endures longer than the presence of a few individuals devoting their personal energy to the cause. The final section of this article offers several recommendations in this vein to finally fulfill, throughout the Corps, the promise of educational wargaming; in the words of MCU's Krulak Center, to "make it stick."[110]

Recommendations

A common theme through this article is that a one-size-fits-all approach is often the death knell of cultivating longevity; thus, the authors will not propose a single silver bullet but offer recommendations culled from the near-century of Corps history through which educational wargaming has ebbed and flowed. Taken together and tailored as necessary for the various training, education, and operational needs, the authors believe that the history bears out the value of these recommendations in establishing a lasting and robust culture of wargaming.

Balance fidelity and playability: whether in the case of the *Educational War Game*, *TACWAR*, or MTWS, the wargames formally developed by the

Marine Corps succumbed, time after time, to a mission creep that conflated realism with complexity. The desire to add more layers, more mechanics, or more rules to a gaming framework due to a perceived need to make it more realistic almost always caused Marines to stop playing the game. A hyper-realistic game that ends up stacked unused in warehouses, as *TACWAR* ultimately did, is valuable to no one. Marine organizations charged with training, educating, and otherwise preparing Marines for operational challenges must accept that even the most realistic wargame necessarily abstracts elements of gameplay. Those organizations must also understand that there is nothing wrong with this, and indeed, there is not a single training event conducted by Marines that does not abstract some element of the exercise. Abstraction is what allows the training or educational event to focus on the critical learning outcomes. The ultimate goal of wargaming—or any training or educational activity—is to give Marines the opportunity to learn, fail, adapt, and try again the desired skill in an environment where such failures do not cost materiel or blood. If a particular decision-making challenge is not adequately captured in a particular wargame, the automatic response should not be to attempt to make the wargame do something it was not designed to do. Find another wargame or decision-making tool or look to a different educational mechanic entirely. However, turning a game designed to provide a specific challenge into a bloated mess that models many challenges but gathers dust in a warehouse does nothing to close the decision-making gap identified by General Berger.

Use a family of games, rather than "one game to rule them all": in the spirit of the recommendation above, those times in the Corps' history when educational wargaming was at its most vibrant were the times when a myriad of different titles, or even gaming platforms, were used for specific objectives. The golden age of Marine Corps wargaming saw a vastly diverse library of games employed, with Marines gravitating toward different gaming titles and platforms as their unique learning requirements demanded. TDGs filled the gap in some instances, *Advanced Squad Leader* in others; and it was this cultural environment of intellectual flexibility and adaptability that allowed the golden age to flourish as long as it did. In reviewing the most recent history of educational wargaming, one thing that should have struck the reader was how many different gaming variations were present. EWS used one game, CSC another, and MCWAR a third—and this is entirely appropriate given the variance in operational perspective present at each school. This ties back to the acceptance of abstraction as well. A captain gaining exposure to the all-domain complexities of modern company command represented in *FMF* at EWS does not also need to consider the five-year investment strategies that the lieutenant colonel at MCWAR must consider in *Hedgemony*. What matters is the opportunity to practice decision making and critical thinking against another human adver-

sary operating under the same rules in the same synthetic environment. Just as a Marine leader will grow their professional knowledge in a PME continuum tailored to their level of responsibility throughout their career, so too must the Corps' training and educational entities accept a similar continuum of decision-making opportunities, tailored to responsibility, offered by a wargaming continuum that uses different games for different challenges to critical thinking.

Connect the islands of excellence to each other: one of the starkest lessons from the Corps' history of wargaming is that such a continuum mentioned above has never existed. Enthusiastic islands of excellence might grow where one motivated individual, or a robust organizational culture, provided exposure to decision-making opportunities through wargaming to a small population of Marines. But even in the golden age, a Marine could step away from one of those islands and never again experience a wargaming touchpoint. A game like the LFDG could exist but stay tucked away in a small corner of the institution with no opportunity to reach a wider audience. Conversely, a senior leader like General Krulak might issue an order that nominally impacted the whole of the institution, but not have the time to create the corresponding enforcement mechanics needed to make that order stick beyond his tenure in office. Like a carnival whack-a-mole game, for more than a century wargaming islands have popped up only to vanish because they could not support each other. Those islands need reinforcement at all levels, so that a culture of educational wargaming might endure and correct the decision-making deficit identified by General Berger. There exists a unique opportunity in the Corps today where multiple islands exist, from the *Commandant's Planning Guidance* down through massed educational efforts at MCU, and in those individual FMF units whose commanders are willing to carve out the time to create decision-making spaces for their Marines with stand-alone wargaming programs. These islands should not wait for a formal multiyear plan, with attendant funds, personnel, and formal bureaucratic changes to make cross-institutional wargaming "official." Marines are known for their initiative; with so many islands implementing their own wargaming efforts today, the leaders on those islands must connect with each other now to make the gaming culture maintain staying power and let the paperwork trail catch up when it can.

Do not let resourcing be an excuse: not a Service under the Department of Defense stands unthreatened by shrinking budgets. COVID-19, the drawdown in Afghanistan, and a host of other factors all feed into the new reality that our armed forces do not have as much money to work with as they did in previous decades. When it comes to wargaming, however, money should not be the excuse to stand idle. In contrast to long-range fire support platforms or fifth-generation aircraft, wargames are a bargain. Most current computer or tabletop titles cost less than $100; many classic titles can be found through third-party

marketplaces for a fraction of that price tag. Once acquired, the only other cost incurred by wargaming is time. The authors freely admit that this cost is not inconsequential. It is a truism that even basic unit annual training requirements eat up almost more training hours than are available in a calendar year, and that is before one counts operational training and readiness manual requirements. Even a simple wargame takes a few hours and a few repetitions for a facilitator to learn, and that time must come from somewhere. However, the relatively low material requirements for conducting a wargame arguably create their own opportunities. One does not need a training range, safety officer, ammunition, fuel, chow, or air support to conduct a wargame that nevertheless models fire, maneuver, and logistical challenges. Moreover, a few hours carved from a training schedule for wargaming may provide more decision making and critical thinking reps and sets overall, for a much larger pool of Marines who need it, than several days of live training wherein a Marine might get only one repetition in the event. All told, wargaming can fulfill vital learning outcomes for a fraction of the time and money needed to replicate a similar outcome in the real world.

Leverage the Marine: a preponderance of the examples highlighted throughout this article are not the result of the institutional Marine Corps getting it right, but of individual Marines offering their own talents and time to capitalize on the promise of wargames. In some cases, this individual initiative was actively cultivated by higher authority; in others, the Marine might have had no support but was sufficiently convinced of the need to help their peers increase their capacity for decision making and critical thinking that they did it on their own anyway. The point from both cases is that talented wargamers exist in the Marine Corps who only need to be given the opportunity to share that talent, and they will carry the effort forward themselves. In those organizations where a culture of wargaming is already growing, the leaders there should leverage those Marines as part of their broader approach to implementing wargames as an instructional tool. If an organization has no preexisting culture or is afraid to take the first steps to start one lest a failed attempt strangle the project in the cradle—ask those organic wargamers for help. Leaders may not know they exist, but they do and will gladly manifest themselves when asked. Moreover, another common thread through the history just described is that when given the opportunity to facilitate wargaming, the Marines given that responsibility will pour themselves into that effort. They will not count the hours needed to prepare or facilitate or clean up—they are inflamed with the passion that comes from believing in the value of something and only want to be given the chance to demonstrate that value. Let them; those Marines will prove infinitely more useful than an unlimited budget or training white space.

Do it more than once, and do it with everyone: General Berger's com-

ment on "reps and sets" ties back to a key part of what made the Naval War College's wargames so valuable in the interwar years. To paraphrase both Admirals Sims and Nimitz, the value came from the game's constant iterations throughout the students' course of study, with wargame scenarios run week after week and under a variety of different conditions. Leaders can only hone decision-making skills for future wars when they are given repeated opportunities to make, and learn from, decisions. Moreover, wargaming's full value for the operating forces comes from giving as many Marines as possible as many opportunities as possible to sharpen their critical thinking. Another key takeaway from the Naval War College example is that the wargame was not reserved for a handful of wise old admirals, but it involved officers who would later command at all levels, from individual ships to carrier task forces to fleets flung across the vast expanse of the Pacific. The Navy had far more lower-level tactical commanders than admirals ensconced in Pearl Harbor or Washington, DC; those commanders were the ones who would be directly engaging the enemy, and who needed the decision-making skills to strike and counter Japanese actions far from the ability of fleet admirals to sway battles one way or the other. They were the real beneficiaries of the Naval War College wargaming program, and so the Marine Corps should keep that in mind as it seeks to rekindle its own wargaming renaissance. Service-level wargames executed every one to two years for a senior audience may have a value for that audience; but that is a far cry from reps and sets conducted week after week by those tactical and operational leaders whose decision making will be the most challenged in any future conflict. Decision-making skills held only by a select few, and tested on only a yearly basis, are the antithesis of the model developed at the Naval War College. Wargaming's value truly comes from activities done time after time, under different conditions, with the broadest audience possible

If the Marine Corps is to capitalize on this latest renaissance in educational wargaming—to actively help it endure and not ebb away in the space of a few years, as did the transient golden ages of the past—the Service should embrace the bold actions recommended above and in the many past pages written on the subject, and value, of wargaming. These recommendations are informed by the few successes and larger number of failures and unfulfilled promises of the Corps' history of wargaming. Moreover, as noted in the authors' final recommendation, the most important raw material—the energetic and thinking Marine—is available in abundance. The Corps abounds with thousands upon thousands of "frisky" Marines cut from the cloth of Earl Ellis: competitive, intellectually engaged, and open both to trying and mastering new tools that help them excel in their trade of warfare. Across the many pages just presented to the reader, one recurrent theme is that Marines are ready and eager to do this, and even if the wargaming opportunity given them is only on a small island of

excellence, or supported with the most marginal of resources, they will exploit wargaming's promise to the utmost. And that promise is as a training tool for the deadly serious mission of winning their nation's wars that every Marine is called to fulfill.

Skeptics should not be distracted by the "game" verbiage of wargaming. While they can be entertaining, the point of the wargame is war—its study, practice, the preparation needed to face its challenge, and most importantly, developing the decision-making and critical thinking habits needed to face human adversaries who are equally determined to out-decide and out-think us. In future conflicts, against adversaries who have closed the gap of materiel and technological advantage long enjoyed by the armed forces of the United States, such mental habits may be one of the few remaining places America's men and women in uniform can gain a decisive edge. In the succinct words of Major Frederic Green in 1964, "Tomorrow's Marine may fight a better war, thanks to the War Game of today."[111] Wargames are an arena in which Marine leaders of all ranks can develop those habits and do so without the cost of lives or irretrievable defeat. Cardboard counters do not bleed, and a loss within a wargame is neither fatal nor final. It is far better for leaders to make mistakes, fail, learn, and build their critical thinking habits in that environment, over and over again, rather than have those first failures and defeats come against a real opponent and with no opportunity to reset the game board.

Endnotes

1. "Dinner Given for Flotilla in Newport, R.I.," 12 April 1913, ID MSS53645, box 21, folder JA-MY 1913, William Sowden Sims papers 1856–1951, Library of Congress, Washington DC. The authors are grateful to B. J. Armstrong for directing them to this holding in the Sims papers.
2. LtCol John J. Reber, "Pete Ellis: Amphibious Warfare Prophet," in *Assault from the Sea: Essays on the History of Amphibious Warfare*, ed. LtCol Merrill L. Bartlett (Annapolis, MD: Naval Institute Press, 1983), 159; B. A. Friedman, ed., *21st Century Ellis: Operational Art and Strategic Prophecy for the Modern Era* (Annapolis, MD: Naval Institute Press, 2015), 45; and Dirk A. Ballendorf and Merrill L. Bartlett, *Pete Ellis: An Amphibious Warfare Prophet, 1880–1923* (Annapolis, MD: Naval Institute Press, 1997), 53–54. Bellendorf and Bartlett's biography does reference the War College's *Fleet Tactical* game, but it contains no further detail on Ellis's participation in the wargame or Ellis's proficiency at it compared to his Navy counterparts.
3. Fleet Adm Chester Nimitz (commander in chief of the U.S. Pacific Fleet during World War II who oversaw the famous island-hopping campaign against far-flung Japanese outposts in the drive toward Japan) famously made clear his views on the value of the wargames he experienced as a student at the Naval War College: "The enemy of our games was always—Japan—and the courses were so thorough that after the start of WWII—nothing happened in the Pacific was strange or unexpected . . . the war with Japan had been reenacted in the game room . . . by so many people in so many different ways that nothing that happened during the war was a surprise—absolutely nothing except the Kamikaze tactics toward the end of the war; we had not visualized those." See Michael Vlahos, "Wargaming, an Enforcer of

Strategic Realism: 1919–1942," *Naval War College Review* 39, no. 2 (1986): 7; and "Fleet Admiral Chester W. Nimitz, Tenth Chief of Naval Operations, December 15, 1945–December 15, 1947," Naval History and Heritage Command, last modified 15 July 2016.

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5. *Advantage at Sea: Prevailing with Integrated All-Domain Naval Power* (Washington, DC: Department of Defense, 2020), 3–5.
6. Peter P. Perla, *The Art of Wargaming: A Guide for Professionals and Hobbyists* (Annapolis, MD: Naval Institute Press, 1990), 62–63; Trent Hone, *Learning War: The Evolution of Fighting Doctrine in the U.S. Navy, 1898–1945* (Annapolis, MD: Naval Institute Press, 2018), 98; and Matthew B. Caffrey Jr., *On Wargaming: How Wargames Have Shaped History and How They May Shape the Future* (Newport, RI: Naval War College Press, 2019), 25–26.
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9. Perla, *The Art of Wargaming*, 66.
10. Perla, *The Art of Wargaming*, 66.
11. Perla, *The Art of Wargaming*, 66–67; and Hone, *Learning War,* 99–100.
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13. Perla, *The Art of Wargaming*, 66; and Michael Vlahos, *The Blue Sword: The Naval War College and the American Mission, 1919–1941* (Newport, RI: Naval War College Press, 1980), 136–37.
14. Perla, *The Art of Wargaming*, 68.
15. Perla, *The Art of Wargaming*, 71.
16. Perla, *The Art of Wargaming*, 71.
17. "Fleet Admiral Chester W. Nimitz."
18. Allan R. Millett, *Semper Fidelis: The History of the United States Marine Corps* (New York: Free Press, 1991), 322–25.
19. Millett, *Semper Fidelis*, 325.
20. Millett, *Semper Fidelis*, 326.
21. Millett, *Semper Fidelis*, 327–43; Nofi, *To Train the Fleet for War*, 178–314; LtCol Kenneth J. Clifford, *Progress and Purpose: A Developmental History of the United States Marine Corps, 1900–1970* (Washington, DC: History and Museums Division, Headquarters Marine Corps, 1973), 25–59; LtGen Victor H. Krulak, *First to Fight: An Inside View of the U.S. Marine Corps* (Annapolis, MD: Naval Institute Press, 1984), 71–110; Gunther E. Rothenberg, "From Gallipoli to Guadalcanal," in *Assault from the Sea*, 177–81; and Col Robert D. Heinl Jr., "The U.S. Marine Corps: Author of Modern Amphibious Warfare," in *Assault from the Sea*, 185–94.
22. Millett, *Semper Fidelis,* 325.
23. David J. Ulbrich, *Preparing for Victory: Thomas Holcomb and the Making of the Modern Marine Corps, 1936–1943* (Annapolis, MD: Naval Institute Press, 2011), 32–33, 43.
24. Col Arthur T. Marix, "Thoughts on Naval Tactics," *Marine Corp Gazette* 9, no. 6 (June 1924): 133.
25. Clifford, *Progress and Purpose,* 45.
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27. "Advanced Base Problem II, 1934–1935, Truk," Advanced Base Problem Files, box 2, various folders, HD Archives. In the Truk Advanced Base Problem documents, Cates is listed as a member of student group 2; Smith and Graves are listed as presenters and slide managers for the formal briefing of the students' various solutions. All three men would see extensive action in the Pacific theater in World War II, with Cates and Erskine both commanding infantry divisions during the Battle of Iwo Jima. Cates later became the 19th Commandant of the Marine Corps. Oliver Smith would command

the 1st Marine Division at the start of the Korean War and lead it in its famous fighting withdrawal from the Chosin Reservoir.

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48. Capt C. A. Leader, "The 'TACWAR' Wargame," *Marine Corps Gazette* 65, no. 12 (December 1981): 24.
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80. The key instructors involved with the pilot of *TacOps* at NMITC were then-LtCol Eric Walters, Capt Brian Rideout, and Capt Brian Gillman. Walters and Gillman retired from the Marine Corps as colonels. Col Brian Rideout remains on active duty; and Walters interview. Another adaption of *TacOps,* called *TacOps Cavalry,* would be used by Col John Antal at the U.S. Army Armor School at Fort Knox, KY.
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82. For more information on *InfoChess*, refer to "InfoChess," Global ECCO. InfoChess remains in use today at the Naval Postgraduate School, Monterey, CA; and Walters interview.
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84. Capt John C. Ketcherside, "Pulling the Virtual Trigger," *Marine Corps Gazette* 84, no. 10 (October 2000): 66–67.
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86. Maj Brendan B. McBreen, "Close Combat and Learning Infantry Tactics," 88, no. 9 *Marine Corps Gazette* (September 2004): 12. Many sources mistakenly credit Eric Walters, a lieutenant colonel at the time, for *Close Combat Marine*. However, Walters did not participate in its development. Walters interview.
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88. Maj Brendan B. McBreen, "Close Combat and Learning Infantry Tactics," *Marine Corps Gazette* 88, no. 9 (September 2004): 12–14; and *Close Combat Marine Workbook* (Washington, DC: Marine Corps Institute, 2004), iv–32.
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94. John Lawson III, "Video Games for Marines," *Marine Corps Gazette* 99, no. 6 (June 2015): 42.
95. James Lacey, "Wargaming in the Classroom: An Odyssey," *War on the Rocks*, 19 April 2016.
96. Sebastian J. Bae, "Just Let Them Compete: Raising the Next Generation of Wargamers," *War on the Rocks*, 9 October 2018; and Lawson III, "Video Games for Marines," 42–43.
97. Berger, *Commandant's Planning Guidance*, 19.
98. Berger, *Commandant's Planning Guidance*.
99. Berger's call for increased educational wargaming was further amplified by *Developing Today's Joint Officers for Tomorrow's Ways of Way: The Joint Chiefs of Staff Vision and Guidance for Professional Military Education and Talent Management* (Washington, DC: Joint Chiefs of Staff, 2020). The document highlighted the role of wargaming in the training and education of future leaders and the need for change in the current PME enterprise. For more on this, see James Lacey, "Finally Getting Serious About Professional Military Education," *War on the Rocks*, 18 May 2020.
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101. For more information about *Hedgemony*, refer to Michael E. Linick et al., *Hedgemony: A Game of Strategic Choices* (Santa Monica, CA: Rand, 2020), https://doi.org/10.7249/TL301.
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104. Under Dr. Benjamin Jensen, there was a brief effort in establishing and conducting a

TECOM Warfighting Club, which had a focus on educational wargaming. However, the club did not endure due to various mitigating factors like COVID-19. However, it did inspire similar "Fight Club" initiatives, including the expansive UK Fight Club. For more, refer to Benjamin Jensen, "TECOM Warfighting Club," *Marine Corps Gazette* 103, no. 6 (June 2019): 8–10.

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