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**THESIS**

**ARMY MANEUVER LEADERS AND INFORMATION  
ADVANTAGE: PROFESSIONAL MILITARY EDUCATION  
FOR ARMY MANEUVER LEADERS**

by

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December 2023

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**ARMY MANEUVER LEADERS AND INFORMATION ADVANTAGE:  
PROFESSIONAL MILITARY EDUCATION  
FOR ARMY MANEUVER LEADERS**

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## ABSTRACT

Despite the growing importance of information in modern-day conflict and warfare, Army maneuver leaders have very limited education on information advantage. This study attempts to examine how much curricula within current required professional military education for maneuver leaders is focused on information advantage or individual information activities and how existing education could be amended to include a more appropriate amount of education on information for U.S. Army maneuver leaders. Research on professional military education included the examination of curriculum and interviews with instructors and faculty at five standard courses required for U.S. Army maneuver leaders, including the Infantry and Armor Basic Officer Leaders Courses, the Maneuver Captains Career Course, the Command and General Staff College, and the U.S. Army Senior Staff College. Results of this study found that professional military education on information advantage equates to no more than 0.1% of all curricula in required professional military education for maneuver officers. This thesis recommends that 1) there should be additional education for maneuver leaders at required PME, 2) the Army should develop an IA smart book to provide to maneuver commanders in lieu of formal education while education centers update curricula and, 3) further research should be conducted to identify specific requirements for how much and what kinds of education on IA is appropriate for maneuver leaders.

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## LIST OF ACRONYMS AND ABBREVIATIONS

ABOLC	Armor Basic Officer Leaders Course
ADP	Army Doctrine Publication
AOC	Advanced Operations Course
BOLC	Basic Officer Leaders Course
CALL	Center for Army Lessons Learned
CEMA	Cyber and Electromagnetic Activities
CGSC	Command and General Staff College
CTC	Combat Training Center
D3SOE	Denied, Degraded and, Disrupted Space Operational Environment
DA Pam	Department of the Army Pamphlet
DIME	Diplomacy, Information, Military, Economy
DL	Distance Learning
DOD	Department of Defense
EW	Electronic Warfare
FM	Field Manual
GAO	Government Accountability Office
IA	Information Advantage
IBOLC	Infantry Basic Officer Leaders Course
IE	Information Environment
JCOIE	Joint Concepts for Operating in the Information Environment
JIPC	Joint Information Planners Course
JP	Joint Publication
JRTC	Joint Readiness Training Center

LIWA	Land Information Warfare Activity
LSCO	Large Scale Combat Operations
LTP	Leader Training Program
MCCC	Maneuver Officer Captains Career Course
MCoE	Maneuver Center of Excellence
MDMP	Military Decision-Making Process
MEL	Military Education Level
MMAS	Master of Military Art and Science
MOS	Masters in Operational Studies
MOS	Military Occupational Specialty
NTC	National Training Center
OE	Operational Environment
OES	Officer Evaluation System
OIE	Operations in the Information Environment
OPSEC	Operational Security
PME	Professional Military Education
PMI	Program of Instruction
SOIE	Strategy for Operations in the Information Environment
SSC	Senior Staff College

## EXECUTIVE SUMMARY

Information continues to grow in importance and adversaries of the U.S. have placed considerable focus on its application to increase their already growing advantage in the information space to “strengthen their global position and challenge U.S. power and ideals.”<sup>1</sup> Since the 1960s, the Army has evolved how it perceives and integrates information into operational planning<sup>2</sup> and has recently landed on information advantage (IA) codified in the Army’s draft publication ADP 3–13 *Information*.<sup>3</sup> Despite the growing importance of information in modern day conflict and warfare, maneuver leaders have very little education on information advantage.

This study attempts to determine how much curriculum within current required professional military education for maneuver leaders is focused on information advantage or individual information activities and how existing education could be amended to include a more appropriate amount of education on information for U.S. Army maneuver leaders. To answer this, the research has been scoped to focus on maneuver leaders. For the purpose of this study, maneuver leaders include infantry and armor officers between the grades of O1 to O6. Research on professional military education included the five standard courses required for U.S. Army maneuver leaders,<sup>4</sup> including the Infantry and Armor Basic Officer Leaders Courses, the Maneuver Captains Career Course, the Command and General Staff College, and the U.S. Army Senior Staff College. These courses are required for officer development and apart from a select number of officers selected through boards, the majority of officers attend these courses. The curriculum from each of these courses was carefully examined to identify how much applies to information.

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<sup>1</sup> Department of Defense, *2023 DOD Strategy for Operations in the Information Environment* (Washington, D.C: Department of Defense, 2023), 3.

<sup>2</sup> Sarah P. White, “The Organizational Determinants of Military Doctrine: A History of Army Information Operations,” *Texas National Security Review*, January 5, 2023, <https://tnsr.org/2023/01/the-organizational-determinants-of-military-doctrine-a-history-of-army-information-operations/>.

<sup>3</sup> Department of the Army, *Information (Draft)*, Draft, ADP 3-13 (Washington, D.C: Department of the Army, 2023).

<sup>4</sup> Department of the Army, *Officer Talent Management*, Department of the Army Pamphlet 600–3 (Washington, D.C: Department of the Army, 2023).

Furthermore, educators and faculty from each course provided interviews or email communication to offer further context to how information is integrated, or not integrated, into lesson plans.

In his opening remarks in the *2023 DOD Strategy for Operations in the Information Environment*, Secretary of Defense Lloyd Austin stresses the importance of information.<sup>5</sup> The document further explains how education of military leaders is critical to the successful application of information.<sup>6</sup> These endeavors, however, as the GAO report *Contested Information Environment: Actions Needed to Strengthen Education and Training for DOD Leaders* points out, are not yet fully met and there are education gaps that effect maneuver leaders' understanding of information.<sup>7</sup> This study's findings show that education on information advantage equates to no more than 0.1% of all curricula in required professional military education for maneuver officers. That is no more than 20 academic hours in an estimated 21,900 academic hours in 22 years of service.

This study provides numerous recommendations to fill current education gaps for information. First, there should be additions to professional military education to increase required curriculum on information. Determining the exact amount and appropriate content for each level of education would require further study, but one possible method would be to discuss how information relates to each warfighting function so that curriculum on warfighting functions include how information relates to that particular warfighting function. Similarly, information can be discussed as part of offense, defense, and stability operations. Second, the Army should develop an information advantage smart book to provide maneuver commanders in lieu of education while education centers update curriculum. Publications provided by the Center for Army Lessons Learned (CALL) have numerous similar publications meant to “resolve gaps, enhance readiness, and inform

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<sup>5</sup> Department of Defense, I.

<sup>6</sup> Department of Defense, 12.

<sup>7</sup> U.S. Government Accountability Office, *Contested Information Environment: Actions Needed to Strengthen Education and Training for DOD Leaders*, GAO-23-105608 (Washington, D.C: Government Accountability Office, 2023).

modernization.”<sup>8</sup> Third, further research should be conducted to identify specific requirements for how much and what kinds of education on IA is appropriate for maneuver leaders. It is important to establish not only how much curriculum is necessary but also what material is appropriate for each level of learning. At the very least, one-to-two-hour lectures as part of learning for each warfighting function may be appropriate.

The current education on information for maneuver leaders is very limited. Adversaries of the U.S. have invested in information and gained considerable advantage. If attention is not given to improving professional military education for Army maneuver leaders, the U.S. will continue to be outpaced both below the threshold of armed conflict and in potential future large-scale combat operations. With adequate changes, the U.S. can close the gap on achieving information advantage against its adversaries and improve understanding of information among maneuver leaders.

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<sup>8</sup> Department of the Army, “CALL,” Center for Army Lessons Learned, accessed October 16, 2023, <https://www.army.mil/call>.

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## I. INTRODUCTION

Understanding and prioritization of information advantage (IA) has a history of being overlooked, and often has been an afterthought among military planners. The Department of Defense (DOD) and the Army, along with other services, are revising how they see information and the priority it receives as a critical component of the operational environment (OE). The information environment (IE) has grown in complexity and stands to have a greater impact on modern warfare than ever before. Without recognizing and appreciating the IE as an intrinsic part of the OE, commanders and their staffs will continue to fail to plan and integrate the IE into operational planning. As the Army orients itself around IA, the Army should restructure professional military education (PME) at all levels, especially for maneuver officers, to increase understanding, planning, and integration of the IE into operational planning.

Educating the force, specifically maneuver leaders, is paramount to remaining competitive relative to our adversaries. Without formal education, leaders will continue to form their own perspectives and strategies for integrating IA or ignoring it all together. Imagine if an Infantry Brigade Commander had zero education on indirect fires. He would not know how to integrate such fires into his planning process and synchronize them with other warfighting functions. Of course, the commander will have a fires support officer on staff but without formal education on fires, that commander is less likely to use this staff member for the correct purposes and even more unlikely to consider recommendations provided by the staff member. Although the Army does not consider information a warfighting function, the same can be said for Information Operations staff officers. A commander lacking in relevant education will not know how to best utilize the officer on staff or how to integrate information into operational planning. Without addressing the issue of maneuver leader's limited education on IA, organizations will struggle to achieve IA.

The DOD has directed services to invest in the development and prioritization of the IE, leading services to take their own approach to meet expectations.<sup>1</sup> Recent publications such as the Department of Defense’s 2023 *Strategy for Operations in the Information Environment* (SOIE), and the Army’s 2023 draft Army Doctrine Publication (ADP) 3–13, *Information*, mention education of the force as a critical aspect of preparations for competing in the information space. The Army has continuously refined how it envisions and defines the IE since the 1960s, finally gaining traction in 1996 with the publication of its first doctrinal text on information, Field Manual (FM) 100–6, *Information Operations*. Through constant refinement and attempts to codify its definition of and strategy for operations in the information environment, the Army has finally landed on information advantage as of fall 2020.<sup>2</sup> Still, maneuver commanders lack education on information advantage and its impacts to the operational environment which can limit their ability to synchronize information with the war fighting functions. As the Army orients itself around information advantage, it should also amend PME at all levels, especially among maneuver officers, to increase understanding, planning, and integration of the IE into operational planning among the other war fighting functions. Maneuver officers command combat units and therefore have an increased interest in IA and its impacts to combat operations. Limited education of these officers leads to limited understanding of how IA can shape those combat operations.

This thesis closely examines current education for maneuver leaders. Through careful examination of required schooling for these leaders this study shows that they receive limited education on IA or individual information activities and attempts to define methods to determine the appropriate amount of related course material. Consistent with numerous publications with similar findings this study argues for increased formal professional military education for maneuver leaders, provides recommendations to amend

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<sup>1</sup> U.S. Government Accountability Office, *Contested Information Environment: Actions Needed to Strengthen Education and Training for DOD Leaders*, GAO-23-105608 (Washington, D.C: Government Accountability Office, 2023).

<sup>2</sup> Sarah P. White, “The Organizational Determinants of Military Doctrine: A History of Army Information Operations,” Texas National Security Review, January 5, 2023, <https://tnsr.org/2023/01/the-organizational-determinants-of-military-doctrine-a-history-of-army-information-operations/>.

current curriculum, and provides possible other methods to increase understanding of and prioritization of IA.

## **A. RESEARCH QUESTION**

How much curriculum within current required professional military education for maneuver leaders is focused on information advantage or individual information activities and how can existing education be amended to include an appropriate amount of education on information for U.S. Army maneuver leaders?

## **B. APPROACH**

### **1. Scope**

The scope of this study includes U.S. Army maneuver leaders and the professional military education that is required for their professional development. Maneuver leaders, for the purpose of this study, include infantry and armor officers from the grades of O1 through O6. The leadership positions held by these officers include platoon leader, company commander, battalion commander, and brigade commander. These individuals may also serve as part of a battalion or brigade staff in numerous roles including but not limited to operations officer, assistant operations officer, or executive officer. These staff positions are the most common positions held by maneuver officers in a battalion or brigade staff. Maneuver leaders have numerous opportunities for professional military education throughout their career. This study is scoped to include only that education that is required for their professional development and attended by the vast majority of officers within this study's scope. These professional development requirements are outlined in Department of the Army Pamphlet (DA PAM) 600–3 *Officer Talent Management*.<sup>3</sup>

This study was scoped to include maneuver officers because they lead and command combat units most responsible for combat operations in the OE. Lack of

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<sup>3</sup> Department of the Army, *Officer Talent Management*, Department of the Army Pamphlet 600–3 (Washington, D.C: Department of the Army, 2023).

understanding of the effects of information, much like lack of understanding of how to employ indirect fires, has the greatest potential negative effect among these officers. The professional military education reviewed in this study was chosen because it is required for these officers and the majority of these officers attend these courses. There are exceptions to attendance of these courses however, these exceptions apply to a small number of select officers that do not make up the majority of this audience. Therefore, these exceptions are excluded from this study as they do apply to the majority.

## **2. Research**

To inform this study, research included 1) a review of POI for professional military education (PME), 2) interviews, 3) review of current doctrine and DOD strategy, 4) review of publications discussing and analyzing the status of information advantage and education on information.

PME selected and reviewed includes the following:

1. Infantry Basic Leader's Course (IBOLC) for Infantry officers grades O1–O2.
2. Armor Basic Leader's Course (ABOLC) for Armor officers grades O1–O2.
3. Maneuver Captain's Career Course (MCCC) for Infantry and Armor officers grade O2 promotable–O3.
4. Intermediate Leader's Course (ILE) for officers grade O3 promotableO4.
5. U.S. Army Senior Staff College (SSC) for officers grade O5–O6.

Review of PME included academic calendars provided through the schoolhouse via schoolhouse web pages or through instructors and faculty. Interviews with instructors or faculty provided better understanding of the POI, and discussion on how or if information advantage was included in POI.

Interviews were important to gaining greater perspective on the issue of education on IA from former and current senior maneuver commanders, information professionals,

thought leaders, PME faculty and instructors, and authors of research relating to the topic. Interviews also helped to focus or refine research as well as develop recommendations for improvement to curriculum. Interviews were primarily open discussion and dialogue on information advantage and current PME on information advantage. Interview questions were drafted to help scope the discussion. Examples of interview questions include

1. How will the Army's concept for IA differ from previous concepts? What about from Joint concepts outlined in JP 3-04?
2. How has current education for U.S. Army maneuver leaders on IA impacted abilities to integrate the IE successfully into operational planning?
3. How might the U.S. Army restructure its PME to provide maneuver leaders with early and more frequent education on IA?
4. How might units fail to be successful or fail to integrate IA into operational planning or execution?
5. How might a smart book for IA be useful to senior maneuver commanders and their staff? Where and how would it best be introduced?

Current doctrine and DOD strategy is important to providing context and understanding of information advantage and the information environment. These publications include

1. *2023 DOD Strategy for Operations in the Information Environment* (published July 2023)<sup>4</sup>
2. *2016 DOD Strategy for Operations in the Information* (published June 2016)<sup>5</sup>

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<sup>4</sup> Department of Defense, *2023 DOD Strategy for Operations in the Information Environment* (Washington, D.C: Department of Defense, 2023).

<sup>5</sup> Department of Defense, *DOD Strategy for Operations in the IE Signed* (Washington, D.C: Department of Defense, 2016).

3. *Joint Concepts for Operating in the Information Environment (JCOIE)* (Published July 2018)<sup>6</sup>
4. Joint Publication 3-04, *Information in Joint Operations* (Published September 2022)<sup>7</sup>
5. FM 3-13, *Information Operations* (Published 2016)<sup>8</sup>
6. Draft ADP 3–13, *Information* (Draft as of September 2023)<sup>9</sup>

Additional literature includes publications critical of the current level of education within the DOD, informational publications on information within the Army and the DOD as a whole, and publications assessing the current status of information advantage.

The research for this study is meant to determine how much education on information advantage and information activities is provided to maneuver leaders through mandatory professional military education. It will also help to review how current education can be amended to include more curriculum related to information advantage and attempts to define future possible methods to determine the requisite amount.

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<sup>6</sup> Joint Chiefs of Staff, *Joint Concept for Operating in the Information Environment (JCOIE)* (Washington, D.C: Joint Chiefs of Staff, 2018), chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/[https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joint\\_concepts\\_jcoie.pdf](https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joint_concepts_jcoie.pdf).

<sup>7</sup> Joint Chiefs of Staff, *Information in Joint Operations*, JP 3-04 (Washington, D.C: Joint Chiefs of Staff, 2022), <https://jdeis.js.mil/jdeis/>.

<sup>8</sup> Department of the Army, *Information Operations*, FM 3-13 (Washington, D.C: Department of the Army, 2016), [https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB\\_ID=1001357](https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=1001357).

<sup>9</sup> Department of the Army, *Information (Draft)*, Draft, ADP 3-13 (Washington, D.C: Department of the Army, 2023).

## II. LITERATURE REVIEW

In a statement from Secretary of Defense Lloyd Austin, taken from the 2023 DOD SOIE, he encourages the DOD to prioritize information power in order to “meet aggressions,” and “undermine adversary or other relevant actor efforts in the information environment.”<sup>10</sup> Education of the force is critical to this endeavor. The existing literature is replete with definitions of the IE, arguments of its misuse and for better IE-focused education for the forces. An example of such criticism are findings outlined in the U.S. Governmental Accountability Office’s (GAO) January 2023 report titled *Contested Information Environment: Actions Needed to Strengthen Education and Training for DOD Leaders*.<sup>11</sup> Reviewing current directives and doctrinal text on information advantage is the first step to addressing the lack of education. The most recent guidance from the DOD on the information space is captured in the 2023 DOD SOIE.<sup>12</sup> To meet requirements laid out by the Secretary of Defense, the strategy repeatedly calls for education of the force by demanding that “Commanders across all Military Services will increase training to promote awareness of all personnel on how to integrate OIE across the joint functions, how to measure and assess outcomes, and how to ensure tactical activities are synchronized with operational and strategic Operations in the Information Environment (OIE) objectives.”<sup>13</sup> However, more needs to be done through means of formal education to inform leaders as directed by the DOD.

The services have improved their focus on the OIE through various methods and refined their doctrine to meet requirements. This, however, does not supplement formal education. The newest joint doctrine, JP 3-04, published in September 2022, describes the use and leverage of the IE, the DOD’s role in maintaining unity of effort across service branches, informs the joint force on how to incorporate information into execution,

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<sup>10</sup> Department of Defense, 2023 DOD Strategy for Operations in the Information Environment, I.

<sup>11</sup> U.S. Government Accountability Office, *Contested Information Environment*.

<sup>12</sup> Department of Defense, 2023 DOD Strategy for Operations in the Information Environment.

<sup>13</sup> Department of Defense, 2023 DOD Strategy for Operations in the Information Environment, 10.

discusses the importance and challenges of assessing effects, and finally the planning coordination, execution, and assessment of the OIE.<sup>14</sup> The Army has recently made public a draft copy of its updated doctrine ADP 3–13 titled *Information*<sup>15</sup> due to be published by the end of 2023. Although the publication is currently a draft, it codifies the Army’s concept for information advantage which had only been formally defined in the 2022 publication of JP 3-04 as “the operational advantage gained through the joint force’s use of information for decision making and its ability to leverage information to create effects on the IE.”<sup>16</sup> The Army provides its own definition as “a condition when a force holds the initiative in terms of situational understanding, decision making, and relevant actor behavior.”<sup>17</sup> With updated doctrinal sources, the Army can now begin to build a framework for professional military education to meet standards outlined in the DOD strategy for operations in the information environment.

Other recent publications discuss the lack of education within the DOD for leaders. Referring back to GAO’s report *Contested Information Environment: Actions Needed to Strengthen Education and Training for DOD Leaders* it expresses the DOD’s current disadvantage in the IE, and provides two recommendations, first, “to develop guidance about what content to incorporate in its education and training related to decision-making in a contested environment,” and second, “assess the resources necessary to meet related education and training needs.”<sup>18</sup> The DOD partially agreed with the first point with the caveat that, frequency of efforts, specifically training will be based on operational tempo and determined at the Combatant Commander level. The DOD did, however, concur on the second recommendation responding that the DOD “will assess the resources necessary to meet related education and training needs as appropriate.”<sup>19</sup> Similarly, an article by Sarah P. White titled “The Organizational Determinants of Military Doctrine: A History of

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<sup>14</sup> Joint Chiefs of Staff, *Information in Joint Operations*.

<sup>15</sup> Department of the Army, *Information (Draft)*.

<sup>16</sup> Joint Chiefs of Staff, *Information in Joint Operations*, II-2.

<sup>17</sup> Department of the Army, *Information (Draft)*, 2-3.

<sup>18</sup> United States Government Accountability Office, *Contested Information Environment*, 39.

<sup>19</sup> United States Government Accountability Office, 40.

Army Information Operations,” published in January of 2023, makes much of the same argument, sharing concerns that despite “numerous attempts at doctrinal codification...[the Army] seems to be in much the same place in 2023 as it was in the 1990s” in reference to the Army’s understanding of the IE. She also argues for refinement to doctrinal publications, which the Army has done with expected 2023 publication of ADP 3–13, and for DOD refinement of education requirements for leaders.<sup>20</sup> Both sources, White and the GAO, serve as strong indicators that the Army’s education for leaders on the IE has much improvement to be made.

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<sup>20</sup> White, “The Organizational Determinants of Military Doctrine,” January 5, 2023.

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### III. PROFESSIONAL MILITARY EDUCATION

The 2023 DOD SOIE calls for more education of military leaders,<sup>21</sup> however, the current structure for professional military education relating to information advantage for U.S. Army maneuver leaders is limited. Although there has been little time for education centers to implement changes since the publication of the new DOD strategy, the 2016 strategy<sup>22</sup> made many of the same recommendations and in seven years there is still a lack of formal education on IA. As this chapter discusses professional military education throughout a maneuver officer’s career it will show how much curriculum is dedicated to IA.

This chapter reviews five standard courses required for U.S. Army maneuver leaders including<sup>23</sup>

1. Infantry Basic Leaders Course (IBOLC) for Infantry officers grades O1–O2.
2. Armor Basic Leaders Course (ABOLC) for Armor officers grades O1–O2.
3. Maneuver Captains Career Course (MCCC) for Infantry and Armor officers grade O2 promotable–O3.
4. The Command and General Staff College (CGSC) for officers grade O3 promotable–O4.
5. U.S. Army Senior Staff College (SSC) for officers grade O5–O6.

These courses, part of the Army Officer Education System (OES),<sup>24</sup> are meant to provide the knowledge required for maneuver officers as they progress through their career and are part of their professional development. The OES objectives are meant to provide training to officers that is “relevant to the current environment but structured to future

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<sup>21</sup> Department of Defense, 2023 DOD Strategy for Operations in the Information Environment.

<sup>22</sup> Department of Defense, DOD Strategy for Operations in the IE Signed.

<sup>23</sup> Department of the Army, *Officer Talent Management*.

<sup>24</sup> Department of the Army.

environment.”<sup>25</sup> Many of these courses have joint, sister service, or foreign service equivalent that officers can attend. The curriculum for those courses is not included in this study since they are outside of the scope of research and only for a select population of officers. The majority population of maneuver officers will attend these five courses. Research included examination of the POI and curriculum of each course as well as interviews with course instructors and faculty. Each course is discussed in detail and snapshots of academic calendars are provided in each section of this chapter.

## **A. BASIC OFFICER LEADERS COURSE**

The Basic Officer Leaders Course is a required course to be completed as soon as possible following an officer’s commission.<sup>26</sup> It is meant to prepare lieutenants for their first assignment and is tailored to officer’s military occupational specialty (MOS). For Infantry and Armor officers BOLC is divided into two courses, Infantry Basic Officer Leaders Course (IBOLC) or Armor Basic Officer Leaders Course (ABOLC), based on the officer’s MOS, both offered at The Maneuver Center of Excellence (MCoE) located at the U.S. Army’s Fort Moore, in Columbus, Georgia. The Fort Moore website describes that each course “trains, educates, and inspires agile, adaptive and ready Leaders, committed to the Army Profession, that are ready to lead platoons in combat and are relevant for the challenges of tomorrow while providing a world-class quality of life for our Soldiers, Civilians, and the Army Families.”<sup>27</sup>

Both courses are required for U.S. Army maneuver officers, but both have very different curriculum and will therefore be discussed separately.

### **1. Infantry Basic Officer Leaders Course (IBOLC)**

IBOLC is a 19-week program totaling 136 days of training separated into four gates and includes eleven course critical events. The course website provides students a snapshot

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<sup>25</sup> Department of the Army, 36.

<sup>26</sup> Department of the Army, 73.

<sup>27</sup> “Basic Officer Leaders Course – BOLC,” U.S. Army Fort Moore and The Maneuver Center of Excellence, accessed September 19, 2023, <https://www.moore.army.mil/BOLC/>.

(Figure 1) of the course requirements including the course mission statement: “2-11th Infantry Regiment (IBOLC) trains and develops Infantry Lieutenants to become mentally, physically, and morally fit leaders who are prepared to lead Infantry Platoons and win.”<sup>28</sup>

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<sup>28</sup> Infantry Basic Officer Leaders Course, “IBOLC Mission Statement,” U.S. Army Fort Moore, September 2023, <https://www.moore.army.mil/infantry/199th/ibolc/content/pdf/20231309%20IBOLC%20Mission.pdf>

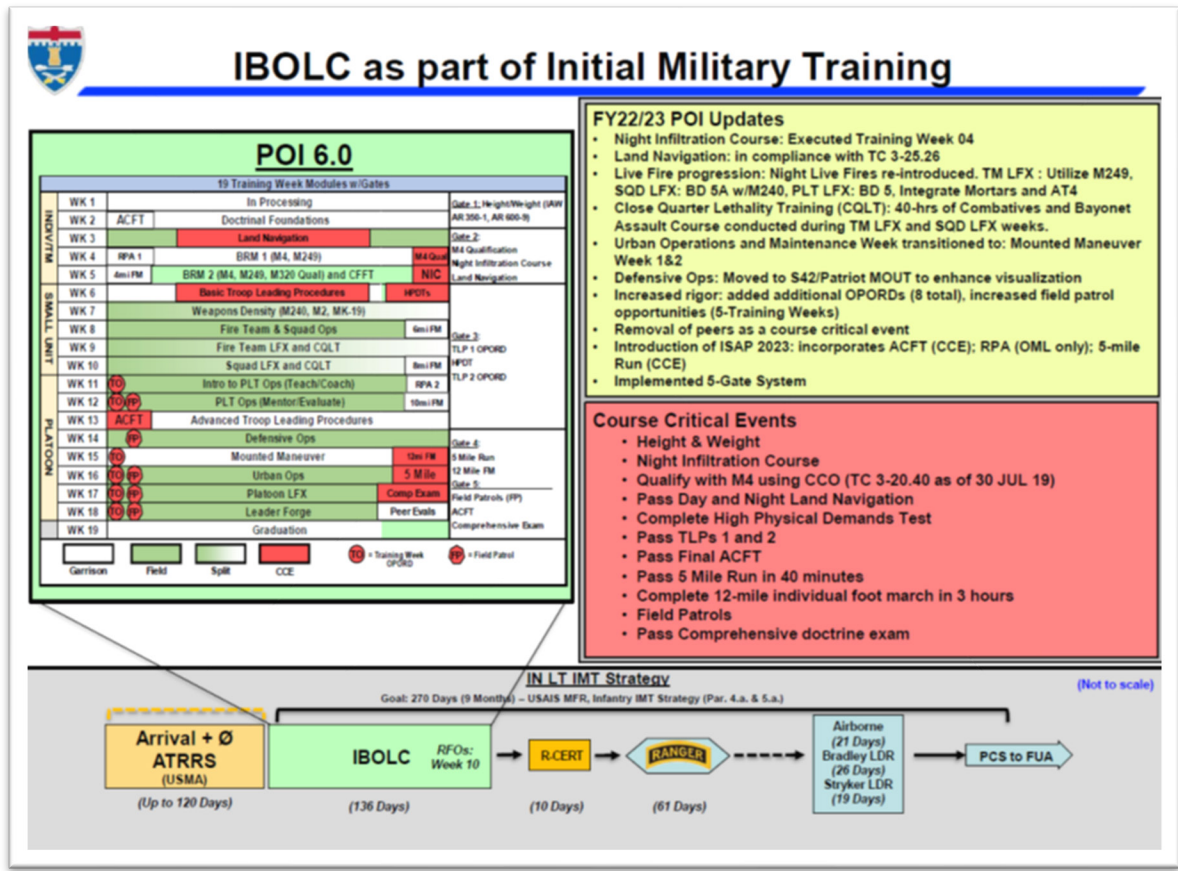


Figure 1. Snapshot IBOLC Academic Calendar and POI<sup>37</sup>

<sup>37</sup> Infantry Basic Officer Leaders Course.

Figure 1 provides an overview of the training focus by week for IBOLC students including updates to the POI and course critical events. According to the snapshot, training is focused on physical fitness, technical personal skills, troop leading procedures, weapon familiarization, and maneuver. There is nothing related to information advantage listed on this snapshot.<sup>38</sup> An interview however, with a senior staff member of the 199<sup>th</sup> IN BDE Department of Training and Development at MCoE, revealed that additions to the POI include areas focused on achieving information advantage. These changes are displayed in Figure 2<sup>39</sup> which outlines large scale combat operations (LSCO) initiatives in IBOLC. These additions, according to a senior staff member at the 199<sup>th</sup> Infantry Brigade's Department of Training and Development, are meant to train and assess student's ability to perform in a contested operational environment with degraded capabilities as well as understand the importance of an individual's electromagnetic footprint.<sup>40</sup> Examples highlighted in Figure 2 include one hour of classroom training focused on Cyber and Electromagnetic Activities (CEMA), and one hour of conducting operations in a degraded space environment. Additionally, the slide highlights objectives for classroom training on command and control as "be prepared to operate in denied, degraded and disrupted space operational environments (D3SOE)."<sup>41</sup>

The additions to the curriculum do show more consideration for training students to understand information advantage, however, that training only includes two hours out of a total of 1,390 available training hours. The Department of Training and Development mentioned other lessons on achieving information advantage could be discussed as part of after-action reviews or course feedback from instructors however, the context of discussions is at the discretion of the instructor.<sup>42</sup> Regardless, the current curriculum related to IA is extremely limited.

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<sup>38</sup> Infantry Basic Officer Leaders Course.

<sup>39</sup> Senior Staff Member 199th IN BDE Department of Training and Development, email message to author, September 19, 2023.

<sup>40</sup> Senior Staff Member 199th IN BDE Department of Training and Development.

<sup>41</sup> Senior Staff Member 199th IN BDE Department of Training and Development.

<sup>42</sup> Senior Staff Member 199th IN BDE Department of Training and Development.



## 2. **Armor Basic Officer Leaders Course (ABOLC)**

ABOLC is a 19-week program separated into four blocks. The course website provides students a snapshot (Figure 3)<sup>44</sup> of the training timeline as well as a 114-page syllabus outlining expectations, timeline, and training standards.

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<sup>44</sup> U.S. Army Fort Moore and The Maneuver Center for Excellence, “ABOLC Snake Chart,” U.S. Army Fort Moore, August 2021, <https://www.moore.army.mil/infantry/199th/2-16/ABOLC/content/pdf/Snake%20Chart.pdf?1AUG2021>.



# ABOLC Snake Chart

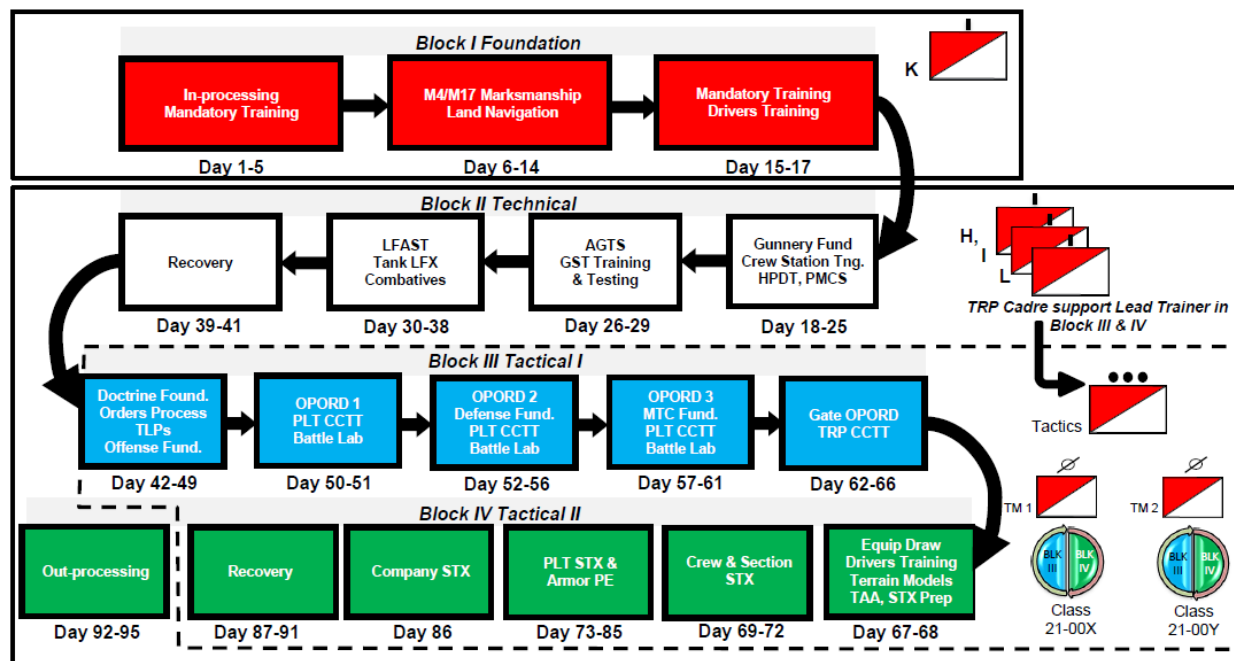


Figure 3. ABOLC Training Snake Chart<sup>45</sup>

<sup>45</sup> U.S Army Fort Moore and The Maneuver Center of Excellence.

Additionally, the course syllabus states that the purpose of the course is to, “provide Commanders in the field with Armor Leaders trained in fundamentals of tank and platoon weapon systems and capabilities, maneuver, tactics, and instill in them the warrior spirit, preparing them to assume leadership of a mounted platoon.”<sup>46</sup>

ABOLC primarily focuses on physical fitness, mounted combined arms maneuver, gunnery skills, troop leading procedures, mounted crew drills, individual technical skills, and weapons familiarization. In the course syllabus, there are only two classes offered that are related to information advantage. One is a one hour block of instruction on CEMA in which students learn to “describe the fundamentals of cyber electromagnetic activities and space”<sup>47</sup> and the other is a one hour block dedicated to conducting operations in a degraded space environment in which students “identify impacts of denied, degraded, disrupted space operational environment (D3SOE) on Army operations.”<sup>48</sup> The ABOLC LSCO initiatives provided by the Department of Training and Development provide even fewer initiatives related to IA than IBOLC does.<sup>49</sup> Under the protection war fighting function, the slide lists Operational Security (OPSEC) as an additional training priority. Review of the course syllabus reveals that only two hours in 19 weeks of training are dedicated to achieving information advantage.<sup>50</sup> This course, much like IBOLC, has extremely limited curriculum related to IA.

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<sup>46</sup> Armor Basic Officer Leaders Course, *Armor Basic Officer Leader Course Student Syllabus* (Fort Moore, GA: Maneuver Center of Excellence, 2020), <https://www.moore.army.mil/infantry/199th/2-16/ABOLC/content/pdf/Armor%20Basic%20Officer%20Leader%20Course%20Student%20Syllabus.pdf?05AUG2020>, 2.

<sup>47</sup> Armor Basic Officer Leaders Course, 102.

<sup>48</sup> Armor Basic Officer Leaders Course.

<sup>49</sup> Senior Staff Member 199th IN BDE Department of Training and Development, email message to author, September 19, 2023.

<sup>50</sup> Armor Basic Officer Leaders Course, *Armor Basic Officer Leader Course Student Syllabus*.



# LSCO Initiatives in ABOLC



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Fort Moore, Home of the MCoE

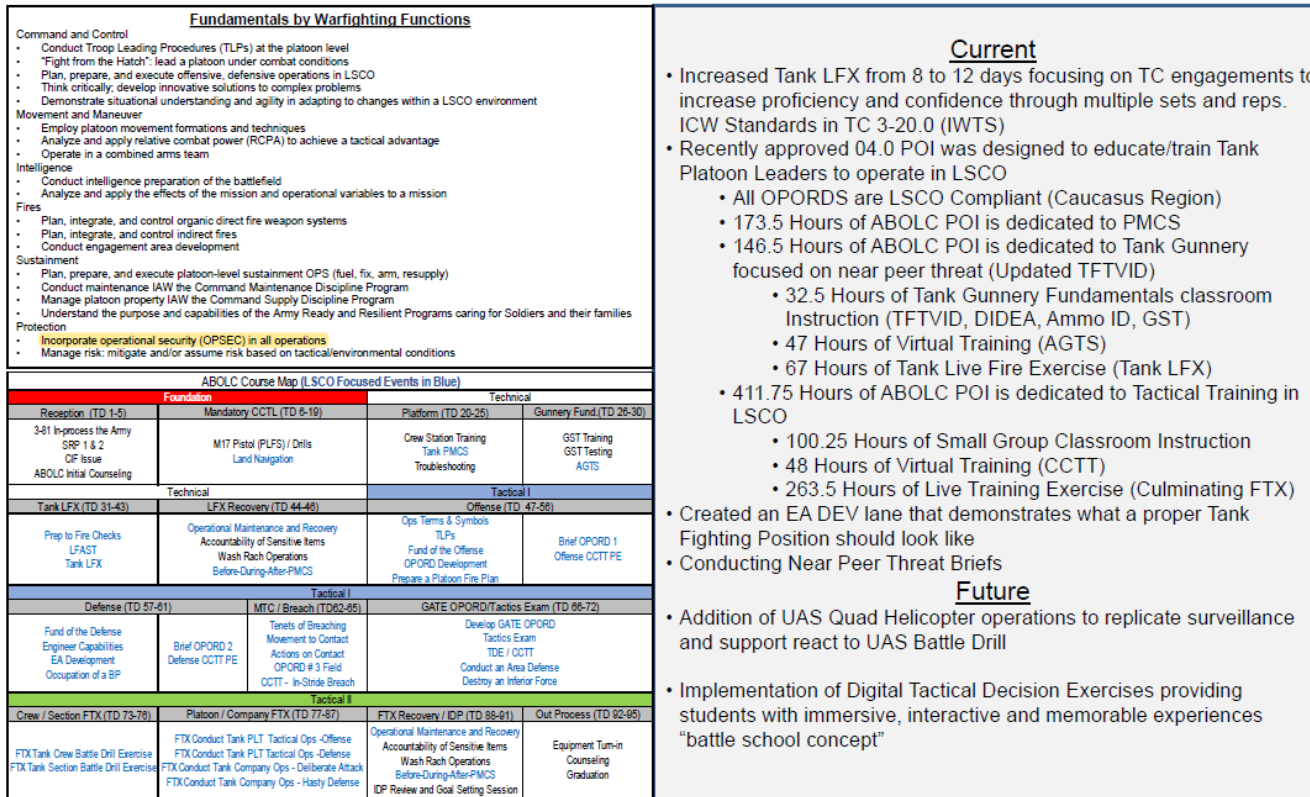


Figure 4. LSCO Initiatives in ABOLC<sup>51</sup>

<sup>51</sup> Senior Staff Member 199th IN BDE Department of Training and Development, email message to author, September 19, 2023.

## **B. MANEUVER CAPTAINS CAREER COURSE (MCCC)**

MCCC is a required course for pre-command Infantry and Armor officers at the grades of either O2 or O3 and is also taught at MCoE. It is part of the Army’s mid-grade learning continuum meant to “develop leaders who are critical and creative thinkers, and sufficiently agile and adaptive to address complex problems now and in the future.”<sup>52</sup> The course is 23 weeks long separated into three phases with instruction primarily taking place in the classroom. The course structure and timeline are laid out in Figure 5,<sup>53</sup> which is included on the school’s webpage. According to the MCCC Policy Memo dated October 2019, MCCC prepares students for “maneuver company command and staff responsibilities” and “educates students to master the fundamentals of combined arms war fighting at the tactical level.”<sup>54</sup> This includes training and lessons on troop leading procedures, unit training management, and participating as part of a battalion level staff in the Military Decision-Making Process (MDMP).<sup>55</sup>

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<sup>52</sup> Department of the Army, *Officer Talent Management*, 73.

<sup>53</sup> U.S. Army Fort Moore and The Maneuver Center of Excellence, “2023 MCCC-AC Course Map,” U.S. Army Fort Moore, accessed October 5, 2023, <https://www.moore.army.mil/Infantry/199th/CATD/MCCC/Student-Information.html>.

<sup>54</sup> Headquarters United States Army Maneuver Center for Excellence, “Active Component Maneuver Captains Career Course Policy Memo and Individual Assessment Plan” (official memorandum, Fort Benning, GA: Maneuver Center of Excellence, 2019), <https://www.moore.army.mil/infantry/199th/CATD/MCCC/Student-Information.html>, 1.

<sup>55</sup> Headquarters United States Army Maneuver Center for Excellence.



# FY23 MCCC-AC Course Map



Home of the MCoE

A0	A1: IBCT OFFENSE			A2: ABCT OFFENSE			A3: ABCT DEFENSE
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
<ol style="list-style-type: none"> <li>1. Student In-process</li> <li>2. Intro to Comm Skills</li> <li>3. Effective use of Military History</li> <li>4. Entrance Exam</li> </ol>	<ol style="list-style-type: none"> <li>1. IBCT ORG CAPS, LIMS</li> <li>2. Comms Fundamentals</li> <li>3. Mission CMD</li> <li>4. CDR Intent/DP</li> <li>5. A1 RTM</li> <li>6. Terrain/WX</li> <li>7. Threat Analysis</li> </ol>	<ol style="list-style-type: none"> <li>1. SDZs/REDS</li> <li>2. MG Theory</li> <li>3. Bush Hill TEWT</li> <li>4. COA DEV</li> <li>5. SOSRA / Breaching</li> <li>6. Scheme of Maneuver</li> </ol>	<ol style="list-style-type: none"> <li>1. A1 Example OPORD Briefs</li> <li>2. A1 OPORD Briefs</li> <li>3. A2 Train-up</li> </ol>	<ol style="list-style-type: none"> <li>1. A1 Retrain</li> <li>2. ABCT ORG, CAPS, LMS</li> <li>3. Threat Defense</li> <li>4. A2 TDE</li> <li>5. A2 TLPs</li> <li>6. A3 Train-up</li> </ol>	<ol style="list-style-type: none"> <li>1. A2 TLPs</li> <li>2. A2 OPORD Briefs</li> </ol>	<ol style="list-style-type: none"> <li>1. A2 OPORD Briefs</li> <li>2. A2 Retrain</li> <li>3. History of Combined Arms</li> <li>4. A3 Fundamental of Defense</li> </ol>	<ol style="list-style-type: none"> <li>1. Threat Offense</li> <li>2. Sequence of the Defense</li> <li>3. Defensive Prep</li> <li>4. History of Combined Arms</li> <li>5. A3 TDE</li> <li>6. A3 TLPs</li> <li>7. A3 TEWT</li> </ol>
<b>A3: ABCT DEFENSE</b>	<b>A4: SBCT OFFENSE</b>		<b>BATTLE FORGE</b>	<b>B0</b>	<b>B1: BDE OFFENSE</b>		<b>B2: BN OFFENSE</b>
Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16
<ol style="list-style-type: none"> <li>1. A3 TLPs</li> <li>2. A3 OPORD Briefs</li> </ol>	<ol style="list-style-type: none"> <li>1. A4 Train-up</li> <li>2. Urban Operations</li> <li>3. SBCT ORG, CAPS, LIMS</li> <li>4. Columbus TEWT</li> </ol>	<ol style="list-style-type: none"> <li>1. A4 TLPs</li> <li>2. A4 OPORD Briefs</li> <li>3. A4 Retrain</li> </ol>	<ol style="list-style-type: none"> <li>1. Battle Forge TLPs</li> <li>2. Battle Forge OPORD Briefs</li> </ol>	<ol style="list-style-type: none"> <li>1. Battle Forge Re-Briefs</li> <li>2. CO Phase Counseling</li> <li>3. Intro to MDMP</li> <li>4. AA TDE Cyber/EW Class</li> <li>5. MDMP Step 3</li> </ol>	<ol style="list-style-type: none"> <li>1. WFF Deep Dives</li> <li>2. MDMP Step 1</li> <li>3. MDMP Step 2</li> <li>4. MDMP Step 3</li> </ol>	<ol style="list-style-type: none"> <li>1. MDMP Step 4</li> <li>2. MDMP Step 5</li> <li>3. MDMP Step 6</li> <li>4. MDMP Step 7</li> </ol>	<ol style="list-style-type: none"> <li>1. RTM</li> <li>2. MDMP Step 1</li> <li>3. MDMP Step 2</li> <li>4. MDMP Step 3</li> </ol>
<b>B2: OFFENSE</b>	<b>B3: DEFENSE (CPX)</b>		<b>C1: UNIT TRAINING MANAGEMENT</b>				
Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	
<ol style="list-style-type: none"> <li>1. MDMP Step 4/5</li> <li>2. BN CARs</li> <li>3. BN OPORD</li> </ol>	<ol style="list-style-type: none"> <li>1. B3 RTM</li> <li>2. B3 Step 2</li> <li>3. B3 Step 3</li> <li>4. (BNs begin after BDE completes COA DEV)</li> </ol>	<ol style="list-style-type: none"> <li>1. MDMP Step 4 – 7</li> <li>2. STAFFEX / CPX</li> </ol>	<ol style="list-style-type: none"> <li>1. UTM</li> <li>2. QTB Brief</li> <li>3. Staff Ride Class</li> </ol>	<ol style="list-style-type: none"> <li>1. 8 Step Training Model</li> <li>2. LFX Brief</li> <li>3. Command Topics</li> <li>4. Staff Ride (PM)</li> </ol>	<ol style="list-style-type: none"> <li>1. Command Topics</li> <li>2. Common Core Exam</li> <li>3. Inf &amp; Armor Day</li> <li>4. Comp Exam</li> <li>5. TML 3</li> </ol>	<ol style="list-style-type: none"> <li>1. GRAD Prep</li> <li>2. Comp Exam re-test</li> <li>3. End of Course Counseling</li> <li>4. Graduation ceremony</li> </ol>	
Company Phase			Battalion Phase		Command Phase		

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Figure 5. 2023 MCCC Course Map<sup>56</sup>

<sup>56</sup> U.S. Army Fort Moore and The Maneuver Center of Excellence, “2023 MCCC-AC Course Map.”

Reviewing the policy memo and the course map there appears to be limited curriculum dedicated to achieving information advantage. Correspondence with a senior instructor at MCCC confirmed that there is not POI focused on IA but indicated that students are familiar with it that “concepts are sprinkled throughout the course”<sup>57</sup> and intended to help commanders make timely decisions. The MCCC instructor also provided an excel document outlining all lesson plans covered in MCCC in further detail which does include two academic hours on protection, one hour on command and control and signal planning, two hours for Space and CEMA, and one hour for cyber.<sup>58</sup> With the help of the Cyber Center of Excellence, the instructor stated that they intend to include protection of friendly information in course curriculum.<sup>59</sup> This marks a positive improvement; however, current curriculum covers only six academic hours in a total of 924.6 available training hours.

### **C. U.S. ARMY COMMAND AND GENERAL STAFF COLLEGE (CGSC)**

CGSC is held at Fort Leavenworth, Kansas. It is required curriculum for officers in the grades of O3 promotable and O4 to be completed “by their 15th year of commissioned service and by no later than the 5th year of time-in-grade rank of MAJ (O4).”<sup>60</sup> Select officers can attend sister service or foreign service equivalent schools in lieu of CGSC, however they are outside the scope of this study since only a small population of qualified Army officers attend them. CGSC is offered as either a resident program, satellite program, or distance learning (DL). The resident program is a ten-month program and includes over 1,200 students from all service branches as well as international students. It is the focus of this study. The satellite programs include approximately 960 students at campuses located at Fort Belvoir, Fort Greg-Adams, Fort Eisenhower, or Redstone Arsenal. DL includes

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<sup>57</sup> Senior Instructor, email message to author, July 17, 2023.

<sup>58</sup> Instructor Maneuver Center of Excellence, email message to author, 2022.

<sup>59</sup> Senior Instructor, email message to author, July 17, 2023.

<sup>60</sup> Department of the Army, *Army Training and Leader Development*, AR 350-1 (Washington, D.C.: Department of the Army, 2017), 75.

approximately 5,300 officers worldwide.<sup>61</sup> Each of the courses, despite differing structure “employs the same course outcomes, terminal learning objectives, and enabling learning objectives” according to the CGSC course catalog.<sup>62</sup> For this reason, the course structure will not be discussed for the distance learning courses as the curriculum remains the same.

The CGSC Catalog provides two mission statements. One is “to educate, train and develop leaders for Unified Land Operations in a Joint, interagency, intergovernmental, and multinational operational environment; and to advance the art and science of the Profession of Arms in support of Army operational requirements.”<sup>63</sup> The other is to “educate and train field grade level leaders to be agile, innovative and adaptive leaders, who think critically, communicate effectively, can build teams, and lead organizations under mission command to conduct land operations in unified action while in complex and uncertain environments.”<sup>64</sup> Both definitions are reflected in the course curriculum.

The resident course includes the P920 Intermediate Level Education Preparatory Course, common core, advanced operations course (AOC), and electives as shown in Figure 6. Additionally, resident course students have the option to pursue the Master of Military Art and Science (MMAS). Those who do not may pursue a Masters in Operational Studies (MOS).<sup>65</sup>

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<sup>61</sup> U.S. Army Command and General Staff College, CGSC Circular 350-1 U.S. Army Command and General Staff College Catalog, 1-1.

<sup>62</sup> U.S. Army Command and General Staff College, 7-29.

<sup>63</sup> U.S. Army Command and General Staff College, 1-2.

<sup>64</sup> U.S. Army Command and General Staff College, 7-1.

<sup>65</sup> U.S. Army Command and General Staff College, 3-1.

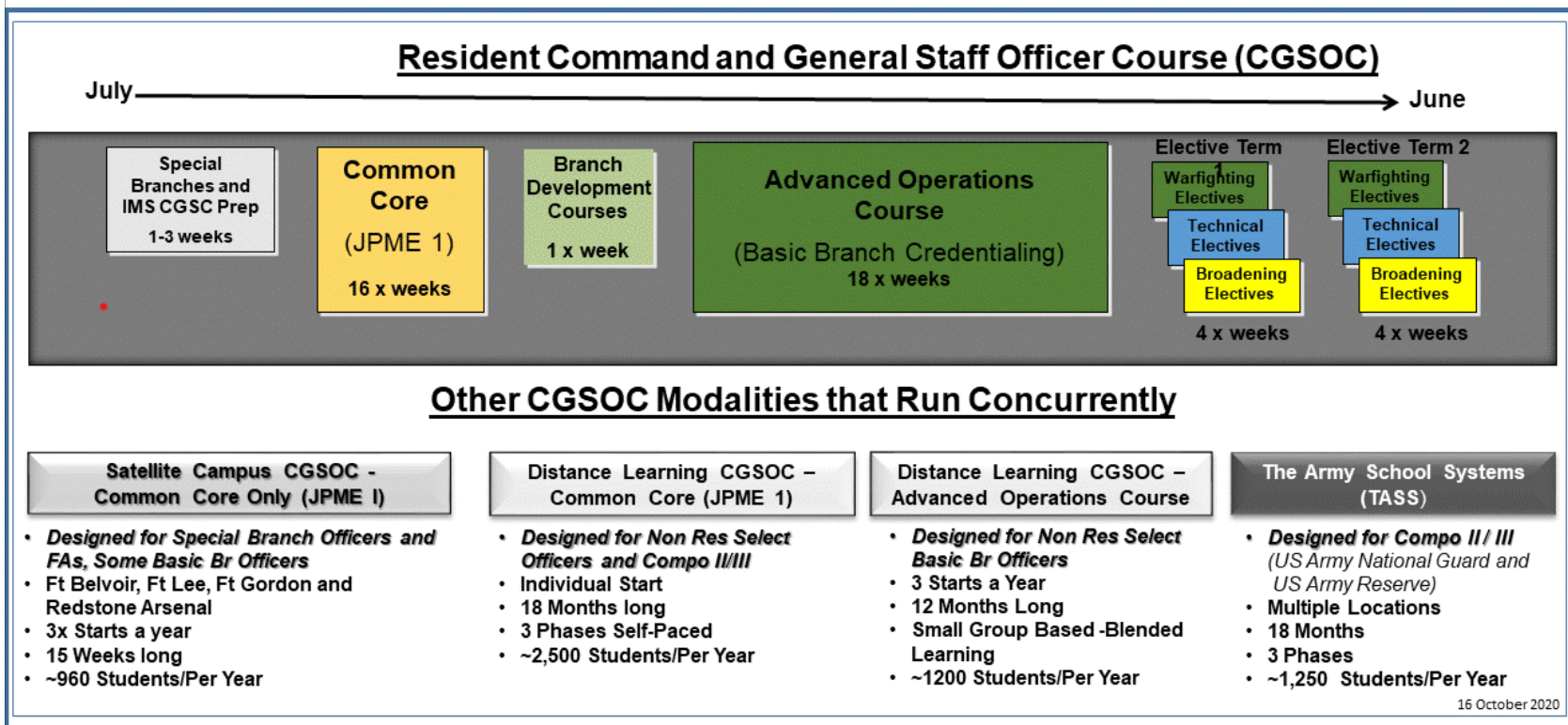


Figure 6. The Command and General Staff Officer Course Snapshot<sup>66</sup>

<sup>66</sup> U.S. Army Command and General Staff College.

## 1. **P920 Intermediate Level Education Preparatory Course**

P920 is a five module online preparatory course that is a requirement for all incoming CGSC students. According to the catalog it, “provides basic Army concepts and provides a refresher on basic Army doctrine, symbology, sustainment, tactics and the military decision-making process (MDMP).”<sup>67</sup>

## 2. **Common Core**

CGSC Common Core includes five primary blocks of instruction and three supporting blocks of instruction covered over 18 weeks and consists of 79 lessons. Figure 7 provides a snapshot of Common Core purpose, course outcomes, and terminal learning objectives.<sup>68</sup>

### *a. Five Primary Blocks*<sup>69</sup>

1. C100 (Foundations) 28 academic hours consisting of ten lessons.
2. C200 (Strategic Context of Operational Art) 30 academic hours consisting of six lessons.
3. C300 (Unified Action) 41 academic hours consisting of 14 lessons.
4. C400 (Apply U.S. Army Doctrine) 36 academic hours consisting of eight lessons.
5. C500 (Operational Art and Planning) 44 academic hours consisting of five lessons.

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<sup>67</sup> U.S. Army Command and General Staff College, 7-3.

<sup>68</sup> U.S. Army Command and General Staff College, 7-10.

<sup>69</sup> U.S. Army Command and General Staff College, 7-5.

<p><b>Purpose:</b> To educate and train field grade leaders to serve as staff officers and commanders with the ability to build teams, lead organizations and integrate Unified Land Operations with Joint, Interagency, Intergovernmental, and Multinational partners in complex and uncertain environments.</p>	
<p><b>Graduates of the CGSOC Common Core:</b></p> <ul style="list-style-type: none"> <li>• Have met JPME-1 qualification standards;</li> <li>• Possess the knowledge and skills to be an effective Joint and Army staff officer;</li> <li>• Are officers who can understand war, the spectrum of conflict and the complexity of the operational environment (history, culture, ethics, geography);</li> <li>• Can meet organizational-level leadership challenges;</li> <li>• Are critical and creative thinkers who can apply solutions to operational problems in a volatile, uncertain, complex or ambiguous environment;</li> <li>• Can communicate concepts with clarity and precision in both written and oral forms;</li> <li>• Are self-aware and motivated to continue learning and improving throughout their careers.</li> </ul>	<p><b>Terminal Learning Objectives (TLOs):</b></p> <ol style="list-style-type: none"> <li>1. Explain how field grade officers lead the development of ethical organizations to achieve results. (Synthesis)</li> <li>2. Incorporate critical and creative thinking skills. (Synthesis)</li> <li>3. Analyze historical context to inform professional military judgment. (Analysis)</li> <li>4. Analyze the nature of war and the causes, consequences and contexts of change in modern warfare. (Analysis)</li> <li>5. Analyze the considerations, functions, capabilities, limitations, and doctrine of joint forces / unified action partners in joint, multinational and interagency operations. (Analysis)</li> <li>6. Analyze solutions to operational problems using operational art and joint doctrine. (Analysis)</li> <li>7. Apply US Army doctrine. (Application)</li> <li>8. Apply DoD and Army processes to develop, resource, and integrate Army capabilities for Combatant Commanders. (Apply)</li> <li>9. Understand how military forces, in conjunction with other instruments of national power, further US national interests in the international security environment. (Apply)</li> <li>10. Incorporate effective communication skills. (Synthesis)</li> </ol>

Figure 7. Common Core Purpose, Course Outcomes, and Terminal Learning Objectives<sup>70</sup>

<sup>70</sup> U.S. Army Command and General Staff College.

**b. *Three Supporting Blocks***<sup>71</sup>

1. F100 (Managing Army Change) 11 total lessons. No academic hours provided.
2. H100 (Rise of Western Way of War) 26 academic hours consisting of 13 lessons.
3. L100 (Developing Organizations and Leaders) 26 academic hours consisting of 12 lessons.

**3. *Advanced Operations Course***<sup>72</sup>

The CGSC AOC also totals 18 weeks and consists of six modules with 60 lessons. Figure 8 provides a snapshot of the AOC purpose, course outcomes, and terminal learning objectives.

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<sup>71</sup> U.S. Army Command and General Staff College, 7-5.

<sup>72</sup> U.S. Army Command and General Staff College, 7-9–7-13.

<p><b>Purpose:</b> To educate and train field grade leaders to serve as staff officers and commanders with the ability to build teams, lead organizations and integrate Unified Land Operations with Joint, Interagency, Intergovernmental, and Multinational partners in complex and uncertain environments.</p>	
<p><b>Graduates of the CGSOC Common Core:</b></p> <ul style="list-style-type: none"> <li>• Have met JPME-1 qualification standards;</li> <li>• Possess the knowledge and skills to be an effective Joint and Army staff officer;</li> <li>• Are officers who can understand war, the spectrum of conflict and the complexity of the operational environment (history, culture, ethics, geography);</li> <li>• Can meet organizational-level leadership challenges;</li> <li>• Are critical and creative thinkers who can apply solutions to operational problems in a volatile, uncertain, complex or ambiguous environment;</li> <li>• Can communicate concepts with clarity and precision in both written and oral forms;</li> <li>• Are self-aware and motivated to continue learning and improving throughout their careers.</li> </ul>	<p><b>Terminal Learning Objectives (TLOs):</b></p> <ol style="list-style-type: none"> <li>1. Explain how field grade officers lead the development of ethical organizations to achieve results. (Synthesis)</li> <li>2. Incorporate critical and creative thinking skills. (Synthesis)</li> <li>3. Analyze historical context to inform professional military judgment. (Analysis)</li> <li>4. Analyze the nature of war and the causes, consequences and contexts of change in modern warfare. (Analysis)</li> <li>5. Analyze the considerations, functions, capabilities, limitations, and doctrine of joint forces / unified action partners in joint, multinational and interagency operations. (Analysis)</li> <li>6. Analyze solutions to operational problems using operational art and joint doctrine. (Analysis)</li> <li>7. Apply US Army doctrine. (Application)</li> <li>8. Apply DoD and Army processes to develop, resource, and integrate Army capabilities for Combatant Commanders. (Apply)</li> <li>9. Understand how military forces, in conjunction with other instruments of national power, further US national interests in the international security environment. (Apply)</li> <li>10. Incorporate effective communication skills. (Synthesis)</li> </ol>

Figure 8. Advanced Operations Course Purpose, Course Outcome, and Terminal Learning Objectives<sup>73</sup>

<sup>73</sup> U.S. Army Command and General Staff College.

*a. Six Modules*<sup>74</sup>

1. Module 0 (The Military Decision-Making Process) 30 academic hours consisting of four lessons.
2. Module 1 (Training and Deployment Operations) 53 academic hours consisting of 14 lessons and three practical exercises.
3. Module 2 (Joint Reception, Staging, Onward Movement and Integrations) 36 academic hours consisting of ten lessons.
4. Module 3 (Transition to the Offense) 87 academic hours consisting of 21 lessons and one practical exercise.
5. Module 4 (Division Offensive Operations) 87 academic hours consisting of ten lessons and four practical exercises.
6. Module 5 (Transition from Offense to Consolidated Gains) Eight Academic hours consisting of one lesson and one practical exercise.

The curriculum for CGCS covers a wide variety of subjects pertinent to the training and education of field grade officers. Review of the lessons reveals there is limited curriculum dedicated to discussing IA or individual information activities. In fact, in a total of 139 lessons only three are focused on IA or a specific information activity. Two of these fall under AOC Module 1, titled lesson M155 EAD (command and control) and lesson M156 (Setting the theater – cyber ops). The third falls under AOC Module 3, titled M333 (Information Operations). This theme of limited attention to IA and information activities is consistent throughout the training pipeline for maneuver officers.

**D. SENIOR SERVICE COLLEGE (SSC)**

SSC is required training for senior O5's, or O6's. It is offered through either the ten-month resident program located at Carlisle Barracks, Pennsylvania, two-year distance education program, or the U.S. Army War College Fellows program. Education and curriculum is meant to prepare students for “service at the strategic level in a joint,

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<sup>74</sup> U.S. Army Command and General Staff College, 7-9-7-13.

interagency, intergovernmental, and multinational national security community.”<sup>75</sup> Both the resident and distance learning program are offered by the School of Strategic Landpower, also located in Carlisle Barracks. Both have similar curriculum while the fellows program offers an “an advanced education experience” at 49 locations across the U.S. and overseas.<sup>76</sup>

### **1. Resident and Distance Program**

The resident program at Carlisle Barracks, as of the class of 2023, includes 373 students. Figures for attendance are represented in Figure 9,<sup>77</sup> provided by the senior faculty member of the U.S. Army War College.<sup>78</sup> Student numbers for the 2023 distance program and fellows program are also provided in this photo. The resident and distance programs cover requirements for certification in Military Education Level 1 (MEL 1) considered the highest level of Army PME.<sup>79</sup> Courses also cover “theories of war, strategic leadership, defense management, national security policy, theater strategy, regional studies, and elective courses.”<sup>80</sup> The timelines associated with each of the courses are provided in Figures 10<sup>81</sup> and 11.<sup>82</sup>

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<sup>75</sup> Army War College, “U.S. Army War College Military Education Level 1 Programs.” Accessed September 27, 2023, [https://www.armywarcollege.edu/programs/mel\\_1.cfm](https://www.armywarcollege.edu/programs/mel_1.cfm).

<sup>76</sup> “U.S. Army War College Fellows & CSA Senior Army Fellows,” Army War College, accessed September 27, 2023, <https://www.armywarcollege.edu/programs/fellows.cfm>.

<sup>77</sup> Senior Faculty U.S. Army War College, email message to author, September 14, 2023.

<sup>78</sup> Senior Faculty U.S. Army War College.

<sup>79</sup> Army War College, “U.S. Army War College Military Education Level 1 Programs.”

<sup>80</sup> Army War College.

<sup>81</sup> Senior Faculty U.S. Army War College, email message to author, September 14, 2023.

<sup>82</sup> Senior Faculty U.S. Army War College.

# Who Do We Teach at the War College



Figure 9. Army War College Demographics<sup>83</sup>

<sup>83</sup> Senior Faculty U.S. Army War College.

# Resident Education Program

August	September	October	November	December	January	February	March	April	May	June
Foundations	Strategic Leadership						Defense Management	Electives	Oral Comp Exams	National Security Seminar
	Theory of War and Strategy	National Security Policy and Strategy			Regional Studies					
	Military Strategy & Campaigning									
	Strategic Research Requirement									
	Enhanced Programs									
	Specializations									



Figure 10. Resident Program Schedule<sup>84</sup>

<sup>84</sup> Senior Faculty U.S. Army War College.

# Distance Education Program

FIRST YEAR STUDIES					
APR	JUL-SEP	SEP-NOV	NOV-FEB	FEB-APR	JUN
Orientation	Strategic Leadership	National Security Policy & Strategy	War & Military Strategy	Global & Regional Issues & Interests	Strategic Leadership in a Global Environment  First Residency
SECOND YEAR STUDIES					
JUL-SEP	SEP-NOV	NOV-FEB	FEB-APR	APR-JUN	JUL
Contemporary & Future Security Issues	DOD Organization & Processes	Theater Strategy & Campaigning I	Theater Strategy & Campaigning II	Electives / Directed Studies / Research Project	Strategic Leadership in Current & Future Warfare / Commandant National Security Program  Second Residency

Figure 11. Distance Learning Program Schedule<sup>85</sup>

<sup>85</sup> Senior Faculty U.S. Army War College.

A senior faculty member at the U.S. Army War College provided a breakdown of the six program learning outcomes for further understanding through email communication. These PLOs are developed through the U.S. Army War College Strategic Plan, student and faculty critiques, the Officer Professional Military Education Policy, and graduate surveys.<sup>86</sup> They are also consistent through both the resident and distance education programs. They are as follows,

1. PLO 1: Discern the military dimension of a challenge impacting national interest; assess and communicate options for employing land power in joint warfighting and integrating with other instruments of national power.
2. PLO 2: Apply analytical frameworks and theories to analyze and evaluate strategies to address current and anticipated national security challenges across the competition continuum in a global environment.
3. PLO 3: Analyze the military requirements of current and future security environments and how senior leaders use Department of Defense processes and organizations to develop, integrate, and sustain necessary military capabilities.
4. PLO 4: Apply principles of strategic leadership to address problems of organizational performance, adaptation, integration, and learning.
5. PLO 5: Lead teams of experts, develop professional networks, and collaborate with others to provide innovative solutions to complex, unstructured problems.
6. PLO 6: Apply strategic thinking and communication to analyze and evaluate the scope and implications of current and future national security and strategic military challenges.<sup>87</sup>

The Resident Education Program includes a total of 190 academic days including six core courses, a strategy research project, oral examination, three national security staff rides and a weeklong National Security Seminar. In addition to the 27 core curriculum credit hours, students take an additional 8 hours of elective courses. The six core courses are as follows.

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<sup>86</sup> U.S. Army War College, *United States Army War College Academic Program Guide* (U.S. Army War College, 2023), <https://www.armywarcollege.edu/>.

<sup>87</sup> Senior Faculty, U.S. Army War College, email message to author, August 1, 2023.

1. AA2200 (Introduction to Strategic Studies) 1 credit hour
2. NS2200 (War, Policy, and National Security) 7 credit hours
3. LM2201 (Strategic Leadership) 4 credit hours
4. WF2200 (Military Strategy and Campaigning) 7 credit hours
5. LM2202 (Defense Management) 3 credit hours
6. NS2202-07 and NS2249 (Regional Studies Program) 2 credit hours<sup>88</sup>

The Distance Learning Program is a two-year course totaling 36 credit hours. Courses are taken online apart from two resident courses attended over the two-year span. The program includes an online orientation course, eight online core courses, an elective (2 credit hours) or research and writing project, and two resident courses. The courses are as follows.

1. DE2301 (Strategic Leadership) 3 credit hours
2. DE2302 (National Security Policy and Strategy) 4 credit hours
3. DE2303 (War and Military Strategy) 4 credit hours
4. DE2304 (Global and Regional Issues and Interests) 3 credit hours
5. DE2306 First Residential Course (Strategic Leadership in a Global Environment) 3 credit hours
6. DE2307 (Contemporary and Future Security Issues) 3 credit hours
7. DE2308 (DOD Organization and Processes) 3 credit hours
8. DE2309 (Theater Strategy Campaigning 1) 4 credit hours
9. DE2310 (Theater Strategy Campaigning 2) 4 credit hours
10. DE2312 Second Residential Course (Strategic Leadership in Current and Future Warfare) 3 credit hours
11. Commandants' National Security Program 3 days<sup>89</sup>

Although it is not shown in the academic program guide, interviews with a faculty instructor<sup>90</sup> at the Army War College revealed additional curriculum directly related to information that is mandatory for students titled Lesson # MSC-10-S Information Operations. The lesson material was provided in an academic syllabus sent via email by

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<sup>88</sup> U.S. Army War College, *United States Army War College Academic Programs Guide* (Carlisle, PA: U.S. Army War College), 22–24.

<sup>89</sup> U.S. Army War College, 33–36.

<sup>90</sup> Faculty Instructor Army War College, personal communication, October 3, 2023.

the same faculty member and describes the course outcomes and lesson plan. Learning outcomes for the course include the following:<sup>91</sup>

1. Understand IO concepts, doctrine, and capabilities to gain a deeper appreciation for how joint force commanders can complement conventional force operations with IO and to achieve national security objectives.
2. Analyze considerations for effective planning and employment of IO to support joint force commanders.
3. Evaluate the Russian, Ukrainian, or American use of IO in the 2022 war in Ukraine.
4. Comprehend the impact of complexity and uncertainty on strategic decision-making and think consciously about the progress of making decisions under conditions of uncertainty.

The desired outcomes of this course are consistent with priorities outlined in the 2023 DOD SOIE and demonstrate more detailed education and attention given to information at the Army War College. This is the most detailed and most relevant mandatory course on information that U.S. Army maneuver leaders receive in over twenty years of service and professional military education.

## **2. U.S. Army War College Fellows Program**

Annually, the U.S. Army selects officers to spend an academic year at “institutions of higher learning around the country and overseas.”<sup>92</sup> This opportunity provides a broadening experience not offered through the resident or distance learning program. Upon completion of their academic year, fellows receive MEL1 credit. Academic curriculum varies by location and only a select number of officers are chosen, therefore, the curriculum is not discussed in this study.

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<sup>91</sup> U.S. Army War College, *Syllabus AY23 MSC-10-S Information Operations* (U.S. Army War College, 2023), 1.

<sup>92</sup> U.S. Army War College, *United States Army War College Academic Program Guide*, 10.

### 3. Elective Material

The U.S. Army War College offers an elective course to students titled Elective WF2303 Joint Warfighters and the Information Environment. The academic syllabus for this course was provided via email following an interview with an assistant professor from the Army War College.<sup>93</sup> The course includes nine three hour classes and includes one to two meetings per week for one month. The course is unclassified and open to all students. According to the course syllabus, it is “designed to assist joint force leaders and warfighters in developing the necessary mindset to leverage information and the informational aspects of military activities to gain and maintain information advantage.”<sup>94</sup> The format for the course includes in person and asynchronous lectures, guest speakers, discussion, and student presentations. The breakdown of the classes is as follows.<sup>95</sup>

1. JWIE-01 (Influence, Persuasion, & Perception: Weaponizing Information)
2. JWIE-02 (Information is the Glue to Make Integrated Deterrence Stick)
3. JWIE-03 (Iran and North Korea: An Information Warfare Afterthought?)
4. JWIE-04 (Maskirovka and Informatized Warfare: Russian and Chinese Disinformation, Deception, and cognitive Domain Strategies)
5. JWIE-05 (Bringing Sun Tzu to Life: The Art of Deception)
6. JWIE-06 (The New High Ground: Warfighting Concepts in the Information Environment)
7. JWIE-07 (Wargame – War of Whispers)
8. JWIE-08 (Cyber and Electromagnetic Spectrum Operations: The Wild West)

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<sup>93</sup> Assistant Professor at U.S. Army War College, personal communication, September 28, 2023.

<sup>94</sup> Army War College, Syllabus Elective WF2303 Joint Warfighters and the Information Environment (Carlisle, PA: Army War College, 2023), 1.

<sup>95</sup> Army War College. 3

9. JWIE-09 (Looking at the Horizon: Emerging Information Concepts and Capabilities)

Review of the academic program guide and interviews revealed that there is considerably more information related curriculum included in the Army War College's Senior Service College compared to other levels of education. Reinforcing this point, the a senior faculty member at the Army War College offered comment that Information Dominance is heavily discussed during student wargame simulations.<sup>96</sup> An assistant professor at the U.S. Army War College also mentioned that information and its effects is conceptually understood by students and the DIME principle, including the information aspect, is applied to lessons throughout the course.<sup>97</sup> The elective program does provide those interested with much more detailed curriculum however, since it is an elective, it only appeals to the population interested in the subject. The elective course does offer a strong model for curriculum that can be added to PME at other levels and can also be scaled to the tactical level, more appropriately suited for junior leaders at BOLC and MCCC. Up to this point in a maneuver officer's career, the Senior Service College offers the most relevant and detailed curriculum on information offered through mandatory PME.

**E. ANALYSIS OF PME FOR INFORMATION**

The U.S. Army goes to great lengths to educate its leaders and build PME to “enhance knowledge of the science and art of war.”<sup>98</sup> As mentioned before, OES aims to provide training that is relevant to the current and future environment. Information has grown into an even greater part of the current environment and will shape the future of warfare. Drawing from Secretary of Defense Lloyd Austin's comments in the 2023 DOD Strategy for Operations in the Information Environment, “our ability to gain and sustain information advantages at the times and places of our choosing are critical to successful operations in the information space.”<sup>99</sup> Education of the force, especially of maneuver

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<sup>96</sup> Senior Faculty, U.S. Army War College, personal communication, September 14, 2023.

<sup>97</sup> Assistant Professor at U.S. Army War College, personal communication.

<sup>98</sup> Department of the Army, *Officer Talent Management*.

<sup>99</sup> Department of Defense, 2023 DOD Strategy for Operations in the Information Environment, I.

leaders, is critical to the U.S. Army's ability to achieve IA. After reviewing the curriculum for required PME for maneuver officers, there is sufficient evidence that education on IA is limited. Every course does have, to some extent, some curriculum on individual information activities (such as Electronic Warfare [EW] or Cyber), or conceptual discussion on information (such as it is discussed within the DIME principle). This, however, adds up to no more than 20 hours out of approximately two and a half years of required training for officers grades O1-O6. The only course that gives serious and detailed education on information is the Senior Service College. The requisite amount of education on IA is difficult to determine from this study however, at a minimum it can be introduced as a lecture to begin curriculum on all war fighting functions to educate leaders on how information relates to each warfighting function. More study can also be done to determine the precise amount required. To truly enhance the knowledge of the science and art of war, as well as remain relevant in the current and future environment, maneuver leaders will need more than what is offered on information in current PME and at an earlier stage of their careers.

## IV. FINDINGS AND RECOMMENDATIONS

Modern warfare has demonstrated a shift in the importance of information in all levels of competition both kinetic and non-kinetic. Representative Seth Moulton affirmed this: “Fundamentally, information operations is a critical part of modern warfare. Our enemies are using it. We’ve actually used it effectively in the past. But our current capabilities are way behind the times. We are losing the information warfare fight.”<sup>100</sup> Representative Moulton is not the only person who shares these concerns. Other experts fear that information capabilities within the DOD have atrophied since the conclusion of the Cold War and relative to our competitors, we are at a distinct disadvantage.<sup>101</sup> This chapter highlights why information is important and how our adversaries, including Russia and China, have prioritized it to gain an advantage. Education for maneuver leaders on information is limited. This chapter also discusses the importance of information and Army education on IA, as well as providing recommendations to fill education gaps and opportunities for further study by expanding the scope of the research.

### A. WHY IS INFORMATION IMPORTANT?

The DOD has highlighted the importance of information in recent publications stressing how it effects modern warfare and how our adversaries have developed their own strategies to gain an information advantage over the U.S. The 2023 DOD Strategy for OIE provides guidance on the U.S.’s stance on taking information seriously to prioritize it in order to achieve advantage. Secretary of Defense Lloyd Austin’s speaks to this in another excerpt from his opening comments in the new strategy: “America’s competitors and enemies are moving quickly in the information environment, hoping to offset our enduring

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<sup>100</sup> Michael Geheren, “DOD Making Progress in Information Operations but More Improvement Is Needed, Experts Say,” *DefenseScoop* (blog), November 4, 2022, <https://defensescoop.com/2022/11/04/dod-making-progress-in-information-operations-but-more-improvement-is-needed-experts-say/>.

<sup>101</sup> Mark Pomerleau, “DOD Information Operations Strategy and Posture Review to Be Delivered to Congress ‘in a Matter of Weeks,’” *DefenseScoop* (blog), March 7, 2023, <https://defensescoop.com/2023/03/07/dod-information-operations-strategy-and-posture-review-to-be-delivered-to-congress-in-a-matter-of-weeks/>.

strategic advantages elsewhere.”<sup>102</sup> Our adversaries have put more weight on the importance of information and the U.S. has serious catching up to do. China and Russia continue to improve on technology, innovation, and information capabilities to increase their advantage and the capability gap. The strategy stresses that the “DOD must embrace a cultural shift wherein information is a foundational element of all military strategies, operations, activities, and investments.”<sup>103</sup> In order to regain lost advantage in the information space, the U.S. will need a culture shift. Such a culture shift would require additional education on information for leaders.

## **B. EDUCATION**

As definitions and practice for information have evolved, education has followed. However, a careful review of the curriculum offered to Army maneuver officers revealed very little education on IA or information activities when compared to the rest of the academic curriculum. Education on IA equates to no more than 0.1% of all curricula in required professional military education for maneuver officers from the grades of O1 to O6. That is no more than 20 academic hours in an estimated 21,900 academic hours in 22 years of service. With these figures, it is understandable that maneuver officers potentially lack the understanding needed for IA.

This lack of education on IA throughout the maneuver officer’s training pipeline will increase U.S. disadvantages in the information space against adversaries. With the introduction of the 2023 DOD SOIE there is hope that information will become more of a priority for military leaders and education centers. Dr. Joseph Kirschbaum, the director of Defense Capabilities and Management at GAO, provided more positive feedback in an interview commenting on a January 2023 report by GAO, “Contested Information Environment.” In the interview he stated that there has been dialogue with the DOD outlining commitments to improve education as well as an intention to hold services accountable in implementing more education on information.<sup>104</sup> In a separate interview

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<sup>102</sup> Department of Defense, 2023 DOD Strategy for Operations in the Information Environment, I.

<sup>103</sup> Department of Defense, 2023 DOD Strategy for Operations in the Information Environment, 1.

<sup>104</sup> Kirschbaum, Joseph, personal communication, September 31, 2023.

with Defense Scoop, Dr. Kirschbaum had a similar discussion stating that he was pleased with the momentum of the DOD and that in the past, the DOD had struggled to follow through but now, with added pressure from Congress, have been more serious about implementation.<sup>105</sup> In their response to the GAO report, the DOD has provided their plan to update “(1) a draft Curriculum Development Guide, (2) a course on Joint Knowledge Online, and (3) the Joint Training Guidance to, among other things, focus on decision-making in the contested information environment.”<sup>106</sup> Additionally, they intend to assess current resources in education centers to provided education on decision making in the information environment.<sup>107</sup> Doctrine, criticism, and data from this study stress that there is currently an oversight on education offered to maneuver leaders which needs to improve.

### **C. RECOMMENDATIONS**

Positive feedback from the DOD is encouraging but there are numerous education gaps that need to be filled. The lack of education, as shown by data in this study, is alarming, and provides context to adversarial advantages over the U.S. in the information space. To improve education on information, 1) there should be improved education for maneuver leaders at required courses including BOLC, MCCC, CGSC, and the Senior Service College, 2) the Army should develop an IA smart book to provide maneuver commanders in lieu of formal education while education centers update curriculum and, 3) further research should be conducted on this matter with an expanded scope as well as examine specific requirements for how much education on IA is appropriate for maneuver leaders.

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<sup>105</sup> Geheren, “DOD Making Progress in Information Operations but More Improvement Is Needed, Experts Say.”

<sup>106</sup> U. S. Government Accountability Office, “Contested Information Environment: Actions Needed to Strengthen Education and Training for DOD Leaders,” accessed October 6, 2023, <https://www.gao.gov/products/gao-23-105608>.

<sup>107</sup> U. S. Government Accountability Office.

## 1. Improved Education

The current academic hours dedicated to information advantage or individual information activities is dwarfed by other subjects in the curriculum. Currently, in IBOLC and ABOLC, students only receive two hours of training out of a 19 week program on independent information activities and currently zero curriculum dedicated to bring context to information advantage for these young officers. The same can be said for MCCC. These soon to be Company commanders receive only six hours of curriculum dedicated to information activities, in a total of 924.6 available training hours. While there is better context provided for IA, that material is primarily conceptual, and not formally part of the curriculum. CGSC shows some improvement with the introduction of Information Operations during the 18-week Advanced Operations Course, but it is not until the Army War College's Senior Service College that information is a major theme within the curriculum. This occurs after officers have already had 20–22 years of service. SSC can be used as a model for how to introduce information earlier in maneuver officer's careers and tailored to the appropriate level both tactical and strategic, at BOLC, MCCC, and CGSC.

SSC has an entire seminar dedicated to Information Operations. This learning is also built upon throughout the rest of the course through discussion on information through the DIME principle as well as discussion on how students have incorporated information during wargaming exercises.<sup>108</sup> Although this is primarily discussed at the strategic level, it drives students to consider informational aspects throughout their operational planning. Additionally, the Elective Joint Warfighters and the Information Environment course provides further context to information for those interested in the course. This course is broken up over a month with three-hour lessons one to two times a week. A similar approach can be taken for BOLC, MCCC, and CGSC however, it can be made mandatory study instead of elective.

The difficulty lies in determining what course material should be removed in order to make room for more education on information, however, to mitigate this, curriculum on information can be introduced throughout the course and integrated into other lessons

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<sup>108</sup> Senior Faculty, U.S. Army War College, personal communication.

instead of replacing curriculum altogether. Referring to the Army’s Draft ADP 3–13, the publication notes that, “information is central to all activity that Army forces undertake”<sup>109</sup> and that, “[information] is the basis for situational understanding, decision making, and actions across all war fighting functions.”<sup>110</sup> The Army does not recognize information as a war fighting function but does acknowledge that it is present within all war fighting functions. Therefore, curriculum on war fighting functions should include how information relates to that particular war fighting function. Similarly, information can be discussed as part of the offense, defense, and stability operations. CGSC already takes this approach with sustainment planning. In 15 blocks and modules across common core and AOC curriculum, CGSC curriculum includes eight lessons dedicated to sustainment some of which discuss sustainment as it applies to the offense, defense, and stability operations during planning for large scale combat operations.<sup>111</sup> Information can be added to curriculum in a similar manner. In this way, there is less risk of removing relevant curriculum and instead, spreading information across existing curriculum.

An additional challenge is determining the appropriate amount of curriculum on IA for maneuver commanders at each level of education. This study cannot make this determination however, it can provide possible options. Again, the Army does not recognize information as a war fighting function but does respect its importance to each warfighting function. At a minimum, as recommended prior, every lesson on specific warfighting functions should include a lecture on how information relates to it. A possible solution would be a one-to-two-hour lecture for each warfighting function, which would certainly be more than what is already offered. Six to twelve hours more education on information per level of professional military education may at least provide enough context to IA for maneuver leaders to think more critically about it. Further research, discussed as part of the expanded scope recommendations would need to be done to determine specific content and course objectives appropriate for each level.

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<sup>109</sup> Department of the Army, *Information (Draft)*, 1-5.

<sup>110</sup> Department of the Army, 1-5.

<sup>111</sup> U.S. Army Command and General Staff College, CGSC Circular 350-1 U.S. Army Command and General Staff College Catalog.

Education on information should be increased at all levels of required PME for maneuver leaders. BOLC, MCCC, CGSC and SSC already have extensive curriculum on all war fighting functions. Furthermore, the war fighting functions are applied to offensive, defensive, and stability operations. Information Advantage should be scaled to the appropriate level, either tactical or strategic, based on the level of education and grade of the officer. As mentioned in ADP 3–13, information exists throughout all war fighting functions, therefore, should be included in curriculum for all war fighting functions and how they relate to all phases of large-scale combat operations. This would be a sufficient model to introduce information to the already existing curriculum that would reduce the need to replace a significant amount of course curriculum.

## 2. Smart Book

The Army should develop an information advantage smart book to provide maneuver officers as a reference guide and planning tool to fill the educational gap on information. Despite this gap, education is not easily amended which is why such a smart book can quickly educate the force in lieu of formal education. A publication such as this should be tailored to be informative to non-information professionals or practitioners and should especially appeal to the maneuver leader. Similar publications on other capabilities exist within the Center for Army Lessons Learned (CALL) libraries which are available to organizations in print with official DOD mailing addresses or digitally through their restricted website. CALL pledges to “resolve gaps, enhance readiness, and inform modernization.”<sup>112</sup> Examples of their more technical publications include the *Reconnaissance and Security Commander’s Handbook*<sup>113</sup> meant to be used as a planning tool for Cavalry Troop Commanders but also informative for those without education on reconnaissance and security. A similar publication is *Sustainment in Support of Large Scale Combat Operations*<sup>114</sup> which provides additional lessons on sustaining combat units.

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<sup>112</sup> Department of the Army, “CALL.”

<sup>113</sup> Center for Army Lessons Learned, *Reconnaissance and Security Commander’s Handbook*, 17-12 (Fort Leavenworth, KS: Center for Army Lessons Learned, 2017).

<sup>114</sup> Center for Army Lessons Learned, *Sustainment in Support of Large Scale Combat Operations*, 22-657 (Fort Leavenworth, KS: Center for Army Lessons Learned, 2022).

CALL also provides fictional and non-fictional vignettes to provide context to a problem, education gap, or capability gap. An example includes *Musicians of Mars: The Mustang's War (Deliberate Attack)*<sup>115</sup> which is the fourth volume in a four-volume series displaying fictional characters and their experiences in maneuver warfare. Another non-fiction example is *Scouts in Contact*<sup>116</sup> which includes historical vignettes related to reconnaissance and security. The publications, whether technical or a compilation of vignettes, attempts to inform an audience and augment existing education. Shortcomings on education on information advantage is one such gap that can be temporarily resolved with a smart book similar to ones developed by CALL.

Two additional publications, both by Dr. Christopher Paul, provide similar educational benefits. His book, titled, *Dominating Duffer's Domain: Lessons for the U.S. Army Information Operations Practitioner* provides a fictional vignette modeled after *The Defense of Duffer's Drift* by Major General Sir Ernest Swinton, in which, through a series of dreams, readers follow the experience of a young Army Information Operations Captain who continues to fail in her efforts until her final dream when she succeeds in her brigade's mission. In writing the story, Dr. Paul captures twenty-six lessons useful for IO planners.<sup>117</sup> In another publication, titled *Handbook for Tactical Operations in the Information Environment*, he takes a similar approach with a fictional vignette but provides much more technical information that is still easily digestible for those not already familiar with information advantage.<sup>118</sup> His first publication targets information planners but his second is meant for implementation at the tactical level for maneuver commanders and staffs. Methods from both publications would be beneficial to informing audiences with limited education on IA.

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<sup>115</sup> Center for Army Lessons Learned, *Musicians of Mars The Mustang's War (Deliberate Attack)*, vol. IV. (Fort Leavenworth, KS: Center for Army Lessons Learned, 2020).

<sup>116</sup> Center for Army Lessons Learned, *Scouts in Contact: Tactical Vignettes for Cavalry Leaders*, 17-01 (Fort Leavenworth, KS: Center for Army Lessons Learned, 2016).

<sup>117</sup> Christopher Paul and William Marcellino, *Dominating Duffer's Domain: Lessons for the U.S. Army Information Operations Practitioner* (Santa Monica, CA: RAND Corporation, 2017), [http://www.rand.org/pubs/research\\_reports/RR1166z1.html](http://www.rand.org/pubs/research_reports/RR1166z1.html).

<sup>118</sup> Michael Schuille et al., *Handbook for Tactical Operations in the Information Environment*, TL-A732-1 (Santa Monica, CA: RAND Corporation, 2021), <https://www.rand.org/pubs/tools/TLA732-1.html>.

Other, more doctrinal examples include a draft copy of the *Land Information Warfare Activity (LIWA) Handbook*<sup>119</sup> published in 1998, or the *Joint Information Planners Course (JIPC) Phase II Handbook*<sup>120</sup> published in June 2023. The LIWA Handbook, provided by associates of the 1st IO Command at Fort Belvoir, VA, serves to inform practitioners deployed to support units abroad, assist commanders and staffs in integrating information into operational planning, and provides a common lexicon and procedures for joint staffs.<sup>121</sup> The JIPC handbook is similar; however, its audience is primarily information planners or practitioners and aims to aid planners in “planning, integrating, and synchronizing information at the Joint level. Both publications are good examples of smart books; before these would be suitable for maneuver commanders, they would need to be revised to be less technical and more informative to non-information professionals or practitioners.

More publications such as those provided by CALL, Dr. Christopher Paul, 1st IO Command, or the Joint Forces Staff College could easily help to contribute to educating maneuver commanders as the Army builds the framework for stronger PME oriented on IA. An applicable publication for maneuver leaders will be several years in the making due to the current fluidity of Army doctrine as it pertains to IA. Such a publication would need to be nested with doctrine however, the Army’s current publication ADP 3–13 *Information* is still in draft form and soon to be followed by the publication of FM 3-13 *Information Advantage*<sup>122</sup> which will supersede the current FM 3-13 *Information Operations*<sup>123</sup> that was published in 2016. Without the use of most recent doctrine, a smart book risks being outdated and irrelevant to commanders and their staff. Once doctrine has been fully

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<sup>119</sup> 1st Information Operations Command, *Land Information Warfare Activity Handbook* (Fort Belvoir, VA: 1st Information Operations Command, 1998).

<sup>120</sup> Joint Forces Staff College, *Joint Information Planners Course Phase II Handbook* (Joint Forces Staff College, 2023).

<sup>121</sup> 1st Information Operations Command, *Land Information Warfare Activity Handbook*.

<sup>122</sup> John Bicknell and John Agnello, “John Agnello On Information Advantage,” *The Cognitive Crucible*, accessed September 19, 2023, <https://information-professionals.org/episode/cognitive-crucible-episode-166/>.

<sup>123</sup> Department of the Army, *Information Operations*.

updated to reflect current concepts for IA, a smart book should be created to be used as a reference guide or planning tool for maneuver commanders and their staffs.

### 3. Expanded Scope

Evaluation of current education on information should not be confined to Army maneuver leaders. As shown by GAO's report, *Contested Information Environment*, it is a problem that extends throughout the entire DOD and the Joint Force. Within the Army, further study should be done to determine how much education other MOS's currently receive on information. Once again, "information is central to all activity that Army forces undertake"<sup>124</sup> and should therefore be studied across all MOS's. More study would be required to determine the appropriate degree of curriculum for each MOS. Similarly, the Air Force, Marines, Coast Guard, Navy, and Space Force should conduct similar studies and make requisite changes. Information is relevant to all service branches and should be studied accordingly.

Precisely determining the appropriate amount of curriculum for IA is also a recommendation for further study. It is important to establish not only how much curriculum necessary but also what material is appropriate for each level of learning. As mentioned in a previous recommendation, at the very least, one-to-two-hour lectures as part of learning for each warfighting function may be appropriate, however, there can and should be much more. Possible methods to determine the appropriate amount of curriculum may be to survey current students at each level to gage their conceptual level of understanding of IA. This may be useful data in establishing a baseline for assessment. Another possible method would be to compare it to academic hours spent on each warfighting function. Although information is not a war fighting function, comparing it to war fighting functions provides some data to compare it to. Looking at MCCC for example, using the POI comparison tool used by the faculty<sup>125</sup> it gives a breakdown of academic hours. The comparison tool shows 8.5 hours dedicated to protection, 39.5 hours dedicated to intelligence, 35 hours dedicated to movement and maneuver, 20 hours dedicated to fires,

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<sup>124</sup> Department of the Army, *Information (Draft)*, 1-5.

<sup>125</sup> Instructor Maneuver Center of Excellence, email to the author, 2022.

8 hours dedicated to sustainment, and 203 hours dedicated to command and control (includes MDMP process learning). Several of these alone account for more academic hours in a single course than what is dedicated to information across all of the studied professional military education courses. Assessing this across all required PME may also improve understanding of how to incorporate more curriculum on information and integrate it into lesson plans as the war fighting functions are.

Combat Training Centers (CTC) such as the National Training Center (NTC) in Fort Irwin, CA or the Joint Readiness Training Center (JRTC) in Fort Polk, LA, are important in evaluating unit readiness through “highly realistic operational environments” meant to “replicate the complexity of the battlefield to promote increased proficiency with combined arms maneuver.”<sup>126</sup> GAO once again provided feedback on this to the DOD in the same report *Contested Information Environment*. The report found that training only includes some but not all contested information environment effects, training is inconsistent, and that current training focuses primarily on offensive scenarios.<sup>127</sup> Generating effects for information can be a challenge for training centers but current efforts by NTC may lead to better training value for Brigade Combat Teams. Current initiatives by NTC include mitigating the risks of commercial technology, electromagnetic signature management, operational security (OPSEC), tactical deception, cyber effects, social media environments for commands to navigate, and targeting.<sup>128</sup> Resource constraints also limit training centers’ ability to replicate a contested information environment.<sup>129</sup> Increased ability to replicate a contested information environment at training centers would allow for better feedback on unit proficiency and highlight vulnerabilities that can be exploited in large scale combat operations.

Linked to discussion on training center replication of a contested information environment is preparing leaders and units for such training. One training mechanism used

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<sup>126</sup> U.S. Army, “STAND-TO!,” U.S. Army, accessed October 16, 2023, <https://www.army.mil/standto/archive/2019/01/22/>.

<sup>127</sup> United States Government Accountability Office, 30–32.

<sup>128</sup> Faculty Naval Postgraduate School, email message to author, August 10, 2023.

<sup>129</sup> United States Government Accountability Office.

by CTCs is the Leader Training Program (LTP) often completed by a brigade staff prior to training rotations at CTCs to challenge brigade staffs on the military decision-making process (MDMP).<sup>130</sup> During such training, trainers provide units with an operations order in which the brigade staff and subordinate staffs will be evaluated on their execution of MDMP and production of their own operations order. Although LTPs lack the ability to provide a contested information environment, they would be a low-cost training event in which units can be evaluated on their ability to plan for achieving information advantage.

Expanding the scope of this study would be a wholistic approach on how to improve education on the information environment for the Army and all service branches. The issue of limited education is not confined to Army maneuver leaders but the DOD as a whole. With increased education, there would come a demand for increased ability to evaluate leaders and units which would require investment from Combat Training Centers to replicate these effects.

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<sup>130</sup> Department of the Army, *Training and Command and Control Warfighting Function*, TC 6-0 (Department of the Army, 2021), D-6.

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## V. CONCLUSION

Information has always been an important aspect of conflict. As technology evolves so too does the nature of conflict driving information to hold even greater weight in modern warfare. U.S. adversaries such as Russia and China have gained an advantage in the information space which provides a new challenge for the DOD. The DOD has recognized that military leaders lack sufficient education on information. This study examined Army maneuver leaders and found that mandatory PME for these leaders lacks sufficient education on information advantage. With information having such a profound impact on the operational environment, leaders will require more education in order to understand, prioritize, and incorporate it into operational planning.

Evaluation of current mandatory PME for Army maneuver leaders showed that less than 0.1% of current curriculum is dedicated to information or information activities. BOLC, MCCC, CGSC, and SSC are courses that provide the foundational knowledge required of Army Officers. Information is present through all aspects of military action and should be included in foundational knowledge. However, it is underrepresented in the current curriculum. In order for Army maneuver leaders to be properly prepared for modern day warfare, their education on information advantage should be drastically improved.

Following analysis of current curriculum, feedback from interviews with instructors and information professionals, and research, this study makes multiple recommendations to improve education on information. The Army can better educate maneuver leaders by scaling education on information down to the appropriate level, either tactical or strategic, and add it to existing curriculum on all war fighting functions. By adding discussion on information as it applies to each warfighting function, the Army will mitigate the need to remove massive amounts of already existing curriculum. Furthermore, these discussions can be added to each phase of large-scale combat operations, a practice already done for sustainment operations.

The Army should also develop an IA smart book to fill the educational gap, while course curriculum is analyzed and adjusted. A smart book, carefully nested with up-to-date

doctrinal concepts, can be carefully formatted to appeal to those unfamiliar with information, as well as be useful as a planning tool or quick reference guide for commanders and their staff. Such a smart book should be easily distributable such as publications produced by CALL.

This study was scoped to include Army maneuver leaders however, the problem exists throughout the DOD. Similar studies should be conducted for education pertaining to other Army MOS's as well as the other service branches. Informational effects exist within the entire operational environment which involves the entire joint force. Increased education throughout the entirety of the DOD will potentially offset adversarial advantages in the information space.

Finally, more study can be conducted to evaluate how a contested information environment can be replicated at combat training centers. NTC already has numerous initiatives to challenge brigade combat teams however, more can be done or more resources dedicated to improve these efforts. It is difficult to assess leaders' true understanding of information advantage without practical application in a contested information environment.

This study only scratches the surface of current limitations existing within the information environment for the DOD. Education is a key component of officer development. The current curriculum on information advantage for Army maneuver leaders is limited. By incorporating discussion on information for learning on all war fighting functions, the Army can increase leader education without removing considerable amounts of current curriculum. Furthermore, a smart book, can fill educational gaps, and the scope of study on education on information can be expanded to include the DOD as well as how to incorporate realistic training into combat training centers. With these changes, the U.S. can close the gap on achieving information advantage against its adversaries and improve understanding of information across the DOD.

## LIST OF REFERENCES

- 1st Information Operations Command. *Land Information Warfare Activity Handbook*. Fort Belvoir, VA: 1st Information Operations Command, 1998.
- U.S. Army Fort Moore and The Maneuver Center of Excellence. "ABOLC Snake Chart." U.S. Army Fort Moore, April 2021. <https://www.moore.army.mil/infantry/199th/2-16/ABOLC/content/pdf/Snake%20Chart.pdf?1AUG2021>.
- Armor Basic Officer Leaders Course. *Armor Basic Officer Leader Course Student Syllabus*. Fort Moore, GA: Maneuver Center of Excellence, 2020. <https://www.moore.army.mil/infantry/199th/2-16/ABOLC/content/pdf/Armor%20Basic%20Officer%20Leader%20Course%20Student%20Syllabus.pdf?05AUG2020>.
- Army War College. Syllabus Elective WF2303 Joint Warfighters and the Information Environment. Carlisle, PA: Army War College, 2023.
- Army War College. "U.S. Army War College Fellows & CSA Senior Army Fellows." Accessed September 27, 2023. <https://www.armywarcollege.edu/programs/fellows.cfm>.
- Army War College. "US Army War College Military Education Level 1 Programs." Accessed September 27, 2023. [https://www.armywarcollege.edu/programs/mel\\_1.cfm](https://www.armywarcollege.edu/programs/mel_1.cfm).
- Bicknell, John, and John Agnello. "John Agnello On Information Advantage." The Cognitive Crucible. Accessed September 19, 2023. <https://information-professionals.org/episode/cognitive-crucible-episode-166/>.
- Center for Army Lessons Learned. *Musicians of Mars: The Mustang's War (Deliberate Attack)*. Vol. IV. Fort Leavenworth, KS: Center for Army Lessons Learned, 2020.
- Center for Army Lessons Learned. *Reconnaissance and Security Commander's Handbook*. 17-12. Fort Leavenworth, KS: Center for Army Lessons Learned, 2017.
- Center for Army Lessons Learned. *Scouts in Contact: Tactical Vignettes for Cavalry Leaders*. 17-01. Fort Leavenworth, KS: Center for Army Lessons Learned, 2016.
- Center for Army Lessons Learned. *Sustainment in Support of Large Scale Combat Operations*. 22-657. Fort Leavenworth, KS: Center for Army Lessons Learned, 2022.
- Department of Defense. *2023 DOD Strategy for Operations in the Information Environment*. Washington, D.C.: Department of Defense, 2023.

- Department of Defense. *DOD Strategy for Operations in the IE Signed*. Washington, D.C.: Department of Defense, 2016.
- Department of the Army. *Army Training and Leader Development*. AR 350-1. Washington, D.C.: Department of the Army, 2017.
- Department of the Army. “CALL.” Center for Army Lessons Learned. Accessed October 16, 2023. <https://www.army.mil/call>.
- Department of the Army. *Information (Draft)*. Draft. ADP 3–13. Washington, D.C.: Department of the Army, 2023.
- Department of the Army. *Information Operations*. FM 3-13. Washington, D.C.: Department of the Army, 2016. [https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB\\_ID=1001357](https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=1001357).
- Department of the Army. *Officer Talent Management*. Department of the Army Pamphlet 600-3. Washington, D.C.: Department of the Army, 2023.
- Department of the Army. *Training and Command and Control Warfighting Function*. TC 6–0. Department of the Army, 2021.
- Geheren, Michael. “DOD Making Progress in Information Operations but More Improvement Is Needed, Experts Say.” *DefenseScoop* (blog), November 4, 2022. <https://defensescoop.com/2022/11/04/dod-making-progress-in-information-operations-but-more-improvement-is-needed-experts-say/>.
- Headquarters United States Army Maneuver Center of Excellence. “Active Component Maneuver Captains Career Course Policy Memo and Individual Assessment Plan.” Official memorandum. Fort Benning, GA: Maneuver Center of Excellence, 2019. <https://www.moore.army.mil/infantry/199th/CATD/MCCC/Student-Information.html>.
- Infantry Basic Officer Leaders Course. “IBOLC Mission Statement.” Fort Moore, GA: Maneuver Center of Excellence, 2023. <https://www.moore.army.mil/infantry/199th/ibolc/content/pdf/20231309%20IBOLC%20Mission.pdf>
- Joint Chiefs of Staff. *Information in Joint Operations*. JP 3-04. Washington, D.C.: Joint Chiefs of Staff, 2022. <https://jdeis.js.mil/jdeis/>.
- Joint Concept for Operating in the Information Environment (JCOIE). Washington, D.C.: Joint Chiefs of Staff, 2018.
- Joint Forces Staff College. *Joint Information Planners Course Phase II Handbook*. Joint Forces Staff College, 2023.

- Paul, Christopher, and William Marcellino. *Dominating Duffer's Domain: Lessons for the U.S. Army Information Operations Practitioner*. Santa Monica, CA: RAND Corporation, 2017. [http://www.rand.org/pubs/research\\_reports/RR1166z1.html](http://www.rand.org/pubs/research_reports/RR1166z1.html).
- Pomerleau, Mark. "DOD Information Operations Strategy and Posture Review to Be Delivered to Congress 'in a Matter of Weeks.'" *DefenseScoop* (blog), March 7, 2023. <https://defensescoop.com/2023/03/07/dod-information-operations-strategy-and-posture-review-to-be-delivered-to-congress-in-a-matter-of-weeks/>.
- Schwille, Michael, Jonathan Welch, Scott Fisher, Thomas M. Whittaker, and Christopher Paul. *Handbook for Tactical Operations in the Information Environment*, TL-A732-1. Santa Monica, CA: RAND Corporation, 2021. <https://www.rand.org/pubs/tools/TLA732-1.html>.
- U.S. Army. "STAND-TO!" U.S. Army. Accessed October 16, 2023. <https://www.army.mil/standto/archive/2019/01/22/>.
- U.S. Army Command and General Staff College, Stimson. *CGSC Circular 350-1 U.S. Army Command and General Staff College Catalog*. Fort Leavenworth, KS: U.S. Army Command and General Staff College, 2021.
- U.S. Army Fort Moore and The Maneuver Center of Excellence. "2023 MCCC-AC Course Map." U.S. Army Fort Moore. Accessed October 5, 2023. <https://www.moore.army.mil/Infantry/199th/CATD/MCCC/Student-Information.html>.
- U.S. Army Fort Moore and The Maneuver Center of Excellence. "Basic Officer Leaders Course – BOLC." U.S. Army Fort Moore. Accessed September 19, 2023. <https://www.moore.army.mil/BOLC/>.
- U.S. Army War College. *Syllabus AY23 MSC-10-S Information Operations*. U.S. Army War College, 2023.
- U.S. Army War College. *United States Army War College Academic Programs Guide*. Carlisle, PA: U.S. Army War College, 2023. <https://www.armywarcollege.edu/documents/Academic%20Program%20Guide.pdf/>.
- U.S. Government Accountability Office. *Contested Information Environment: Actions Needed to Strengthen Education and Training for DOD Leaders*. GAO-23-105608. Washington, D.C.: Government Accountability Office, 2023.
- U. S. Government Accountability Office. "Contested Information Environment: Actions Needed to Strengthen Education and Training for DOD Leaders." Accessed October 6, 2023. <https://www.gao.gov/products/gao-23-105608>.

White, Sarah P. “The Organizational Determinants of Military Doctrine: A History of Army Information Operations.” Texas National Security Review, January 5, 2023. <https://tnsr.org/2023/01/the-organizational-determinants-of-military-doctrine-a-history-of-army-information-operations/>.

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