



Leadership Matters: **War Gaming Command and Control in the Modern Maritime Environment**¹

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The Enduring Challenge of Command and Control at Sea

Commanding and controlling ships of war has been a challenging but necessary function ever since the first navies went to sea. Whether it was the age of sail; the era of steam, radio and radar; or the emergence of the cyber and space domains today; maritime commanders have sought to master “the exercise of authority and direction... over assigned and attached forces in the accomplishment of the mission.”² While there has always been an appetite to centralize information in order to have complete awareness and control over one’s forces, the reality of maritime operations is that commanders have always relied and still must rely on de-centralized execution of their orders. Communicating clear commander’s intent was and remains implicit to effective sailing directions. To quote the most recent joint publication on maritime operations, maritime command and control requires “subordinate commanders to execute operations independently, but in accordance with a thorough understanding of the commander’s intent, and command by negation or mission command.”³ *Joint Publication 3-32, Command and Control for Joint Maritime Operations* also notes that “[essential] to mission command is the thorough understanding of the commander’s intent at every level of command.” Thus, commander’s intent is as significant to “mission command” in 2013 as it has ever been.

¹ The opinions, conclusions, and recommendations expressed or implied are those of the authors and do not necessarily reflect the views of the U.S. Naval War College, the Department of the Navy, or the Department of Defense.

² Department of Defense, *Joint Publication 1: Doctrine for the Armed Forces of the United States*, 25 March 2013, (Washington, D.C.: Government Printing Office, 2013), GL-5.

³ Department of Defense, *Joint Publication 3-32: Command and Control for Joint Maritime Operations*, 7 August 2013, (Washington, D.C.: Government Printing Office, 2013), I-2.

The key to good mission command (and good commander's intent) is to have good commanders—leaders who are confident and competent in their ability to communicate intent that is purpose-focused, enduring, and relevant for subordinates to fulfill. Experience cultivates confidence and competence, and certainly the U.S. has a cadre of experienced military leaders informed by the joint operations of the last decade in Afghanistan and Iraq. However, the U.S. has not been seriously contested on the maritime commons since the end of World War II, and thus, the same level of competence and confidence cannot be assumed for American naval leaders in the maritime domain. Naval leaders have not experienced the real world situations that can adequately inform commander's intent as they command and control future maritime operations under contested conditions. How are today's naval leaders to gain confidence and competence in their decisions and command at sea, especially when the sea becomes contested? How are they to master the art of centralized control and de-centralized execution? Essentially, how do leaders become experienced in command and control during war at sea when there has not been one?

History and War Gaming for Understanding

Coming to grips with the paradox of command and control, the tension of centralized control and de-centralized execution, has been on the minds of many naval leaders today, and consequently has been the impetus for recent research and war gaming efforts at the U.S. Naval War College. Studying the past and doing war games are effective means to help leaders understand and explore the decisions they must make in today's maritime environment. In *Command at Sea*, author Michael Palmer advocates for history, stating that “despite incredible advances in technology future commanders can learn myriad lessons about the nature of their art from the careers of leaders such as Nelson.” Palmer quotes the 1995 *Naval Doctrine Publication 6, Naval Command and Control* to argue that Lord Admiral Nelson best illustrates the type of relationship necessary for effective command and control, one that creates “understanding ... based on doctrine, teamwork, and trust.”⁴ Palmer's book is an excellent study of command and control at sea from history's perspective. Similar to the study of history, war gaming provides scenarios, context, and situations to stimulate thinking about enduring problems. But unlike the

⁴ Michael A. Palmer, *Command at Sea: Naval Command and Control since the Sixteenth Century* (Cambridge, Ma.: Harvard University Press, 2005), 17-18.

historical cases, a war game creates a unique simulated environment for participants to arrive at their own understanding and insights. Thus, war gamers have new, internalized experiences from which to think about contemporary challenges.⁵

Famously the war games of the interwar years provided the experiences and insights for the maritime leaders who led the Navy in World War II.⁶ From 1919 to 1941, the Newport War Games explored the tactical engagements that the Rainbow War Plans, specifically, War Plan Orange, imagined would occur between the U.S. Navy and Japan's Imperial Navy.⁷ Primarily the issue studied was gaining command of the commons, or in today's terms of reference gaining and maintaining sea control by overcoming adversarial anti-access and area denial (A2AD).⁸ Command and control was not a primary area of concern in the interwar gaming, but those games, some 318 on record, did create a framework of understanding for the American Naval Officer Corps. The games attempted to model and simulate the interactions of the American and Japanese fleets at the tactical level, using screens to mask each move until the umpires determined that each side would be detected and melee could ensue. The players communicated moves to the pucks via mimeographed "move sheets," replicating near perfect communication among each side. At issue was how each fleet would endure the fight from each engagement.⁹ How the fleets organized for the fight at sea was not specifically addressed in the interwar games. Players assumed Mahanian concentration of the fleet as the way to defeat the enemy fleet at sea. Naval War College students left Newport with a common understanding of how the U.S. Navy was to operate and fight. From Newport, Navy leaders embedded an approach to solving the Japanese problem and infused Mahan's theory into their "ethos" of war at sea.¹⁰ Arguably, this created a generation of naval officers who could act on commander's intent, best exemplified perhaps by Nimitz and Halsey in the Pacific.¹¹

⁵ Shawn Burns, ed., *War Gamers' Handbook: A Guide for Professional War Gamers* (Newport, RI: Defense Automated Printing Service, 2013), 4-5.

⁶ George W. Baer, *One Hundred Years of Sea Power: The U.S. Navy, 1890-1990* (Stanford, Ca: Stanford University Press, 1993), 126-128. Also see Michael Vlahos, *The Blue Sword: The Naval War College and the American Mission, 1919-1941* (Newport, RI: The Naval War College Press, 1980).

⁷ Vlahos, 113-122.

⁸ Milan N. Vego, *Joint Operational Warfare: Theory and Practice* (Newport, RI: U.S. Naval War College, 2007), II-48-II-59, and Department of Defense, *Joint Operational Access Concept (JOAC)* Version 1.0, 17 January 2012, 5.

⁹ Vlahos, 133-141.

¹⁰ Vlahos, 160-161.

¹¹ Palmer, 261.

In the games of 1945-46, the officers replayed the war in the Pacific and sought to validate what they had learned in four years of combat in the Pacific.¹² As the carrier emerged as the focal point of task force organization during the war, naval leaders became more and more concerned about how to organize and employ the battle line. No longer at issue was the tactical problem. Instead, leaders like Halsey and Spruance were thinking about the problem more operationally. By 1946, the college instructed gamers to explore Naval Communications among the Task Groups as they re-fought maritime operations in the vicinity of Truk Island.¹³ In spite of the value of the carrier recently proven in Pacific operations, the post-war games still tended to work through surface problems, and the battleship was still held as the center of the maritime task force.¹⁴ To be sure, the war games of the interwar and postwar era were to inform how to fight the navy against future adversaries, and arguably those games informed a generation of Navy leadership. As technology and the nuclear age created a range of new opportunities and challenges for the Navy in the Cold War, war gaming at Newport receded in importance for several decades, and then underwent a well-documented resurgence with the creation of the Center for Naval Warfare Studies and the Global War Games in the 1980s. Again, the value of war gaming at Newport was to build “foundations for better decisions.”¹⁵

War Gaming Command and Control in the 21st Century

Fast forward to 2013, and the challenges of command at sea have yielded new interest from Navy leadership. The Task Force Construct War Game in 2009 and the Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) War Game in 2010 informed how to integrate emerging cyber and improved communication technologies into maritime operations. Several recent war gaming efforts have provided a laboratory for the Navy, the other services and our U.S. partners to explore and understand command and control, specifically in a communications degraded / denied environment (CD2E). To increase the Navy’s understanding of operating in CD2E, the War Gaming Department has conducted the Global War Game series, the US-UK Concept of Operations War Game Series,

¹² Hal M. Friedman, *Blue versus Orange: The U.S. Naval War College, Japan and the Old Enemy in the Pacific, 1945-1946* (Newport, RI: Naval War College Press, 2013), 3-4.

¹³ Friedman, 266-68.

¹⁴ Friedman, 334.

¹⁵ Francis J. McHugh, *Fundamentals of War Gaming 3rd Edition (Reprint)*(Newport, RI: Naval War College Press, 1966, 2012), 66; and John B. Hattendorf et al, *Sailors and Scholars: The Centennial History of the U.S. Naval War College* (Newport, RI: Naval War College Press, 1985), 314-315.

and implemented an overall effort to integrate the tenets of the Navy's Information Dominance Warfare into its games.

The Air-Sea Battle Concept, designed to “reduce risk and maintain U.S. freedom of action” in a world of increasing challenges to operational access in multiple domains, was developed and released in 2011.¹⁶ As a new concept, Air-Sea Battle has become the driver for many gaming efforts. In 2012, using the framework of Cross-Domain Operations, the Global game asked players to consider how to gain and maintain operational access in the domain of space, air, surface, subsurface and cyber in order to achieve effects with a Joint Task Force. Global 12 identified that the “current service or functional Command and Control structures may be ineffective [in supporting] joint cross-domain operations in high-intensity A2 /AD environments.”¹⁷ As a result, the 2013 Global War Game concentrated on Air-Sea Battle Command and Control in a communications degraded / denied environment.¹⁸ Also in 2013, the UK-US Concept of Operations War Game asked American and British players to work through command and control of a coalition force in an A2/AD environment. Again, the players had to think through their moves in terms of using Cross Domain Operations. Built into the games were pre-determined assumptions about order of battle and communications capabilities so that they players could focus on *decision-making* instead of evaluating some new program or capability. Thus, these games in 2013 were designed to give players insights into the range of decisions that they could expect to make in an A2/AD environment while executing Air-Sea Battle Operations.

Unlike the interwar years, where the games explored American maritime capabilities against specific Japanese capabilities, the games of the 21st century are focused on how best to organize the force for joint operations, best organize for Air-Sea Battle. Like the 1930s, new technologies and capabilities seek to improve how our forces assure command and control, assure battle space awareness, and integrate fires. Today's Navy war games are not tests or validation exercises for those new technologies and capabilities, however, they are effective at

¹⁶ Department of Defense, Air-Sea Battle Office, “Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges,” pamphlet, May 2013, 2.

¹⁷ USNWC War Gaming Department and OPNAV 3/5, “Global 2012: Operationalizing Air-Sea Battle,” post-game pamphlet (Newport, RI: Naval War College Press, 2013).

¹⁸ USNWC War Gaming Department, “Global 2013: Command and Control in an A2/AD Environment,” post-game pamphlet (Newport, RI: Naval War College Press, 2013), 1.

creating understanding for the “complexities associated with Air-Sea Battle.”¹⁹ More importantly, because today’s players are primarily military officers at the mid-grade to field grade level, Newport’s command and control-focused war games have become a creative venue for maritime leaders to share command insights and mutual understanding of how they will make decisions in war. As these insights are captured during the post-game analysis, the game reports and briefs continue to reinforce lessons and themes necessary for commanding and controlling Cross Domain Operations.

War Gaming Insights: Leadership is Paramount

Then as now, Newport’s war games serve an important role in developing Navy leaders. Regardless of the focus of the game, the players learn how to be more effective leaders and war fighters by making decisions in the game environment. The interwar games created a group of naval officers who could receive Nimitz’s orders, his intent, and then carryout those orders under their own “initiative,” with little to no further guidance.²⁰ In 2013, the command and control-oriented games have reinforced the significance of good commander’s intent. Players repeatedly have noted that regardless of the C2 structure and process, quality commander’s intent is necessary to operate successfully in a CD2E fight. As future games look to inform the development of concept of operations for Air-Sea Battle, the War Game Department will continue to serve a vital role in molding the naval leaders in the fight to come. Player decisions made in McCarty-Little Hall today will remain a central source of experience necessary to win any war where the commons are contested in the future.

¹⁹ USNWC War Gaming Department and OPNAV 3/5, “Global 2012: Operationalizing Air-Sea Battle,” post-game pamphlet (Newport, RI: Naval War College Press, 2013).

²⁰ Palmer, 262.