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## Executive Summary

**Title:** Long Live the King: A Discussion on Future Artillery Warfighting

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**Thesis:** After years of training and deploying under the maneuver brigade concept to support non-standard missions such as counter-insurgency (COIN) or security force assistance (SFA), artillery proficiencies have steadily atrophied decreasing overall preparedness and lethality for a future conflict against a near-peer competitor. To best prepare for future warfighting, the fires community must be ready to operate inside a contested electromagnetic spectrum (EMS) while thoroughly planning for information and Information Operations (IO) as a separate warfighting function (WFF). Lastly, artillery battalions must return to the Division Artillery (DIVARTY) under an organic relationship to enable thorough training and certification of fires units prior to supporting maneuver commanders at exercises and during deployments.

**Discussion:** As the character of war evolves with the advancement of the cyberspace and space domains, the necessity to innovate and adapt to prepare for future conflict is paramount. Artillery units must train digital and degraded (non-digital) operations equally as the next conflict could likely present challenges across the electromagnetic spectrum where fires systems operate. Training both methods equally, ensures preparedness when units encounter a GPS-denied environment or digital systems are no longer functional. As leaders and planners prepare for future operations and deployments, planning focus is necessary for information operations as it were the seventh warfighting function. Information is now a joint function showing the importance of planning IO as in years past it was either forgotten or completed as an afterthought. It is necessary to move away from the negative stigma of non-lethal or non-kinetic fires and thoroughly plan information as an emerging area to increase the lethality and reach of artillery capabilities. The organization structure of the artillery community has significantly improved with the re-activation of the Division Artillery (DIVARTY) but missed the mark without organic artillery units belonging to the Force Field Artillery Headquarters (FFA HQs). At the time of this writing, half of the ten active divisions have DIVARTYs without organic artillery battalions. Artillery battalions that belong to the maneuver brigade combat team (BCT) instead of the DIVARTY must fight for time, land, and munitions to train within the congested BCT schedule. With artillery units organic to the DIVARTY, a senior artillery commander and staff can plan, coordinate resources, and standardize certifications across the artillery units prior to attaching units to the BCT for exercises and deployments. The organic command relationship places the responsibility of artillery training and certification on a senior artillery DIVARTY commander instead of the previous concept of a maneuver brigade commander and staff for facilitating artillery training and certification.

**Conclusion:** For the artillery community to continue meeting the mission statement of enabling maneuver commanders to dominate in unified land operations, training and organizational structure must focus towards a future fight against an adversary with similar capabilities in complex terrain and a contested environment.

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## Chapter 1

### If Henry Knox Was Alive Today



**Figure 1:** A/3-320<sup>th</sup> Field Artillery from 101<sup>st</sup> DIVARTY, 101<sup>st</sup> Airborne Division (Air Assault) conducting a live fire hip shoot.  
Source: MAJ Jeremy Blascak, Ft Campbell, KY, 2015.

*An artillery unit is conducting a mounted tactical movement when a fire mission comes over the radio. Months of training kick in like second nature as everyone takes immediate action. Without losing a second, artillery Soldiers speed off the road, howitzers move into position, and the*

*Fire Direction Center (FDC) quickly computes fire mission data. Soldiers begin rapidly establishing sectors of fire around the howitzers to provide security with dismounted machine guns and grenade launchers, howitzer section chiefs give their orders, and artillery Soldiers put muscle to metal as they heave high explosive projectiles into place to rain hell on the next target. This process is known to a select few as the artillery fire mission. It only took a few minutes from the first radio call for the unit to achieve a ready-to-fire status, but to the Soldiers, it felt like mere seconds. Anxiously, the howitzers wait, protected by fighting positions that cover all possible avenues of approach the enemy may attempt. The metal dragons eagerly standby for permission to breathe fire as the FDC completes final calculations and sends word across the radio. Finally, the howitzer section chief shouts and motions as if chopping wood by hand...FIRE!*

An artillery unit preparing to fire is a thing of beauty—a well-oiled and rehearsed machine with the mission to destroy, neutralize, or suppress the enemy. What if Major General

Henry Knox, appointed the first Chief of the Artillery by General George Washington, was alive today to see the current state of U.S Army Field Artillery? He would likely appreciate the strive for precision and ever-increasing range through any environment or weather condition but may not understand current technology in use or the consequences if digital systems were not operable. With the ever-changing character of war, the artillery community strives to be at the forefront of technological innovation in order to provide maneuver commanders with the most lethal fire support asset available. As future battlefields evolve, it is paramount that units are able to operate both with and without digital systems because the next conflict may not be as permissive across the electromagnetic spectrum (EMS) as the last. Therefore, as Henry Knox would likely say, artillery must continually train to the fundamental core competencies while always maintaining the ability to provide fire support in a contested environment throughout complex terrain. To understand the future direction the field artillery community must take, it is important to understand how the artillery evolved with the first Chief of the Artillery, Henry Knox.

### **Background on Henry Knox: A Focus on Artillery Core Competencies**

Since 1924, the artillery community has celebrated Henry Knox's contributions with the annual presentation of the Henry A. Knox award to the top active duty Army Field Artillery Battery. The award acknowledges the top battery based on "performance, excellence, leadership, and proficiency," all being characteristics that Henry Knox lived and embodied during his service to the Continental Army and to General Washington.<sup>1</sup> In 1775, General Washington tasked Henry Knox to retrieve as many artillery pieces as possible from New York and specifically the recently captured Fort Ticonderoga in order to prepare for a siege of Boston. Despite the magnitude of this task, Henry Knox returned just nine weeks later after traveling

over three hundred miles through extremely challenging terrain in the middle of winter with nearly sixty cannons.<sup>2</sup> Henry Knox's cannons proved essential in the 1776 seizure of Boston and more importantly changed the future of fire support by demonstrating that "artillery could be made mobile, even in the frozen wilderness and [through] difficult terrain."<sup>3</sup>

A study of Henry Knox reveals his focus on the fundamentals of employing artillery on the battlefield, which if trained and applied correctly could result in extremely capable and lethal artillery units. During the winter of 1778, Henry Knox established an artillery academy where leaders studied and trained to "confront the specialized complexities of artillery and warfare...[with] lectures on a variety of topics such as tactics, gunnery, and mathematics in order to master basic military principles that they could apply to combat."<sup>4</sup> Due to the artillery school's rigorous winter training, the Continental Army's artillery became a key component in its future success. Only a few years later, General Washington requested that Congress promote Henry Knox to Major General and Chief of the Continental Army's four artillery regiments. Congress approved General Washington's request, making Major General Knox the youngest person to hold that rank at the age of 32.<sup>5</sup>

When studying Henry Knox, it is important to highlight how he gathered concepts from recent European conflicts and applied them to the Continental Army's artillery. As artillery units trained in the newly established artillery schools, the organization transitioned to smaller and lighter field guns focused on the ability to quickly shoot and move across the battlefield.<sup>6</sup> Artillery, unlike today's fixed-wing and rotary-wing air assets, has the ability to provide 24/7 fire support regardless of weather conditions. Thus, Henry Knox refined for the early American military what is now one of the most flexible fire support assets to maneuver forces in the military's inventory.

## **Fires in a Contested Environment**

If the first Chief of the Artillery had the opportunity to see modern fire support in action, the capability, speed, and discipline of the modern artillery unit would amaze him. Henry Knox likely would not understand the technological developments but would certainly see room for improvement as artillery Soldiers struggled with proficiency on the continuous flow of new and updated digital systems. Artillery units acknowledge the added benefit of speed and reduced human error with digital systems when functioning properly, but Henry Knox may question how well artillery Soldiers could provide fire support if the digital systems ceased to function. The ability to provide fire support in a degraded environment (without digital systems), has atrophied over the years as a result of the emphasis on the technological innovation of artillery and continuous deployments and training rotations where degraded operations lose focus. In training for Decisive Action at the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana, observers reported a pattern of units that failed to plan for degraded operations.<sup>7</sup> Over-reliance on digital systems along with the atrophy of degraded artillery skills unaided by digital systems creates a significant challenge in a contested environment against a competitor with similar if not better capabilities.

A study of the systems used in the 2014 Ukrainian conflict shows that the capability exists for potential adversaries to utilize Electronic Warfare (EW) to electronically jam GPS signals, disrupt electronic fuzes on artillery projectiles, and locate/target signals from artillery units presenting an electronic signature.<sup>8</sup> As artillery units set their sights on training for future conflict, it is necessary to prepare for an enemy who may have the ability to deny U.S. forces the use of digital systems through cyber-attacks or EW. The current application of digital systems in the artillery community has certainly increased speed and overall capability but exposes a new

vulnerability that requires protection through electronic signature management (SIGMAN), and the ability to provide fires without the use of computer-aided devices to process fire missions and occupy/fire howitzers. Some of the current precision munitions have undergone changes to protect against GPS jamming/spoofing and to operate without GPS if necessary, but it is still vital to maintain a degraded capability across the inventory of howitzers and associated munitions.

The 2017 National Security Strategy (NSS) states that great powers such as China and Russia are “fielding military capabilities designed to deny America access” and that past adversaries have studied the “American way of war and began investing in capabilities that targeted our strengths and sought to exploit perceived weaknesses.”<sup>9</sup> In the future multi-domain battle, great power competition could see U.S. forces outgunned and outranged further necessitating the need for a precise and accurate first strike that, if necessary, can operate between digital and degraded systems seamlessly. U.S. forces will need to function with reduced and protected electronic signatures in a contested environment against an adversary with EW capabilities. Several examples exist in the warfighting doctrine of comparable military forces such as China where the goal of the People’s Liberation Army (PLA) is a paralysis “through kinetic, and non-kinetic attacks, as either type of attack may be able to destroy or degrade key aspects of the enemy’s operational system, thus rendering it ineffective.”<sup>10</sup> As described in *U.S. Army’s Operating Concept: Win in a Complex World 2020-2040*, it is necessary to both train to protect digital systems across the EMS while also ensuring units can fight without them in order to effectively prepare for the next conflict.<sup>11</sup>

## **Digitization of the Artillery & Degraded Operations**

In October 2016, the Chief of Staff of the Army, General Mark Milley stated that Soldiers will “operate routinely in a partially or significantly degraded environment...that means we must invest in hardening our systems and, equally important, train on the techniques of operating with limited electronics. That’ll be a shocker for all of us. We may have to read a paper map again and learn to use a magnetic compass.”<sup>12</sup> An issue arises with artillery innovation that leaders need to acknowledge and units must train for: a loss in the ability to effectively fight degraded or without the combat multiplier of digital systems and communications.

In the age of a GPS in everyone’s pocket, Soldiers still train land navigation with a compass and paper map before using a digital tracking system to navigate. This training method engrains an understanding of how to navigate with basic systems before using a modern digital method. This method is similar to training artillery core competencies where Soldiers must continue to train degraded methods of processing fire missions and how to lay howitzer positions and fire them without the aid of digital systems. Army Reference Doctrine Publication (ADRP) 3-0: *Operations* describes the necessity to “train in contested conditions that emphasize degraded capabilities [because] threats will attempt to impede joint force freedom of movement and action across all domains [and] disrupt the electromagnetic spectrum.”<sup>13</sup> Over-reliance on modern systems can create a culture that no longer sees the need for analog methods and foregoes training on them. This creates an inability to quickly transition to degraded systems and methods when the situation requires it.

In 2017, the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana produced a study of the top ten shortcomings across the warfighting functions. Rotation after rotation of fires units at JRTC showed a pattern where artillery battalions lacked procedures for degraded operations in a GPS-denied environment or when a loss of digital connectivity occurred.<sup>14</sup> As

evidence of a loss of degraded expertise, “all fiscal year 2016 live fire firing incidents attributed to the firing unit occurred while units were operating in a degraded status.”<sup>15</sup> In a contested environment where potential adversaries have the ability to impact digital operations and the EMS, it is crucial for the artillery community to place equal focus on training for both digital and degraded operations. Artillery units must not lose focus on the importance of training how to transition between the two without impacting the ability to provide accurate and responsive fires to the maneuver force.

Finding time on the training calendar to sharpen both digital and degraded skillsets will always be difficult. To gain and maintain an advantage over the next adversary, it is crucial to equally integrate digital and degraded training so that they reinforce each other where one or the other will not become an exploitable weakness in a contested environment. Recently, several artillery units started a culture change by referring to degraded operations as “manual procedures” in order to eliminate what some consider a negative connotation with the term “degraded.” This is one example that acknowledges issues surrounding degraded procedures and shows that it is the job of artillery leaders and professional Redlegs to ensure training is thorough, creative, and challenging to Soldiers on both aspects of providing fires while finally putting a stop to years of atrophied core competencies.

## **Conclusion**

As some artillery skills have atrophied, some have also grown, marking a time to shift focus towards training on future operating concepts and for the next adversary. In 2016, Gen Milley stated that “we are on the cusp of a fundamental change in the character of war. Technology, geopolitics, and demographics are rapidly changing societies, economies, and the tools of warfare.”<sup>16</sup> This change in the character of war is evident with the growing digitization

in all areas of artillery from the observation post (OP) to the gunline. The artillery community will continue to innovate and implement new digital systems to increase lethality but must not forget the adversary has a vote as well. Therefore, the ability to provide the maneuver commander with integrated, synchronized, and responsive fire support requires artillery units to train digital and degraded operations equally as well as the ability to transition between the two without fail.

In preparation for the future of artillery warfighting, it is important to understand how the fires community has evolved and take lessons learned over the years to provide the most lethal and capable force possible for the next conflict. A look at the history of Henry Knox's Continental Army Artillery in the winter of 1778 reminds leaders to continuously train and hone fundamental core competencies as they are critical to success on the battlefield. While the implementation of digital systems in the artillery community has certainly increased the speed at which a unit can execute a fire mission, it has simultaneously created vulnerabilities through an over-reliance on digital systems and failure to train digital and degraded methods equally. As Henry Knox once required of the artillery, and which remains applicable today, units must remain highly mobile and maneuverable while always maintaining the ability to defend and protect themselves. If fires units never lose sight of artillery fundamentals, train digital and degraded systems equally, and are able to shoot and move while also protecting against adversaries, then there is no doubt that Henry Knox would be extremely proud of how the artillery community has evolved for future conflict.

*"We want great men who, when fortune frowns, will not be discouraged."*<sup>17</sup>

- Henry Knox

## **Chapter 2**

### **Fires Planning in the Information Environment**

Often subordinated to a secondary role with nomenclature such as “Non-Lethal Fires” or “Non-Kinetic Fires,” planning for and execution of Information Operations (IO) frequently falls within the responsibility of the Fires community. An analysis of Information’s recent emergence in the 2017 National Security Strategy (NSS) and the Joint Staff’s doctrine reveals the need to change the culture of how Fires units and leaders plan for Information Operations. In order to take full advantage of available Information Related Capabilities (IRCs), the Fires planning process in a future multi-domain battle must focus on gaining and maintaining a competitive edge inside the Information Environment (IE). Therefore, the desired end-state is to create a “new normal” where Fires units and leaders view Information as though it were another warfighting function to effectively focus all staff sections on how to fight and win in the Information Environment.

#### **Doctrinal Crosswalk: Information’s Recent Emergence**

The National Security Strategy (NSS), signed by President Donald Trump in December, 2017, clearly shows the rising importance of Information as the United States will “use the information-rich open-source environment to deny the ability of state and non-state actors to attack our citizens, conduct offensive intelligence activities, and degrade America’s democratic institutions.”<sup>18</sup> The NSS highlights how Information must be harnessed and fused with proper analysis to increase the effectiveness of US instruments of national power while lowering risks to national security.

Joint Publication 1 (Change 1), *The Doctrine for the Armed Forces of the United States*, signed by General Martin Dempsey in July of 2017, established Information as the seventh joint

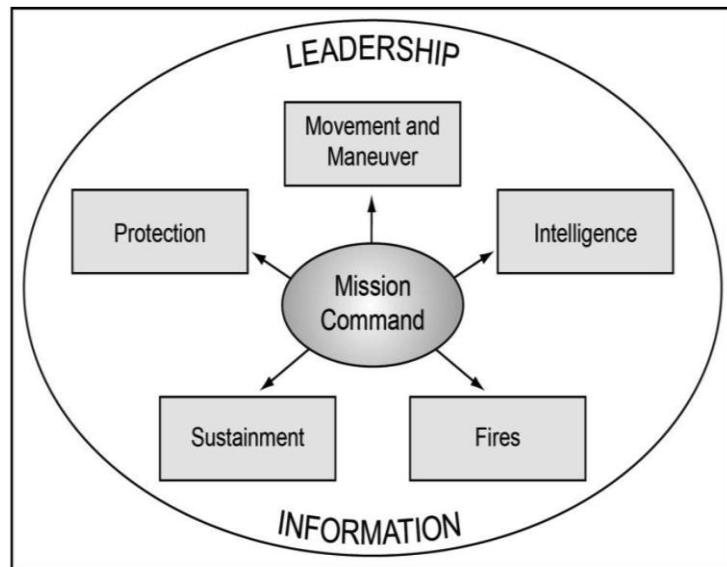
function along with Command and Control, Movement and Maneuver, Intelligence, Fires, Sustainment, and Protection.<sup>19</sup> Joint functions are related capabilities grouped together to better facilitate planning and employment of US forces.<sup>20</sup> The NSS and JP-1 describe the increasing importance of Information as the 2016 Army Doctrine Reference Publication (ADRP) 3-0, *Operations*, highlights Information as one of the eight elements of combat power. ADRP 3-0 defines Combat Power as the “total means of destructive, constructive, and information capabilities that a military unit can apply at a given time.”<sup>21</sup> What this means to leaders and planners in the Fires formation is that they can no longer discount or push aside Information as an afterthought in planning and force employment.

In July, 2017, the NSS and

JP-1 establish the importance of

Information and ADRP 3-0 describes the application of Information in concert with the other elements of combat power to better facilitate mission accomplishment (See Figure 2).<sup>22</sup>

Therefore, the doctrine is clear as to the emerging importance of Information and its utility to US forces. The task moving forward is to change the current culture of leaders and planners that are hesitant to incorporate thorough Information planning and apply the identified recent doctrinal changes to the Fires planning process. This change would enable Information to be a combat multiplier for the Fires community to achieve effects inside the Information Environment.



**Figure 2: Eight Elements of Combat Power.**  
Source: Army Doctrine Reference Publication (ADRP) 3-0, *Operations*, November, 2016.

## **Culture Change: Integration of IO Planning into MDMP and Targeting Cycles**

In November 2014, Joint Publication 3-13 on *Information Operations*, references the Secretary of Defense in characterizing IO as an “integrated employment, during military operations, of IRCs in concert with other lines of operation to influence, disrupt, corrupt, or usurp the decision-making process of adversaries and potential adversaries while protecting our own.”<sup>23</sup> Using this definition, Fires units and leaders typically view IO as good to have but not a need to have. IO planning often remains an afterthought where Lethal or Kinetic Fires take priority. Now weaponization of Information is a reality that requires proper planning to protect against and utilize offensively for current and future conflicts. There is no doubt that future adversaries will use Information warfare to create fog and friction in any plan, making it necessary to change the current culture of Fires units, leaders, and planners to incorporate Information in order to reduce uncertainty and influence future adversaries and their ability to make decisions.

As shown in Figure 1 above, Information planning occurs across the six warfighting functions (WFFs), which results in a process that fails to properly dedicate the appropriate amount of time needed for thorough IO planning. The culture of the Fires community must change to treat Information as another warfighting function where staff sections focus planning efforts inside the Information Environment across all phases of the operation. The 2016 Joint Staff J7’s focus paper on *Communication Strategy and Synchronization* emphasizes the importance of Information planning because “we are in a continuous competitive fight with adversaries for legitimacy, credibility, trust, and influence.”<sup>24</sup> The J7s focus paper stresses the importance of understanding the environment while continuing to update the current assessment so that all available capabilities are leveraged to shape the desired outcome through

informational means.<sup>25</sup> The Fires community is resistant at times to elevate the importance of IO planning as the culture is built around Lethal or Kinetic targeting. Therefore, it is critical to understand the environment and leverage all available capabilities, thus Information planning must receive the same level of focus as a communications or transportation plan being that they are all critical elements of a successful mission.

### **Maintaining a Competitive Edge: Fires Planning in the Information Environment**

Joint Publication 3-13 on *Information Operations* defines the Information Environment (IE) as the “aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information.”<sup>26</sup> The IE contains the three dimensions of physical (C2 systems and infrastructure), informational (networks where information flows), and cognitive (minds of the target audience).<sup>27</sup> Current competitors and possible adversaries have already demonstrated the capability to operate inside the IE, which highlights the need for the Fires community to understand what the IE is and how to gain and maintain a competitive edge inside the IE.

The Fires community cannot discount planning inside the IE and must allocate adequate time and resources to plan across the three dimensions. Lethal and Non-Lethal targeting often rely on the staff sections and planners to accurately understand the adversaries decision-making process, which a thorough understanding of the IE could help to eliminate ambiguity and increase opportunities to influence the outcome of operations and targeting in a multi-domain battle. Countless Information Related Capabilities exist that can be applied inside the three dimensions of the IE as JP 3-13 defines IRCs as “tools, techniques, or activities employed within a dimension of the information environment to create effects and operationally desirable conditions.”<sup>28</sup> IRCs can range from military information support operations (MISO) and

operations security (OPSEC) to electronic warfare (EW) and offensive/defensive cyberspace operations (CO).<sup>29</sup> The IE cannot remain an unknown area that is absent during the planning process, Fires planners must dedicate time and effort to understanding the capabilities and vulnerabilities of potential adversaries inside the three dimensions of the IE to effectively influence the desired outcome while protecting US interests.

### **Conclusion**

General Stanley McChrystal, former commander of the International Security Assistance Force (ISAF) in Afghanistan stated that the “inability to understand our surroundings often left a burned-out building or cratered road—a stark symbol of our shortcomings.”<sup>30</sup> The Fires community can no longer afford to discount the combat multiplier that Information brings to the table. A culture change is necessary to focus Information planning as though it were another warfighting function where synchronized efforts across all staff sections create a competitive edge inside the three dimensions of the Information Environment. This “new normal” will be necessary to be successful in a future multi-domain battle where potential adversaries will certainly use all means necessary to create fog and friction for US forces.

## **Chapter 3**

### **DIVARTY's Return to the Force**

*Only months into the Division Artillery (DIVARTY) activation, I recall sitting in a quarterly training brief to the DIVARTY commander from the battery commanders. The brief was no different from when the field artillery battalion was organic to the Brigade Combat Team (BCT). We presented our plans for the next quarter of training events, the current status of our battery's mission essential tasks, and how we intended to improve over the next quarter. One area that typically required more focus was the battery's certification status and plan to get to the desired level by the end of the quarter whether it be a section, platoon, battery, etc... This topic is extremely important as it shows the current and projected proficiency at each level as a snapshot of where the battery stands from a "fight tonight" or "go to war" perspective. As the Headquarters and Headquarters Battery (HHB) commander briefed the status of his target acquisition platoon (radars), medics, and battalion fire direction center (FDC), the DIVARTY commander asked what his plan was to certify the battalion FDC. This is an interesting question as the battery commander typically certifies his or her subordinate units through the assistance and supervision of the higher headquarters. With the HHB FDC being a battalion-level asset, an artillery headquarters higher than the battalion level to supervise certification of the battalion FDC had been absent for over ten years, leaving battalion FDC certification nonexistent. The HHB commander responded sincerely and respectfully by saying, "well Sir, that plan, and responsibility would now come from you and your headquarters..." The DIVARTY commander looked perplexed and within seconds realized the Captain had stumbled onto the first of many important lessons learned for the newly formed DIVARTY...how to certify battalion level sections.*

After a decade without an artillery headquarters higher than the battalion level, the King of Battle returned in 2014 with the first operational Division Artillery (DIVARTY) since 2003. Years of artillery core competencies slowly atrophying from performing non-standard mission sets necessitated a force design update (FDU) submitted by the Fires Center of Excellence (FCoE) in 2012. With the DIVARTY now established as the Force Field Artillery Headquarters (FFA HQs) to the division, a change must occur across the ten active divisions to create an organic command relationship of the field artillery battalions to the DIVARTY instead of the Brigade Combat Team (BCT). To understand this need, it is important to examine DIVARTY history, the issues associated with artillery certifications when artillery units are organic to the BCT in the modular construct, and trends of decreasing artillery core competencies at combat training centers (CTCs).

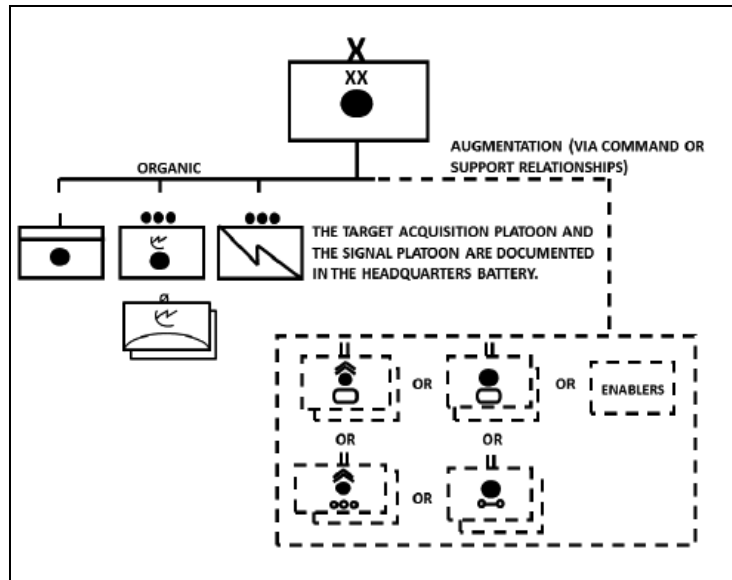
### **History of the DIVARTY**

The field artillery community experienced a significant force structure change in 2003 with the shift to the modular concept of combined arms maneuver brigades. These Brigade Combat Teams (BCTs) contain maneuver units, scouts, fires, intelligence, and a logistics package. The modular BCT design is tailorable so the brigade can grow or shrink in size as the mission requires and while maintaining an organic command relationship between the brigade and battalion headquarters. Field Manual (FM) 6-0 on *Commander & Staff Organization & Operations* defines an organic command relationship as those forces “assigned to and forming an essential part of a military organization as listed in its table of organization for the Army” (see Figure 3).<sup>31</sup> With the implementation of the modular brigade concept that contained organic artillery battalions, the new doctrine eliminated the need for a DIVARTY and responsibility for training and certification fell on the BCT.<sup>32</sup> Over the course of the following ten years, artillery



## Artillery Certifications and Standards of Proficiency

According to the 2012 Army Doctrine Reference Publication (ADRP) 3-09 on *Fires*, the mission of the Field Artillery (FA) is to “destroy, defeat, or disrupt the enemy with integrated fires to enable maneuver commanders to dominate in unified land operations.”<sup>35</sup> In order to provide the most capable fires asset to the maneuver commander, artillery units



**Figure 4: DIVARTY Organization.**

Source: Army Techniques Publication (ATP) 3-09.90, Division Artillery & Fire Support Operations for the Division, October 2017.

must be experts without exception because American lives are at stake where seconds make the difference. The end-state never changed as timely and accurate fires today are equivalent to a duel in the streets of the wild west...the fastest and most accurate gun wins.

BCTs contain units that span across the warfighting functions in terms of capabilities. This design makes sense for the challenges that commanders encounter during a conflict, but the BCT construct gave a full complement of capabilities at what cost? With artillery battalions reporting to an Infantry, Stryker, or Armored brigade commander, the brigade headquarters lacks the ability to effectively certify artillery units. This point came to light in 2007 with the white paper by three maneuver BCT commanders in *The King and I: The Impending Crisis in the Field Artillery's Ability to Provide Fire Support to Maneuver Commanders*. Colonels MacFarland, Shields, and Snow state that “modularization places responsibility for fire support training on maneuver commanders who are neither trained nor resourced to perform these tasks.”<sup>36</sup> The issue

of coordinating resources, training, and certification improved with the re-activation of DIVARTY in 2014, but with artillery battalions organic to the BCT instead of DIVARTY, it becomes a continuous fight for the artillery headquarters to meet training requirements inside the high operational tempo (OPTEMPO) of the BCT training schedule. With a brigade-level artillery headquarters, a senior artillery officer and his/her staff can take complete ownership of the extensive training requirements needed to launch high explosives into the air at targets several miles away.

With DIVARTY assuming responsibility for artillery certifications instead of the BCT, the Force Field Artillery headquarters has the opportunity to standardize training across the artillery battalions in the division, and coordinate resources accordingly while focusing efforts on readiness and assessment of mission essential tasks for each of the units. Assigning artillery units to DIVARTY maximizes direct involvement from senior artillery leaders and staff in the training and certification of artillery battalions while removing that requirement from the overloaded BCT with a demanding OPTEMPO. A DIVARTY with organic artillery battalions creates flexibility to support across the entire division with any of the available artillery units compared to a single artillery battalion that is organic to a BCT to provide direct support.

### **Reversing Trends from CTCs**

Artillery units regularly test their ability to provide responsive fires in support of maneuver commanders at Combat Training Centers (CTCs) like the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana, and the National Training Center (NTC) at Fort Irwin, California. These training rotations place artillery units into a simulated combat environment typically in support of a maneuver brigade fighting against an adversary with similar capabilities. CTCs test the capability of these artillery units to shoot, move, and communicate in conjunction

with the higher headquarters scheme of maneuver. In the *2016 Fires Red Book*, the Field Artillery Commandant, COL Stephen Maranian states that “FA units’ integration and synchronization of Fires is the critical link between Fires and maneuver which will enable maneuver commanders to dominate in Unified Land Operations.”<sup>37</sup> Key to fulfilling the artillery mission of integrated fires that enable the maneuver commander is responsive, accurate, and synchronized artillery at all levels. The three maneuver commanders from *The King and I* list observations from CTC rotations where a majority of fire supporters are uncertified, counterfire is not timely, firing incidents are common, and crew drills stop with the introduction of minor friction.<sup>38</sup> These observations from 2007 intended to highlight the need for a DIVARTY/Fires Brigade structure. In looking at CTC trends a decade later and four years into the DIVARTY reactivation, progress occurred but similar observations still exist on a smaller scale.

CTC observations depict a unit’s capability in a simulated combat environment against a near-peer competitor. Years of CTC rotations show that artillery units often miss the required time standards to provide fires both digitally and degraded (non-digital), fail to provide counterfire because the fire-mission processing took too long, and clearance of fires becomes overly complicated, which slows the fire support process even more. Inability to provide responsive fires in support of the maneuver element is unacceptable. To reverse these CTC trends, the ten DIVARTYs must take full ownership of the artillery battalions through a doctrinally organic relationship where the FFA HQs can standardize and supervise the certification process across the assigned formation instead of that responsibility going to the battalion commander and the maneuver brigade headquarters. With full responsibility, the DIVARTY can train the artillery battalions to standard and provide the maneuver brigades and divisions with certified units capable of providing responsive fires and synchronized fire support.

## **Recommendation for DIVARTY**

Artillery core competencies have atrophied for over ten years from a high OPTEMPO with missions outside the standard scope of fire support and a maneuver headquarters absent of the artillery resident knowledge to maintain appropriate certifications and training requirements. In the 39<sup>th</sup> *Chief of Staff of the Army's Initial Message* to the force, General Milley stated that the “fundamental task is like no other – it is to win in the unforgiving crucible of ground combat.... readiness for ground combat is – and will remain – the U.S. Army’s #1 priority.”<sup>39</sup> The task of artillery readiness belongs with DIVARTY to standardize the formation, certify, train, and prepare artillery battalions to fight the nation’s wars. The DIVARTY must have complete ownership of the artillery battalions through an organic relationship instead of borrowing artillery units for training when it fits within a maneuver brigade's rigorous training schedule.

It is time to reverse the trend of fires units performing below the standard at CTCs. With full ownership of the artillery battalions through an organic command relationship, DIVARTY must focus efforts on the issues identified by JRTC/NTC, and as stated in 2014 by the 51<sup>st</sup> Chief of the Field Artillery, Colonel Turner, “BCTs will be empowered by enhanced Fires capabilities delivered by precision fire supports with world-class training and certification, precision equipment and leaders adept in the art of Fires and mission command.”<sup>40</sup> With the evolving character of war, the artillery community must prepare to fight in a contested environment through complex terrain against an adversary with similar if not superior capabilities. There is no room to make excuses for performance during training, it is the responsibility of the DIVARTY to train Fires for the next fight and make sure those units are the fastest guns on the street when the clock hits high noon.

## **Conclusion**

As the character of war evolves with the advancement of the cyberspace and space domains, the necessity to innovate and adapt to prepare for future conflict is paramount. The field artillery fights a continuous battle of relevancy where fixed-wing and rotary-wing lethality continues to grow. It is important to remember both air and surface-based fires assets are necessary and required to fight and win future wars in a multi-domain battle against an adversary with similar or better capabilities. The field artillery offers an asset that can run with limited fuel and power requirements in any weather condition regardless of crew rest cycles. At the simplest definition, artillery requires a functioning cannon, munitions, a target to be destroyed, and trained soldiers ready to meet the enemy with high explosives.

The artillery community does have room to grow in order to best prepare for a future adversary as units have shown an over-reliance on digital systems where the next conflict may present a contested electromagnetic spectrum. Combat Training Centers (CTCs) report consistent deficiencies with artillery unit's ability to shift from digital to degraded operations and conduct degraded fire missions within the required time standards. Artillery soldiers must prepare to operate with reduced electronic signatures in a contested environment where degraded operations become the standard operating procedure.

Information recently became the seventh joint function showing the importance of thoroughly planning this constantly developing realm into the military decision-making process. Thus, at the service level, leaders and planners must plan IO as the seventh warfighting function to ensure commanders control the narrative in the next conflict. For years, artillery leaders and planners have discussed information operations (IO) across the warfighting functions but as a result, information operations fall by the wayside with inadequate focus. IO must move away

from the negative stigma of non-kinetic or non-lethal fires where leaders and planners change the culture of the IO planning process, ensuring information receives the necessary focus to create a thorough and all-encompassing plan to fight and win.

Lastly, the artillery community moved in the correct direction with the re-institution of the Division Artillery (DIVARTY), but the lack of organic artillery units leaves room for improvement. Half of the DIVARTYs aligned with the ten active divisions have organic artillery units. This concept allows the Force Field Artillery Headquarters (FFA HQs) to focus a thorough training and certification plan prior to attaching those artillery battalions to maneuver BCTs for exercises and deployments. Without an organic relationship between the artillery battalions and DIVARTY, trends have shown a significant decrease in artillery proficiencies and core competencies. The artillery training responsibility falls on the artillery battalion commander and the maneuver brigade headquarters without an organic relationship to DIVARTY, leaving room for inconsistencies and a constant fight to create space for training, land, and ammo within the BCT's already congested training schedule.

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## Endnotes

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- <sup>19</sup> US Joint Chiefs of Staff, *Joint Publication 1 (Change 1): Doctrine for the Armed Forces of the United States* (Washington, DC: US Joint Chiefs of Staff, July, 2017) iii.
- <sup>20</sup> *Ibid*, xii.
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- <sup>22</sup> *Ibid*, 5-1.
- <sup>23</sup> US Joint Chiefs of Staff, *Joint Publication 3-13 (Change 1): Information Operations* (Washington, DC: US Joint Chiefs of Staff, November, 2014) ix.

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- <sup>24</sup> Joint Staff J7 Deployable Training Division, *Insights and Best Practices Focus Paper: Communication Strategy and Synchronization* (Washington DC: US Joint Chiefs of Staff, May, 2016) i.
- <sup>25</sup> *Ibid*, i.
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