

# The Challenges of Intelligence Dissemination in Maneuver Warfare

A Monograph

by

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## Abstract

The Challenges of Intelligence Dissemination in Maneuver Warfare, by MAJ Ryan E. Peacock, US Army, 40 Pages.

Intelligence dissemination and battle damage assessments are critical components of success during large-scale combat operations. This monograph studied the First Gulf War in 1990-1991 to determine what did and did not work with intelligence dissemination and damage assessments at the operational level. During Operation Desert Shield, intelligence dissemination overcame manning deficiencies, interoperability problems, and a lack of communications architecture. During the war of maneuver in Operation Desert Storm, a lack of communications architecture hampered communication. Battle damage reporting was inaccurate because the Army lacked doctrine and an effective method to measure appropriately. Failure to understand and correct the deficiencies from the First Gulf War could lead to further problems in the immediate environment.

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## Abbreviations

ARCENT	Army Central
BDA	Battle Damage Assessment
CENTCOM	Central Command
IPB	Intelligence Preparation of the Battlefield
JSTARS	Joint Surveillance Target Attack Radar System
LSCO	Large Scale Combat Operations
SIDS	Secondary Imagery Dissemination Systems

## Introduction

Large Scale Combat Operations (LSCO) are currently the focus of discussion and energy in the US Army, which aligns with the priorities of our national strategic documents. Challenges to American power, influence, and interest from China and Russia represent potential threats. They are attempting to strengthen their power regionally and extend influence globally, and the re-emergence of long-term strategic competition is the biggest perceived threat to American prosperity and security. Meanwhile, Iran and North Korea are working to destabilize their regions and undermine American security interests by sponsoring terrorism and pursuing weapons of mass destruction.<sup>1</sup> The Department of Defense supported this assessment and said America's central challenge to prosperity and security is the reemergence of long-term strategic competition, represented by China and Russia.<sup>2</sup>

Field Manual 3-0 reflected the focus of these strategic documents and defined LSCO as actions associated with war and actions that tend to be intense and lethal. If the efforts of Russia, China, Iran, or North Korea lead to war with the United States, LSCO will be the result. Given this strategic environment, the US Army must certify it is prepared to fight and win in LSCO.<sup>3</sup>

Intelligence will play a vital role in the success of American military force in any future war. The focus of intelligence is to provide commanders with timely, relevant, and accurate information that enables decision-making within complex, ever-changing environments.

Intelligence thereby drives operations by providing situational understanding to commanders and

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<sup>1</sup> White House, *National Security Strategy of the United States of America*, by Donald J. Trump (Washington, DC: White House, December 17, 2017), 2, 27. The document discusses the methods China, Russia, North Korea, and Iran are using to undermine American interests and why great power competition has returned: a lack of focus on military capacity and technology combined with the rise of a more complex world after the Cold War.

<sup>2</sup> Headquarters, Department of Defense, *Summary of the 2018 National Defense Strategy of the United States of America* (Washington, DC: The Pentagon, January 19, 2018), 2-4. The document outlines the strategic environment from the US point of view and the threats to the international order. It mentions the US decline in relative power and makes statements on the return of long-term strategic competition.

<sup>3</sup> US Department of the Army, Field Manual (FM) 3-0, *Operations* (Washington, DC: Government Printing Office, 2017), 1-2-1-3.

staffs. To accomplish this requirement, intelligence professionals have a four-step process titled the intelligence cycle. The steps are planning and directing, collecting and processing, producing, and disseminating.<sup>4</sup> This process assists intelligence professionals in determining how best to use limited resources to understand the battlefield influence the decision cycle of commanders.

All steps of the intelligence cycle are necessary, but dissemination is vital to success. Without dissemination, the best intelligence plan is worthless. Dissemination ensures intelligence products are placed in commanders and partners' hands in time to support decision-making.<sup>5</sup> This step is heavily reliant on communication capabilities and the judgment of individuals. The communication architecture enables the transmittal of intelligence across vast distances, while the judgment of individuals determines what intelligence commanders receive. Ultimately, their job is to ensure commanders have all relevant intelligence related to the decisions they must make.

The current conflicts in Iraq and Afghanistan have made dissemination easy. With units occupying permanent bases, communication networks are established, maintained, and rarely, if ever, made to move. This constant connectivity has made it easy to access intelligence through e-mail distribution lists and organizational portals, largely mitigating the requirement for individual judgment in disseminating intelligence. Because of this, American intelligence capabilities have adapted to static forces on permanent bases.

The requirement to establish the communication system, maintain it, and then disassemble and move are proficiencies not needed over the past eighteen years. In a war of maneuver, without static bases, how will intelligence perform? What are the priorities for leaders in training and preparing intelligence professionals for LSCO? Lieutenant General Michael D.

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<sup>4</sup> US Department of the Army, Army Doctrine Publication (ADP) 2-0, *Intelligence* (Washington, DC: Government Printing Office, 2019), 3-1-3-2.

<sup>5</sup> US Army, ADP 2-0, 3-6-3-7.

Lundy acknowledged that the approach in Iraq and Afghanistan has led to more strategic and operational intelligence assets at the expense of tactical resources.<sup>6</sup>

This lack of tactical assets creates great strain on the ability of the military to disseminate intelligence from strategic and operational sources. A war of maneuver, in contrast to Iraq and Afghanistan, places intense strain on dissemination due to the constant movement. A lack of tactical assets is preferable to a lack of strategic assets in a war of maneuver because tactical collection is unable to provide the detail required to support operational and strategic decision-makers. However, this gap means tactical commanders in a future conflict will be more reliant on higher headquarters intelligence collection. In a fast-moving conflict across vast distances, dissemination becomes more challenging to maintain, and the stakes for failure rise.

The stakes rise because, in war, lives are in the balance. In LSCO and maneuver warfare, more lives are at stake than in a counter-insurgency environment. A lack of information can lead to poor decisions and result in unnecessary casualties. While war is, and always will be, the realm of chance, accurate intelligence can mitigate some of the uncertainty experienced in war by providing information on enemy activities and possible future actions. Intelligence can never eliminate chance because it is not omniscient, and war occurs in a complex, adaptive environment where the enemy reacts to multiple stimuli. These can be in the form of orders from higher headquarters, weather, adversary actions, incomplete information, or a myriad of other factors.<sup>7</sup>

In a large scale, fast-moving conflict, intelligence must take the continually changing environment into account and disseminate relevant intelligence to commanders. The environment constantly changes because the world is a series of open, complex systems that continually

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<sup>6</sup> Lieutenant General Michael D. Lundy, "ALx: FM 3-0 and Large Scale Combat Operations with LTG Mike Lundy," Fort Leavenworth, March 9, 2018, video of lecture, 53:44, accessed September 19, 2019, <https://www.youtube.com/watch?v=JZcdvKyTU4>.

<sup>7</sup> Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: University of Princeton Press, 1976), 75, 84-85. Clausewitz outlines the theories that war is the use of force to bend an enemy to do your will, that war cannot be divorced from chance, and that those in war will never have perfect knowledge of the situation.

interact with each other. Complexity theory states that the world is a series of open systems that each possess interacting objects able to adapt to their situation based on the information they receive. The combination of multiple systems creates an aggregate that exhibits ordered and disordered behavior at varying times. An open system is one where the surrounding environment can influence it, resulting in adaptations.<sup>8</sup> These changes in the system require a disciplined approach to intelligence collection that accounts for potential actions by the enemy system as it adapts to its changing environment. This concept must have a network that can get information to commanders quickly. The intelligence cycle ensures that intelligence professionals account for the changing adversary plans.

One of the most critical pieces of information for commanders engaged in battle is the strength of the enemy. Accurate and updated battle damage assessments (BDA) on the enemy must be disseminated to commanders as quickly as it becomes available. Army intelligence doctrine states that individual unit standard operating procedures determine how BDA is conducted, with the entire process designed to support targeting.<sup>9</sup> Army targeting and joint doctrine state that BDA is a three-step analytical process-physical damage/change assessment, functional damage assessment, and target system assessment-that is critical to reach higher level conclusions on the enemy and determine the likely impact on future operations.<sup>10</sup> Other than requiring these steps, the Army lacks a standard method of conducting BDA. This lack of uniformity does not, however, mitigate its importance to commanders, and dissemination is again critical to success. The communications network ensures the receipt of accurate and updated information on enemy strength, which can allow Army units to exploit opportunities accordingly.

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<sup>8</sup> Neil Johnson, *Simply Complexity: A Clear Guide to Complexity Theory* (London: Oneworld, 2007), 13-14.

<sup>9</sup> US Army, ADP 2-0, 5-3.

<sup>10</sup> US Department of Defense, Joint Staff, Joint Publication (JP) 2-01, *Joint and National Intelligence Support to Military Operations* (Washington, DC: Government Printing Office, 2017), D-4; US Department of the Army, Army Techniques Publication (ATP) 3-60, *The Targeting Process* (Washington, DC: Government Printing Office, 2015), 2-14-2-17.

This monograph will focus on the 1990-1991 Gulf War to analyze the challenges the military encountered in that conflict with regards to dissemination and its implications for the future. The Gulf War provides insight for multiple reasons: it is the most recent example of LSCO and the technology that existed enabled dissemination over networks while unveiling new challenges. The conflict also demonstrated how technology could increase complexity in war. Korea and World War II were both instances of LSCO, but technology had not advanced to a point where networks disseminated intelligence as they did in 1991. The Gulf War saw an increased reliance at the tactical level on strategic intelligence that placed added importance on dissemination and the communications architecture. These circumstances make the study of the Gulf War relevant to intelligence today. Things have changed between 1991 and present-day, namely in technology, but the core aspects of the Gulf War supply lessons learned and observations that can anticipate the future.<sup>11</sup>

The remaining sections are the historiography, case study, and a conclusion. The historiography will highlight the key ideas and themes previous authors have written on the Gulf War. The case study of the Gulf War will begin with the strategic and operational context that coalition forces operated under, intelligence dissemination doctrine at the time, a transition to a look at Operations Desert Shield and Storm, and finish with lessons learned. The conclusion portion of the monograph will consider the application of the Gulf War to today and future LSCO and provide recommendations.

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<sup>11</sup> John Lewis Gaddis, *The Landscape of History: How Historians Map the Past* (New York: Oxford University Press, 2002), 11. Gaddis states that studying the past does not allow people to predict the future. Instead, it expands experience and wisdom, making individuals better prepared.

## Historiography

The Gulf War of 1990-1991 was a resounding victory. A massive build-up of combat power in Saudi Arabia set the stage for a ground campaign that lasted a mere 100 hours. During the attack, coalition forces killed 25-50,000 Iraqi soldiers, took 80,000 prisoners, and destroyed 3,300 tanks.<sup>12</sup> The destruction of the enemy came at a relatively small price; the US Army, for example, had 148 killed despite providing the bulk of forces engaged in the ground campaign.<sup>13</sup> Academic writing on the Gulf War and the US Army has mainly focused on unit histories and descriptions of their deployment, planning, and fighting. Richard Swain, Stephen Gehring, Stephen Bourque, Charles Toomey, and Gregory Fontenot authored books on the experience of units ranging in echelon from Third Army to the First Infantry Division. Many of these units had similar timelines.

Units not in theater followed a similar path after Saddam's brazen invasion of Kuwait.<sup>14</sup> Upon arrival in Saudi Arabia, units waited to receive their equipment at the ports. Once units secured their equipment, they moved to assembly areas and planned for the eventual attack. Operation Desert Storm was swift, confusing, and far more successful than leaders predicted. What led the United States and coalition forces to this unexpected success? According to the authors mentioned above, Operation Desert Storm succeeded due to international support, US Army doctrine and training, superior logistics, and exceptional intelligence.

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<sup>12</sup> Stephen A. Bourque, *Jayhawk! The VII Corps in the Persian Gulf War* (Washington, DC: Department of the Army, 2002), 455.

<sup>13</sup> Joseph S. Nye, Jr., *The Future of Power* (New York: PublicAffairs, 2011), 34.

<sup>14</sup> Gregory Fontenot, *The 1st Infantry Division and the US Army Transformed: Road to Victory in Desert Storm, 1970-1991* (Columbia: University of Missouri Press, 2017), 77-78; Charles Lane Toomey, *XVIII Airborne Corps in Desert Storm: From Planning to Victory* (Central Point: Hellgate Press, 2004), 15-16; Bourque, *Jayhawk!*, 122, 139. All the authors put forth evidence of Saddam's thoughts and decisions. Fontenot stated Saddam's analysis and calculations impacted the success of coalition efforts because he believed America lacked the will to fight, that he was the leader of the Arabs and they owed him, that the British had created Kuwait (making it illegitimate), and that Kuwait was drilling beneath Iraq. Toomey said the reasons Saddam invaded Kuwait was his belief that he had defended Arab interests in the Iran-Iraq war, and they should pay him back. Bourque said Saddam's decision not to conduct spoiling attacks during the build-up of combat power was a severe miscalculation because the Americans were vulnerable.

International institutions provided the foundation for the ultimate coalition and the legitimacy of future actions.<sup>15</sup> Sanctions by the United Nations were the backbone for the United States Congress' decision to authorize the use of military force.<sup>16</sup> International citizens and military support to defeat Iraq was abundant while the incorporation of British and French divisions into the attack plan highlighted coalition interoperability and international support.<sup>17</sup> The interoperability of other national militaries proved critical at the tactical level, where British headquarters co-located with the Americans to decrease the likelihood of fratricide.<sup>18</sup>

AirLand Battle was United States doctrine at the time. It focused on the operational and tactical levels of war to apply combat power while seizing the initiative. It acknowledged the three-dimensional nature of the world and valued striking from an unexpected direction in a synchronized manner designed to disrupt the enemy in depth.<sup>19</sup> Swain stated that Desert Storm exemplified AirLand Battle because the operation imposed the coalition's will on the enemy and threw the Iraqis off-balance with blows from unexpected directions and rapid follow-ups.<sup>20</sup> In

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<sup>15</sup> Ian Hurd, "Legitimacy and Authority in International Politics," *International Organization* 53, no. 2 (Spring 1999): 381, accessed November 17, 2019, <https://www.jstor.org/stable/2601393>.

<sup>16</sup> Richard M. Swain, *Lucky War: Third Army in Desert Storm* (Fort Leavenworth: US Army Command and General Staff College Press, 1994), 3.

<sup>17</sup> Swain, *Lucky War*, 93-95; Bourque, *Jayhawk!*, 34; Toomey, *XVIII Airborne Corps*, 198; Stephen P. Gehring, *From the Fulda Gap to Kuwait: US Army, Europe and the Gulf War* (Washington, DC: Government Printing Office, 1998), 217-221. Swain discussed the political and military considerations in bringing the British and French into the plan. The French were reluctant to subordinate themselves to a US commander until the minister of defense stepped down, and the British wanted to be in a position to utilize their training. Toomey said the French possessed light tanks that may have been vulnerable to Iraqi tanks, but those light tanks combined with their attack helicopters made them ideal for the screening mission along the western flank of the coalition. Gehring outlined the support provided by German citizens at the behest of their government as well as a few anti-war protests that received backlash from the broader community.

<sup>18</sup> Bourque, *Jayhawk!*, 236-237. Bourque stated the co-location of a British alternate command post with the 1st Infantry Division de-conflicted unit boundaries and increased visibility between commands.

<sup>19</sup> US Department of the Army, Field Manual (FM) 100-5, *Operations* (Washington, DC: Government Printing Office, 1986), 14-18. AirLand Battle focused on issuing the commander's intent and enabling decentralized execution while acting faster than the enemy can respond. This doctrine required integrated fires, airpower, and a focus on the operational level to ensure the operations occurred in a manner that kept the enemy off balance and vulnerable.

<sup>20</sup> Swain, *Lucky War*, 73.

order for the doctrine to work, coalition forces had to possess the right equipment. Toomey asserted that Desert Storm validated the concept of the Big Five. M1 Abrams tanks, Bradley Fighting Vehicles, Apaches, Blackhawks, and Multiple Launch Rocket Systems all performed admirably in the desert conditions.<sup>21</sup> Doctrine and assigned equipment require complex and challenging training to ensure service members have confidence in their ability to fight and win. The National Training Center provided this environment for the 1st Infantry Division, according to Fontenot.<sup>22</sup> Ultimately, Desert Storm validated AirLand Battle and its effectiveness when applied against an adversary that attempted to fight the United States conventionally.

Logistics are critical in any war, and Desert Storm proved no different. The United States had logistics superiority when compared to Iraqi forces and employed this advantage in the lead-up to and execution of the attack.<sup>23</sup> Even with the United States' superiority, there were challenges. A lack of transportation equipment during Desert Shield forced the United States to hire local contractors to move heavy assets.<sup>24</sup> Additionally, Fontenot highlighted the difficulty in tracking the movement of hard-to-deliver parts across vast distances with multiple storage sites located throughout Saudi Arabia. This tracking deficiency created inefficiencies because engines and transmissions were lost, which compounded the strain created by a lack of transportation assets.<sup>25</sup> Toomey wrote that the distances involved challenged the abilities of logistic units to provide adequate food, fuel, ammunition, and medical support during Desert Storm.<sup>26</sup> As an

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<sup>21</sup> Toomey, *XVIII Airborne Corps*, 434.

<sup>22</sup> Fontenot, *The 1st Infantry Division*, 452.

<sup>23</sup> Bourque, *Jayhawk!*, 457-458. Bourque discussed the logistics solutions and how improvisation succeeded early in the war. As the build-up continued, the logistics capability of the United States far outclassed the Iraqis and was critical in the success of the attack.

<sup>24</sup> Toomey, *XVIII Airborne Corps*, 208-212. Toomey outlined the challenges encountered in moving equipment and Soldiers to the front lacking movement equipment and how the obstacles encountered resulted in the United States contracting Saudi nationals to assist.

<sup>25</sup> Fontenot, *The 1st Infantry Division*, 210, 379-380. Fontenot described the difficulties in receiving and tracking critical components in Saudi Arabia and how close to culmination the 1st Infantry Division came on February 27, 1991.

<sup>26</sup> Toomey, *XVIII Airborne Corps*, 398.

example of the challenges presented during the attack, Bourque pointed to the heavily armored force reliance on fuel. An M1 Abrams could operate for six to eight hours but required a stop to refuel.<sup>27</sup> These factors combined to set conditions where the 1st Infantry Division almost culminated during the ground campaign.

Concerning intelligence, authors highlighted doctrine, pre-deployment preparation on Iraqi tactics, and new intelligence collection platforms able to provide imagery as successes. Frustrations with intelligence included a lack of specificity on Iraqi unit locations during pre-deployment, hard copy dissemination speed and ability, a lack of relevant intelligence as conditions evolved, and an inability to keep pace with units during the attack.

Intelligence doctrine improved anticipation of the Iraqi array of forces and their preferred tactics. This information proved decisive when coalition forces first attacked. Intelligence Preparation of the Battlefield (IPB) assisted in the creation of templates that depicted Iraqi tactics and enabled uniform dissemination to subordinate units, according to Bourque.<sup>28</sup> The level of detail provided commanders with a clear understanding of what to expect, but could not answer dynamic questions regarding intent. For example, intelligence estimates did not attempt to determine whether Iraqi forces would use chemical weapons to enhance their defense. It was unclear whether Saddam possessed the will to use them.<sup>29</sup>

During pre-deployment, Fontenot underscored the published pamphlets issued soon after Iraq invaded Kuwait as valuable to Soldier preparation because they detailed how the Iraqi Army preferred to fight.<sup>30</sup> The frustration commanders had was that the pamphlets did not provide information on enemy locations in addition to their tactics. Therefore, the pamphlets ended up being useful information, but not intelligence.

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<sup>27</sup> Bourque, *Jayhawk!*, 249.

<sup>28</sup> Bourque, *Jayhawk!*, 197.

<sup>29</sup> Bourque, *Jayhawk!*, 140.

<sup>30</sup> Fontenot, *The 1st Infantry Division*, 105.

The inability of intelligence to pinpoint Iraqi units during pre-deployment frustrated units. Some commanders held daily briefings to provide updates on the latest intelligence regarding Iraqi equipment and unit locations. As these briefings continued through Desert Shield, many commanders expressed annoyance at the amount of intelligence they received. While the location of Iraqi units became known with time, the condition of the terrain and its ability to support vehicles remained unclear. This lack of clarity hampered planning and limited commander options.<sup>31</sup>

As units established themselves during the build-up in theater, the intelligence picture began to take shape. The location of Iraqi units became available due to imagery intelligence, which enabled better planning for coalition forces. Platforms such as the Joint Surveillance Target Acquisition Radar System (JSTARS) saw extensive use and provided an additional source of intelligence, although it occasionally generated false reports.<sup>32</sup> These collection assets solidified the location of Iraqi units, including the highly capable Iraqi Republican Guard Forces.<sup>33</sup> Within three months, intelligence assets identified 400,000 Iraqi soldiers, 3,600 tanks, and 1,300 artillery pieces opposing coalition forces in Kuwait.

At times, coalition forces received imagery intelligence by hand rather than electronic means, an inefficient and slow method. While access to imagery gradually improved, a lack of hard copy maps limited overall understanding.<sup>34</sup> A lack of communications architecture during Desert Shield contributed to the need for hard copy intelligence. While units in theater scrambled

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<sup>31</sup> Bourque, *Jayhawk!*, 26, 36.

<sup>32</sup> Fontenot, *The 1st Infantry Division*, 200.

<sup>33</sup> Fontenot, *The 1st Infantry Division*, 74, 251, 323.

<sup>34</sup> Fontenot, *The 1st Infantry Division*, 170, 200, 221, 245. Fontenot mentioned that maps arrived at VII Corps and 1st Infantry Division on pallets. The difficulty units experienced in receiving information was partly because intelligence assets focused on Scud launches. Updated imagery and details of Iraqi Army movements provided a large impact at the tactical level for US Army units. US Army units' understanding of the Iraqi order of battle and locations informed planning and sharpened the attack details.

to establish the network, the units deploying to Saudi Arabia craved more and more information.<sup>35</sup>

One key issue Fontenot identified was the inability of intelligence to keep pace with combat units during Desert Storm.<sup>36</sup> This deficiency became a massive problem for commanders as they prepared for complicated maneuvers such as a forward passage of lines. A lack of intelligence led to simplified attack plans that may not have been ideal and exposed servicemembers to higher risk.<sup>37</sup>

The authors discuss many strengths and weaknesses of intelligence during the Gulf War, but there is a general lack of detail on the underlying issues with dissemination. The next section will detail the challenges faced by intelligence professionals regarding dissemination and BDA, how they addressed them, and where they fell short.

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<sup>35</sup> Bourque, *Jayhawk!*, 97.

<sup>36</sup> Fontenot, *The 1st Infantry Division*, 311.

<sup>37</sup> Fontenot, *The 1st Infantry Division*, 324.

## Operations Desert Shield and Desert Storm

The Gulf War showcased the impact technology had on intelligence collection. Satellite imagery, the introduction of unmanned aerial vehicles, and the use of JSTARS all enhanced the ability of commanders to view the battlefield with greater clarity. Many of these capabilities saw their first wartime use during the Gulf War.<sup>38</sup> However, having the ability to collect information is not enough. There must be a process that focuses collection on areas and points that are critical to the commander's decision-making. Once collected, the intelligence must be processed and disseminated quickly to be useful, which requires a network with adequate capacity: the constant maneuver, competing operational and tactical requirements, and limited resources complicated dissemination. To understand the environment in which intelligence collection operated in during the conflict and the challenges it presented, this case study will examine the war's strategic, operational, and tactical context, the doctrine for dissemination in 1991, transition to intelligence collection and dissemination during Desert Shield, Desert Storm operations, and conclude with research on BDA operations.

### Strategic, Operational, and Tactical Context

Globally, the United Nations established the legitimacy of military action against Iraq through multiple resolutions. On August 2, 1990, a resolution condemned the invasion and demanded a withdrawal. On August 6, the institution imposed a trade and financial embargo. Other resolutions focused on the release of detainees and foreign nationals, expansion of embargoes, and calls to halt the continued destruction of Kuwait. The most critical resolution passed on November 29, 1990, with the authorization to use 'all means necessary' to enforce

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<sup>38</sup> Committee on Armed Services, "Intelligence Successes and Failures in Operations Desert Shield/Storm," 103rd Cong., 1st sess., 1993, 8-9.

previous resolutions.<sup>39</sup> This authorization ensured that the international community would see the use of force as legitimate and authorized.<sup>40</sup>

Engaging with regional actors secured support by leveraging established institutions and diplomacy with different states to ensure legitimacy. The Arab League aided this effort when they met one week after Saddam invaded Kuwait and voted to urge Iraq to withdraw from Kuwait.<sup>41</sup> Its vote laid the foundation for Western engagement in the region. Not every instance of local support was so straightforwardly helpful. For instance, Israel's solidarity with the United States and willingness to assist militarily could have stoked Arab resistance. The United States' commitment of air defense assets to Israel protected them and kept the war from expanding.<sup>42</sup> With Arab support, Israeli neutrality, and military support from other international actors, the United States operated in a complex strategic environment that had implications for intelligence.

Domestically, America responded quickly to establish its position regarding Iraq. On August 5, President George H.W. Bush detailed America's strategy and end state. The president's stated objectives included the immediate and complete withdrawal of all Iraqi forces from Kuwait, restoration of Kuwait's government, ensuring the security of Saudi Arabia and the Persian Gulf, and the safety and protection of American citizens that were abroad.<sup>43</sup> These objectives established the frame for the Combatant Command responsible for the region.

General Norman Schwarzkopf commanded United States Central Command (CENTCOM), making him the chief operational artist and commander of the Gulf War. He led a

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<sup>39</sup> US Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress*, April 1992, 368-369. These pages summarized the resolutions adopted by the security council and show the progression of sanctions and calls for Iraq to halt its actions.

<sup>40</sup> Hurd, "Legitimacy and Authority in International Politics," 381.

<sup>41</sup> US Department of Defense, *Conduct of the Persian Gulf War*, 60.

<sup>42</sup> US Department of Defense, *Conduct of the Persian Gulf War*, 66.

<sup>43</sup> US Department of Defense, *Conduct of the Persian Gulf War*, 58, 66. These pages explained the movement of the USS Independence battle group from the Indian Ocean to the Gulf of Oman and detailed how the United States established secure communications to ensure transparency. The United States also deployed Patriot batteries to allay Israeli fears and prevent them from providing a military response.

coalition effort that bridged the strategic and tactical levels, answerable to political leaders. Schwarzkopf's plan strove to leverage coalition strengths while operating within current doctrinal frameworks that called for maneuver and disruption in depth to defeat Iraq.<sup>44</sup> His plan focused on mass and maneuver of tactical formations to engage the enemy combined with a concerted effort to attack the depth of the enemy through airpower, missiles, or airmobile forces to disrupt enemy actions while guarding against culmination.<sup>45</sup> Using the President's objectives as a reference, Schwarzkopf's mission for CENTCOM was "when directed by the National Command Authority, Commander in Chief, United States CENTCOM will conduct offensive operations in concert with coalition forces to: neutralize Iraqi National Command Authority; eject Iraqi armed forces from Kuwait; destroy the Republican Guard; as early as possible, destroy Iraqi's ballistic missile, nuclear, biological, and chemical warfare capabilities; and assist in the restoration of the legitimate government of Kuwait."<sup>46</sup> It was up to General Schwarzkopf to determine how to accomplish his mission, and intelligence was critical to informing decision-making.

Immediately subordinate to CENTCOM was Army Central (ARCENT).<sup>47</sup> Its commander was Lieutenant General Yeosock, and its mission was to "continue to establish a defense well forward in sector and, on order, conduct offensive operations to destroy the Republican Guard Forces Command and defeat Iraqi forces in Kuwait."<sup>48</sup> To accomplish this mission, ARCENT had two US Corps assigned to it: the VII and XVIII. Lieutenant General Franks commanded VII Corps at the tactical level, and their mission was to "on order, VII (US) Corps attacks to penetrate

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<sup>44</sup> US Army, FM 100-5, 31-32.

<sup>45</sup> US Army, FM 100-5, 31-32. The manual detailed considerations at the operational level and during different types of war, such as static or mobile.

<sup>46</sup> Headquarters, US Central Command, "USCINCCENT OPLAN for Operation Desert Storm: USCENTCOM Operations to Eject Iraqi Forces from Kuwait," December 16, 1990, 9.

<sup>47</sup> Swain, *Lucky War*, 25. ARCENT had three separate duties and responsibilities: a service component command (ARCENT), theater army (Third Army), and numbered field army (Third Army). Each carried different requirements, but throughout this monograph, to avoid confusion, ARCENT will be used.

<sup>48</sup> Headquarters, VII (US) Corps, "OPLAN 1990-2: Operation Desert Saber," January 13, 1991, 3.

Iraqi defenses and destroy the Republican Guard Forces in zone. Be prepared to defend northern Kuwait border to prevent re-seizing Kuwait.” The VII Corps’ task to destroy the Republican Guard Forces identified the corps as the main effort for the operational level during the attack.<sup>49</sup>

At the division level, the 24th Infantry Division (Mechanized) was the main effort of the XVIII Airborne Corps and had Major General Barry McCaffrey as its commander. Its mission was “on order, 24th Infantry Division (Mechanized) conducts corps main attack in zone to block Euphrates River Valley location (Objective Gold); continues attack to the east to destroy Iraqi forces vicinity Jalibah Air Force Base (Objective Orange).”<sup>50</sup> XVIII Airborne Corps was arrayed to the west of VII Corps, providing the broad left hook for the attack designed to cut off the Iraqi Army retreat.<sup>51</sup>

## Intelligence Dissemination Doctrine

Within doctrine, intelligence dissemination of the era took many forms. It could be done verbally through briefings’; written in the form of estimates, annexes, and operations orders; or through designated channels in the communications network.<sup>52</sup> The keys to dissemination were ensuring required intelligence arrived on time, in a usable form, that it was relevant to the unit receiving it, and that the intelligence was secure.<sup>53</sup> The reason for the many forms of dissemination during the Gulf War was because it depended on the environment units operated in and organic communication capabilities. Within the levels of headquarters, dissemination methods differed. The higher the headquarters (CENTCOM and ARCENT as an example), the

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<sup>49</sup> Headquarters, VII (US) Corps, “OPLAN 1990-2,” 11-12.

<sup>50</sup> Headquarters, 24th Infantry Division (Mechanized), “OPLAN Desert Storm 91-3,” January 17, 1991, 3-4.

<sup>51</sup> Toomey, *XVIII Airborne Corps*, 178-179.

<sup>52</sup> US Department of the Army, Field Manual (FM) 34-10, *Division Intelligence and Electronic Warfare Operations* (Washington, DC: Government Printing Office, 1986), 4-13.

<sup>53</sup> US Department of the Army, Field Manual (FM) 34-1, *Intelligence and Electronic Warfare Operations* (Washington, DC: Government Printing Office, 1987), 3-61.

more likely dissemination of intelligence occurred through networks or personal communication with relevant individuals. However, between the operational and tactical levels, and within tactical organizations, dissemination over networks became more challenging due to the distances involved and capabilities that existed.

The IPB process, in particular, demonstrated the usability and relevance aspects of dissemination. IPB provided units an understanding of the environment, identified gaps in knowledge, located the threat, and determined what the threat was likely to do according to their doctrine. As a result, they identified targets for intelligence collection and fires.<sup>54</sup> One of the most important outputs of the process was graphics that Soldiers disseminated to provide units with a common understanding. Every echelon in the Gulf War conducted IPB and was responsible for the dissemination of the resulting products. The IPB products were updated as new information became available that provided greater clarity on the situation facing coalition forces.

Intelligence doctrine identified dissemination as critical to the overall success of operations but did not provide information on how to accomplish it because of varying capabilities in units and different operating environments. This variation meant that different units had different methods and capabilities that impacted dissemination. Without a standard, established network for dissemination, units had to use every resource available to ensure intelligence arrived at the appropriate echelon of command.

## Operation Desert Shield

As Operation Desert Shield began, all energy focused on the build-up of forces in order to ensure Saudi Arabian sovereignty and to force Iraq from Kuwait. The strategic level of war provided the framework for all operations, and the operational level made decisions related to force flow and how capabilities operated within the strategic guidance. Operational level

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<sup>54</sup> US Army, FM 34-10, 4-3-4-7. The FM listed the steps in detail and how to integrate the assessments into the planning process.

intelligence staffs strove to ensure intelligence received from strategic and operational platforms arrived at tactical headquarters through the establishment of the dissemination architecture.<sup>55</sup> Tactical level organizations used available intelligence to plan for the eventual attack. During Desert Shield, intelligence was ultimately able to overcome challenges associated with manning deficiencies, dissemination capabilities, and interoperability by implementing innovative solutions aggressively.

At the strategic level, the coalition environment the US Army operated in impacted intelligence and its dissemination. The issues encountered by the coalition are timeless, and the problems encountered in the Gulf War occur in peacetime as well. First, Soldiers had to be mindful of the classification of intelligence and who was receiving it to determine whether they could share it. One positive note from the Gulf War is that America received intelligence from several countries that wished to remain anonymous.<sup>56</sup> This sharing indicated a high degree of trust between nations and a belief in the legitimacy of coalition efforts. Additionally, cultural considerations influenced interactions between countries and increased the complexity of the environment while raising barriers to the receipt of intelligence. For instance, many Americans were frustrated with the amount of intelligence that was shared by the Saudis. However, it came to light that the Saudis did not share such information with their military services, indicating it was a cultural or institutional preference to withhold intelligence.<sup>57</sup>

The operational level is where decisions and force structure directly impacted the ability to disseminate intelligence. At the beginning of Desert Shield, poor manning of CENTCOM and ARCENT headquarters had cascading effects. The staff in theater at the beginning was too small to answer questions from tactical headquarters effectively and lacked adequate training, while the intelligence collection platforms in-theater and dissemination architecture was minimal. The

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<sup>55</sup> US Department of Defense, *Conduct of the Persian Gulf War*, 75.

<sup>56</sup> Committee on Armed Services, "Intelligence Successes and Failures," 12.

<sup>57</sup> Committee on Armed Services, "Intelligence Successes and Failures," 12-13.

decision by Schwarzkopf to prioritize combat forces over support elements meant that understaffing became a long-term problem, collection platforms remained scarce, and the communications architecture lacked adequate personnel to establish it quickly. ARCENT was able to overcome these massive challenges by developing a synchronization matrix that prioritized collection, establishing a courier network to disseminate intelligence, and sending liaisons to subordinate headquarters to facilitate information flow.

Understanding the enemy combat power that faced the coalition, Schwarzkopf elected to prioritize combat forces over supporting functions such as intelligence.<sup>58</sup> His decision ensured that the United States could counter the potential for further Iraqi aggression into Saudi Arabia, but as is the case with most decisions, it involved trade-offs. Support elements, including intelligence platforms and personnel, had to vie with other non-combat elements for the limited spaces remaining.

One manifestation of the manning difficulties was the lack of personnel in place at CENTCOM and ARCENT. The manning of the headquarters staff before Saddam's invasion meant that Schwarzkopf's decision had a massive impact on the overall capability of operational intelligence. In reports after the war, it became apparent that the CENTCOM and ARCENT intelligence staffs should have been expanded during peacetime, and also developed a rehearsed, detailed plan to expand the staff rapidly in the event of war within their area of responsibility.<sup>59</sup> The military has limited resources, and strategic decisions must ensure that the available resources maintain national security and protect the interests of the United States, leading to trade-offs. During the Army analysis in the 1980s, CENTCOM and ARCENT became an economy of force command, accepting risk in the theater to place forces elsewhere. The invasion of Kuwait thus caught the command in a position where it was less able to fulfill its

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<sup>58</sup> Committee on Armed Services, "Intelligence Successes and Failures," 4.

<sup>59</sup> Committee on Armed Services, "Intelligence Successes and Failures," 1.

requirements.<sup>60</sup> Further, the staff that was present lacked training, assets, and an understanding of how to expand rapidly.<sup>61</sup> During the build-up, CENTCOM headquarters possessed few individuals that understood joint doctrine, making coordination between services challenging.<sup>62</sup> CENTCOM, being the combatant command, had to work with all services to provide mutual understanding and ensure mission accomplishment. A lack of familiarity with joint doctrine created unnecessary friction in the planning and processes that CENTCOM executed.

Another manning problem involved the ability to answer requests from subordinate commanders. While capabilities streamed slowly into theater to build the architecture and answer requirements, the initial shortfall of personnel at CENTCOM and ARCENT meant that intelligence professionals spent much of their time responding to immediate requests rather than longer-term projections. For example, ARCENT admitted that they could only begin to answer corps requirements on February 1, well after the units were in theater and shortly before the ground war began.<sup>63</sup> Manning decisions account for risks associated with a specific environment and the cost required to staff units fully.<sup>64</sup> Unfortunately, the risk accepted in regards to manning created an environment where ARCENT was unable to keep pace with requests from corps headquarters. Even though Saddam invaded Kuwait in August, ARCENT was still building its staff in January.<sup>65</sup> ARCENT became more responsive to subordinate needs as Desert Storm approached, but if Saddam had attacked the coalition rather than staying on the defensive, the ARCENT staff would have been unprepared.

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<sup>60</sup> John F. Stewart, Jr., *Operation Desert Storm the Military Intelligence Story: A View from the G-2 3d US Army* (Riyadh, Saudi Arabia, 1991), 7.

<sup>61</sup> Committee on Armed Services, "Intelligence Successes and Failures," 5.

<sup>62</sup> Committee on Armed Services, "Intelligence Successes and Failures," 1.

<sup>63</sup> Stewart, *Operation Desert Storm*, 7.

<sup>64</sup> Committee on Armed Services, "Intelligence Successes and Failures," 5.

<sup>65</sup> Stewart, *Operation Desert Storm*, 16.

The intelligence personnel shortfalls at CENTCOM and ARCENT also impacted the ability to control in-theater intelligence assets and the capacity to build the required communications architecture for intelligence dissemination. While the number of platforms in theater was minimal at the outset of the war, it still represented a critical capability to develop understanding, and trained and competent staff is needed to provide the required information.<sup>66</sup>

War is a human endeavor, and one of the regrettable barriers to dissemination centered on personalities. While not directly linked to inadequate manning, it reflects the capacity of personnel to do their jobs. After the Gulf War, reports indicated that, at times, personnel at higher headquarters such as ARCENT did not consistently pass intelligence to subordinate units.<sup>67</sup> Because of the top-down nature of intelligence during the Gulf War, one individual at the top could have created compounding problems at lower levels. The alleged hoarding of intelligence was an admittedly touchy subject, but the reasons given for not releasing intelligence—because subordinate units did not need it or because the communications network could not support it—appear inadequate given the environment.

Subordinate intelligence organizations faced similar manning problems. In particular, the military intelligence brigade assigned to the theater, the 513th, faced severe shortages in personnel.<sup>68</sup> The 513th was supposed to provide critical capability and capacity to ARCENT, and the manning shortfalls multiplied issues. In late December, the organization still had minimal personnel, mostly of lower rank. The emphasis from ARCENT G-2 leadership ensured more experienced people arrived in December and January to increase capacity, but their absence before that time severely hampered organizational effectiveness.<sup>69</sup> This deficiency created strain

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<sup>66</sup> Committee on Armed Services, “Intelligence Successes and Failures,” 7.

<sup>67</sup> Committee on Armed Services, “Intelligence Successes and Failures,” 16.

<sup>68</sup> Stewart, *Operation Desert Storm*, 35.

<sup>69</sup> Stewart, *Operation Desert Storm*, 4.

between the operational and tactical levels because they were unable to provide the support requested.

With the manning problems identified, a closer look at the communications architecture in theater is warranted. The stress on the communications architecture started as the corps headquarters arrived in theater. ARCENT stated it was unable to provide all of the intelligence the subordinate units needed to be successful.<sup>70</sup> The lack of available capacity created a situation where personal discretion determined which intelligence arrived at subordinates. This process increased the likelihood that critical intelligence would not arrive at the desired headquarters. The communication situation was so dire that Americans considered leasing time on Soviet communication satellites.<sup>71</sup>

One of the reasons the lack of a communication architecture impacted the Gulf War at a more fundamental level was because of the top-down nature of intelligence in the conflict.<sup>72</sup> The Army Intelligence Agency represented the link to the strategic level that provided a better understanding of the Iraqi forces that faced the coalition, and also possessed the intelligence that tactical leaders needed to finalize their planning for the attack. This strategic-level intelligence was sent to ARCENT for dissemination to the tactical leaders that needed it. ARCENT thus sought to quickly establish secure network communications between its headquarters and the subordinate corps, to disseminate imagery in addition to text and voice communications.<sup>73</sup> Unfortunately, the manning issues discussed above, and the low priority placed on intelligence systems slowed efforts. Ultimately, ARCENT established interconnectivity on February 1,

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<sup>70</sup> Committee on Armed Services, "Intelligence Successes and Failures," 16.

<sup>71</sup> Committee on Armed Services, "Intelligence Successes and Failures," 16.

<sup>72</sup> Stewart, *Operation Desert Storm*, 9.

<sup>73</sup> Stewart, *Operation Desert Storm*, 7. Stewart outlined the efforts to connect division leaders with the national level by using different communication networks. Missing are details on how long it took to establish the network and how effective the networks were.

1991.<sup>74</sup> The late establishment meant that workarounds had to be built and maintained to ensure intelligence dissemination.

Some of the problems encountered with dissemination and the communications architecture were generated before the Gulf War by technical choices made within the American military. The best example of this is the challenge the services experienced concerning imagery. The platform used to ensure imagery arrived to the end-user was the Secondary Imagery Dissemination System (SIDS). However, each service possessed its own variant of the SIDS, thus creating issues. It quickly became apparent that only four of the twelve systems in theater could communicate with each other.<sup>75</sup> While the services knew a decade before the Gulf War that they would struggle with interoperability, no one had fixed it.<sup>76</sup> This failure created a gap: commanders needed the imagery, and ARCENT struggled to deliver it electronically because of the communications architecture deficiencies.

One way the intelligence staff attempted to relieve the strain on dissemination networks was by maximizing the intelligence collection platforms in theater. Shortly after arriving in theater, ARCENT identified issues that challenged the overall relevancy of intelligence: there was no way to ensure that the scarce collection platforms collected on the most critical requirements of subordinate corps.<sup>77</sup> To fill this gap, ARCENT created a synchronization matrix that ensured the assets collected information on the most impactful area at the appropriate time. This matrix had to be flexible to emergent needs and easily understood by anyone who looked at it so that they maximized the available dissemination network and deconflicted requirements. It worked to

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<sup>74</sup> Stewart, *Operation Desert Storm*, 7.

<sup>75</sup> Committee on Armed Services, "Intelligence Successes and Failures," 13.

<sup>76</sup> Committee on Armed Services, "Intelligence Successes and Failures," 14.

<sup>77</sup> Stewart, *Operation Desert Storm*, 8-9. Stewart outlined the process ARCENT went through to ensure the timeliness of intelligence and that it was coordinated with the ground campaign to provide the best intelligence available at the critical points. The matrix provided information to commanders on 27 occasions between G-7 (February 17, 1991) and G+4 (February 28, 1991). The author states the communication network provided the means for dissemination.

provide corps commanders with critical information on the enemy, such as their strength and location, and relied on dissemination networks to ensure the information arrived on time.

Another method ARCENT developed as a solution to network dissemination issues during the Gulf War included a simple and improvised system of couriers.<sup>78</sup> Recognizing units needed imagery and information on enemy positions, couriers presented an expedient, although inefficient, work-around. The couriers originated in Riyadh and overcame challenges in locating units to deliver their intelligence. Adequate communications architecture would have mitigated, but not eliminated, the need for this courier network. For example, images and overlays could have used the network, but maps had to be in hard copy because of a lack of technological capability within vehicles. Many authors highlighted the frustration units felt because they could not gain access to adequate maps.<sup>79</sup>

In a dynamic environment with rapidly changing conditions, a network is the quickest method to update enemy locations and provide imagery. A courier system is inefficient, and documents indicate many issues surfaced. Couriers delivered to the wrong unit, provided an inadequate supply of maps, and the vast distances in Saudi Arabia hindered the timeliness and hampered the overall effectiveness of the courier network.<sup>80</sup> Couriers can be useful and fill gaps when units are in static positions, but that changes as units begin to maneuver. The distances encountered during the Gulf War as units operated in Saudi Arabia highlight the limitations of couriers and the need for reliable networked communications.

In addition to couriers, ARCENT used liaisons to disseminate intelligence. The 513th Military Intelligence Brigade was the theater intelligence brigade assigned to ARCENT headquarters, and they provided the personnel for liaisons at corps' headquarters that linked the

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<sup>78</sup> Stewart, *Operation Desert Storm*, 10-11.

<sup>79</sup> See Fontenot, *The 1st Infantry Division*, 170, for example.

<sup>80</sup> Stewart, *Operation Desert Storm*, 10-11.

two.<sup>81</sup> This liaison network aided everyone in understanding the situation. The 513th personnel understood ARCENT capabilities and provided the information to subordinate headquarters and also gained valuable insight into the needs of the corps' and communicated them to ARCENT headquarters. Of note is that given the limited personnel and resources in theater, ARCENT still found it valuable to place individuals from the 513th into subordinate headquarters, so much so that the conference report after the war recommended intelligence liaisons become a standing element between higher headquarters and tactical units. Tactical leaders at the conference saw the value provided at corps and wanted to place liaisons at the lowest level possible.<sup>82</sup>

Analyzing the tactical level, intelligence professionals provided critical support in the form of IPB, but struggled to receive intelligence because of the challenges with dissemination at the operational level, and because Schwarzkopf limited the use of tactical collection platforms. Overall, aside from frustrations with support from higher headquarters, tactical-level intelligence performed well. Schwarzkopf's decision to restrict flights over Iraqi positions created additional strain on the dissemination network because tactical leaders could not collect intelligence using their organic collection platforms. It ensured intelligence assets remained available and that the United States did not instigate a fight before CENTCOM was ready. But the decision forced tactical commanders to rely on ARCENT intelligence products to develop their understanding of the battlefield, challenging the capacity of dissemination channels.<sup>83</sup>

IPB, in particular, served Soldiers and leaders well. The doctrinal process ensured that commanders understood the environment and how the Iraqis would likely fight.<sup>84</sup> The intelligence staff of the 1st Brigade, 1st Infantry Division, demonstrated excellent proficiency in

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<sup>81</sup> Stewart, *Operation Desert Storm*, 4-5.

<sup>82</sup> Headquarters, US Army Training and Doctrine Command (TRADOC), *Desert Storm Conference Report* (Fort Monroe: Office of the Chief of Public Affairs, 1992), 1.

<sup>83</sup> Committee on Armed Services, "Intelligence Successes and Failures," 14.

<sup>84</sup> Jim Stockmore, *1st Brigade, 1st ID, Desert Shield/Storm History* (Fort Riley, KS, 1991), 41-47.

the lead-up to Desert Storm, creating multiple Iraqi course of action templates based on their known tactics and the likelihood that they would use defensive strongpoints. These templates proved critical in the planning process as the unit prepared to execute breach operations.

The Gulf War Conference Report that included feedback from Franks, the VII Corps Commander during the Gulf War, is also instructive. It stated that tactical intelligence performed well due to the preparation of the battlefield, which came from IPB doctrine.<sup>85</sup> It is clear from the tactical examples that the intelligence doctrine was well-executed during Desert Shield and ensured everyone understood what to expect as they transitioned from the defense to the attack. The intelligence staffs effectively took the tactics outlined in the pamphlets during pre-deployment and applied them to the Kuwait terrain.

In summary, Desert Shield presented problems to intelligence dissemination that professionals overcame through ingenuity and tenacity. At the strategic level, the coalition environment required alertness to ensure appropriate clearance and relationships that enable sharing. The operational level created the most innovative solutions in overcoming intelligence dissemination problems by using a synchronization matrix, couriers, and liaisons but struggled to present all intelligence due to compounding issues that primarily resulted from manning issues before the war. The tactical level demonstrated excellent proficiency with IPB and overcame intelligence dissemination deficiencies and constraints that were imposed by higher headquarters.

## Operation Desert Storm

As coalition forces transitioned from the static positions present in Desert Shield to a war of maneuver in Desert Storm, challenges to dissemination increased dramatically. The US Army raced across vast distances, straining dissemination capabilities. The distances involved and the lack of capacity in the dissemination network led to an underdeveloped intelligence picture that failed to answer commanders' questions adequately. Generally, tactical commanders relied on

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<sup>85</sup> Headquarters, US Army TRADOC, *Desert Storm Conference Report*, 1.

their forward-most forces and intelligence received before Desert Storm to make decisions. The reasons for the dissemination problems originated at the operational level but also existed at the tactical level.

During Desert Shield, CENTCOM and ARCENT coordinated well. They successfully reviewed and approved all intelligence disseminated to subordinate units.<sup>86</sup> The static nature of coalition forces and the co-location of CENTCOM and ARCENT in Riyadh enabled this close coordination. Liaisons and couriers facilitated the flow of intelligence from Riyadh to subordinate units, supplementing the communication network, and ensuring delivery of necessary hard-copy products such as maps. Additionally, operational assets such as JSTARS and the U2 collection platforms were able to operate without being challenged.

When the coalition launched its ground attack on February 24, the liaison and courier networks became much less effective. The battle moved so quickly that it was difficult for couriers to find unit headquarters after being sent from Riyadh.<sup>87</sup> This break meant that commanders had to rely on available tactical assets and intelligence received before February 24 to inform operations.<sup>88</sup> VII Corps highlighted the need for a more responsive doctrine designed for offensive operations, a clear indication of problems during Desert Storm.<sup>89</sup> A Brigade from First Infantry Division, when highlighting intelligence contributions during the attack, described contributions provided during planning and preparations rather than anything from the actual assault.<sup>90</sup> These tactical accounts indicate that intelligence systems were unable to provide value during the attack and anticipate Iraqi Army changes as the attack advanced.

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<sup>86</sup> Stewart, *Operation Desert Storm*, 4.

<sup>87</sup> Stewart, *Operation Desert Storm*, 11.

<sup>88</sup> Stewart, *Operation Desert Storm*, 9.

<sup>89</sup> Headquarters, VII (US) Corps, *Enclosure 3 (Major Lessons Learned) to Part 1 (Executive Summary and Historical Narrative) to VII Corps Desert Shield/Desert Storm After Action Report*, 26.

<sup>90</sup> Stockmore, *1st Brigade, 1st ID*, 12-13.

The airborne collections platforms such as the JSTARS and U2 had no problems collecting during Desert Storm and proved their worth in the large scale conflict because the Iraqis were unable to challenge them.<sup>91</sup> ARCENT highlighted the value of JSTARS, even though it was a prototype. VII Corps mentioned JSTARS and unmanned aerial vehicles as proven winners in their section discussing equipment.<sup>92</sup> The break between the operational and tactical levels occurred because of a lack of communications architecture.

Both ARCENT and tactical units, such as VII Corps, discussed the need for better intelligence communications to enable effective communication. ARCENT stated the need to focus on solutions for dissemination, acknowledging the problems they had in providing units with what they required when they needed it.<sup>93</sup> Their recommended solution was to develop a communication system exclusively for intelligence and dissemination. VII Corps, in its review of the war, stated that division level needed imagery, in addition to the requirement for a vast improvement in the intelligence communication system.<sup>94</sup> Both ARCENT and VII Corps reports indicate the break in the dissemination system occurred between the operational and tactical levels. The challenges presented during the rapid movement during Desert Storm broke the available dissemination methods.

At the tactical level, IPB and the tactical intelligence systems could not keep pace with the fight. This problem exacerbated the lack of intelligence the tactical units received from ARCENT. IPB is a snapshot. Constant updates to IPB are required for it to remain relevant, and this proved challenging during Desert Storm. VII Corps highlighted this problem after the war, stating IPB doctrine should be examined and changed to fill the needs of offensive operations

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<sup>91</sup> Committee on Armed Services, "Intelligence Successes and Failures," 7; Stewart, *Operation Desert Storm*, 1.

<sup>92</sup> Headquarters, VII (US) Corps, *Enclosure 3*, 55.

<sup>93</sup> Stewart, *Operation Desert Storm*, 10-11.

<sup>94</sup> Headquarters, VII (US) Corps, *Enclosure 3 (Major Lessons Learned) to Part 1 (Executive Summary and Historical Narrative) to VII Corps Desert Shield/Desert Storm After Action Report*, 26, 33.

better.<sup>95</sup> Due to the complex, adaptive nature of the war and the Iraqi Army system, IPB needed to be able to account for and aid commanders in understanding the changing situation. VII Corps' comments indicate that IPB worked during Desert Shield and preparation but fell short during Desert Storm.

Units knew the battle would be one of maneuver and planned accordingly. 24th Infantry Division placed their most mobile, short-range intelligence assets in direct support to ground elements in order to weight the main effort. This decision meant that the tactical intelligence assets would need to keep pace with combat units and provide up-to-date intelligence. Unfortunately, after the war, it was determined that tactical systems were not up to the task.<sup>96</sup> The culprit behind this problem was the time needed to establish the system after movement, combined with the short range of the systems. The constant set-up and tear-down process revealed a fundamental problem: tactical intelligence was not providing value. The systems, especially signals intelligence platforms, could not be brought into operation before they were required to move again.

The speed and lethality of coalition forces during Desert Storm mitigated many of the challenges encountered regarding intelligence dissemination. The Iraqis represented a willing enemy. They allowed the build-up of overwhelming combat power, lacked training, possessed poor equipment, and employed an inadequate logistics infrastructure. These disadvantages, combined with the overwhelming lethality of coalition forces, ensured that the Iraqi Army was hopelessly overmatched.

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<sup>95</sup> Headquarters, VII (US) Corps, *Enclosure 3*, 26.

<sup>96</sup> Headquarters, 24th Infantry Division, "OPLAN Desert Storm 91-3," B-2; Committee on Armed Services, "Intelligence Successes and Failures," 7. 24th Infantry Division outlined the assignment of the signals intelligence mobile platforms and assignment of the less mobile platforms to units that were to be further in the rear. The Committee determined that tactical intelligence systems, particularly SIGINT platforms, did not provide additional value because of the time required to put them into operation.

## Battle Damage Assessment

Intelligence dissemination primarily relates to capabilities. The communications architecture and equipment present within units largely determines the ability to disseminate intelligence. This section of the monograph focuses on BDA, which is mostly a question of processes with some ties to dissemination. Unfortunately, BDA was a critical task that the US Army executed badly. While inaccurate BDA did not affect the outcome of the war, it can have far-reaching impacts in a broader conflict. BDA is connected to dissemination because higher headquarters must receive it, and networks internal to the Army and between services provide the most efficient method to collate the information, ensure accuracy, and disseminate appropriately.

Throughout the conflict, ARCENT was the headquarters responsible for reporting on the damage inflicted upon the Iraqi Army. The argument behind choosing an Army headquarters over the Air Force was that the ground campaign would be able to provide the most accurate reporting on what they had destroyed.<sup>97</sup> Accurate BDA can provide commanders with a more holistic understanding of the situation. Understanding the combat strength of the enemy can allow units to exploit weaknesses. Unfortunately, in the Gulf War, Army forces in charge of BDA lacked training, adequate intelligence collection platforms, and when commanders did receive BDA information, it lacked context.

One process problem encountered by ARCENT was the lack of training or doctrine amongst American forces on how to conduct BDA. This issue resulted in a situation where the headquarters applied ad-hoc rules of thumb. Because war naturally generates a fog that obscures what is occurring, the attempt to determine damage proved an inexact science.<sup>98</sup> At the beginning of the air campaign, for example, ARCENT assigned A-10 sorties a seventy-five percent kill rate based on faulty assessments. Eventually, the estimate adjusted to thirty-three percent after

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<sup>97</sup> Committee on Armed Services, "Intelligence Successes and Failures," 18.

<sup>98</sup> Clausewitz, *On War*, 85.

feedback and analysis.<sup>99</sup> This significant adjustment gives evidence of how ill-prepared the Army was for the task. The problem with the inaccuracy is the purpose BDA served: to trigger the start of the ground campaign. The guidance was to start the ground war once the Iraqi Army was at fifty percent strength.<sup>100</sup>

After the conflict, ARCENT explained their methodology and the different characteristics they considered. These considerations included whether the targets were armored or artillery, the capability used to attack it, and what asset assessed the damage. It also detailed the inherent tension between ARCENT and other organizations. The Air Force felt ARCENT was undervaluing the damage, while national actors such as the Central Intelligence Agency and Defense Intelligence Agency believed ARCENT was overvaluing it. After the war, ARCENT intelligence staff stated their estimates turned out to be accurate.<sup>101</sup> Unfortunately, the congressional report countered ARCENT's analysis, stating that even the most conservative BDA estimates used were overly optimistic. As evidence, a U2 flew over the battlefield after the war to analyze the damage extensively and determined that ARCENT overestimated the damage by 100 percent.<sup>102</sup>

Doctrine and experience could have mitigated these miscalculations and the exaggeration of enemy damage. Unfortunately, experience in conducting BDA is challenging to gain outside of war. After the war, a conference of tactical leaders at Training and Doctrine Command acknowledged the need to provide a solution for the warfighter.<sup>103</sup> The recommended solution was to create doctrine and reorganize intelligence organizations at the corps and joint levels.

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<sup>99</sup> Committee on Armed Services, "Intelligence Successes and Failures," 18-19.

<sup>100</sup> Committee on Armed Services, "Intelligence Successes and Failures," 19.

<sup>101</sup> Stewart, *Operation Desert Storm*, 20.

<sup>102</sup> Committee on Armed Services, "Intelligence Successes and Failures," 20.

<sup>103</sup> Headquarters, US Army TRADOC, *Desert Storm Conference Report*, 1.

A lack of adequate collection platforms also contributed to the inaccurate BDA. For instance, the threat of Scud attacks required U2 collection platforms to assist in detection. Unfortunately, this limited the U2 platforms available for BDA, a task for which it was ideal.<sup>104</sup> With the already scarce intelligence collections assets available in theater, the Scud hunt strained capabilities further, albeit with the strategic purpose of keeping Israel out of the conflict.<sup>105</sup> One consideration for future conflicts is the need to set some intelligence collection aside expressly for BDA to provide commanders with the most accurate information possible.

One frustration voiced by General Schwarzkopf was a lack of context when intelligence officers briefed him on BDA. Stating that a bridge is a certain percentage destroyed does not assist the commander with decision-making.<sup>106</sup> Commanders want to know whether they can use the bridge or not. Can an Abrams tank drive across it? Can a Bradley? The analysis needed to include both friendly and enemy considerations, so the commander knows the options available to both their forces and the enemy as they continue the fight. Fortunately, this is a simple item to fix. It is a matter of training intelligence officers to view the context from a combat arms commander perspective and provide information in useful terms.

Much of the discussion around BDA focused on the shortcomings of ARCENT headquarters and the subsequent generation of overly optimistic BDA reports. A reliable communications network can provide the backbone for accurate reporting, but it must be combined with doctrine, training, and assigned intelligence collection platforms to correct the BDA deficiency. The short battle mitigated the potential for bad BDA reporting to impact the outcome. In a more protracted battle between near-peer adversaries, BDA becomes a more critical skill. Americans cannot rely on a 100-hour war in a future conflict.

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<sup>104</sup> Stewart, *Operation Desert Storm*, 18.

<sup>105</sup> Committee on Armed Services, "Intelligence Successes and Failures," 6.

<sup>106</sup> Committee on Armed Services, "Intelligence Successes and Failures," 28.

## Conclusion

Operations Desert Shield and Desert Storm were incredibly successful, but it was not a perfect war. The strategic context will always define the frame in which intelligence must operate. During Desert Shield, intelligence support struggled to overcome Schwarzkopf's decision to prioritize combat elements over support units, insufficient manning of CENTCOM and ARCENT headquarters, personality problems, lack of communications architecture, and issues with interoperability. The creation of a courier system, placement of liaisons, and implementation of a synchronization plan ensured relevant intelligence arrived at the appropriate headquarters. The static nature of Desert Shield and the amount of time required to build the requisite forces enabled the development of workarounds and critical communications infrastructure between ARCENT and subordinate headquarters.

During Desert Storm, the break in the intelligence chain occurred between ARCENT and the corps' headquarters. When analyzing the problems in Desert Shield and the solutions developed to overcome them, it is clear why this break occurred. The speed of the war, combined with the distances traveled, required network connections that could not be maintained. This lack of connectivity meant tactical commanders had to rely on outdated intelligence or their organic intelligence assets. Unfortunately, the tactical assets assigned could not keep pace with the combat units. Overarching these intelligence challenges throughout the war was the imprecise accounting of BDA at ARCENT headquarters. Fortunately, the war finished before any intelligence deficiencies significantly impacted the outcome.

Looking at the future, the lessons gained from studying Gulf War intelligence dissemination remain instructive. The world is more complex than it was in 1991, evidenced by the recent creation of Cyber Command and Space Forces, rapid advances in technology, and the return of great power competition. Intelligence dissemination will continue to be critical in the next conflict. The contested nature of any future wars in the air domain will be a departure from

1990-1991. In the Gulf War, the Air Force quickly gained dominance. There is no guarantee that will happen again, and regional actors such as Russia and China have focused on denying access and the ability to build combat power.<sup>107</sup> In this increasingly contested environment, the intelligence community must handle manning deficiencies, communications architecture, interoperability, the speed of war combined with the distances traveled, and conduct BDA in a way that provides an accurate picture of the war.

Trade-offs associated with national priorities and risk mitigation will result in manning deficiencies. In order to prevent the issues encountered at the beginning of Desert Shield, all intelligence staffs at combatant command and component command headquarters must have a plan to scale quickly that identifies the individuals that require notification and how long it will take them to arrive after notification. Further, rehearsals most occur at both the headquarters staff and the individual level so that every party understands their role in the process and what they must do. By expanding rapidly, intelligence staff can mitigate many of the dissemination issues encountered in the Gulf War.

Communication architecture requirements have expanded rapidly. Today, almost all vehicles can electronically display maps and are in constant communication through voice and text with their parent headquarters. This technical capability is vastly different from the capabilities present in the Gulf War, where global positioning satellite technology was relatively new.<sup>108</sup> Linked to this rapid expansion of networks are attacks demonstrating their

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<sup>107</sup> Timothy M. Bonds, Joel B. Predd, Timothy R. Heath, Michael S. Chase, Michael Johnson, Michael J. Lostumbo, James Bonomo, Muharrem Man, and Paul S. Steinberg, "What Role Can Land-Based, Multi-Domain Anti-Access/Area-Denial Forces Play in Deterring or Defeating Aggression?" Rand Corporation, 2017, accessed January 26, 2020, [https://www.rand.org/pubs/research\\_reports/RR1820.html](https://www.rand.org/pubs/research_reports/RR1820.html), ix-xiii. The authors provided a brief synopsis of what Russia and China are employing to achieve strategic goals within their regions and suggestions on what the United States could employ to counter their military posture.

<sup>108</sup> Space and Missile Systems Center and SMC History Office, "Evolution of GPS: From Desert Storm to Today's Users," U.S. Air Force, March 24, 2016, accessed February 11, 2020, <https://www.af.mil/News/Article-Display/Article/703894/evolution-of-gps-from-desert-storm-to-todays-users/>. This article stated that 19 Global Positioning Satellites were operational in 1991 and each unit had at

vulnerability.<sup>109</sup> Cyber Command will have the most substantial responsibility in this environment, tasked with protecting American military networks while contesting the enemy's ability to operate freely in the cyber domain. Its importance in war will grow because technology continues to become more and more integral to military processes and capabilities. Of particular note, the expansion of intelligence platforms and increased demand for intelligence has made communication networks more vital to dissemination.

Interoperability becomes more critical and more complicated as technology advances and more services become involved. Cyber Command will have the most substantial part of interoperability due to our increased network reliance.<sup>110</sup> Any degradation in networks will significantly impact processes and preferred operating methods. Interoperability also extends to our allies, and the challenges inherent in providing information between American and allied networks adds another layer of complexity. As Space Force builds capacity and capability, they must place interoperability at the center of considerations to ensure relevance and the proper functioning of earth-bound forces.<sup>111</sup> Foundational to interoperability is the acquisition process. Army Futures Command, in coordination with the acquisition organizations of other services, must continue to pursue initiatives that enable the Army to be successful in an allied and joint

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least one device capable of communicating with the satellites. Today, this technology provides location services to billions of people.

<sup>109</sup> "Significant Cyber Incidents," Technology Policy Program, Center for Strategic and International Studies, accessed January 26, 2020, <https://www.csis.org/programs/technology-policy-program/significant-cyber-incidents>. This site lists attacks on government agencies, defense and high-tech companies, or economic crimes that incur a loss of more than a million dollars.

<sup>110</sup> Chelsea Barone, "Cybersecurity and Interoperability are a Package Deal for the Defense Community," *The Modern Battlespace: Brought to you by Collins Aerospace*, August 28, 2019, accessed January 26, 2020, <https://modernbattlespace.com/2019/08/28/cybersecurity-and-interoperability-a-package-deal-for-defense-community/#.XjM2-WhKjZk>.

<sup>111</sup> Aaron Boyd, "Space Force Sets First Pitch Day Using Alternative Acquisition Authority," *Nextgov*, January 6, 2020, accessed January 26, 2020, <https://www.nextgov.com/emerging-tech/2020/01/space-force-sets-first-pitch-day-using-alternative-acquisition-authority/162244/>.

environment.<sup>112</sup> Ground forces are large consumers of intelligence, and without interoperability, the amount and type of intelligence the Army can receive decreases dramatically.

The speed of Desert Storm took intelligence systems by surprise. The keys to success are two parts: equipment and training. The equipment the Army uses must be set-up quickly, put into operation, torn down, and moved. This process implies that the range of the systems must be enough to extend beyond the front line of troops as they maneuver, unlike Desert Storm. The equipment must also be interoperable with other intelligence systems and linked into the communications architecture. The 2018 contract for Army intelligence communications systems demonstrates an understanding of how critical dissemination and reach back capability is.<sup>113</sup> Having the right equipment is the first piece. The equally important second step is the presence of personnel trained on the equipment. Realistic training under stress, like that experienced at the National Training Center or Joint Readiness Training Center, prepares personnel to operate in conditions similar to war. These validation exercises require a strong foundation in doctrine and a focus on realistic training at the small-unit level. The more repetitions Soldiers can receive on intelligence equipment, the more likely they will be able to keep pace with combat units during a war of maneuver and add value to commanders.

Shifting from intelligence dissemination to the process of BDA, the final portion of this monograph will focus on doctrine and who should conduct it in the future. BDA doctrine is currently found within targeting and has not changed much from the doctrine that was created

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<sup>112</sup> Dan Lafontaine, “Army Futures Takes Key Step in Enabling Interoperability of Multinational Power Systems,” US Army, June 26, 2019, accessed February 11, 2020, [https://www.army.mil/article/223713/army\\_futures\\_takes\\_key\\_step\\_in\\_enabling\\_interoperability\\_of\\_multinational\\_power\\_systems](https://www.army.mil/article/223713/army_futures_takes_key_step_in_enabling_interoperability_of_multinational_power_systems).

<sup>113</sup> Stephen Carlson, “Army Awards CACI International \$413M for Trojan Strong Comms Support,” Defense News, November 19, 2018, accessed February 12, 2020, <https://www.upi.com/Defense-News/2018/11/19/Army-awards-CACI-International-413M-for-Trojan-Strong-comms-support/3701542646803/>.

based on recommendations from the Desert Storm Conference Report in 1992.<sup>114</sup> There is a focus on doing physical, functional, and target system assessments and ensuring individuals understand that BDA may change plans and decisions. There is also a discussion on who is responsible within a staff for determining which enemy targets require BDA and who receives and collates information on BDA. Unfortunately, the doctrine does not address the root problems discovered during the Gulf War. Namely, how to accurately conduct BDA and what service should be in charge.

ARCENT during the Gulf War was very inaccurate when it came to their assessment of damage incurred on Iraqi elements. Even after adjustment to more conservative estimates, the post-war analysis showed that the organization woefully overreported the amount of damage.<sup>115</sup> If the Army is to be more effective in the next conflict, the service must re-analyze the doctrine for BDA and provide service members with better detail on how to calculate it. There should be analysis from ongoing and past conflicts that provide rules of thumb. If a seventy-five percent kill rate for A-10s was wildly optimistic and even a thirty-three percent kill rate proved to be double the actual kill rate, provide an appendix that gives service members a starting point. For example, an A-10 sortie against tanks can expect to destroy one out of every five tanks (adjusted for what the analysis determines). This information would be more helpful than the current doctrine that states it needs to be done and who is responsible, but without any rules of thumb or guidance on what is reasonable. If not, the military is likely to re-experience issues identified in the previous war, with potentially dire consequences.

The second note around BDA centers around which service should hold the primary responsibility in the next fight. As every future war will be a joint fight, it follows that having an

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<sup>114</sup> Headquarters, US Army TRADOC, *Desert Storm Conference Report*, 1; US Department of the Army, Field Manual (FM) 6-20-10, *Tactics, Techniques, and Procedures for the Targeting Process* (Washington, DC: Government Printing Office, 1996), 2-14-2-15; US Army, ATP 3-60, 2-14-2-17.

<sup>115</sup> Committee on Armed Services, "Intelligence Successes and Failures," 18-20.

assigned service will increase efficiency and decrease the potential for inter-service argument at the beginning of a conflict. It will increase efficiency because having a primary service ensures someone explicitly accounts for BDA responsibilities in planning.

Given the addition of Cyber Command and Space Force, combined with the experience in the Gulf War, the Air Force is the logical service to be the lead on BDA. The Air Force possesses overhead assets that can quickly and extensively cover the battlefield. Additionally, Space Force was created out of Air Force Space Command, increasing the likelihood of a close partnership with those responsible for space-based imagery platforms that can aid in BDA.<sup>116</sup> These capabilities, combined with an established intelligence staff, can more effectively provide information on enemy BDA to commanders than other services.

In conclusion, Desert Storm provided an illustrative example of the challenging environment intelligence dissemination faces in maneuver warfare. The ability to provide commanders with situational understanding while continually moving in a contested environment will prove critical in a future fight, and every service and combatant command has a role to play. Intelligence forces must be adequately staffed, possess communications architecture, be interoperable, and keep pace with the speed of war and travel vast distances. Finally, intelligence staff must support commanders in understanding the battlefield by providing accurate BDA, ideally with the Air Force as the lead in the future.

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<sup>116</sup> Meghann Myers, "The Space Force is Officially the Sixth Military Branch. Here's What That Means," Air Force Times, December 20, 2019, accessed January 27, 2020, <https://www.airforcetimes.com/news/your-military/2019/12/21/the-space-force-is-officially-the-sixth-military-branch-heres-what-that-means/>.

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