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## **Innovation, Flexibility, and Adaptation: Keys to Patton's Information Dominance**

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## Innovation, Flexibility, and Adaptation: Keys to Patton's Information Dominance

Spencer L. French

**ABSTRACT:** In 1944, Third US Army created a cohesive and flexible system for managing information and denying it to the enemy that aligned operational concepts with technological capabilities. The organization's success in the European Theater highlights its effective combined arms integration. An examination of the historical record shows the creative design of the Signal Intelligence and Army Information Services enabled Third Army to deliver information effects consistently and provides a useful model for considering the dynamics at play in fielding new and experimental multidomain effects formations.

**Keywords:** World War II, Third United States Army, military effectiveness, force design, information advantage

Upon arriving in Greenock, Scotland, in January 1944, Lieutenant General George S. Patton Jr. met the first elements of Third Army (call sign Lucky). He greeted them by saying, "I am your new commander. I'm glad to see you. I hope it's mutual. There's a lot of work to be done, and there's little time to do it." By midsummer, Patton would create an Army capable of managing and controlling information to gain the operational advantage. Its call sign notwithstanding, Third Army succeeded in operations across Belgium, France, and Luxembourg not by luck or accident but by the successful integration of informational resources, the consistency between its operating concept for information and available technology, and organizational mobility and flexibility. American leadership and military planners struggle to control these elements in today's complex strategic environment and could benefit from reviewing Patton's strengths and Third Army's accomplishments.<sup>1</sup>

Recognizing the centrality of decision making and execution speed to campaigning, Patton could see Third Army required a cohesive system and dedicated elements to manage information and deny it to the enemy to gain the initiative, anticipate decisions, and extend operational reach. Today, the US Army requires similar systems and organizations to support its multidomain operations (MDO) approach and enable multidomain effects to generate information advantage and open windows of opportunity

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1. Carlo D'Este, *Patton: A Genius for War* (New York: Harper Collins, 1995), 571.

against its great-power competitors. Simply deploying technologically advanced information-related capabilities will not deliver an advantage. The multidomain formations the US Army is fielding today, however, like Third Army in spring 1944, are in their infancy—lacking fully developed forces, staff structures, and processes necessary to create that advantage.

Third Army addressed its shortfall by creating the Army Information Service (AIS) to pair with its existing Signal Intelligence Service (SIS). This partnership integrated flexible and adaptive elements to manage the electromagnetic spectrum to gather and disseminate intelligence and information and security-friendly information while taking full advantage of existing technology within its operational limits. Postwar European Theater Board reviews recognized much of Third Army's construct as a best practice, and its approach impacted US Army thinking in subsequent years and remains relevant for the US Army and Joint Force in designing structures and forces to generate information advantage in this period of strategic competition.

## Characterizing Military Effectiveness

Military organizations are effective to the degree to which they integrate their operational methods and supporting structures, exploit available technology without outstripping its capabilities, and are flexible enough to reorient themselves physically and intellectually. This concept is true for forces that operate primarily in the physical domains and in the information environment. First, military organizations are most effective when they combine arms to “take full advantage of their strengths while covering their weaknesses” and directly incorporate support structures into an integrated operational method. Therefore, to generate information advantage, organizations should combine information capabilities and enable them with dedicated intelligence, communications, and information transport support as part of an integrated concept to operationalize information and intelligence to enhance situational awareness and decision making and deny the same to the enemy.<sup>2</sup>

Successful military organizations also have operational concepts that fully exploit available technology but do not outstrip its potential. Organizations are less effective if they rely upon a misunderstanding of a communications, security, intelligence, or battlespace-awareness technology's potential. Failing to adopt emerging technologies quickly and

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2. Allan R. Millett, Williamson Murray, and Kenneth H. Watman, “The Effectiveness of Military Organizations,” in *Military Effectiveness*, vol. 1, *The First World War*, ed. Allan R. Millett and Williamson Murray (New York: Cambridge University Press, 2010), 13, 16.

integrate them into organizational constructs and operational concepts risks being left behind. Employing nascent technologies that have not been fully assimilated across the force or without sufficient redundancy risks failure under the strain of conflict.<sup>3</sup>

Another factor in efficiency is whether the organization is inherently flexible or able to move “intellectually and physically in either anticipated or unanticipated directions.” Given the speed at which information can move and the alacrity with which many information-related capabilities can be deployed, military organizations must possess the flexibility to reorient rapidly on targets of opportunity, seize the initiative, and exploit it across domains. Since the enemy constantly alters its practices in competition and conflict, inflexible organizations also risk being overcome by a more adaptive foe.<sup>4</sup>

More effective military organizations should approach the contest for superior battlefield understanding by logically integrating their resources, aligning their organizational construct with a realistic appraisal of technological capabilities, and ensuring their construct remains flexible and adaptive. Beginning in March 1944, Third Army organized its Signal Intelligence Service and Army Information Service along these parameters.

### Forming an Approach

As early as March 1944, Patton directed his intelligence officer (G-2) Colonel Oscar W. Koch to prepare an intelligence estimate for an offensive toward Metz even though Allied staff estimates projected Allied forces would not reach the area until 330 days after D-day (D+330). Patton and his staff visualized the battle for France as a high-tempo offensive focused on objectives deep in the enemy’s rear area that balanced risk to gain and maintain the initiative and take advantage of windows of opportunity.<sup>5</sup>

### Obstacles

A series of problems stood between Third Army and the execution of this plan. To achieve its goals, Third Army first had to gain the space to maneuver and break out. Assuming success, it would then need to maintain momentum and respond to new opportunities and threats while spread over hundreds of miles, often with elements lacking reliable contact with one

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3. Millett, Murray, and Watman, “Effectiveness of Military Organizations,” 15.

4. Millett, Murray, and Watman, “Effectiveness of Military Organizations,” 15.

5. Robert W. Williams, “Moving Information: The Third Imperative,” *ARMY* 25, no. 4 (April 1975): 18.

another. Patton's experiences in Africa and Sicily demonstrated the vital importance of precise and up-to-date knowledge of the location of his forces. Reporting latency and inaccuracy, however, presented ongoing challenges. The Third Army operations section estimated it took 10 to 12 hours for routine information to reach the Army Command Post. Finally, an enemy on the defense could trade space for time and reorganize, disrupting Third Army's offensive and regaining the initiative.

### Leveraging Information

As early as 1943, Patton developed a concept to leverage information. He viewed intelligence as providing the initial advantage to "do it first."

First—surprise; find out what the enemy intends to do and do it first. Second—rock the enemy back on his heels—keep him rocking—never give him a chance to get his balance or build up. Third—relentless pursuit—a l'outrance the French say—beyond the limit. Fourth—mop him up.<sup>6</sup>

Intelligence provided valuable warnings and a means to gain and maintain the initiative, anticipate decisions, and sequence actions.

Patton understood the critical relationship between speed and initiative. The time to exploit opportunities against an adaptive enemy is limited.<sup>7</sup> He recognized that injecting friction, misinformation, and delays into the enemy's sensing and decision-making system would keep the enemy reactive. Koch described Patton's formula as:

. . . applying the tactical concept that it would take a certain minimum of time for a large enemy force to react. By progressively following up his first action by a second in less than that minimum, he would catch his enemy in the act of maneuvering to react to the first and so on.<sup>8</sup>

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6. Carlo D'Este, *Bitter Victory: The Battle for Sicily, 1943* (New York: Dutton, 1988), 140.

7. Headquarters, Department of the Army (HQDA), *Operations*, Field Manual (FM) 3-0 (Washington, DC: HQDA, 2022), 3-3.

8. Oscar W. Koch and Robert G. Hays, *G-2: Intelligence for Patton* (Atglen, PA: Schiffer Publishing, Ltd., 1999), 151.

Third Army did not possess the capability to execute this formula in the spring of 1944. After a brief period of analysis, it adopted organizational changes to fill the capability gap.<sup>9</sup>

### Building Specialized Units

Third Army needed to create relative informational advantages and position itself for decision dominance in France within a few months. Third Army aggressively adapted its Signal Intelligence Service and repurposed a mechanized cavalry group to serve as an “information service,” creating new arrangements for functional responsibilities and processes. These changes integrated information management and security capabilities under executive agents, employed technologies within a realistic appraisal of their capabilities, and ensured organizational flexibility, enabling Third Army to converge several capabilities across multiple domains to create effects against enemy systems and decisionmakers. These new organizations and staff arrangements increased the “speed of recognition, decision making, movement, and battle drills” critical to agility in multidomain operations and enabled Third Army to adjust “its disposition and activities” more rapidly than the Germans and exploit the opportunities created by the convergence of capabilities.<sup>10</sup>

### Signal Intelligence Service: Information Protection and Denial

Third Army Signal Intelligence Section held a large part of the responsibility to protect friendly information and deny the enemy use of information. Major Charles W. Flint, a “young, trigger smart expert,” led these efforts. Doctrinally, the Signal Intelligence Service was a subordinate element of the Army Signal Section, responsible for managing signal intelligence, supervising signal security, and issuing cryptographic materials. The Signal Intelligence Service rapidly expanded between March and August 1944, however, taking on a progressively larger communications security, electronic attack, and military deception mission.<sup>11</sup>

Within 24 hours of Third Army’s activation in England, the Signal Intelligence Service began communications security monitoring of Third Army radio networks. Lacking a dedicated organization for monitoring,

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9. Robert W. Williams, as told to Lyman C. Anderson, “Third Army Reconnaissance,” *Cavalry Journal* (January-February 1945): 21; and Third United States Army, *After Action Report: Third US Army, 1 August 1944–9 May 1945*, vol. 2, *Staff Section Reports, G-3* (Regensburg, DE, May 1945), 10.

10. HQDA, *Operations*, 3-3.

11. Robert S. Allen, *Lucky Forward: The History of Patton’s Third U.S. Army* (New York: Vanguard Press, 1947), 56; and US War Department, *Signal Corps Intelligence*, FM 11-35 (Washington, DC: US War Department, 1942), 2, <https://digitalcommons.unl.edu/dodmilintel/113/>.

Signal Intelligence Service directed the Army-level 118th Radio Intelligence (RI) Company and each corps-level signal service company to allocate some receivers to the mission.<sup>12</sup> The 118th RI Company and signal service companies proved flexible and adaptive organizations over the next year. Like most radio intercept and signal service companies, the 118th RI Company consisted of more highly educated and technically proficient soldiers. This flexibility proved critical as these soldiers were often shifted physically and in terms of activities to meet emerging requirements.<sup>13</sup>

In the spring, the Signal Intelligence Service also assumed direct supervision of the Code Room, a subordinate office of the Third Army Message Control Center responsible for the cryptographic process and “coordinating the transmission of outgoing orders and reports and expediting the delivery of incoming messages.” Eventually, in France, the Signal Intelligence Service took over management of the entire center and secured the flow of information to decisionmakers. This highly effective direct integration of information assurance, security, and intelligence exceeded the level of integration of other US armies in the European Theater of Operations.<sup>14</sup>

The Signal Intelligence Service also took the lead in England for all military deception operations in the electromagnetic spectrum. For example, it supported the Supreme Headquarters Allied Expeditionary Force’s Operation Fortitude plan to make the Germans believe the Allies would invade fortress Europe at the Pas-de-Calais, led by Patton’s fictional First US Army Group. To increase the narrative’s verifiability, the Allies mimicked the day-to-day radio signature of the fictional First US Army Group as it seemingly prepared for the invasion. The Signal Intelligence Service oversaw the entirety of Third Army’s participation in this plan

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12. Third United States Army, SIS, “Third Army Radio Intelligence History in Campaign of Western Europe,” SRH-042, October 1945, p. 24, Records of the NSA, National Archives Record Group 1457, National Archives and Records Administration, College Park, MD.

13. John W. DeGrote, *The 118th Signal Radio Intelligence Company, 1942–1946, Third US Army, World War II*, (J. W. Grote: 1991), 8.

14. US War Department, *Operations*, FM 100-5 (Washington, DC: US War Department, 1941), 36, Combined Arms Research Library (CARL), Obsolete Military Manuals, Fort Leavenworth, KS; Army Security Agency (ASA), “Histories of Radio Intelligence Units, European Theater, September 1944 to March 1945, Vol. 2,” SRH-228, Records of the NSA, National Archives Control Number NN3-457-83-34, National Archives and Records Administration, College Park, MD, 2:7 (hereafter cited as SRH-228); and General Board of the United States Forces European Theater, *Study No. 111, Signal Corps Operations* (report of the General Board United States Forces, European Theater, November 1945), 34, CARL, World War II Operational Documents, Fort Leavenworth, KS.

and controlled activity on Third Army's radio nets to confuse German traffic analysis.<sup>15</sup>

Third Army increasingly aligned additional responsibilities under the Signal Intelligence Service from March through June, resulting in greater efficiency. For example, Signal Intelligence Service established a close working relationship with Third Army's counterintelligence section to identify attempts at wiretapping. Similarly, starting in April, it took the lead on procuring and directly distributing medium-grade cryptographic systems to corps-level and below elements to ensure they were employing the most up-to-date and functional communications security equipment. In May, the Signal Section reassigned a small photographic detachment from its Captured Documents Department to the Signal Intelligence Service. This detachment photographed captured German cryptographic documents and devices and provided insight into German coding and encryption schemes. The detachment's direct integration into the Signal Intelligence Service empowered it to conduct exploitation of the captured materials, decreasing the time and coordination required to generate solutions to German codes and ciphers and begin collection.<sup>16</sup>

As Third Army prepared to embark for the continent, it codified the Signal Intelligence Service's role as the executive agent for coordinating all "radio countermeasures." For the remainder of the war, Third Army possessed a single coordinating body for synchronizing communications intelligence collection, communications security, electronic attack, and electromagnetic data and integrating them with operational-level maneuver. Consequently, Third Army possessed a rudimentary staff structure that could enable multidomain effects at the operational level.<sup>17</sup>

These structural changes enabled Third Army to inform decision making, protect friendly information, and attack enemy decision making. By the end of May, Third Army had optimized its Signal Intelligence Service to balance the Army's emissions control requirements with the need to ensure valuable information was securely flowing to decisionmakers. Similarly, the Signal Intelligence Service was well postured to attack enemy decision-making

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15. Michael J. Donovan, "Strategic Deception: Operation Fortitude" (strategy research project, US Army War College, Carlisle, PA, 2002), 9; Eric D. Hresko, "Quicksilver IV: The Real Operation Fortitude" (master's thesis, Air University, Maxwell Air Force Base, AL, 2010), 22; and ASA, "Radio Intelligence Units," 2:6.

16. ASA, "Radio Intelligence Units," 2:4, 2:7, 2:15.

17. Third United States Army, *After Action Report: Third US Army, 1 August 1944–9 May 1945*, vol. 1, *The Operations* (Regensburg, DE, May 1945), 561, CARL, World War II Operational Documents, Fort Leavenworth, KS; and Third United States Army, *After Action Report: Third US Army, 1 August 1944–9 May 1945*, vol. 2, *Staff Section Reports, Signal* (Regensburg, DE: May 1945), 4, CARL, World War II Operational Documents, Fort Leavenworth, KS.



processes through the synchronized employment of radio countermeasures and communications security procedures while improving Third Army's understanding of the enemy by attacking the security of enemy information.

Yet, the Signal Intelligence Service could not provide Third Army with information about the friendly situation to provide superior understanding, faster and better decision making, and synchronization during high-tempo operations.

### The Army Information Service

Patton and the then Colonel Elton F. Hammond, the Third Army signal officer, realized part of the solution to this problem lay in the US Army's provisional signal information and monitoring (SIAM) companies. These companies were an American adaptation of the British "Phantom" liaison patrols (also called "J" Service), which served with British Eighth Army in Tunisia and monitored lower-echelon radio networks for communications security infractions and information that could enhance friendly situational understanding and then passed the information directly to headquarters, bypassing normal channels.<sup>18</sup>

Patton first observed J Service's utility in Africa in 1942 and employed it for the first time during Operation Husky in 1943 when two British J Service officers were assigned to Seventh Army. In April 1943, Fifth US Army established a provisional American signal information and monitoring company and deployed it later that year to Italy, where it functioned alongside the Phantom model. Fifth Army's adaptation was successful in late 1943 and reflected the ability of the United States and British coalition partners to adapt and build upon a working concept. Such partnerships and interoperability are critical in employing information-related capabilities and developing them over the course of a conflict against a peer enemy. Fifth Army's success with its provisional signal information and monitoring company, along with Patton's experience with J Service in Sicily, likely convinced Patton that Third Army needed a similar service.<sup>19</sup>

In early 1944, Hammond tasked Flint and the Signal Intelligence Service to recommend further improvements to Fifth Army's signal information and monitoring company model. Again reflecting the often close partnership between British and American technical services, Signal Intelligence

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18. *American Signal Intelligence in Northwest Africa and Western Europe*, vol. 1, *United States Cryptologic History Sources in Cryptologic History* 4 (Fort Meade, MD: NSA, 2010), 66.

19. Howe, *American Signals Intelligence*, 66, 85; John S. D. Eisenhower, "The Army Tactical Information Services," *Military Review* 29, no. 5 (August 1949): 34; and Walter B. Potter, "SIAM: Signal Information and Monitoring," *Military Review* 25, no. 2 (May 1945): 28.

Service officers visited the British Phantom regiment in England to gather lessons learned. Based on his analysis of Fifth Army's operations in Italy and lessons from the Phantom Regiment, Flint developed a proposed table of organization and equipment for a signal information and monitoring company. Third Army submitted this proposal to Supreme Headquarters Allied Expeditionary Force in April 1944, yet it soon became apparent Third Army would deploy to France without this critical capability. So, Flint, Hammond, and Maddox generated a plan to adapt a cavalry group as an information service.<sup>20</sup>

Third Army selected 6th Cavalry Group (Mechanized), commanded by Colonel Edward M. "Joe" Fickett, to serve as the Army Information Service. It was comprised of a headquarters element and two identical nonorganic cavalry squadrons that were authorized 31 officers, 2 warrant officers, and 721 enlisted men in three reconnaissance troops, a light tank company, and an assault gun company.<sup>21</sup>

The group arrived in Northern Ireland in 1942 and conducted field and command post exercises for two years. Fickett emphasized to his formation that "good communications is the guts and essence of cavalry reconnaissance, and if every soldier in the group were a qualified [radio] operator, there still wouldn't be enough." Fickett's vision for the 6th Cavalry Group (Mechanized) and cavalry in general aligned well with the requirements of an Army Information Service.<sup>22</sup>

Events moved quickly after the creation of Third Army's Information Service in May 1944. The 6th Cavalry Group (Mechanized) transformed into an information service, deployed to the continent, and entered combat in fewer than 80 days. Patton believed time and detail were lost when transmitting messages to Army Headquarters through normal channels. Therefore, he directed the Army Information Service to enhance situational understanding at the operational level by operating a "rapid communications channel, bypassing normal command channels." The Army Information Service would monitor radio nets and gather information and run a system of patrols while liaising with division G-2 and G-3 sections. The emphasis on liaison and the decision

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20. Third United States Army, *Staff Section Reports, Signal*, 5; and ASA, "Radio Intelligence Units," 2:2, 2:3.

21. George Forty, *The Armies of George S. Patton* (New York: Arms & Armour Press, 1996), 78; and William Stuart Nance, "Patton's Iron Cavalry – The Impact of Mechanized Cavalry on the U.S. Third Army" (master's thesis, University of North Texas, Denton, TX, May 2011), 26.

22. Williams, "Moving Information," 18; Ellsworth B. Crowley, *The Fighting Sixth: History of the 6th Cavalry Regiment, 1861–1960* (Dallas, TX: Military Publications, 1961); US War Department, Adjutant General's Office, *Official Army Register* (Washington, DC: US War Department, 1947), 358; and Robert D. Sweeney, "How Patton Kept Tabs on His Third Army," *Armored Cavalry Journal* (March-April 1949): 53.

to retain the communications security monitoring mission under SIS control and the radio intelligence companies represented a significant adaptation from the Phantom-Signal Information Monitoring company model.<sup>23</sup>

The Army Information Service reported reconnaissance and intelligence information to the G-2 and friendly force information to the G-3. On behalf of the Signal Section, the Signal Intelligence Service would exercise technical direction of the Army Information Service and provide guidance on methods of procedure, employment, and coordination. Patton made it clear that enhanced situational awareness was critical to enabling operational maneuver in France, and Fickett and the Army Information Service were directly responsible to the Army commander for the mission's success.<sup>24</sup>

Immediately, Fickett and Group Operations Officer Major Thomas H. Stewart III implemented Operation Unicorn, their plan for transforming the group and training it for operations as an information service. Per Patton's directive, the group's headquarters would act as the AIS headquarters. One of the two squadrons would serve as the AIS force provider, and the other squadron would serve as an Army-level reconnaissance element. Fickett and Stewart created 13 self-sustaining information detachments from the force provider squadron. Nine platoon-sized "information detachments" would be assigned to the division level, and four small supplementary detachments consisting of troop headquarters would be assigned to the corps.<sup>25</sup>

At the division level, information detachments consisted of two sections led by lieutenants—a "command and monitoring" section and a "patrol and liaison" section with about 20 enlisted soldiers per section. The monitoring section tracked and retransmitted relevant radio traffic within the assigned division to AIS headquarters. The patrol and liaison section moved with the forward line of troops, providing up-to-date information regarding the overall combat situation. With the understanding that these detachments could be assigned to either armored or infantry divisions performing various missions and also likely could be reassigned over the course of the campaign, Fickett and Stewart ensured the organizations were flexible.<sup>26</sup>

The motorcycles, jeeps, and radios currently assigned to 6th Cavalry Group were a good start, but they were insufficient to equip all the

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23. Crowley, *Fighting Sixth*; and Third United States Army, *Staff Section Reports, G-3*, 10.

24. Sweeney, "How Patton Kept Tabs," 51; Williams, "Moving Information," 18; and Third United States Army, *Operations*, 603.

25. Williams, as told to Anderson, "Third Army Reconnaissance," 21; and Third United States Army, *Staff Section Reports, G-3*, 10.

26. Sweeney, "How Patton Kept Tabs," 52; Third United States Army, *Staff Section Reports, G-3*, 10.

new information detachments. To supplement on-hand equipment, Third Army requested additional equipment based on the signal information and monitoring company table of organization Flint had developed in the spring.<sup>27</sup>

The training plan developed by Fickett and Stewart focused on officer training, a communications exercise at reduced distances, and a two-day situational training exercise. Cavalry officers trained on liaison, radio monitoring and employment procedures, and reporting practices. The instruction also covered armored and infantry division doctrine and organization. While the classroom portion of the training plan went well, the lack of radio equipment hampered the ability of 6th Cavalry Group to conduct the planned communications exercise and test the provisional organization of the information detachments. Ultimately, Fickett and Stewart were forced to cancel the field exercise.<sup>28</sup>

While training and reorganization were in progress, Flint worked closely with Fickett and Stewart to create processes and an Army-level facility for receiving the information from the dispersed divisional and corps information detachments. Flint procured a communications van to serve as the SIS headquarters and an AIS information center. While the Signal Intelligence Service and the Army Information Service were separate organizations, answering to separate staff elements (the G-3 for the Army Information Service and the G-2 and signal officer for the Signal Intelligence Service), this colocation had added benefits. Up-to-date combat information, signals intelligence, and awareness of communications security shortfalls would all pass through a single location.<sup>29</sup>

Success in multidomain operations rests on seeing oneself and the enemy reliably and accurately. The physical colocation and innovative connections between the Army Information Service, the Signal Intelligence Service, and the G-2 and G-3 sections provided Third Army with a unique ability to sense itself and the enemy in the physical domain and the electromagnetic environment. It allowed Third Army to harmonize effects to shape enemy understanding. The Army Information Service actively hunted information and ensured the Army commander had access to a reliable real-time picture of the friendly force. This support complemented the Signal Intelligence Service's role of denying the same to the enemy—through electromagnetic deception, electronic attack, and information security and providing the

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27. Williams, as told to Anderson, "Third Army Reconnaissance," 21; and ASA, "Radio Intelligence Units," 2:3.

28. Third United States Army, *Staff Section Reports, G-3*, 10.

29. Howe, *American Signals Intelligence*, 126; and ASA, "Radio Intelligence Units," 2:10.

commander with access to enemy information through communications intelligence. Together, this construct enhanced and assured Army-level decision making and enabled Patton to maintain the initiative and extend operational reach in France.

### Third Army Success: August to December 1944

This construct contributed to Third Army's successes over the coming months. In France, the distances and pace involved in operations strained the ability of the Army to communicate with its dispersed elements and maintain a timely and clear understanding of its disposition. At one point in mid-August, Third Army was stretched from Brittany in the west to the Seine River in the east and from Normandy south to the Loire River. Communications across large distances were challenging to maintain due to the technical limitations of Army radio equipment and the frequent displacement of Army and Corps headquarters. Due to its flexibility and facility with available technology, the Army Information Service mitigated these challenges by establishing radio relays and running motorcycle courier services. The Third Army G-2 later noted that "when no other means was available, the AIS could get the information through."<sup>30</sup>

Third Army's ability to exploit new technology via the Signal Intelligence Service paid dividends. For example, Third Army participated in one of the first uses of active radio countermeasures in direct support of ground forces in the European Theater during the Battle of the Bulge. In conjunction with Third Army's counterthrust near Bastogne (December 29, 1944 to January 7, 1945), 8th Air Force B-24s flew relays over the Ardennes, carrying the AN/ART-3 "Jackal" high-powered airborne radio jammer. Thus, German tanks operating AM radio sets experienced significant jamming while American tanks operating FM receivers experienced little interference. As the executive agent for radar countermeasures, the Signal Intelligence Service helped coordinate these experimental radio countermeasure missions on behalf of Third Army. After the war, Third Army recommended the US Army continue direct coordination between

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30. George Raynor Thompson and Dixie R. Harris, *United States Army in World War II, Technical Services – The Signal Corps: The Outcome (Mid-1943 through 1945)* (Washington, DC: US Army Center of Military History, 1991), 119; DeGrote, *118th Signal Radio Intelligence Company*, 59; and Third United States Army, *Staff Section Reports, G-3*, 15.

Army-level signal intelligence and security entities and entities involved in radio countermeasures to exchange information and coordinate operations.<sup>31</sup>

Integrating the Signal Intelligence Service and particularly the Army Information Service into the Third Army command-and-control structure enabled superior situational awareness at critical points. For example, in September, as Third Army was approaching the German West Wall, Field Marshal Johannes A. Blaskowitz's Army Group G counterattacked from the Neufchâteau-Épinal area against the exposed flank of Third Army's XII Corps south of Nancy. The German LXVI Corps and the 16th Division were responsible for holding the assembly area between Épinal and Neufchâteau long enough to mass armored forces for the counterattack. In the second week of September, Patton tasked Major General Wade H. Haislip's XV Corps with filling the gap between Third Army and Seventh Army by assuming the position to the right of the XII Corps. Enhanced situational awareness provided by AIS detachments assigned to XV Corps allowed Haislip to synchronize the actions of Major General Ira T. Wyche's 79th Infantry Division to the north and General Jacques-Philippe Leclerc's 2nd French Armored Division as they swept through the German LXVI Corps assembly area on September 11. In part thanks to the work of the Army Information Service over the next few days, 79th Division reduced German positions near Neufchâteau, routing the 16th Division in hard fighting by September 15.<sup>32</sup>

These and numerous other examples of situational awareness enhancement, decision support, and information denial demonstrate the value of the adaptations made to the Signal Intelligence Service and the creation of the Army Information Service. The European Theater Board and the personal observations and accounts of Third Army commanders, staff, soldiers, and observers drew the conclusion in the months and years after the conflict that SIS and AIS operations significantly contributed to Third Army's ability to maintain a superior understanding of itself and its foes.

### Third Army Accomplishments

Between March when it stood up and late July when it arrived in France, Third Army dramatically altered how it fought for information. It expanded the role of its Signal Intelligence Service, and in just over

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31. Raynor and Harris, *Signal Corps*, 164; National Defense Research Committee, *Summary Technical Report of Division 15 National Defense Research Committee*, vol. 1, *Radio Counter-Measures* (Washington, DC, 1946), 310; Combined Army Research Library, Fort Leavenworth, KS; and Third United States Army, *Staff Section Reports, Signal*, 25.

32. John Nelson Rickard, *Patton at Bay: The Lorraine Campaign, 1944* (Lincoln, NE: Potomac Books, 2004), 94; and Williams, as told to Anderson, "Third Army Reconnaissance," 23–24.

80 days, it designed, tested, fielded, and deployed the Army Information Service to enable decision making. Once in France, the Army Information Service and Signal Intelligence Service enhanced friendly decision making and protected friendly information while attacking the enemy's decision-making ability and disrupting its use of information. The sweeping changes and resulting increase in effectiveness were not random. Instead, a realistic assessment of the challenges Third Army anticipated in France and an appreciation of recent combat performance in the Mediterranean Theater of Operations drove the reform. These changes also reflected an appreciation for the need to integrate informational resources, ensure consistency with available technology, and maintain organizational flexibility.

Third Army fostered a close relationship between the Army Information Service, the Signal Intelligence Service, the G-2, and the G-3, resulting in an effective alignment of information, intelligence, and cryptological, logistical, and other support functions. Third Army surpassed most armies in the European Theater of Operations by empowering the SIS element to conduct cryptographic, signal security, and signal intelligence functions and deconflict electromagnetic deception, electronic attack, and friendly emissions. Dedicated logistical and other support structures enabled the Signal Intelligence Service to manage these operations effectively. By creating an organization capable of managing many similar functions, Third Army enhanced reliability and efficiency and increased decision-making speed.

The creation of the Army Information Service represented an alignment between operational concepts and available technology. Third Army planned to offset communications and information technology shortfalls with liaison and human initiative. The Army Information Service bridged the communications and information-processing gap, speeding information to the Army commander and facilitating situational awareness and rapid decision making. Third Army's adaptation of the signal information and monitoring company construct acknowledged the limitations technology and a strategy to overcome an intermittently connected and bandwidth-limited environment placed on Third Army.

Finally, and perhaps most importantly, Third Army's mobile and flexible organizational design came from its cavalry group and expeditionary RI company. At multiple points, Third Army leaders intentionally designed the Army Information Service for maximum flexibility and encouraged the Signal Intelligence Service to pursue new ways to deny the enemy information. Third Army's information forces entered combat with established systems and processes while recognizing virtually all

constructs could change based on conditions in France. Third Army leaders understood the only way to gain and retain an advantage was to build adaptable formations. Taken together, Third Army in France underscores the criticality of integrating resources as part of a combined arms approach that ensures consistency between concepts and technology and fosters organizational flexibility.<sup>33</sup>

## Recommendations

To support its MDO approach in the era of great-power competition, the Army is developing, fielding, and adapting new and experimental units to enable multidomain effects. Like Third Army in March 1944, the US Army of the early twenty-first century has organized itself with information-related capabilities largely insulated from one another and imperfectly integrated into combined arms warfare. To address this shortfall, the Army established the 915th Expeditionary Cyber Warfare Battalion in 2019 to provide cyber, electronic warfare, and information operations support to Army Service Component Commands. The same year, the Army fielded its first Intelligence, Information, Cyber, Electronic Warfare and Space Battalion (now officially designated as Multidomain Effects Battalions) to integrate signals and military intelligence with capabilities in space, cyberspace, information space, and the electromagnetic spectrum. The multidomain effects battalions are reminiscent of the Third Army Signal Intelligence Service and possess an intelligence support structure and defensive and offensive capabilities. Over the coming years, these formations will experiment with new technologies and processes to allow the US Army to generate informational advantages in competition, crisis, and conflict. While the specific capabilities hosted by these new formations are more sophisticated than those of the Signal Intelligence Service, the organizing principles that made the Signal Intelligence Service successful remain relevant.<sup>34</sup>

First, effective military entities organize themselves and have concepts that integrate all information resources and support functions. Third Army's experience demonstrates the importance of creating integrated

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33. Williams, as told to Anderson, "Third Army Reconnaissance," 21.

34. Justin B. Gorkowski, "US Information Operations in Large-Scale Combat Operations: Challenges and Implications for the Future Force," in *Perceptions Are Reality: Historical Case Studies of Information Operations in Large-Scale Combat Operations*, ed. Mark D. Vertuli and Bradley S. Loudon (Fort Leavenworth, KS: Army University Press, 2018), 17; Mark Pomerleau, "New US Army Unit Is Building Concepts for Tactical Cyber Operations," C4ISRNET (website), December 29, 2021, <https://www.c4isrnet.com/cyber/2021/12/29/new-us-army-cyber-unit-is-building-concepts-for-tactical-cyber-operations/>; and Charles McEnany, "Multidomain Task Forces: A Glimpse at the Army of 2035," Association of the United States Army (website), March 2, 2022, <https://www.ausa.org/publications/multidomain-task-forces-glimpse-army-2035>.



structures to synchronize the real-time denial of information to the enemy, protect friendly information, and assure the availability of priority information in a denied, disrupted, intermittent, and bandwidth-limited environment. The SIS example also indicates the importance of directly aligning supporting functions like intelligence and logistics to enable these organizations to protect information and deny it to the enemy.

Second, effective organizations exploit available technology and develop appropriate operational employment concepts to match the technology's demonstrated capabilities. The Third Army SIS example suggests the importance of integrating emerging technology into operations rapidly and exploiting its potential. The Army Information Service's performance indicates the value of building redundancy and leveraging human resources to ensure the ability to generate information effects resiliently.

Finally, effective organizations have the mobility and flexibility necessary to reorient themselves on new threats or opportunities. Much like Third Army's Signal Information Service, expeditionary cyber, electronic warfare, and information operations elements may be expected to support a range of elements performing diverse missions from competition through conflict. Success in multidomain operations is also predicated upon the ability of US Army elements to exploit temporary windows of opportunity. Consequently, future multidomain effects battalions and expeditionary cyber team-like organizations should have the intellectual, organizational, and physical ability to transition missions, supported elements, and locations.

Although technology has progressed significantly since 1944, and *Field Service Regulations: Operations*, War Department Field Manual FM 100-5 (1944) did not reference information-related capabilities or concepts like decision dominance or information advantage, Patton would understand the challenges the US Army faces today. Like Third Army in World War II, the US Army currently struggles with efficiently employing its capabilities to generate informational advantages and open windows of opportunity against peer adversaries. Third Army adapted and modified existing organizations with available technology to integrate capabilities while maintaining flexibility. This model adaptation of the Army Information Service and Signal Intelligence Service illustrates the dynamics at play in fielding new and experimental multidomain effects formations.

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