

# **Innovating in War: Risk, Organizational Cost and Successful Adoption**

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## ABSTRACT

### **Innovating in War: Risk, Organizational Cost, and Successful Adoption**

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Why do military organizations often fail to adopt innovation in wartime even when it promises to increase military effectiveness? To answer the question, a theory was developed focusing on a gap in the literature for military diffusion. While theories for explaining the decision to adopt are well represented, less work exists to explain implementation. The theory, agent-led adoption, argues that in cases where implementation within the parent military is led by a special purpose suborganization, or lead agent, these efforts have a history of success and failure that hinges on the lead agent's ability to moderate organizational resistance by managing risk and organizational cost. Both efforts are necessary for the organization to successfully adopt the innovation. Three questions were postured to drive an analysis of the theory. Does evidence reduce risk? Does integration support reduce organizational cost? Are both reducing risk and organizational cost necessary to increase the likelihood of permanent adoption? Among the insights are considerations for overcoming both cultural and bureaucratic constraints on adoption, the relative importance of external and internal factors on implementation, and the identification of desirable organizational features for an optimally configured lead agent. The study concludes by providing policy implications for the latest and perhaps one of the grandest Army transformations of the last century, the ongoing implementation of the Army's new warfighting concept by its latest lead agent, the U.S. Army Futures Command.

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## CHAPTER 1: INTRODUCTION

*"If you don't like change, you're going to like irrelevance even less."<sup>1</sup>  
—General Eric Shinseki*

This study examines why military organizations succeed and fail to effectively implement innovations in wartime and answers questions about how to improve the likelihood of successful adoption. Combining insights from principal-agent literature, military innovation studies, organizational learning, and social learning, the study presents a theory for agent-led adoption. The theory's claims are tested against the historical record beginning with World War I. In doing so, the study finds support for the theory, and subsequently draws insights from the use of lead agents to leverage innovation as a source of military effectiveness. Among the insights are considerations for overcoming both cultural and bureaucratic constraints on adoption, the relative importance of external and internal factors on implementation, and the identification of desirable organizational features for an optimally configured lead agent. The study concludes by providing policy implications for the latest and perhaps one of the grandest Army transformations of the last century, the ongoing implementation of the Army's new warfighting concept by its latest lead agent, the U.S. Army Futures Command.

Why do military organizations fail to adopt new capabilities even when they are likely to increase effectiveness? Two broad schools of thought account for most of the academic research. First, that external pressure in the form of state peer competitors

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<sup>1</sup> James Dao and Thom Shanker, "No Longer a Soldier, Shinseki Has a New Mission," *The New York Times*, 11 November, 2009, New York Edition.

create the fear of defeat and drive civilian intervention in favor of adopting new capabilities.<sup>2</sup> Second, that military culture and professionalism influence the outcomes associated with the attempt to adopt novel capabilities.<sup>3</sup> These approaches however tend to conflate the decision to adopt with successful implementation. By doing so, the role played by the military organization itself to influence adoption is overlooked and accordingly understudied. Yet, organizations commonly play instrumental roles by altering their internal structures and routines to facilitate the diffusion of new ideas throughout the parent military. The term, “lead agent”, is introduced to describe a special type of change to internal structure. They are a suborganization that is specifically created by the parent military to lead the implementation of a new capability or paradigm throughout the whole organization.

In World War I, the German Army invented and implemented a new concept in warfare through the efforts of a purpose-built organization serving as the lead developer and trainer. This lead agent’s actions enabled the spread of infiltration tactics and subsequently the restoration of operational maneuver to what had previously been a locked trench war. The idea spread before the war was over, with the allies replicating

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<sup>2</sup> For example, see Barry Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars*, *Cornell Studies in Security Affairs* (Ithaca: Cornell University Press, 1984). Also see Robert T. Foley, Stuart Griffin, and Helen McCartney, "Transformation in Contact: Learning the Lessons of Modern War," *International Affairs* 87, no. 2 (2011). Also see H. R. McMaster, "Learning from Contemporary Conflicts to Prepare for Future War," *Orbis* 52, no. 4 (2008).

<sup>3</sup> For an example of military culture affecting diffusion, see Theo Farrell and Terry Terriff, *The Sources of Military Change: Culture, Politics, Technology* (Boulder, CO: Lynne Rienner Publishers, 2002). Also see Jeffrey W. Legro, "Military Culture and Inadvertent Escalation in World War II," *International security* 18, no. 4 (1994). For an example of intraservice professionalism, see Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military*, *Cornell studies in security affairs* (Ithaca: Cornell University Press, 1991). For an example of interservice rivalry see Harvey M Sapolsky, "On the Theory of Military Innovation," *Breakthroughs* 35, no. Spring (2000).

similar capabilities to counter the German advantages. It continued to spread after the war. By World War II, the paradigm had become part of the standard operational doctrine for all major powers.<sup>4</sup>

Also consider the more recent origin story of the Joint Improvised-Threat Defeat Agency (JIDA), a Department of Defense juggernaut that at its height commanded a \$4 billion budget with over 3,000 unit members.<sup>5</sup> This story reveals how the U.S. Army created a small task force in 2005, the Army Counter-Improvised Explosive Device Task Force (CIED-TF), and delegated to it responsibility for developing and integrating new capabilities to counteract the strategic influence wielded by non-state actors using improvised explosive devices (IEDs). The CIED-TF grew rapidly spreading to the other services and allied partners. They directly supported the institutionalization of it within the Department of Defense, enabling it to contribute directly to national defense policy.<sup>6</sup> Both the German and U.S. example, nearly 100 years apart, showcase how these lead agents spread these capabilities, contributing significantly to military effectiveness within their organizations, and through their success, affecting decisions on strategy, war termination, and the spread of military power throughout the international system.

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<sup>4</sup> Stephen D Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton, N.J: Princeton University Press, 2006). Also see Allan C Stam, *Win, Lose, or Draw: Domestic Politics and the Crucible of War* (University of Michigan Press, 1996).

<sup>5</sup> For a review of the establishment directive, see U.S. Department of Defense, *Department of Defense Directive 2000.19E, Joint Improvised Explosive Device Defeat Organization (JIEDDO)*, by Gordon England (Washington, D.C.: Government Printing Office, 2006). Also see Jen Judson, "As JIEDDO Becomes JIDA, IED Threat Builds In Theater," *Defense News* (19 November 2015 2015), accessed 6 October 2019, <https://www.defensenews.com/land/2015/11/19/as-jieddo-becomes-jida-ied-threat-builds-in-theater/>.

<sup>6</sup> White House, *Countering Improvised Explosive Devices*, by Barak Obama (Washington D.C.: Office of the President of the United States, 2013).

In describing the spread of new martial capabilities, Ryan Grauer recently noted that organizations do not simply decide to adopt an innovation and then become successful. Diffusion “is the result of more than that initial decision.”<sup>7</sup> It requires successful implementation. Attempts to implement antimechanized defense in World War II,<sup>8</sup> counterinsurgency operations in Vietnam,<sup>9</sup> and force modernization reform during the wars in Iraq and Afghanistan<sup>10</sup> all were initiated with enthusiasm but enjoyed at best only limited success. They were marginalized or abandoned altogether at or before the conclusion of the conflict.

In all the cases mentioned above, and in the remaining balance of the 12 cases that will be considered here, a military organization made the commitment to adopt a new capability, had compelling operational reasons to adopt, had the support of senior civilian and military leaders, and the resources necessary to proceed. In a hierarchical military organization, one accustomed to following orders, it would seem that these conditions would be enough to ensure the spread of new ideas within the organization. Certainly, those senior leaders who made the decision to attempt the adoption believed that the conditions were set for success. However, despite the aforementioned conditions, that so many attempts resulted in failure remains unexplained.

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<sup>7</sup> Ryan Grauer, “Moderating Diffusion: Military Bureaucratic Politics and the Implementation of German Doctrine in South America, 1885-1914,” *World politics* 67, no. 2 (04/01/ 2015): pg. 269.

<sup>8</sup> Christopher R. Gabel, *See, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War 2* (Fort Leavenworth, KS: Combat Studies Institute, 1985).

<sup>9</sup> John A. Nagl, *Learning to Eat Soup With a Knife: Counterinsurgency Lessons Form Malaya and Vietnam* (Paperback Ed.) University of Chicago Press, 2005).

<sup>10</sup> Department of the Army, *General Orders No. 4: Redesignation of the United States Army Training and Doctrine Command Futures Center as the Army Capabilities Integration Center* (Washington, D.C.: Headquarters, Department of the Army, 2006).

For senior U.S. civilian leaders and military elite, this puzzle is quite relevant and timely as the answer informs both ongoing analysis and decisions on national security policy. In the last Quadrennial Defense Review, published in 2014, the diffusion of innovation became a central tenet of US military strategy.<sup>11</sup> More recently, Secretary of Defense James Mattis's written statement for the House Armed Services Committee, specified the need to increase the efficacy with which we diffuse new knowledge, writing that "[i]n response to these realities, the Department must develop new weapons and capabilities, adjust concepts of operations, adapt our training, and spend more time war-gaming and exercising to improve our ability to fight and win."<sup>12</sup> Mattis would expand on this idea in the 2018 National Defense Strategy, directing that "[i]f current structures hinder substantial increases in lethality or performance, it is expected that Service Secretaries and Agency heads will consolidate, eliminate, or restructure as needed."<sup>13</sup>

It is a key priority for the Army as well. General Mark Milley, the current U.S. Chairman of the Joint Chiefs of Staff and former Army Chief of Staff, in an address before the annual Association of the United States Army in Washington, D.C. articulated the need to alter many of the Army's most cherished beliefs about warfighting to contend with the changing character of war.<sup>14</sup> Much of his legacy as the 39<sup>th</sup> U.S. Army Chief of

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<sup>11</sup> *2014 Quadrennial Defense Review*, by United States Department of Defense (Washington, D.C., 4 March 2014), pg. vi.

<sup>12</sup> U.S. House of Representatives, *Secretary of Defense Jim Mattis House Armed Services Committee Written Statement for the Record Monday, June 12, 2017*, by James Mattis (Washington, D.C.: U.S. House of Representatives, 2017).

<sup>13</sup> United States Department of Defense, *Summary of the National Defense Strategy of the United States of America*, by James Mattis (Washington, D.C., 2018), p. 10.

<sup>14</sup> Mark A. Milley, "Changing Nature of War Won't Change Our Purpose," U.S. Army, accessed 02 February 2017. [https://www.army.mil/article/175469/changing\\_nature\\_of\\_war\\_wont\\_change\\_our\\_purpose](https://www.army.mil/article/175469/changing_nature_of_war_wont_change_our_purpose).

Staff will be judged on the efficacy of these changes, most notably, through the work of his lead agent, the Army Futures Command.<sup>15</sup>

### **Agent-Led Adoption**

Agent-led adoption argues that successful diffusion depends on the organization's ability to moderate organizational resistance. It does so by constituting a special ad hoc organization to lead the implementation effort. This lead agent works to moderate organizational resistance by addressing two key areas. First, the organization must reduce risk created by the introduction of a new and untested capability during a conflict. Second, it must reduce the organizational cost, or energy required to change the existing system of practice. By doing both, the military organization increases the likelihood of successful adoption. When an organization fails to address both risk and organizational cost, they may achieve limited or partial success, but it is unlikely that the innovation will be successfully adopted.

### ***Assumptions***

Agent-led adoption has three basic assumptions. First, it assumes a rationalist framework, accepting that subordinates within the military respond to basic incentives like costs and benefits.<sup>16</sup> Second, that actors are strategic, in that they anticipate the

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<sup>15</sup> Sydney J. Jr. Freedberg, "How McCain & Milley Created Army Futures Command," *Breaking Defense* (24 August 2018), accessed 20 January 2019, <https://breakingdefense.com/2018/08/how-mccain-milley-created-army-futures-command-it-almost-didnt-happen/>.

<sup>16</sup> Peter Feaver adopts a similar framework in his analysis of civil-military relations. See Peter Feaver, *Armed Servants: Agency, Oversight, and Civil-Military Relations* (Cambridge, Mass: Harvard University Press, 2003), pg. 13-14.

actions of others and act accordingly to maximize their benefit. Third, the organization shares a common desire to improve combat effectiveness to enable winning but does not necessarily agree on how to achieve those improvements. This results in a status quo, where a lack of consensus for significant change in the dominant beliefs about warfighting persists. It is the lack of consensus in support of the innovation that can ultimately cause military organizations to abandon the attempt and fall back on existing modes and beliefs about warfare.<sup>17</sup>

Two internal preferences explain the lack of consensus within military organizations. First, military organizations prefer winning or at least not losing. Stated differently, military organizations prefer to avoid needless risk as it decreases the likelihood of obtaining the desired outcomes. Perceptions of needless military risk create expectations of diminishing combat effectiveness through lost resources and increased battle losses. This preference drives a cultural belief in the efficacy of existing practices, ones that are well rehearsed, and integrated with other forms of maneuver.<sup>18</sup> Introducing innovation in combat, introduces additional risk by upending norms of behavior and patterns of success in which subordinates may be heavily invested.<sup>19</sup> The magnitude of

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<sup>17</sup> Jeff Legro explains how consensus is a prerequisite for major change within large social organizations. See Jeffrey W. Legro, "The Transformation of Policy Ideas," *American Journal of Political Science* 44, no. 3 (2000): pg. 426-27. Also, Downie and separately, Nagl, both use consensus building as the key mechanism for explaining change in military organizations. See Richard Duncan Downie, *Learning From Conflict: The U.S. Military in Vietnam, el Salvador, and the Drug War* (Westport, Conn: Praeger, 1998). See previously referenced Nagl.

<sup>18</sup> For a description of U.S. Army culture as described by the former Army Chief of Staff in his capstone doctrinal reference on the profession, see Department of the Army, *The Army Profession*, by Raymond T. Odierno, Vol. Army Doctrine Reference Publication No. 1 (Washington, DC: Headquarters, Department of the Army, 2015), pg. A-1.

<sup>19</sup> For a discussion of organizational culture and cultural resistance see James Q Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, 1989), pg. 93. For an overview of the effects of military culture on innovation, see Michael B Siegl, "Military Culture and Transformation," *Joint Force Quarterly* 49, no. 2d Quarter, 2008 (2008): pg. 103-06.



risk represented by the innovation is different for each suborganization, accounting for some of the variety in subordinate responses to change and the lack of consensus.

Second, military organizations prefer to reduce the friction inherent in war. Friction in this context is a military term that represents the myriad of considerations, conditions, circumstances and even coincidences that affect battle outcomes. Taken collectively, things like rates of supply, weather, morale, timing, accidents and many others can make the execution of a relatively straightforward action extremely complex. As noted by the military theorist, Carl von Clausewitz, when referring to the complexity and randomness connected to military operations, “Everything in war is very simple but the simplest thing is difficult.”<sup>20</sup> To confront this challenge, military organizations spend an inordinate amount of time during peacetime to perfect bureaucratic systems for logistics, personnel, maintenance, basic skills development and battle drills. These efforts collectively become standing operating procedures, institutionalized training and doctrinal manuals, and constitute what some scholars refer to as “organizational memory”.<sup>21</sup> Perfecting these practices in peacetime enables greater attention during war on external conditions rather than internal capability development. Innovations challenge these systems, often requiring extensive organizational costs to implement. Since

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<sup>20</sup> Carl von Clausewitz, Michael Howard, and Peter Paret, *On War* (Princeton, N.J.: Princeton University Press, 1976), pg. 119.

<sup>21</sup> Organizational memory is a conceptual term referring to the storage and accessibility of organizational practices and routines. In some cases, the repository is through tacit knowledge of members. More often, it is documented as standing operating procedures, routines and scripts. It represents the body of knowledge regarding the execution of known capabilities taught during formal military education. Collectively they strengthen the attachment to existing dominant forms of warfighting. See George P. Huber, "Organizational Learning: The Contributing Processes and the Literatures," *Organization Science* 2, no. 1 (January 1, 1991 1991): pg. 105. Some authors also refer to it as institutional memory, see Downie, pg. 23. In this research the two terms are interchangeable.

innovations do not affect all portions of a military organization similarly, the suborganizations who bear the greater costs of these transactions are more likely to resist adoption.

### ***Principal Agent Approach***

I conceptualize the diffusion of innovation within a military organization as a principal-agent problem in which senior civilian and military leaders (the principals) disagree with military subordinates (the agents) about the risk and organizational costs associated with adoption. Peter Feaver similarly uses a principal-agent approach, describing it as one that “analyzes how the principal can shape the relationship so as to ensure that his employees are carrying out his wishes.”<sup>22</sup> This approach explains outcomes based on the means employed by the principal to overcome organizational resistance. Those means include the monitoring of agent actions and the manipulation of incentives.<sup>23</sup>

While Feaver offers his approach as a rational baseline, he explicitly recognizes that organizations do not regularly respond rationally. Feaver’s model represents a stylized view of the world, one in which organizations respond predictably. Although principals would prefer that agents respond in purely utilitarian ways, they simply do

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<sup>22</sup> Feaver, pg. 55.

<sup>23</sup> See Feaver, Tables 3.1 for a summary of oversight mechanisms, and Table 3.2 for a list of punishments *ibid.*, pg. 86, 94. Note that Feaver includes the following monitoring mechanisms from the extant literature: Contract incentives, screening and selection, fire alarms, institutional checks, police patrols, and revising delegation decisions. Punishments include restrictive monitoring, current and future material disincentives, military justice system, and extralegal action.

not.<sup>24</sup> The principal therefore needs a third strategy by which to moderate irrational agent responses.

This third strategy involves changes in structure to alter organizational behavior. On some occasions, a change in structure could indicate the need to remove layers of management. It could also mean the opposite, bifurcating an organization in order to reduce the span of control. In considering the challenges of coordinating pacification programs in Vietnam, Robert Komer identified a different change in structure. "Where specially tailored programs which are not in conventional organizational repertoires or which cut across conventional agency lines are required, it may be best to set up an autonomous ad hoc organizations to run them – with the requisite funding, resources, people, and other backing to do the job."<sup>25</sup> Komer's autonomous ad hoc organization, what this study refers to as a lead agent, represents a unique class of agent, incentivized to align with the principle due to their complete dependence on the principal and on the success of the implementation plan for their survival.

This project advances existing principle-agent and innovation scholarship in three important ways. First, lead agents are understudied. Scholarship explaining both their use as an alternative strategy for overcoming principal-agent problems, and their role in spreading military innovation are scarce.<sup>26</sup> Rather than focusing on how the principal

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<sup>24</sup> Ibid., pg. 13-14.

<sup>25</sup> Robert Komer, *Bureaucracy at War: U.S. Performance in the Vietnam Conflict*, Westview special studies in national security and defense policy (Boulder, Colo: Westview Press, 1986), p. 168.

<sup>26</sup> While little scholarship isolates the purposive actions of lead agents to guide the diffusion of innovation within their organizations, examples of scholarship that considers key suborganizations as the source of innovation includes Philipp Rotmann, David Tohn, and Jaron Wharton, "Learning Under Fire: Progress and Dissent in the U.S. Military," *Survival* 51, no. 4 (2009). Also see Raphael D Marcus, "Military Innovation

achieves his goals,<sup>27</sup> or how the agent resists,<sup>28</sup> this analysis focuses on the lead agent, and how its actions moderate organizational resistance to major changes.

Second, this study contributes to the recent academic turn in the study of military innovation which moves away from an emphasis on rigidly structured top-down processes of internal diffusion. Rather than view military organizations as a unitary actor structured to resist change, this more recent literature has developed a view of the military as a diverse learning organization.<sup>29</sup> This body of work highlights that learning can emanate from a variety of sources within the parent military, and that each is capable of becoming the impetus for spreading knowledge across the parent organization.<sup>30</sup>

Third, the study of lead agents also offers the advantage of drawing attention to micro-level processes that are responsible for promulgating ideas through the parent military. It exposes the ghosts in the machine that would otherwise remain hidden. One such ghost is the social coordination necessary to develop consensus on a new concept or

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and Tactical Adaptation in the Israel–Hizballah Conflict: The Institutionalization of Lesson-Learning in the I.D.F.," *Journal of Strategic Studies* 38, no. 4 (2015).

<sup>27</sup> Epstein and O'Halloran focus their research on how congress moderates policy making by the executive department. See David Epstein and Sharyn O'Halloran, *Delegating Powers: A Transaction Cost Politics Approach to Policy Making Under Separate Powers, Political economy of institutions and decisions* (Cambridge, U.K, New York: Cambridge University Press, 1999), pg. 7.

<sup>28</sup> Grauer. His argument focuses on how bureaucracy affects the likelihood of adoption success.

<sup>29</sup> Adam Grissom, "The Future of Military Innovation Studies," *Journal of Strategic Studies* 29, no. 5 (2006): pg. 919. Also see Eliot A Cohen, "Change and Transformation in Military Affairs," *Journal of Strategic Studies* 27, no. 3 (2004): pg. 400.

<sup>30</sup> For examples, see Theo Farrell, "Improving in war: military adaptation and the British in Helmand Province, Afghanistan, 2006–2009," *The Journal of Strategic Studies* 33, no. 4 (2010). Also, Sergio Catignani, "'Getting COIN' at the Tactical Level in Afghanistan: Reassessing Counter-Insurgency Adaptation in the British Army," *Journal of Strategic Studies* 35, no. 4 (2012). Also, Robert T Foley, "A Case Study in Horizontal Military Innovation: The German Army, 1916–1918," *Journal of Strategic Studies* 35, no. 6 (2012). Also Chad C. Serena, *It Takes More Than a Network: The Iraqi Insurgency and Organizational Adaptation* (2014). Also, Kristen A Harkness, and Michael and Hunzeker, "Military Maladaptation: Counterinsurgency and the Politics of Failure," *Journal of Strategic Studies* 38, no. 6 (2015). Also Nina A Kollars, "War's Horizon: Soldier-Led Adaptation in Iraq and Vietnam," *Journal of Strategic Studies* 38, no. 4 (2015).

capability within highly complex organizations. This micro-level process is often omitted in studies of military diffusion.

Consider Michael Horowitz's (2010), *The Diffusion of Military Power*, which theorizes that "organizational capital" is an intangible asset representing the military organization's ability to adopt innovation.<sup>31</sup> While his conceptualization has had detractors,<sup>32</sup> its principle omission is the underdevelopment of the phenomena of social coordination. According to Horowitz, the measure of organizational capital uses characteristics of the parent military prior to the decision to attempt adoption. Left unexplained, was the means by which the organization internally coordinated consensus in support of implementation. The organization's ability to alter its own internal structure, to experiment, to alter internal routines, and create new practices, all are omitted as part of the explanation.

Restating the theory, agent-led adoption describes how a lead agent moderates organizational resistance to increase the likelihood of the parent organization successfully implementing a new capability or paradigm. In simpler terms, it describes how the lead agent can be instrumental in his own success. It is novel in that it offers an alternative strategy for solving PA problems. I specifically am interested in how the actions of the lead agent affect both risk and organizational cost, and subsequently, how those actions enable the lead agent to moderate resistance to major change. While the study also

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<sup>31</sup> Michael C Horowitz, *The Diffusion of Military Power: Causes and Consequences for International Politics* (Princeton University Press, 2010), pg. 32-39.

<sup>32</sup> Gilli and Gilli argue that the theory is misapplied when used to assess nontechnological diffusion such as suicide bombing. Andrea Gilli and Mauro Gilli, "The Spread of Military Innovations: Adoption Capacity Theory, Tactical Incentives, and the Case of Suicide Terrorism," *Security Studies* 23, no. 3 (2014).

contributes to the larger understanding of diffusion between military organizations, more importantly, it offers insight into the microprocesses that shape diffusion and adoption within individual organizations.

### **Research Method and Case Selection**

To discern the relationship between a lead agent's actions and organizational behavior regarding adoption, this study employs process tracing to conduct a series of within-case qualitative analyses. This methodology enables the tracing of events and decisions by which the "initial case conditions are translated into case outcomes."<sup>33</sup> If observable evidence of the step-by-step linkages between cause and effect are present, then they provide "valuable leverage in causal assessment."<sup>34</sup> Additionally, as noted by Dale Copeland, qualitative analysis is better suited to the examination of rare events, allowing the researcher to apply judgment as to whether the independent variables are actually doing the work claimed by the theory.<sup>35</sup>

I rely on both primary and secondary research material. The primary research consists of official military histories, autobiographical data, historical newspaper interviews, official military studies and unit reports. Together, these types of sources makeup a compelling data set that can identify whether a theory's prescribed

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<sup>33</sup> Stephen Van Evera, *Guide to Methods for Students of Political Science* (Cornell University Press, 1997), pg. 64. As found in Sharon Crasnow, "The Role of Case Study Research in Political Science: Evidence for Causal Claims," *Philosophy of Science* 79, no. 5 (2012): pg 658.

<sup>34</sup> Henry E Brady and David Collier, *Rethinking Social Inquiry: Diverse Tools, Shared Standards* (Rowman & Littlefield Publishers, 2010), pg. 318. As found in Crasnow, pg. 659.

<sup>35</sup> Dale C Copeland, *Economic Interdependence and War* (Princeton University Press, 2015).

relationships between the identified actions and organizational responses correlate. If correlations exist in multiple cases, it lends support to the theory.

The case selection includes only wartime cases of innovation in ground combat during the modern period of war. While there is no consensus within the field on the universe of cases involving the wartime diffusion of innovation,<sup>36</sup> the specific focus on wartime offers several advantages. Among them is that wartime provides clear limits on the evaluation period for diffusion, enabling a distinct assessment at war's end, of whether the innovation was successfully integrated as a new capability used to inform future war plans.

Another advantage is that it controls for strategic need, holding it constant for all participants.<sup>37</sup> Military organizations in peacetime rarely employ the capabilities they have against an adversary. Accordingly, they lack real feedback on its efficacy. During periods of war however, adaptation, innovation and change more generally is expected to some degree as part of the ongoing duel between combatants, each seeking their preferred outcome--to win the contest of wills or at least not lose.<sup>38</sup> The possibility of losses ranging from resource depletion to existential defeat, highlighting the unknown risks associated with war, serve as consistent impetus to adopt more effective capabilities if feasible.

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<sup>36</sup> Horowitz, pg. 61.

<sup>37</sup> For an informative argument on why strategic need cannot explain variance in the successful implementation of innovation within military organizations, see Rosen, pg. 22-24.

<sup>38</sup> Williamson Murray, *Military Adaptation in War: With Fear of Change* (Cambridge University Press, 2011). Murray's work was accessed on the Kindle version, location 224, Chapter 1. Introduction: The Background to Military Adaptation.

This sample of 12 wartime cases is the result of a thorough review of the literature on innovation as well as the history of conflicts in the 20th and early part of the 21st century.<sup>39</sup> While wartime innovation includes far more than ground combat (World War I for example had incredible innovation in battlefield surgery, signals communication, aerial reconnaissance, submarines, dreadnaughts, and carriers), these cases are limited to ground combat for reasons best explained by Stephen Biddle. Ground combat “will remain the most expensive mission to fulfill, it will remain the central purpose for the majority of the U.S. military, and it will continue to occur between other parties in other parts of the world.”<sup>40</sup> Additionally, I only consider the period of modern war, roughly defined as beginning with World War I.<sup>41</sup> While research encompassing wartime innovation back through the ages would be an immensely valuable undertaking, this project hopes to derive implications for ongoing and future efforts. I draw these out from an era where the major features of warfare are more similar in scope and structure to the present day.

This research centers on the efficacy of lead agents to facilitate adoption. Accordingly, two commonly considered types of wartime innovation are not considered in this study. Adoption that is clearly attributable to an extreme shock or technological revolution may have an agent involved in the effort, but their involvement is not focused on guiding the diffusion of the innovation. Consider for example the attack on Pearl

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<sup>39</sup> The following works served as the primary pointers in the research leading to the discovery of the universe of cases. Rosen. Horowitz. Dale C. Copeland, *The Origins of Major War, Cornell studies in security affairs* (Ithaca, NY: Cornell University Press, 2000). Copeland.

<sup>40</sup> Biddle, pg. 6.

<sup>41</sup> Emily O Goldman and Richard B Andres, "Systemic effects of military innovation and diffusion," *Security Studies* 8, no. 4 (1999): pg. 18.



Harbor and its clear effect on the U.S. Navy adopting unrestricted submarine warfare. At the time of the attack, the U.S. Navy was already considering the use of submarines as combat vessels. However, the loss of so large a portion of the surface fleet undermined organizational commitment to a capital ship-centric mode of warfare, allowing the diffusion of unrestricted submarine warfare within the U.S. Navy to progress rapidly.<sup>42</sup>

Similarly, while there is no agreement on whether the spread of new technology follows a Darwinian model, with the most effective technologies superseding others, or whether it is a social construct, where the technologies obtaining social consensus are the ones that spread, technology is widely accepted as a critical variable in the diffusion of innovation.<sup>43</sup> Therefore, including these types of cases would detract from assessing the efficacy of lead agents. For revolutionary technology, as with occasions of extreme shock, the causal influence of the lead agent cannot be easily parsed.

As indicated, a careful historical review using these criteria yields 12 cases for analysis. They are included in *Figure 1-1, Innovation Cases Involving Lead Agents Since 1900*. While, I have attempted to locate all cases meeting these selection criteria from throughout the modern period of warfare, it is expected that some cases remain obscured by the strategic interaction between combatants. Invention and countervention by adversaries render certain initiatives less significant to history. A successful adoption that is rendered mute by a countervention may not be noted in the historical record.

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<sup>42</sup> Jeffrey Legro, *Cooperation Under Fire: Anglo-German Restraint During World War II*, *Cornell Studies in Security Affairs* (Ithaca: Cornell University Press, 1995), pg. 80-93.

<sup>43</sup> Farrell and Terriff, pg. 13. Also see Martin Van Creveld, *Technology and War: From 2000 B.C. To the Present* (New York: Free Press, 1989).

*Figure 1-1. Lead-agent cases since 1900*

Lead Agent	Innovation	Conflict	Ground Forces
Stormtroop Battalion	Infiltration Tactics	WWI	Germany
Tank Corps	Armored Warfare	WWI	Great Britain
Tank Destroyer Center	Anti-Tank Operations	WWII	United States
Eighth Army Ranger Company	Small Unit Patrolling	Korean War	United States
Korean Military Advisory Group (KMAG)	Korean Augmentation to the U.S. Army (KATUSA)	Korean War	United States and Canada
11th AirAssault (Test)	Air Mobile Operations	Vietnam War	United States
Civil Operations and Revolutionary Development Support (CORDS)	Counterinsurgency Operations	Vietnam War	United States
Counter Improvised Explosive Device-Task Force CIED-TF	Counter IED Operations	Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF)	United States
Asymmetric Warfare Group (AWG)	Operational Adaptability	OIF/OEF	United States
Rapid Equipping Force (REF)	Rapid Equipping	OIF/OEF	United States
162d Infantry Training Brigade	Security Force Assistance	OIF/OEF	United States
Army Capabilities Integration Center (ARCIC)	Force Modernization	OIF/OEF	United States
Ongoing Efforts			
Army Futures Command	Force Modernization	Operation Inherent Resolve, Operation Freedom's Sentinel	United States

The data set spans the observation period beginning in World War I to the present. Importantly, all cases shared conditions that conventional wisdom would associate with successful adoption. They all were created as result of directed guidance

from either the senior civilian and/or military leader the time. Additionally, all cases occurred under conditions where the war outcomes were in doubt and high importance was given to improving operational effectiveness. Despite sharing a common starting point, the organizational behavior in these cases varies significantly.

As noted in *Figure 1-2, Distribution of Case Outcomes*, just under half of the cases, five of twelve, resulted in successful adoption. In seven of twelve cases, organizational resistance was enough to cause the implementation effort to fail. Three of twelve occurred during existential wars (World War I, World War II), although only one of these three were successfully implemented. Of the remaining nine that occurred during limited wars (Korea, Vietnam, Iraq War, Afghanistan War) only four were successfully implemented.

***Figure 1-2. Distribution of Case Outcomes***

Successful Adoption	Failed Adoption	
Stormtroop BN 11 <sup>th</sup> Air Assault (Test) CIED-TF AWG REF	<b>Partial Adoption</b> Tank Destroyer Ctr CORDS 162d Infantry Trng Bde ARCIC	<b>Rejection</b> The Tank Corps Eighth Army Ranger Co KMAG

Interestingly, none of the cases resulting in failure can be attributed to badly conceived innovation concepts or poor leadership. To account for these possibilities as alternative explanations for failed implementation, each case in the set will begin with a description of the conditions surrounding the selection of the lead agent. By doing so, the case captures the high-level vetting process surrounding the innovation prior to the

appointment of a lead agent. Each case will also include the motivation behind the selection of the lead agent's key leader, thereby exposing the presence of incompetence as an explanation. If for example the innovation was selected for adoption as a product of institutional logrolling, one would expect to find evidence to support the collusion of various interest groups despite the innovation's repeated failures. Similarly, evidence of a key leader's record of demonstrated performance (or lack thereof) indicating their qualifications for selection to critical positions should also be readily available.

Appropriately, the sample omits any cases occurring during short conflicts from consideration entirely. Short wars do not allow enough time for senior leaders to discern shortcomings or needs out of the fog of war, weigh the risks, identify an alternative solution, decide to adopt, implement the innovation across their entire organization and then decide whether to keep it.<sup>44</sup> As stated by Stephen Rosen, "Wartime innovation will be limited in its impact where it does occur at all, because the time necessary to complete all these tasks is likely to be long relative to the length of the war."<sup>45</sup> For example, the Falkland War, Battle for Grenada, and the first Gulf War did not allow the time for major innovation to be implemented during combat operations.

This study is principally interested in U.S. military adoption patterns. As such, this sample only includes western armies. Non-western armies are unlikely to have used autonomous lead agents due to their different societal approach to warfare, which was

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<sup>44</sup> The stages of diffusion as listed here are taken from the research of Everett M Rogers, *Diffusion of Innovations*, 5th Edition ed. (New York: Free Press, 2003), pg. 168-218.

<sup>45</sup> Rosen, pg. 38.

more hierarchic and more prone to coup-proofing practices.<sup>46</sup> Regardless, their omission is purposeful enabling a focused lens on the west.

Of the three potential outcomes highlighted in Figure 1-2, the lead agent's preference is successful adoption. *Successful adoption* is the retention of a wartime innovation as part of the new baseline of dominant warfighting ideas, accepted, resourced and trained, for use in future wars. In every successful case, the lead agent's efforts reduced risk and organizational cost. Together, these two accomplishments served to moderate resistance from sub-elements of the parent military, allowing the adoption effort to succeed. German implementation of infiltration tactics in World War I illustrates this outcome.

By the end of World War I, German infiltration tactics replaced the large frontal assaults that had dominated the early campaigns.<sup>47</sup> In order to spread this capability, the German Operational High Command tasked the 5<sup>th</sup> Stormtrooper Battalion to act as the lead agent. As the lead agent, they repeatedly tested and refined tactics both during combat operations and during live training scenarios, demonstrating the effectiveness of the capability. Simultaneously, they informed the development of tactical doctrine, developed training routines and trained sister elements in the use of the same tactics, sending advisors to both embed with those elements in training as well as combat

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<sup>46</sup> For a discussion on how societal differences affect the diffusion of innovation, see Jeffrey A. Isaacson et al., *Predicting Military Innovation* (Santa Monica, CA: RAND, 1999), pg. 13. Also, for a discussion on how non-democratic regimes coup proof themselves against their militaries by appointing politically loyal leaders and restricting interaction between subgroups, see Caitlin Talmadge, *The Dictator's Army: Battlefield Effectiveness in Authoritarian Regimes*, *Cornell studies in security affairs* (Ithaca, London: Cornell University Press, 2015).

<sup>47</sup> Biddle, pg. 3.

operations.<sup>48</sup> The combined effect drove both confidence in the techniques and capacity in the force. The actions of the 5th Stormtroop BN were instrumental in successfully spreading the innovation within the German Army,<sup>49</sup> enabling the major offenses of 1918, and subsequently replacing their existing dominant paradigm.<sup>50</sup>

The two remaining outcome types represent failed adoption attempts but differ in terms of how the organization behaves in resisting the effort, resulting in either partial implementation or rejection. Within the sample, four cases of *partial implementation* demonstrate an outcome in which the new capability is sustained initially, but for ulterior reasons. For example, suborganizations may appear to embrace it in order to harvest its resources for use in other areas. Alternately, they may use the new capability considering it to be idiosyncratic, with little enduring value. In either case, this outcome highlights how the lead agent is either incapable of overcoming the skepticism associated with the capability or unable to facilitate the conversion of tacit knowledge about the new capability into permanent organizational routines, thereby failing to moderate resistance.

Two vignettes illustrate this outcome. Counterinsurgency (COIN) operations during Vietnam were led by the Civil Operations and Revolutionary Development Support (CORDS) program. Tasked with expanding COIN, they introduced improved local security initiatives, sponsored programs for incentivizing Vietcong defections, and developed programs for improving the leadership qualities of Vietnamese government

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<sup>48</sup> G. C Wynne, *If Germany Attacks: The Battle in Depth in the West* (London: Faber and Faber Ltd, 1940), pg. 147.

<sup>49</sup> Timothy T Lupfer, *The dynamics of doctrine: The changes in German tactical doctrine during the First World War* (Diane Publishing, 1981), pg. 28.

<sup>50</sup> Jonathan BA Bailey, "The First World War and the Birth of Modern Warfare," in *The dynamics of military revolution: 1300-2050*, ed. MacGregor Knox and Williamson Murray (Cambridge, UK: Cambridge University Press, 2001), pg. 144.

representatives, all of which contributed to progressively increasing the percentage of the population under effective governance. However, despite these successes, they did not attempt to alter institutional training for officers or alter the level of acceptance for pacification programs within the deployed divisions. Ultimately, with little support outside of those assigned to serve within CORDS, counterinsurgency operations were discarded as an unneeded vestige of a war best forgotten.<sup>51</sup> More recently, the 162d Infantry Brigade was established at Fort Polk, in order to spread military advisory skills to designated units in support of both the war in Iraq and Afghanistan.<sup>52</sup> As the war progressed, the organization created doctrine and training routines to support requirements in these two locations but was unable to foster consensus about the need for the capability in future wars. Attempts to demonstrate the capability in other theaters were unsuccessful at shifting confidence from traditional military capabilities. Subsequently, the unit was closed, and its core functions were eliminated while its personnel were absorbed into other organizations.<sup>53</sup>

The third outcome type, *organizational rejection* represents a more extreme form of failure than does partial implementation. This outcome is characterized by a complete lack of implementation progress due to active resistance from multiple locations within the parent military. In the sample, three cases have this outcome type. It differs from

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<sup>51</sup> Andrew F Krepinevich, *The Army and Vietnam* (Baltimore: Johns Hopkins University Press, 1986).

<sup>52</sup> Unlisted, "162nd Infantry Brigade Activates, Welcomes New Commander," *Leesville Daily Leader* (4 May 2009), <https://www.leesvilledailyleader.com/article/20090504/NEWS/305049997>. Of note, the article discusses the unit's historic ties to "Tigerland", the Vietnam era training area which fed individual replacements to the Vietnam theater.

<sup>53</sup> Pablo Villa, "Noncommissioned Officers of 162nd Infantry Brigade Ready to Tackle Regionally Aligned Forces Mission," *NCO Journal* (10 June 2014), accessed 7 February 2019, <http://ncojournal.dodlive.mil/2014/06/10/ncos-of-162nd-infantry-brigade-ready-to-tackle-regionally-aligned-forces-mission/>.

partial implementation in that the lead agent is neither able to build a broad base of support to overcome commitment to the current paradigm, nor is he able to replace existing bureaucratic systems that reinforce the existing paradigm.

Ridgeway's attempt to alter the performance of infantry units fighting along the Eighth U.S. Army front in September 1950 illustrates this example. During the height of the Battle of Pusan Perimeter, Ridgeway created the 8th Army Ranger Company to spread the tactics, techniques and procedures necessary in combat to conduct deep penetrations, reconnaissance, and critical intelligence gathering operations. The implementation effort was meant to spread these new skills to infantry units throughout Ridgeway's field Army. While extensive modeling refined unit tactics, the lead agent was unable to effectively demonstrate how the new capability would benefit the division. Attempts to demonstrate were regularly blunted by supported elements who assigned the company to missions that were consistent with existing beliefs. After 15 months, the 8th Ranger Company would experience extensive casualties, while not being able to sustain internal training standards for replacements. Instead, replacements arrived untrained due to a lack of institutional support. Having little effect on the behavior of the conventional infantry battalions within the command, the unit was deactivated.<sup>54</sup>

Overall, a sample of 12 cases is sufficiently large to discern whether a strong correlation exists between the identified actions and the organizational responses. While the study cannot conclude a definitive causal relationship, if the correlations exist in multiple cases, it lends support to the theory and informs the need for additional research.

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<sup>54</sup> Chelsea Y. Chae, "The Roles and Missions for Rangers in the Twenty-First Century" (Command and General Staff College, 1996), pg. 6-7.



Furthermore, if the theory holds, then we can also generalize beyond the cases under review to appreciate the implications for a broader set of cases.

### **Organization**

The dissertation will be organized into seven chapters. The introduction provided an overview of agent-led adoption, situated it in the literature, and described the case selection and sample. Chapter two will focus on the theory itself, describing the supporting logic, a framework for the analysis of each of the detailed case study chapters, and a summary of findings across the sample of cases. Chapters three through six will provide evidence describing how the lead agent influences both risk and organizational cost, thereby affecting the outcomes.

The case selected for detailed analysis in chapter three is the attempted diffusion of armored warfare by the Tank Corps within the British Army in World War I. The case selected for analysis in chapter four, is the attempted diffusion of antimechanized defense by the U.S. Army using the Tank Destroyer Center in World War II. The former resulted in organizational rejection, while the latter was partially adopted. While both initiatives ultimately failed, they differed in how they failed. Neither case included successful risk reduction, which according to agent-led adoption is a necessary feature. The cases differed in their approaches to reducing organizational cost. As a result of this difference, the Tank Destroyer Center was able to partially implement the new capability within the U.S. Army through the integration of doctrine and training routines, something the British Tank Corps was unable to accomplish.

In chapter five, the case looks at the partial implementation of counterinsurgency operations within the U.S. Army during the Vietnam War as led by the Civil Operations and Revolutionary Development Support (CORDS) program. In chapter six, the case focuses on the successful adoption of airmobile operations as facilitated by the 11th Air Assault Division (Test) also during the Vietnam War. Unlike chapters three and four, both CORDS and the 11<sup>th</sup> Air Assault were both successful in demonstrating the value of the respective capabilities they championed through employment in combat operations or in live experimentation. Only the 11<sup>th</sup> Air Assault was able to couple successful risk mitigation with a reduction in organizational cost to effectively moderate resistance. By demonstrating that new capability was at least as effective as existing capabilities and modifying institutional training, doctrine, and unit routines, the 11<sup>th</sup> Air Assault (Test) was able to facilitate implementation and retention of airmobility operations as a critical capability within the U.S. Army.

The final chapter will be composed of three sections. First, it will open with insights from across the cases. Next it will discern implications for future studies of military diffusion. Lastly it will examine policy implications for the largest reorganization of the U.S. Army since 1973.<sup>55</sup> As alluded to in the opening paragraph, the newly formed Army Futures Command directly involves approximately 25,000 soldiers and civilians and affects the expenditure of roughly \$30 billion dollars annually within the defense budget. The reason behind the massive reorganization is the

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<sup>55</sup> Jen Judson, "The Army is Creating a Modernization Command to Keep Projects on Track," *Defense News* (9 October 2017 2017), accessed 1 October 2018, <https://www.defensenews.com/digital-show-dailies/ausa/2017/10/09/the-army-is-creating-a-new-modernization-command-to-keep-projects-on-track/>.

implementation of Multi-Domain Operations, an ambitious new warfighting concept that seeks to reverse the declining efficacy of U.S. deterrence, and transform the Army's modernization enterprise into an organization designed for wartime innovation.<sup>56</sup> Whether this effort will ultimately be successful is unclear but agent-led adoption may provide some clues.

First, however, the project turns back to theory. The next chapter begins by introducing the process of military diffusion. It then develops the theory of agent-led adoption by describing both cultural and bureaucratic resistance models, then describing how both risk and organizational cost can be mitigated by lead agents.

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<sup>56</sup> David Perkins, "Multi Domain Battle: The Advent of 21st Century War," *Military Review* (November-December 2017 2017). Also see Hassan M. Kamara, *Army Combat Developments Command: A Way to Modernize Better and Faster than the Competition* (Arlington, VA: Institute of Land Warfare, 2018), p. 11.



## CHAPTER 2: AGENT-LED ADOPTION

*“Seeing others perform threatening activities without adverse consequences can create expectations in observers that they too will eventually succeed if they intensify and persist in their efforts. They persuade themselves that if others can do it, they should be able to achieve at least some improvement in performance.”<sup>1</sup>*

—Albert Bandura

Agent-led adoption argues that successful adoption of wartime military innovation is more likely if the parent organization can moderate organizational resistance through her lead agent. To moderate organizational resistance, the lead agent must reduce the risk created by the introduction of a new and untested capability in war and reduce the organizational cost of adjusting the systems of practice and routines by which a military operates. If the lead agent fails to address both risk and organizational cost, the organization may achieve limited or partial success, but it is unlikely that the innovation will be successfully adopted.

This chapter is organized into four sections and explains how agent-led adoption operates. The first explains military diffusion, defines key terms and explains how risk and organizational cost serve as firewalls inhibiting diffusion. The lead agent is introduced as a strategy to moderate the effects of these firewalls. The lead agent does this by creating evidence to offset the risk and providing integration support to offset the organizational cost. The second and third sections focus on describing the variety of forms that evidence creation and integration support can take, defining the forms in order of their salience. The more salient the activity, the greater the effect on moderating resistance and therefore the greater likelihood of successful adoption. The chapter

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<sup>1</sup> Albert Bandura, *Social Learning Theory* (Englewood Cliffs, N.J: Prentice Hall, 1977), p. 79.

concludes by providing a framework for the cases that follow as well as table with a complete summary of findings.

### **Explaining Military Diffusion**

In his seminal work, *Diffusion of Innovations*, Everett Rogers defined diffusion as the “process by which an innovation is communicated through certain channels over time among members of a social system.”<sup>2</sup> Rogers identified five stages to explain diffusion, calling it the Innovation-Decision Process (see Figure 2-1). The first stage is Knowledge, in which a decision-making unit initially learns about the new idea. The second stage is Persuasion, during which potential adopters assess the value of the innovation. The third stage is Decision, in which the decision to attempt adoption is realized. The next stage is Implementation, during which new systems must be created and propagated to sustain the innovation. In the final stage, Confirmation, the decision-making unit either opts for long-term retention or to discontinue its use.<sup>3</sup>

In the third stage, when an organization decides to attempt adoption, early adopters within the organization make it easier for others to follow by helping to clarify the uncertainty surrounding the innovation.<sup>4</sup> Some early adopters become agents by which knowledge is distributed and provide tangible evidence of the benefits of using the innovation. In this way, these agents can both sustain initial supports to align with the adoption effort and help early rejectors reform their assessments to also align with

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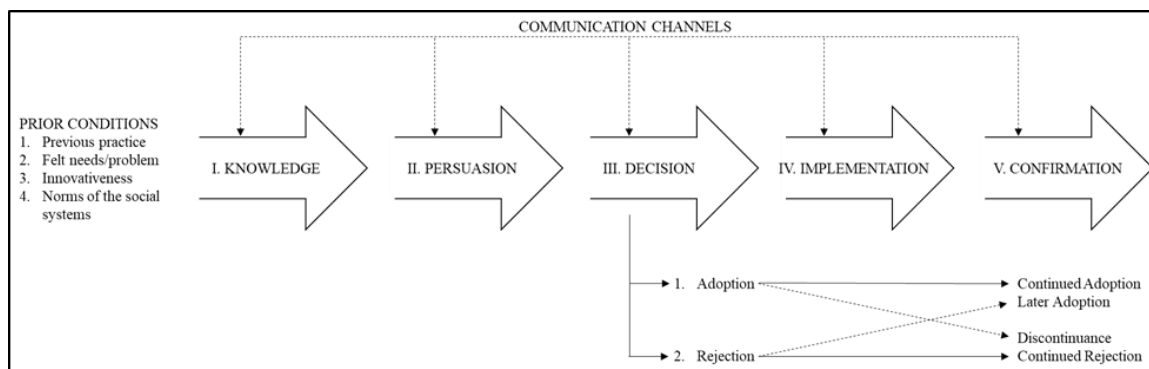
<sup>2</sup> Everett M Rogers, *Diffusion of Innovations*, 4th Edition ed. (New York: Free Press, 1995), p. 34.

<sup>3</sup> Ibid., p. 162.

<sup>4</sup> Ibid., p. 399.

adoption. This process of socialization, over time, generates the momentum for successful adoption.<sup>5</sup>

**Figure 2-3. Roger's Innovation-Decision Process**



Here, successful adoption in military organizations refers to the post-conflict retention of the innovation. Retaining the innovation represents confirmation that the implementation effort generated consensus within the military about the value provided by the innovation. As an accepted part of the new baseline of dominant warfighting ideas, the innovation is integrated and resourced for use in future wars.

Additionally, in this work, the definition of innovation and adaptation are closely related. Innovation in war is the development of “new organizational structures and new organizational capacities built in war.”<sup>6</sup> Defined broadly, the principal distinction between innovation and adaptation is that innovation represents a “greater degree of

<sup>5</sup> Bandura.

<sup>6</sup> James A Russell, *Innovation, Transformation, and War : Counterinsurgency Operations in Anbar and Ninewa, Iraq, 2005-2007* (Stanford, CA: Stanford University Press, 2011), p. 8. By capacities, the author refers to the collection of things necessary within the organization to implement an innovation. This may consist of new organizational structures but may also require new equipment or new training procedures, or new tactical approaches.

novelty and disruptive organizational change than adaptation.”<sup>7</sup> That “greater degree” is assessed by whether the proposed change is likely to affect more than one branch of the army under analysis. For example, the introduction of armored warfare included the creation of a tank corps, what would eventually become a separate branch, but implementing the concept required changes in the traditional roles of infantry and artillery.<sup>8</sup> Armored warfare will be considered in more detail in Chapter 3.

Additionally, emulation, or the spread of capabilities from “originators to replicators” still requires the entity attempting to adopt the practice to create new structures and capacities, qualifying here as a form of innovation.<sup>9</sup> For example, counterinsurgency operations were used successfully in other conflicts prior to Vietnam, but the attempted adoption of it by U.S. forces in Vietnam still required implementation through new organizations and routines.<sup>10</sup> The implementation of counterinsurgency operations during Vietnam will be covered in greater detail in chapter five.

Importantly, large organizations in general and government organizations specifically are not inclined to adopt innovation. As noted by Graham Allison, “government consists of a conglomerate of semi-feudal, loosely allied organizations, each with a substantial life of its own.”<sup>11</sup> Accordingly, military organizations represent various

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<sup>7</sup> Theo Farrell, Frans Osinga, and James A. Russell, eds., *Military Adaptation in Afghanistan* (Stanford, CA: Stanford University Press, 2013), p. 7.

<sup>8</sup> J. P. Harris, *Men, Ideas, and Tanks: British Military Thought and Armoured Forces, 1903-1939, War, Armed Forces, and Society* (New York: Manchester University Press, 1995).

<sup>9</sup> This idea is also applied by Grauer, p. 269.

<sup>10</sup> For an overview of the Army’s struggles to adopt COIN during the Vietnam era, see Nagl.

<sup>11</sup> Graham T. Allison, “Conceptual Models and the Cuban Missile Crisis: National Policy, Organization Process, and Bureaucratic Politics,” in *International Relations Theory*, ed. Paul R. Viotti, and Mark V. Kauppi (London: Collier Macmillan, 1987), p. 295.



departments and subcultures competing for resources and exhibiting not only a tendency to promote their own capabilities, but also to resist imposed solutions.<sup>12</sup> A military may share common preferences, but that does not guarantee that the subgroups come to similar conclusions about which future capabilities they should adopt. The default state is a lack of consensus, which, interestingly, is rooted in a traditional view of military necessity.

Prior to the modern period of warfare, major changes in military capabilities occurred infrequently.<sup>13</sup> The noted historian, Williamson Murray, attributes the slow pace of change to the importance of discipline and cohesion. Discipline and cohesion were imperatives for success in combat, making adaptation “antithetical” to traditional ways of war.<sup>14</sup> The behaviors that were ingrained by both beliefs and practices, ingrained to the point of being reflexive, were the ones most correlated with past success and survival. Implementing change, therefore was generally seen as counterproductive. While the pace at which warfare transformed increased through the industrial revolution and continues to increase today the tension between the status quo and incorporating innovation continues.<sup>15</sup>

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<sup>12</sup> Wilson, p. 231. Also see JP Clark, "Organizational Change and Adaptation in the US Army," *Parameters* 46, no. 3 (2016). JP Clark argues that one such conglomeration of cultures within the military is based on demographic diversity.

<sup>13</sup> MacGregor Knox and Williamson Murray, eds., *The Dynamics of Military Revolution, 1300–2050* (Cambridge University Press, 2001).

<sup>14</sup> Murray, pp. 2-3.

<sup>15</sup> Michael Vickers, *Fostering Revolutionary Innovation* (Washington D.C.: Office of the Secretary of Defense, 2001), p. 3. Vickers references his own dissertation in FN 5, the Structure of Military Revolutions where he discusses the pace of change for major transformations citing about 12 major revolutions in military affairs, but six of the twelve occurred in the last 200 years.

The two critical factors in preserving the status quo are risk and organizational cost. Risk can refer to several types of military assessments. Strategic risk refers to the calculations made by states surrounding decisions made with incomplete information about adversarial intentions and capability.<sup>16</sup> Operational risk involves decisions by civilians and military leaders made about which capabilities to commit as part of an ongoing or future campaign or battle. These decisions are affected by cultural beliefs in the efficacy of the dominant forms of warfare. As mentioned, these beliefs are tied to past performance that resulted in desirable outcomes, like winning, and work to resist the adoption of new ideas. An innovation may promise gains in effectiveness, but those gains are hypothetical until proven otherwise. Until proven, the innovation increases the perception of risk, be it strategic or operational, forming a firewall inhibiting the implementation effort.

Organizational cost similarly preserves the status quo. Organizations institutionalize learned behaviors in the form of organizational practices and routines. Collectively, these behaviors are documented as standing operating procedures, doctrine, and formal training, and represent the body of knowledge regarding the execution of known capabilities. The organizational effort necessary to adjust or unlearn these ingrained practices is extensive. Large complex organizations invest heavily in artifacts that lock in organizational memory. The introduction of new ideas and capabilities work

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<sup>16</sup> James D Fearon, "Rationalist Explanations for War," *International Organization* 49, no. 03 (1995).

against this established praxis requiring new investments to replace the standing practices. This cost serves as a bureaucratic firewall to implementation.<sup>17</sup>

As mentioned, diffusion occurs through information sharing via the communication channels of an organization. The two firewalls—overcoming the added risk tied to existing beliefs about martial efficacy, and the organizational cost at scale of replacing old routines with the new tactics, techniques and procedures—slow down or completely curtail information sharing between early advocates/adopters and would-be adopters. These firewalls moderate diffusion by either reducing the effectiveness of the advocate’s messaging or the willingness of the would-be adopter to act on the new information.<sup>18</sup>

In a recent study about moderating diffusion, Ryan Grauer focused on the former. In it, Grauer argued that during the implementation of a new capability, military-to-military engagements were a principal means of transmitting the necessary information about an innovation. As the efficacy of the mil-to-mil contact increased, so did the likelihood of positive implementation outcomes. When training teams from innovating external militaries were contracted to serve as advisors, their past implementation success and first-hand knowledge of the innovation made them more successful in leading the

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<sup>17</sup> Joseph R. Clark, "The Efficacy of Landpower: To Win Wars, Correct the Army's Political Blindspot," *Parameters* 45, no. 4 (2016): p. 31. Clark argues that the U.S. Army’s commitment to formal doctrinal training and education “validates the perceived utility of established behaviors” thereby limiting its ability to innovate.

<sup>18</sup> Etel Solingen, "Of Dominoes and Firewalls: The Domestic, Regional, and Global Politics of International Diffusion 1," *International Studies Quarterly* 56, no. 4 (2012): p. 634. in his 2012 International Studies Association presidential address on diffusion, Solingen suggested closer attention to the characteristics that prevent diffusion, presenting a good explanation of how agents are enabled or constrained by the efficacy of the information medium used to transfer knowledge. As described, these firewalls can be both bureaucratic and cultural.

contracting army towards adopting the new capability.<sup>19</sup> When information transfer was largely a result of using other forms of mil-to-mil contact, such as military attachés, which did not possess the same bona fides, the diffusion process was moderated. The decision of which type of military-to-military contact to use was largely left to the military organization itself. Elements within the military who opposed the new capability could align to prevent the more effective training-advisory missions from occurring, thus arresting implementation.<sup>20</sup>

Unlike Grauer's bureaucratic model, agent-led adoption considers both the advocate's ability to transmit information and the disposition of the would-be adopter to act on the new information. Additionally, agent-led adoption is informed by two key aspects of Grauer's research. First, Grauer highlights the salience of certain actions over others. Grauer explains that mil-to-mil actions are a critical means of conveying information, but some modes of conveying information are more effective than others. These more salient actions, like contracting foreign military advisors with the prerequisite experience, led to a higher probability of successful implementation.

Secondly, Grauer rightly identifies that many diffusion problems are also principal-agent problems. He does this by highlighting that due to the diversity of military organizations, subordinates can strategically resist the desires of the principal. In other words, by casting diffusion as a principal-agent problem, Grauer explicitly exposes how the agent acts to condition the outcome in his favor. He also implicitly suggests the

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<sup>19</sup> Grauer, p. 277.

<sup>20</sup> Ibid., pp. 279-80.

idea, resident in all principal-agent problems, that the principal too can act to condition the organization.

Agent-led adoption adds to the principal-agent construct, explaining an additional method by which the principal might achieve the compliance he seeks from the agents. As noted, the traditional principal-agent approach explains outcomes based on two means employed by the principal to overcome organizational resistance. Those means are the manipulation of material incentives and the monitoring of agent actions. Agent-led adoption offers another option. The principal can moderate the resistance of non-conforming agents by leveraging the lead agent to condition the organization through structural changes that enhance the diffusion of new ideas.

### **Defining Lead Agents**

The lead agent represents a change in structure to alter organizational behavior. In his seminal work, *Bureaucracy*, James Q. Wilson highlights this practice in describing how government organizations can be so resistant that it will often require the creation of a specialized subunit, free of existing biases and routines, to guide the spread of changes within the organization.<sup>21</sup> James March and Herbert Simon, in their landmark study, *Organizations*, complement this finding by detailing how the creation of special purpose organizations in the business world increase the likelihood of successful implementation by both creating a dedicated entity accountable for success and by ensuring that the

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<sup>21</sup> Wilson, p. 231.

newly formed entity is not already burdened with existing routines that might compete with their primary responsibility of implementation.<sup>22</sup>

A recent study of the effectiveness of policy Czars in the White House applies the insights from the study of organizations and the study of firms to international relations. In their research, Vaughn and Villalobos highlight how changes in organizational structure (in their case, the Czar) concurrent with the vesting of coordinating responsibility provides a single problem focus to an entity with the ability to cross departmental agencies, independent of agency loyalties.<sup>23</sup> Importantly, the study of Czars mirrors the principal-agent conceptualization in this study, only here, I apply it to military organizations rather than the executive cabinet.

Building on these insights, we can define lead agents. They are a suborganization that is specifically created by the principal (in this case the parent organization) to lead the implementation of a new capability or paradigm throughout the whole organization. They represent a unique class of agent, composed of early adopters, empowered with the authority to influence across organizational boundaries, and incentivized to align with the principal. The main incentive is a focused *raison d'être*, where failure results in the lead agent's disestablishment. Importantly, the lead agent is developed as a critical preemptive move by the principal to moderate resistance created by both the risk introduced by the innovation and the bureaucratic cost imposed on the organization. Either is enough to block diffusion so both must be addressed.

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<sup>22</sup> James G March and Herbert A Simon, *Organizations* (New York: Wiley, 1958), pp. 198-99.

<sup>23</sup> Justin S Vaughn and José D Villalobos, *Czars in the White House: The Rise of Policy Czars as Presidential Management Tools* (Ann Arbor: University of Michigan Press, 2015), p. 11.

To influence behavior the lead agent can develop and distribute evidence that assuages concerns about the risk inherent in fielding untested capabilities during war. This moderates resistance by countering dominant beliefs about the efficacy of existing practices. Cultural ties to dominant practices and their historical precedents create norms of behavior against which subordinates constantly compare the innovation.<sup>24</sup> By providing tangible evidence, the lead agent alters the perceptions of greater risk from the innovation, shifting those perceptions to the existing practices.

Additionally, the lead agent can provide integration support to moderate resistance derived from organizational cost. Integration support refers to the direct assistance provided by the lead agent to facilitate the transfer of knowledge. They include the creation, adjustment and/or replacement of artifacts that constitute organizational memory and thereby make diffusion easier. When used broadly, integration support transfers the burden of effort from the organization wrestling with the execution of an existing wartime mission to the lead agent.

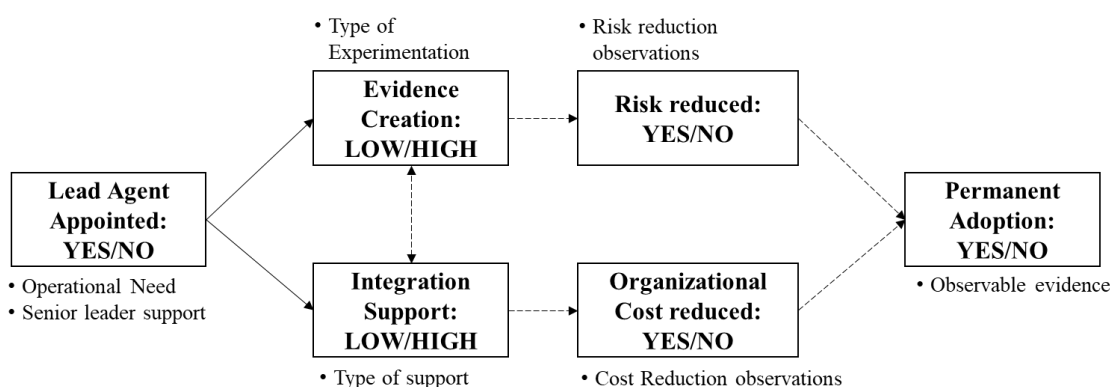
The logical relationship between the lead agent, risk reduction, evidence creation, and adoption are illustrated in *Figure 2-2, Agent Led Adoption Logic Diagram*. The appointment of the lead agent and the associated conditions leading up to it enable the lead agent to pursue both evidence-creating and integration initiatives. Working in tandem, the two categories of initiatives push military organizations towards consensus. Experimentation serves to create evidence that enables the reduction of risk inherent in the new capability. With lower risk, the new capability is better positioned for long term

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<sup>24</sup> Farrell and Terriff, p. 7.

retention. Similarly, integration support, such as creating new doctrinal references and the propagation of unit routines, reduces organizational cost, accelerating and scaling the distribution of knowledge throughout the parent organization. Together the two moderate resistance and increase the likelihood of permanent adoption.

**Figure 2-4. Agent-led Adoption Logic Diagram**



A similar figure will appear in each of the case studies (chapters three through six). Supporting evidence will appear aligned in bulletized text either above or below each node. The lines connecting the nodes will be solid if the evidence supports progress between nodes, otherwise they will appear dashed indicating where the lead agent fell short during its implementation effort. Each mechanism is enough on its own to inhibit implementation. As will be demonstrated in the ensuring cases, the lack of experimentation undermines confidence to use the innovation in combat, preventing any assessment of its value in future warfare. Similarly, the lack of assistance to institutionalize the innovation, makes the mechanics of diffusion, the actual distribution of knowledge, harder to achieve, similarly impeding value assessments.



Importantly, the double headed arrow connecting *Evidence Creation* and *Integration Support* highlights the interdependence of these initiatives. While each of the two variables can exist independent of the other, it is also likely that if successful, they will be mutually reinforcing. For example, new discoveries or iterative improvements achieved during experimentation will inform the publication of tactical doctrine<sup>25</sup> and training routines. Alternately, tactical doctrine and training routines improve how suborganizations integrate the new capability and subsequently employ it to gain value, enabling future experiments such as a combat demonstration, to be more successful.

### **Creating Evidence Mitigates Risk**

Creating evidence works to mitigate risk in a similar fashion as consequential failure. If the current paradigm is undermined due to a consequential failure, retaining it becomes a higher risk option than adopting something else.<sup>26</sup> Creating evidence draws on the same idea, undermining the attachment to current beliefs, albeit in a less spectacular and more controlled fashion. In general, risk associated with deviating from a dominant paradigm is difficult to overcome because the dominant paradigms are, as noted by

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<sup>25</sup> The term “tactical doctrine” is distinguished from operational or capstone doctrine. The former relates to a specific capability or military means, how its employed and how it might support or in turn be supported by other parts of the military organization. It principally informs the units or suborganizations designated to execute the tasks included in the subject reference manual. Capstone or operational doctrine refers to the broader description of how a military organization will arrange its various capabilities to compete against adversaries and has as the target audience the entire military organization. Operational doctrine is consistent Barry Posen’s definition. See Posen, p. 13. In instances throughout this project where the term “doctrine” is used without identifying it as either tactical or operational, then it is referring to both.

<sup>26</sup> See Legro, “The Transformation of Policy Ideas.” In it, the author explains ideational change as a two-step process. The first is collapse, in which a society experiences failure of the dominant orthodoxy as well as a set of dire consequences resulting from the failure. The second is coordination, in which as a result of the vacuum left by collapse, the society aligns on a new orthodoxy.

retired Lieutenant General Theodore Stroup, part of an Army's personality. While discussing organizational culture, Stoup described these beliefs as reflective of not only its personality but also its "values, philosophy, norms, and unwritten rules." These common underlying assumptions in effect "guide behavior and the way the Army processes information as an organization."<sup>27</sup> Reducing risk therefore requires overcoming the firewall created by the existing belief system, and while catastrophic failure of the dominant paradigm can have that effect, it can also be achieved less dramatically.

Social learning theory offers two key insights to bolster the claim that creating evidence moderates organizational resistance due to risk. It describes how most organizational learning occurs vicariously, from observing others and assessing the consequences of their actions, both positive and negative. The first insight is that "the more costly and hazardous the possible mistake, the heavier is the reliance on observational learning from competent examples."<sup>28</sup> As an example of this insight in action, consider a new driver watching a video of a test dummy without a seatbelt during a head-on collision. The new driver can appreciate the need to wear a seatbelt based on watching the results. She does not have to go through a trial and error period where she wears and then does not wear a seatbelt during a crash to learn the benefits of wearing her seatbelt. This is what Albert Bandura, the noted Stanford Psychologist calls, setting "outcome expectations."<sup>29</sup>

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<sup>27</sup> Theodore G Stroup, "Leadership and Organizational Culture: Actions Speak Louder Than Words," *Military Review* 76, no. 1 (1996): p. 45.

<sup>28</sup> Bandura, p. 12.

<sup>29</sup> *Ibid.*, p. 79.

The second insight focuses on the required performance levels to achieve the outcomes of the observed behavior. It suggests that as the results become more achievable, the observers become less reluctant to attempt the innovation despite the risk.<sup>30</sup> Continuing with the driver example, consider a hypothetical situation where one is observing a driver negotiating a vehicle obstacle course. One may develop a desirable outcome expectation, that is, the desire to want to enjoy the same outcomes achieved by the stunt driver on the course, but at the same time, doubt that one can perform the tasks necessary to achieve that outcome. However, if the tasks are being performed by someone like the observer, as opposed to a professionally trained stunt driver, one may see that as evidence that the task is manageable. This demonstration would lower the observer's reluctance to attempt to negotiate the course. This is what Bandura calls setting "efficacy expectations."<sup>31</sup> While the driver metaphor is clearly an oversimplification included for illustrative purposes only, it conveys how these insights work.

In practical terms, during periods of conflict, when an experiment for a new capability suggests the potential to save lives, especially one's own life, it creates an incentive to replicate. Upon learning that the innovation worked in a live trial under the same combat conditions as faced in the conflict, the results serve to further increase the incentives to replicate, especially when the old system's chances for success are questionable. If other suborganizations also view the necessary tasks to achieve the

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<sup>30</sup> Ibid., p. 51.

<sup>31</sup> Ibid., p. 79.

desirable outcome as within its capacity to replicate, then the incentives will outweigh beliefs in the previous system.

When the evidence is convincing, an observer would expect to see a rise in the demand for the capability which can take the form of public statements, professional articles, and replication. Additionally, convincing evidence may generate an increased demand for integration support which then may also enhance cost reduction. Other observables of positive risk reduction include increased funding spent on the innovation, prioritized resourcing for its production, and lastly, a reduction in efforts to undermine the new capability.<sup>32</sup>

### ***Types of Evidence Creation***

Taken together, these insights suggest that the lead agent can conduct experiments to create evidence and by doing so moderate risk. The experiments are successful if they showcase the desired behavior as being within the capacity of like elements to replicate (efficacy expectation) and achieve the desired outcomes (outcome expectation). An experiment is defined as a future-oriented modernization event that tests proposed capabilities to evaluate their ability to enable operations in an anticipated operating environment.<sup>33</sup> Not all experiments produce credible evidence. The potential for

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<sup>32</sup> For an overview of common ways employed to undermine innovation, see Andrew Hill and Stephen Gerras, "Systems of Denial: Strategic Resistance to Military Innovation," *Naval War College review* 69, no. 1 (2016). They theorize three techniques. The first is to Kill the messenger, where the the credibility of advocate is brought into question. The second is to claim that the experiment suffers irrecoverably from construct validity issues. Lastly, the effort to undermine may involve a change in the ultimate measure of effectiveness for which the innovation was invented.

<sup>33</sup> Experiments are distinguishable from exercises in that an exercise is a current-oriented readiness event primarily supporting training objectives for a particular audience.

experimentation to create evidence depends on the type of experiment conducted. There are three broad categories of experimentation.

The first and most effective category of experimentation is a combat demonstration. Given that other external conditions remain constant, combat demonstrations will be effective at reducing risk and will be coded as “high”. To be considered a combat demonstration, the innovation must be used in accordance with its doctrinal or conceptual guidance, employing any new equipment in accordance with that guidance, featuring the new organizational structure, showing the interactions between various elements engaged in the action and lastly, performing as expected, regardless of who wins the battle. Such evidence is difficult to refute, particularly when the would-be adopter knows that their turn under similarly hazardous conditions may be forthcoming.

Such was the case with the 5th Stormtrooper Battalion and the development of infiltrations tactics during World War I. This lead agent regularly tested, refined and improved the operational concept and tactics through direct employment in combat. They were not always successful in achieving the objectives of the attack, but the use of infiltration tactics worked as predicted. Reports of their experiences spread across the German Army generating requests for support with unit training and SOPs and for advisors to support unit planning, making the process of implementation more effective and ultimately successful.<sup>34</sup>

Importantly, a combat demonstration of the innovation is not the same thing as using a new piece of equipment in combat. While a new technology may be quite

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<sup>34</sup> Foley, pg. 811. For additional information also see Wynne, pg 127.

effective, recall that as defined here, an innovation requires new organizational structures and capacities. Therefore, if the new equipment is used exclusively to reinforce current practices, the event does not provide evidence in support of the subject innovation. It may, instead, undermine implementation by casting focus on the alternative and less disruptive option.

If the lead agent is not able to demonstrate the effectiveness of the innovation under combat conditions, then two other options are available, each decreasing in its likelihood to moderate resistance. The next best option for the lead agent is to test the new capability within a simulated live experiment (from here forward referred to as simply a live experiment). Importantly, given that all other external conditions remain constant, live experiments provide credible evidence except under conditions of bias and therefore would be coded as “high”. Live experiments create simulated conditions designed to replicate the complexity of combat operations. They can include live ammunition and force-on-force maneuvers, but as simulations, some of the conditions are contrived. The opposing force in a live experiment for example, is not an actual member of the enemy. Accordingly, the consequence for failure are not dire, making the potential benefits less tangible than those derived from actual combat operations, and thus the lower level of salience afforded experiments as credible evidence. Live experiments do however offer the advantage of being repeatable, enabling refinements.

Critically, unlike combat demonstrations, live experiments have the potential for bias in favor of the innovation to permeate the experiment.<sup>35</sup> If the experiment is seen as biased, the results are less credible and would be coded as “low”. This characteristic, the introduction of bias during live experiments undermined the efforts of the Tank Destroyer Center at the outset of World War II. The Louisiana Maneuvers, a tremendous live experimentation effort focused on preparing American forces for the war in Europe, was intended to showcase an armored force against an antimechanized defense. The exercise director, who was supposed to provide an unbiased environment, was also the chief architect for the Army’s antimechanized defense forces, the new tank destroyer arm of the service.<sup>36</sup> The controversial results of the experiment, were shrouded in doubt, undermining the implementation effort. This case is the subject of chapter four.

The least effective option is an experiment that models combat operations using hypothetical or historical scenarios. A common example is an event often referred to as a tabletop experiment because it involves a discussion around maps and sketches on a tabletop. A tabletop experiment uses a simulated scenario using future forces and capabilities, enabling the participants to gain insights about possible approaches and requirements against anticipated future challenges. Another example of modeling involves the repeated execution of a portion of the new capability in order to refine its execution or develop standing operating procedures. It differs from a tabletop

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<sup>35</sup> For a discussion on the limitations associated with testing a new capability, see Edward L Katzenbach, "The Horse Cavalry in the Twentieth Century: A Study in Policy Response," in *Readings in American foreign policy: A bureaucratic perspective*, ed. Morton H Halperin and Arnold Kanter (Boston: Little, Brown, 1973), pp. 183-84.

<sup>36</sup> Gabel, pg. 15.

experiment in that rather than a wholly theoretical discussion, equipment and resources like the actual operating environment are included to enable performance assessments.

Given that all external conditions remain constant, modeling without other types of experimentation is unlikely to produce credible evidence and will be coded “low”. Modeling tends to include fewer military participants than live experiments, choosing to trade down to a smaller footprint in exchange for flexibility and repetition. Additionally, modeling is much more agile and can be adapted to address very specific issue areas. In the case of modern-day computer models, they can be repeated thousands of times within relatively short time periods. The downside is that the disparity between actual wartime conditions and the experimental conditions is too great. Often, this type of experimentation is used effectively to mature a capability in conjunction with live experiments or preceding combat demonstrations.<sup>37</sup> In some cases, it is the only type of experimentation possible as it allows for testing capabilities that are not currently manufactured. In isolation however, it tends to do little to mitigate the risk associated with introducing innovation in war.<sup>38</sup> See Figure 2-3, Effect by Type of Evidence Creation on Reducing Risk, for a summary of the types of evidence creation.

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<sup>37</sup> Importantly, a technology demonstration should not be misconstrued as a form of modeling or live experimentation. Technology demonstrations are events that showcase the level of maturation for a given technology or piece of equipment. Its focus is to demonstrate that the equipment can meet established engineering performance measures. It says little about how “adoptable” it is as part of a comprehensive innovation.

<sup>38</sup> The idea that virtual simulations and table-top exercises do little on their own to mitigate risk is shaped in part by a discussion held by senior military capability developers from multiple services during a discussion on “Multi Domain Operations as a Joint Concept” on 29 April 2019 at Creech Conference Center, Langley Air Force Base.



***Figure 2-5. Effect by Type of Experiment on Reducing Risk***

Type	Effect	Remarks
Combat Demonstrations	High	Highly reliable due to actual presence of both a live enemy and friction
Live Experimentation		Friction is replicated, but enemy actions and reactions are modeled. Coded “high” unless seen as biased
Modeling/ Tabletop Experiment	Low	Both friction and enemy activities are either modeled or notionally included.

### **Integration Support Reduces Organizational Cost**

As mentioned, organizational memory is a conceptual term referring to the storage and accessibility of organizational practices and routines. In some cases, the repository is through tacit knowledge of members. More often, it is documented as standing operating procedures, routines and scripts. It represents the body of knowledge regarding the execution of known capabilities taught during formal military education.<sup>39</sup> A failure to affect organizational memory creates a gravity well, pulling against implementation efforts. Rather than integrating the innovation, the natural tendency is for organizations to resort to practices that they already understand or can easily access.<sup>40</sup>

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<sup>39</sup> Huber, p. 105.

<sup>40</sup> March and Simon, p. 179.

Paraphrasing Robert Komer, the author of *Bureaucracy at War*, whatever the issue, organizations will bend the solution to fit responses already existing in their repertoire.<sup>41</sup>

Under normal conditions a suborganization is already sustaining established practices that are directed in their existing doctrine, trained in formal military courses, and refined in standing operating procedures and local routines. As noted by the military scholar, Richard Downie, “the effort to alter these routines requires incurring significant cost (time and effort) which is at a premium during war.”<sup>42</sup> If the lead agent produces and assists in supplanting those established practices, they lower a suborganization’s cost of implementation.

When integration support is effective, one would expect to see changes in the parent military’s organizational memory. Observable changes could include changes in professional education curriculum content, an increase in related professional writing, the integration of the new concepts into a military’s tactical doctrine, and a reconfiguration of institutional training to produce soldiers and leaders with the knowledge to execute the new capability. Additionally, observables could include promotions for early adopters, and adjustments to campaign plans that incorporate the new capability. The absence of these changes are also indicators that cost reduction efforts are not working.

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<sup>41</sup> Komer, pp. 166-67. Of note, the actual quote is “whatever the nature of the problem in the policy adopted, the institutions tasked to execute it will tend to contort this policy in practice to doing what they are used to doing – playing out their institutional repertoires.”

<sup>42</sup> Downie, pg. 23.

### ***Types of Integration Support***

Integration support can be subcategorized into two types. They are institutional support and organizational support. Of the two, institutional support is the more effective as it enables changes in the force generating systems of an army to occur and thereby contribute to the long-term sustainment of the capability. Operational support enables improved execution by units receiving the capability and complements institutional support. As would be expected, operational efforts remain localized to the immediate unit receiving support. This stands in contrast with institutional support which affects a much broader swath of the force.

Military institutions predominantly consist of branch schools and acquisition related organizations. These institutions develop the overarching doctrine that describes how operational units will fight. The institutional side of an army also recruits, trains and equips soldiers upon their initial entry (weapons and uniforms) and provides base training and knowledge to its leaders. They also design and procure associated platforms that are crucial to fighting and sustaining the army (e.g., ammunition, artillery pieces, communications equipment, motorized or track platforms).

Institutional support aligns with the major responsibilities of military institutions. It includes support for updating or replacing the tactics, techniques and procedures that describe how the innovation will integrate within the current systems and with other suborganizations and branches within the parent military. Additionally, it may also include input for updating the coursework used in formal training centers. It could include recommendations and designs for initial entry training in support of newly

created military occupational skills. Lastly, it may also include support in developing special organizational or equipment designs, and related equipment utilization training.<sup>43</sup> If the lead agent provides institutional support to accelerate changes in doctrine, leader development, initial entry training and organizational designs, then all things being equal, the result will be to lower the organizational cost of adoption. Accordingly, it will be coded “high”.

If institutional support is missing, then the tacit knowledge necessary for long term adoption may develop too slowly or differently among individual units, creating conflicting practices that hinder rather than help adoption. The lack of institutional support also places the burden of training all unit members within the operational unit itself, increasing rather than decreasing the organizational cost of change.

Operational units represent the fighting formations within a military organization. One of the principal means for providing support to operational units includes the development of operating procedures and unit level training that serves to enhance the integration of the new capability within the existing fighting force. Importantly it also includes support in the form of operational advisors, which are elements detached from the lead agent to support the integration of the new capability as an embed within a supported element.

Operational advisors work in close partnership with critical suborganizations within the parent military to both demonstrate the new techniques and help train its members. They are functionally incentivized to provide recommendations in the most

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<sup>43</sup> Nagl, p. 7. John Nagl, a noted security studies scholar and retired Army officer identifies similar indicators of change within a military organization.

effective manner. Only through the successes derived from the actions or recommendations they provide is the advisor likely to earn and sustain credibility.<sup>44</sup> By combining both ready access to the new knowledge as well as support in transferring that knowledge, the advisor serves to increase the likelihood of consensus within that suborganizations. Of note, advisors with common backgrounds as the target audience, who have gained distinction in some relevant way, of which combat experience is preeminent, are more likely to be successful embeds due to the innate prestige they bring to the knowledge transfer. They are simply more believable.<sup>45</sup> Importantly, because operational support in the absence of institutional support is limited to the units in which advisors are embedded, it is considered to have limited effects on cost reduction and is coded “low”. Figure 2-4 summarizes the types of integration support.

***Figure 2-6 Effect of Integration Support on Reducing Organizational Cost***

Type	Lead Agent Effect	Remarks
Institutional Support	High	New Doctrine Leader Development Initial Entry Training Organizational Designs
Operational Support	Low	Advisors Unit Level Training Unit Level Routines

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<sup>44</sup> Downie, p. 13.

<sup>45</sup> Bandura, pp. 88-89.

### **Describing Outcomes**

The next four chapters focus on the empirical evidence. Chapter three and chapter four analyze cases in which the effect of evidence creation on reducing risk was low. The two cases differed in how the lead agent affected organizational cost. Chapter five and six analyze cases in which the effect of evidence creation on reducing risk was high. Once again, these cases differed in how they affected organizational cost. In the case where the lead agent was neither able to affect risk or cost in a positive fashion, the adoption outcome was organizational rejection (chapter 3). In the cases where the lead agent was only able to affect one or the other independent variable, the outcome was partial adoption (chapter four and five). Finally, only in the case where the lead agent positively affected both (chapter six) was the outcome permanent adoption. Of note, just because the lead agent attempts to reduce risk and organizational cost, does not guarantee successful implementation. As the evidence will show, diffusing innovation is complex. However, in all cases where either of these two variables were coded as low whether due to omission, or poor management, the implementation failed, and the army returned to the status quo. See Figure 2-5, Implementation Outcomes Resulting from Lead Agent Actions, as a reference.

### ***Case Study Framework***

The following major cases will highlight four essential elements. Each will begin with a review of the innovation's background, including a description of both the context in which the innovation was considered, and the bona fides of the leaders involved in its

**Figure 2-7. Implementation Outcomes Resulting from Lead Agent Actions**

		<i>Effect of evidence creation on reducing risk</i>	
		High	Low
<i>Effect of integration support on reducing organizational costs</i>	High	Permanent Adoption	Partial Adoption (Status Quo)
	Low	Partial Adoption (Status Quo)	Organizational Rejection (Status Quo)

creation. Second, each case will describe the innovation itself, to include an overview of prevailing beliefs against which the innovation was competing, and the support from military and civilian senior leaders. Third, each case will describe the lead agent, and its attempt to reduce organizational resistance by closely examining the lead agent's efforts to create evidence and provide integration support. Finally, the case closes with a critical analysis of the observed outcomes. The analysis will include the likely effect of the special conditions presented by each case, some of which reflect ideas contained in more conventional theories of diffusion, and the effect created by the lead agent on behalf of the parent organization.

Using the empirical record as the basis for analysis, the following critical questions will be answered. What other considerations explain the outcomes? Does evidence reduce risk? Does integration support reduce organizational cost? Are both reducing risk and organizational cost necessary to increase the likelihood of permanent adoption? If the answer to this last question is yes, then we step forward in appreciating a

range of implications concerning the diffusion of innovation. Most important among them being a better appreciation for whether organizational resistance to change can be reliably moderated to reduce failed implementation efforts.

### ***Summary of Findings***

While the scope of this project does not allow for a detailed case study of every case in the sample, included here is summary of findings annotated with references (see Figure 2-6, *Summary of Findings*). The summary of findings is listed over the next three pages in landscape view. To read the figure, start at the column labeled “Innovation/Lead Agent” and read from left to right. Column two highlights the initial conditions that led to the lead agent being established. Columns three and four, “Key Factors”, include the coding of the two independent variables and an abbreviated description of the evidence explaining the coding decision. Column five lists the dependent variable. The last column includes a list of the principal references used in cataloging the individual case. Those references are also included in the bibliography.

The figure includes all 12 cases in the sample listed chronologically. Highlighted in bold text are the four major cases that will be discussed in greater detail throughout the remainder of the project. Each entry will highlight important supporting and key factors affecting the outcome of the case. Supporting factors include the conditions that existed before the implementation effort started that were important to its progress. Key factors are the lead agent’s attempts at experimentation and integration support that advanced implementation. This consolidated collection of cases and research citations offers a look at rare cases and analyses to inform future research. Some are from the recent past,



describing events from Operation Iraqi Freedom and Operation Enduring Freedom in Afghanistan. These include the implementation of security force assistance brigades, counter improvised explosive device (Counter IED) operations, operational adaptability, rapid equipping operations and force modernization reform. Additionally, summary descriptions from the minor cases within the sample have been mentioned as anecdotes throughout chapters one, two, and seven.

Turning to the major cases, chapter three focuses on the absence of evidence. It represents the first chronological case in the sample. In it, the British Army struggles to find alternatives to the stalemate on the Western Front. In the end, they would miss an opportunity to leverage innovation. The consequences of that omission would not be felt for two decades, but they would be dire.

**Figure 2-8. Summary of Findings**

Innovation (Lead Agent)	Supporting Factors	Key Factors: Risk Reduction	Key Factors: Cost Reduction	Outcomes	Principal Ref. (Chapter)
Infiltration Tactics in World War I by the German 5th Stormtrooper Battalion (BN)	German losses on Western Front drive Ludendorff to modify tactics; adopts 5th BN to drive transformation	HIGH: live experimentation with combined arms rehearsals; repeated combat demos showcase effectiveness	HIGH: 5th BN practices codified in tactical doctrine; 5th BN informs initial training; advisors produce operational unit SOPs.	Adoption succeeds; Infiltration tactics identified in post war analysis as basis for new warfighting doctrine.	Wynne 1940; Gudmundson 1989; Foley 2012; Lupfer 1981; (Chapter 1/2)
Armored Warfare in World War I by the British Tank Corps	<b>Extension of the war due to the stagnation of forces along the Western Front drives War Ministry to create the Tank Corps</b>	<b>LOW: Concerns for secrecy limit risk reduction to tech demos &amp; modeling; tanks misused during debut at the Somme</b>	<b>LOW: Institutional training eliminated during war; operational planners rejected by British Exp Force</b>	<b>Adoption fails; British Army discredits Armored Warfare, Armor branch excluded from general officer ranks</b>	<b>Swinton 1933; Harris 1995; Larson 1984; (Chapter 3)</b>
Antimechanized Defense in World War II by the U.S. Tank Destroyer Center (TDC)	German blitzkrieg defeats Poland and France, prompting U.S. War Department to build defenses creating TDC	<b>LOW: Obsolete platforms used to experiment and in debut in N. Africa; units unable to perform IAW tactical doctrine</b>	<b>HIGH: Produced initial tactical doctrine; established and directed leader development and initial training course</b>	<b>Adoption fails: TDC late in correcting shortfalls; units discontinued at end of war</b>	<b>Gabel 1981, 1985; Calhoun 2015; USFET 1945; (Chapter 4)</b>
Small Unit Patrolling in the Korean War by the U.S. Eighth Army Ranger Company (8th Ranger Co.)	Collapse of 8th Army to Pusan and lack of enemy intelligence inspires creation of 8th Ranger Co. to diffuse patrolling techniques	LOW: Extensive modeling refines concept; live experiments limited due to vulnerability of U.S. Forces in Pusan, leading to misuse	LOW: New capability not well understood by division leaders; misuse results in high casualties; incoming replacements untrained	Adoption Fails: 8th Ranger Co. disestablished after suffering mass casualties defending Hill 205.	Chae 1996; Finlayson 2010; Piasecki 2010; (Chapter 1)

\*Bold highlights indicate the major cases contained in Chapters 3 through 6.

*Figure 2.6 (Continued)*

Innovation (Lead Agent)	Supporting Factors	Key Factors: Risk Reduction	Key Factors: Cost Reduction	Outcomes	Principal Ref. (Chapter)
Korean Augmentation to the U.S. Army (KATUSA) in the Korean War by the U.S. Korean Military Advisory Group (KMAG)	After S. Korea Army collapse, MacArthur and S. Korean President direct KMAG to integrate Korean soldiers	<b>LOW:</b> No experimentation conducted prior to use in combat; flawed early combat demo deemed unrecoverable	<b>LOW:</b> Augmentees combat ineffective; Poor quality of initial training placed burden of integration on receiving units	Adoption Fails: original program cancelled within 12 months due to average effectiveness below 50%	Blumenson 1957; Austin 2013; Eighth U.S. Army, Korea 1952; (Chapter 1)
Airmobile Division Operations in Vietnam by the U.S. 11th Air Assault Division (Test)	<b>Vietcong advantage in ground mobility degraded U.S. advisory effort; McNamara directs improved use of airmobility</b>	<b>HIGH:</b> Experiments <b>AIR ASSAULT I &amp; II</b> credible; Ia Drang valley campaign validates concept	<b>HIGH:</b> Creation of tactical doctrine, standard structure, & changes in branch schools all enable standup of follow-on division	Adoption succeeds; fully integrated into post-Vietnam capstone doctrine and campaign plans	<b>Tolson 1973; Galvin 1969; Graves 2017; Howze Report 1962; (Chapter 6)</b>
Counterinsurgency Operations in Vietnam by the U.S. Civil Operations and Revolutionary Development Support (CORDS)	Increases in insurgent activity undermines Vietnam Policy; Presidential cabinet aligns to support <b>CORDS</b>	<b>HIGH:</b> New initiatives (e.g., militia training, insurgent amnesty, GVN leader training) increase effective governance	<b>LOW:</b> Created U.S. based training for <b>CORDS</b> personnel; <b>COIN</b> doctrine shrank; branch schools remained unchanged	Adoption Fails: Tet Offensive shifts policy to "vietnamization"; Army reverts to large scale operations	<b>Komer 1986; Krepinevich 1986; Jones 2005; Pentagon Papers 2011; (Chapter 5)</b>
Counter Improvised Explosive Devices (CIED) Operations in OIF/OEF by CIED Task Force (TF)	Iraqi insurgents stall consolidation following defeat of Iraqi regime. Rumsfeld directs creation of CIED-TF	<b>HIGH:</b> Combat demonstrations enhanced force protection and intelligence gathering for U.S. and allies	<b>HIGH:</b> integrated techniques and procedures across branch schools and throughout deployed elements	Adoption Succeeds: CIED-TF codified in DODD 2000.19E and national policy for CIED implemented.	England 2006; Judson 2015; Obama 2013; (Chapter 1)

\*Bold highlights indicate the major cases contained in Chapters 3 through 6.

*Figure 2.6 (Continued)*

Innovation (Lead Agent)	Supporting Factors	Key Factors: Risk Reduction	Key Factors: Cost Reduction	Outcomes	Principal Ref. (Chapter)
Operational Adaptability during OIF/OEF by the U.S. Army Asymmetric Warfare Group (AWG)	Slow adaptation in OIF consolidation phase prompts Secretary Harvey to approve creation of AWG	HIGH: conducted 6-month of experimentation at Fort A.P. Hill prior to 3-month combat demonstration in both Iraq and Afghanistan	HIGH: sustained advisors at both institutional and operational headquarters; reported quarterly to VCSA	Adoption succeeds: Expanded to other regional commands (e.g., U.S. Forces Korea, Southern Command)	Shaw 2007; AWG Operational & Organizational Concept 2005; Harvey 2006; (Chapter 7)
Rapid Equipping during OIF/OEF by the U.S. Army Rapid Equipping Force (REF)	Inability to access off the shelf technology for current operations was the impetus for CSA Schoomaker to create REF	HIGH: Combat demonstrations showcase accelerated capacity to define and resource materiel solutions	HIGH: Distributed knowledge for accessing REF throughout branches; deployed teams to every division in OEF/OIF	Adoption succeeds: Expands to all regional commands; 1st Director appointed Assistant Secretary of the Army	Tiron 2004; Miles 2005; Kennedy 2006; Silwa 2014, 2014; (Chapter 7)
Security Force Assistance (SFA) during OIF/OEF by the U.S. Army 162d Infantry Training Brigade	To accelerate SFA in both theaters, CSA Schoomaker elected to professionalize advisor development	LOW: initial combat deployment failed to demonstrate a coherent doctrine or concept; effect indistinguishable from status quo	HIGH: Provided doctrinal support after deploying; established schoolhouse for army-wide advisor training	Adoption Fails: Afghanistan drawdown reduces demand; mission absorbed by combat training center	Morgan 2009, 2010; Potter 2011; Villa 2014; (Chapter 1)
Force Modernization during OIF/OEF by the U.S. Army Capabilities Integration Center (ARCIC)	Modernization unable to respond to wartime demands; Secretary Harvey creates ARCIC to improve integration within Army/Joint Staff	LOW: ARCIC limits experimentation effort to internal modeling; deepens arcane nature of process	HIGH: All branch schools receive support to develop courses. Mobile training teams also established	Adoption Fails; Deemed incapable of delivering future army, replaced with creation of a 4-star major command	Hudson 2003; Harvey 2006; Decker Wagner Report: 2011; Esper 2018; (Chapter 7)



### CHAPTER 3: THE ABSENCE OF EVIDENCE: ARMORED WARFARE IN WORLD WAR I

*“If, in warfare, a certain means turns out to be highly effective, it will be used again; it will be copied by others and become fashionable”<sup>1</sup>*  
—Carl von Clausewitz

The introduction of armored warfare by the British Expeditionary Force (BEF) in World War I led to dramatic changes in the way modern states prepared for and conducted war. While the evolution of Armored Warfare would by 1940 become known around the world as Blitzkrieg, during the period between 1914 and 1918, the British effort to implement it would ultimately be unsuccessful. As the war trudged on, tanks as a platform would eventually be used by the British with good effects, particularly in 1918, but the concept of armored warfare would be rejected for its unacceptable risk and would have to wait another 22 years before emerging to dominate military thinking among modern states.

This case will trace the actions of the Machine Gun Destroyer Force, which would eventually become known by its more common name, the Tank Corps. Beginning with the conditions surrounding its initial designation through its combat demonstration at Cambrai and ending with its contributions in the final few months of the war, the Tank Corps was unable to overcome existing beliefs in the efficacy of the traditional roles of the established combat arms. Two reasons are offered to explain the failed implementation. The first is the inability of the Tank Corps to create credible evidence about the efficacy of the new operational concept. The second was their inability to lower

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<sup>1</sup> Michael Howard and Peter Paret, eds., *Carl von Clausewitz: On War* (Princeton University Press, 1984), p. 171. In other editions, see Book 2, Chapter 6.

the organizational cost of implementation, which would have reduced the effort necessary to transition and sustain the new capability. Unable to moderate the organizational resistance, the wartime innovation was relegated to a significantly smaller role in future war planning than was intended by its supporters.

This chapter explores the first of four alternative outcomes explained by agent-led adoption. Specifically, it will describe the conditions surrounding the organizational rejection of armored warfare as implemented by the Tank Corps. Of note, several conventional theories for successful diffusion incorrectly assess this case. The implementation, as managed by this lead agent, enjoyed substantial senior level support from both civilian leaders and military elite. Additionally, there was a clear and present military need for the innovation, as it promised to solve a critical wartime challenge, namely the need to cross the area known as no-man's land between the two armies facing each other across the Western Front.<sup>2</sup> The case also enjoyed the support of key military leaders, able to advocate for and direct change.<sup>3</sup> Unlike the challenges faced by the German economy, the British were unencumbered by the industrial and economic capacity shortfalls that might have prevented adoption.<sup>4</sup> Yet, contrary to conventional predictions, the innovation was not adopted. The following description of the case enables an assessment of the relative efficacy of the lead agent and provides insight as to why it failed.

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<sup>2</sup> Both the influence of civilian leadership and the balance of power drivers are consistent with the work of Posen.

<sup>3</sup> Intraservice support is an essential component of the explanation for successful organization change proposed by Rosen. Of note, Dr. Rosen explains the British failure to adopt tanks to their refusal to coalesce around the strategy of attrition. This explanation is challenged here.

<sup>4</sup> Horowitz.

As mentioned, this case is set in World War I but makes no attempt at a comprehensive historical review of the war. That would be well beyond the scope of this project. Instead, this analysis focuses on the actions taken by the British military to develop and fight the German Army with tanks. Similarly, the analysis is agnostic about whether the innovation was good or bad, instead simply attempting to arrange the facts and conditions to inform an understanding of the variables and outcome.

The chapter follows in four sections before concluding. First, it opens by providing the background preceding the decision to attempt adoption as well as the prevailing beliefs and practices within the British Army at the time. This includes a review of the education and qualifications for the main actors that would go on to shape the actions of the lead agent. Next, the case describes the concept of Armored Warfare as conceived by its proponents and supporters. Subsequently, the case transitions to a description of the lead agent, the Royal Tank Corps, to include its actions and accomplishments. The chapter then closes by analyzing the key relationships between risk, organizational cost and adoption.

### **Background**

The introduction of tanks and armored warfare during WWI wasn't a surprise. H.G. Wells wrote a fictional short story in 1903 of a war between an industrial and preindustrial nation in which "land ironclads", his name for tanks, were employed by the



more advanced state.<sup>5</sup> In 1912, Lancelot de Mole, an Australian, who eventually served as a corporal during WW1, submitted a design to the British War Office for a tank that was a near approximation of what would eventually become the Mark I.<sup>6</sup> Separately, the Navy under the direction of the First Lord of the Admiralty, Winston Churchill, approved the use of armored cars in September 1914. The Royal Naval Air Service (RNAS) in Dunkirk was to use them as reconnaissance vehicles for expeditionary airfields.<sup>7</sup> Furthermore, in October of 1914, a concept for using armored vehicles with caterpillar tracks instead of wheels was proposed and subsequently denied a hearing by the office of the Secretary of War.<sup>8</sup> Tanks had been conceived in fiction, that conception was advanced with production designs, and the technology was integrated as part of an operational concept, but the need wasn't apparent until the end of 1914.

### ***The Operational Need***

The war in 1914 was believed to be an affair that would be won by rapid offensive maneuver. Germany initiated the Schlieffen Plan on 4 August, attempting to quickly defeat France, while expecting Russian forces to attack Austria-Hungary. Not expecting Austria to hold very long, the Germans saw the defeat of France as critical to success. The Schlieffen Plan called for two coordinated attacks. One directly into French defenses to hold them in place and a northern attack through Belgium intended as an

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<sup>5</sup> Herbert George Wells and John R Hammond, *The Complete Short Stories of H.G. Wells* (Benn, 1927), pp. 77-93.

<sup>6</sup> Harris, p. 9.

<sup>7</sup> Ibid., pp. 11-12.

<sup>8</sup> Robert H. Larson, *The British Army and the Theory of Armored Warfare, 1918-1940* (Neward: University of Delaware Press, 1984), p. 52.

envelopment of French defenses held in place by the southern attack. However, the initial German attack was too successful. Germany's overly aggressive attack in the south forced a French retreat. Instead of destroying the fixed French Army, the French forces were able to withdraw to a consolidated defense occurring at the Battle of the Marne. The French effectively ended the German need for a quick defeat. The failure to defeat France forced Germany to reinforce Austria- Hungary or else risk their ally being defeated by the Russians. Throughout the remainder of 1914, both the allied powers and central powers continued to attempt the same pattern demonstrated by the Schlieffen Plan but to a smaller scale resulting in a series of flanking maneuvers that effectively extended the front in the west from the English Channel to Switzerland, and in the east from the Baltic Sea to the Black Sea. By the end of 1914, all sides began planning for a much longer conflict.<sup>9</sup>

It was only after the war bogged down behind the trenches, that the idea of using tanks to enable a new form of warfare would find traction. In December of 1914, an assessment, written by the Secretary to the Committee of Imperial Defense (CID) COL Maurice Hankey, "stressed that the allies possessed no means of breaking the German lines at that time." The assessment included potential solutions to this problem, one of which was the recommendation of a Royal Engineer, Ernest Swinton, who was at the time serving as the BEF's official War Correspondent.<sup>10</sup> Swinton's recommendation, his

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<sup>9</sup> For a description of the tactics and conditions that led to the war's stagnation, see Jonathan M House, *Towards Combined Arms Warfare: A Survey of Tactics, Doctrine, and Organization in the 20th Century* (DTIC Document, 1984), pp. 22-25. For an effective and succinct overview of the principle state actors see Geoffrey Parker, *The Cambridge Illustrated History of Warfare: The Triumph of the West* (Cambridge University Press, 2000), pp. 266-76.

<sup>10</sup> Larson, p. 53. The secretary, COL Maurice Hankey's memorandum came to be called the Boxing Day Memorandum.

concept for employing armored vehicles with caterpillar tracks, had already been denied a hearing by the Secretary of War in October when Swinton's office call request on the same subject was turned down. Swinton's concept found its way into the CID Secretary's assessment and together were circulated among the War Council, coming to the attention of the Churchill, still serving as the First Lord of the Admiralty. Churchill then sought to convert the RNAS experiences of using armored cars into a program for developing an armored landship. Ironically, the army took little interest.<sup>11</sup>

The BEF did not take interest until June of 1915, when Swinton provided his recommendations in a memorandum that eventually made it to the Commander-in-Chief of the BEF, Sir John French.<sup>12</sup> French, "in turn forwarded it to the War Office on June 22, with a cover letter stating in part that there was 'considerable tactical value' in the proposal."<sup>13</sup> Nearly nine months after the concept was initially proposed and rejected, it would finally draw enough interest to draw together both the BEF and the work of the Navy's Landships committee in the creation of a joint Admiralty and War Office Committee to develop working prototypes of the tank.<sup>14</sup>

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<sup>11</sup> Winston S Churchill, *The World Crisis, 1915* (New York: Scribner, 1928), p. 68.

<sup>12</sup> The name of Swinton's memorandum to Sir John French was the "Armoured Machine gun Destroyers" Memo, which was validated by the BEF Innovation Committee and endorsed to Sir John French who in turn sent it to the War Office. See Ernest D. Swinton, *Eyewitness, Being Personal Reminiscences of Certain Phases of the Great War, Including the Genesis of the Tank (Kindle Version)*. (Pickle Partners Publishing, 2015 (1933)), Location 1724.

<sup>13</sup> Ibid., Location 2026.

<sup>14</sup> Ibid., Location 2169.

***Ernest D. Swinton***

Swinton was more than a war correspondent. Having been appointed as the official correspondent by the War Minister, Lord Kitchener, he enjoyed access to leaders and locations across the Army and throughout the battle area. His appointment was a result of already being an accomplished author and combat veteran. Born in India in 1868, he was a Captain in the Royal Engineers during the 2d Boer War, where he received the Distinguished Service Order in 1901.<sup>15</sup> He wrote *The Defense of Duffer's Drift* in 1904 as a result of his experiences and study of tactics while serving, a book that won him some acclaim.<sup>16</sup> He also served as the official historian of the Russo-Japanese War. His selection as the War Office's correspondent was therefore a natural selection. His access also enabled him to see the Western Front develop and provided first-hand observations of the devastation that came with its development.

In his reflections after the war, Swinton articulated that his original insight, that of using an armored vehicle on tracks that could cross through the trenches, would be the seed of what would evolve to be a much more important idea. He saw the technological capability of a tank as the core of a concept that could serve as an alternative to the tactics currently employed on the Western Front. For Swinton, "one of its main purposes was the saving of life."<sup>17</sup> The ongoing waves of infantry-led assaults had already wrought massive destruction and suffering, and there was little indication of it changing. The

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<sup>15</sup> "War Office Announcements," *London Gazette*, 27 September 1901, 1901.

<sup>16</sup> Ernest Dunlop Swinton, *The Defence of Duffer's Drift* (Washington: United States Infantry Association, 1916). Of note, Swinton's short book was used by the U.S. Canada, and Great Britain to teach small infantry tactics through both world wars and into the Cold War.

<sup>17</sup> Swinton, Location 216.

solution required more than a technological solution. It also required integration into an operational scheme of maneuver that accounted for the roles of the other capabilities present on the battlefield. Swinton's concept called for "a thorough overhaul of long-established roles and organizations."<sup>18</sup> Accordingly, it should not have been surprising that a strong degree of resistance would develop, in some ways already manifesting through the long delay in perceiving the concept's necessity. To Swinton's great disappointment, the organizational resistance would continue throughout the war.

### **The Innovation**

The strategic logic of the day—to wear down the enemy force—was grounded in British pre-war doctrine. Modern war was growing increasingly unconstrained. The ability to leverage the whole-of-nation resources, particularly the post-industrialized capacity of a modern state, created the perception that any war would ultimately require the destruction through attrition of the opposing side.<sup>19</sup> Sir Douglas Haig, commander-in-chief of the British Expeditionary Forces for most of the war, sponsored the adoption of the 1909 Field Service Regulations while serving as the Director of Staff Studies. Accordingly, he was well versed on its guidelines.<sup>20</sup> According to the doctrine, the objective was to attrit the enemy through direct decisive attack, enabling a subsequent exploitation only after sufficient losses were imposed so as to neutralize the effects of a

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<sup>18</sup> John Stone, "The British Army and the Tank," in *The Sources of Military Change: Culture, Politics, Technology* (2002), p. 187.

<sup>19</sup> Haig's Final Dispatch communicates this message and post war commentaries show that it was representative of the view held by senior leaders of the time. See John H Boraston, "Sir Douglas Haig's Despatches," *London and Toronto: JM Dent & Sons LTD* (1919): p. 320. Also see Larson, pp. 63-65.

<sup>20</sup> Stone, in *The Sources of Military Change: Culture, Politics, Technology*, p. 191.

reserve.<sup>21</sup> Haig described the process, stating that "...losses will necessarily be heavy on both sides, for in it the price of victory is paid. If the opposing forces are approximately equal in numbers, in courage, and morale and equipment, there is no way of avoiding payment of the price or of eliminating this phase of the struggle."<sup>22</sup>

### *Armored Warfare*

In contrast, the theory of Armored Warfare called for an indirect approach. Rather than targeting an opponent's main force, something that an enemy would be prepared to resist, it sought to prevent the opponent from organizing to fight effectively. As Liddell Hart would theorize, the new doctrine sought to secure victory at the least possible expense of a nation's men and treasure. It involved the use of "turning maneuvers, which force the enemy to make a sudden change in front, movements that threatened the enemy's supply line, or advances that threatened two or more objectives simultaneously."<sup>23</sup> JFC Fuller would claim that armored warfare enabled the focus of armed conflict to shift from destroying the main body to instead attacking "the nerves of an army, and through its nerves the will of its commander."<sup>24</sup> Both Basil Liddell Hart and JFC Fuller, who would go on after the war to become perhaps the two most renowned advocates for the new doctrine,

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<sup>21</sup> Boraston, p. 320. Also see Stone, in *The Sources of Military Change: Culture, Politics, Technology*, p. 191. Of note, Stone quotes the standing British war doctrine at the time, by the British War Office, *Field Service Regulation, Operations, 1909* (London: HMSO, 1914), pp. 130-45, 58-59.

<sup>22</sup> Boraston, p. 320.

<sup>23</sup> Larson, pp. 87-88. Larson cites extensively from the works of both Basil Liddell Hart and J.F.C Fuller, two of the most read advocates of armored warfare. Specifically, Larson paraphrased his description of the indirect approach from Basil Henry Liddell Hart, *The British Way in Warfare* (London: Faber & Faber limited, 1932), pp. 99-114.

<sup>24</sup> John Frederick Charles Fuller, *Lectures on FSR III: Operations Between Mechanized Forces* (London: Sifton Praed & Company, Limited, 1932), p. 7.

The tank, as a platform, offered the means by which an army could pursue an indirect approach. Tank formations were survivable enough to bypass well defended areas and instead target the more critical command centers or logistics nodes. As part of a mechanized force, they offered two advantages. The first was that “they could cover greater distances in far less time, producing what was, in essence, a concentration of space and time” that could effectively paralyze an opponent’s capacity to respond.<sup>25</sup> The second was that the sheer cost of building, training and sustaining a mechanized force would compel states to constrain the size of their armies, and professionalize their force, eliminating the value of conscripts. Together the two advantages could restore rationality and constraint to war.<sup>26</sup>

The early version of this approach was first offered within the initial guidance documents for employment of tanks written by Swinton. The “Notes on the Employment of Tanks”, written in February of 1916, right after his appointment as the commander of the Tank Corps, focused on describing the overarching strategy for employing tank formations and the alternative roles that would be required of the older branches as a result of introducing the concept into the war.<sup>27</sup> Principally, he described the importance of short clear objectives to allow the tanks to cause the enemy to dislocate. These immediate objectives could be overwhelmed quickly and simultaneously as the tanks could trample or otherwise cross the range of existing obstacles currently filling the space

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<sup>25</sup> Larson, p. 89.

<sup>26</sup> Ibid., p. 90.

<sup>27</sup> Wilfred Miles, *History of the Great War, Military Operations France and Belgium, 1916 Volume 2* (London: Macmillan & Co, 1938), Appendix 18, pp. 50-59. On his appointment as Commander of the Tank Corps, see Swinton, Location 2746. Importantly, The “Note” was a more detailed version of the theory of victory espoused in Swinton’s June 1915 memo titled, “The Necessity for Machine Gun Destroyers”, see *ibid.*, Location 1691.

between the facing armies. He called for immediate infantry support to follow and on call, to secure the enemy's front-line positions. Additionally, rather than opening with days of artillery bombardment, he instructed commanders to hold the artillery to both surprise the enemy, and to prevent the artillery fire from churning the ground to such an extent that it might impede the tank assault. Alternately, the artillery was to focus on counterbattery fire to protect the tank from enemy artillery<sup>28</sup> The lack of enemy direct or indirect fire would enable this initial infantry movement to proceed quickly and facilitate the capture of equipment, and other supplies.

Swinton's "Training Note" was meant to convey clarity for the employment of the armored warfare concept. Instead, Swinton created a wave of resistance throughout the British Army. In his training guidance, he effectively advocated for a reduction in the prominence of the infantry and artillery in favor of tanks, while also advocating for the abandonment of closely held beliefs in the strategy of attrition for winning the war. Swinton's instructions effectively directed existing commanders to forget their experiences thus far on the Western Front, where infantry assaults were organizing principle for all combat operations. Instead they were to transition their infantry to trail as the support force behind an armored tank assault for which they had no previous personal experience.

Swinton instructions similarly affected the role of artillery. Thus far in the war, the operational range of artillery determined the shape of the battlefield. Artillery was

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<sup>28</sup> Artillery barrages, often lasting days, were the preeminent indicator of a major offensives. The British attack at the Somme lasted seven days and expended 1,628,000 shells. See Lupfer, p. 04. Also see Swinton's "Note" in Miles, pp. 58-59.



used to both “physically destroy enemy obstacles and trenches,” as well as to “neutralize the men defending them.”<sup>29</sup> Swinton’s concept relegated the artillery to an as needed capability to keep the enemy artillery off balance and unable to engage the attacking tanks directly. Swinton even suggested that they were in some ways a detriment to the fight when used to in their traditional way.

Attrition called for the imposition of both human and physical cost until such time as one or the other side became exhausted. For 14 months, the BEF was both doling out and absorbing these tremendous costs, attempting to edge Germany closer to exhaustion. Swinton’s concept focused instead on an alternative theory of victory with untested and unfamiliar equipment and tactics for which there was no precedent. In summary, its critics found that the concept lacked credibility.

### ***Senior Leader Support***

Despite the initial resistance offered by the BEF, Swinton’s theory of victory was supported by a host of key civilian leaders. One of these was the Prime Minister, Mr. David Lloyd George, who willingly supported the development and fielding, going as far as even countermanding decisions by the War Office to limit their production.<sup>30</sup> The support from the Prime Minister was based on his observation of a technology demonstration conducted on 2 February 1916 in which both he and Lord Kitchener, the War Minister, were present.<sup>31</sup> Occurring near London, the Mark I model tank performed

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<sup>29</sup> Bailey, in *The dynamics of military revolution: 1300-2050*, p. 140.

<sup>30</sup> Larson, p. 58.

<sup>31</sup> Swinton, Location 2661. On technology demonstrations, recall from chapter 2, that they are events that showcase the level of maturation for a particular technology or piece of equipment. Its focus is to demonstrate that the equipment can meet established engineering performance measures.

to the established specifications on a track designed to replicate German defenses. The Mark I tank would trample wire obstacles, drive over uneven terrain and cross a nine-foot ditch. These tests were arranged to replicate the challenges of the German trench systems.<sup>32</sup> While more work remained to incorporate machine guns and small cannons, the war office immediately ordered 40 tanks to be built, an order that was later increased to 100.<sup>33</sup>

The creation of what would become the Tank Corps occurred by midmonth. Although Lord Kitchener remained skeptical, he saw enough potential to agree with the Prime Minister and approve an BEF request for production. As previously mentioned, other key supporters included Winston Churchill and General Sir John French, Haig's predecessor as Commander-in-Chief of the BEF.<sup>34</sup> Despite the senior level support by the Prime Minister, members of the War Council, and the War Office, the instantiation of the lead agent did not guarantee concurrence within the Army on the operational concept.

### **The Lead Agent: The Royal Tank Corps**

On September 15th, the Tank Corps debuted at the Somme.<sup>35</sup> Swinton was denied the opportunity to command his tanks during their first experience in combat, as the date was kept secret from him until the day before the attack. Both he and his lead planner were unavailable to support the preparations and execution, therefore it is unsurprising

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<sup>32</sup> For a graphical illustration of the complexity of German trench systems, see House, p. 23.

<sup>33</sup> Larson, p. 55.

<sup>34</sup> Churchill's support is recorded in his WWI chronicle. See Churchill, pp. 63-64. Sir John French's response is recorded by Swinton, Location 1749.

<sup>35</sup> Larson, p. 57.

that the tank corps was not employed in accordance with Swinton's provisional guidance—in mass, with specific objectives, with close infantry support, without preceding artillery barrages to churn up the ground, and within mechanical limits. Instead, the tanks were subordinated to the infantry as mobile shields.<sup>36</sup> The tactical commanders employed them in small numbers, to traverse muddy terrain, with linear columns of infantry aligned behind them, all preceded with massive artillery barrages.<sup>37</sup> The result was that the tanks performed well short of their expectation. “Of 49 tanks committed to battle, only nine managed to keep up with the infantry on the first day of operations.”<sup>38</sup> It was certainly not the intention of the lead agent to have the debut performance fall outside of the desired concept for their employment, but their actions leading up to the event may have unintentionally set their course.

### ***Reducing Risk and Organizational Cost***

Before describing the efforts of the lead agent, a review of risk reduction and cost reduction follows. The differences between creating evidence to reduce risk and providing integration support to reduce organizational cost is nuanced. Risk reduction is accomplished through the visible demonstrations of how a capability would be employed and the effect it is likely to achieve in combat. This evidence may take the form of models, live experiments and combat demonstrations. The capture and packaging of that

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<sup>36</sup> Swinton, Location 3571.

<sup>37</sup> Lupfer, p. 4-7. The quick expansion of the army, and the fresh recruits it required, meant that troops were undertrained upon their arrival in France. It was not uncommon during the offensives in 1916 for new recruits to be led in linear columns through the devastated defensive belts (dramatically increasing the casualty rate. This lack of confidence extended to the newly formed tank organizations.

<sup>38</sup> Rosen, p. 122.

capability for distribution into the various forms that comprise the institutional memory of an organization reduces the organizational burden associated with learning and transitioning to the new practice and is referred to here as cost reduction. Cost reduction includes lead agent support to the development of doctrine, institutional training, and leader development. It also includes operational support such as the development and documentation of unit routines and unit training. Its collectively referred to here as integration support. Risk reduction and cost reduction are also interdependent. High-level evidence creation informs the efficacy of the integration support and quality integration support improves the veracity of evidence creation. They should form a virtuous cycle, but this is clearly not always the case.

### *Reducing Risk*

Prior to September of 1916, the Tank Corps did little outside of working towards their production requirements. With an initial capacity of 100 tanks in conjunction with the integration of crews and support troops numbering around 700, the unit appropriately spent their first months training and developing the necessary routines to field the capability.<sup>39</sup> They also continued conducting additional technical demonstrations to refine prototypes. However, the desire to keep the arrival of the tanks on the continent a secret, combined with the demand for troops in France, limited the opportunities to conduct live demonstrations at scale.<sup>40</sup>

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<sup>39</sup> On the initial size of the Tank Corps, see Swinton, Location 2695. On the initial manning, see Location 2782.

<sup>40</sup> On the need for secrecy see Churchill, p. 186. On the limitations to live demonstrations see Swinton, Location 3803-04.

The additional technology demonstrations and associated design work did, however, yield a new requirement. In addition to the original destroyer class tank approved by the prime minister, the Tank Corps discovered a need for and got approval for commissioning a second class of tank. The new model, designated as an escort class, was designed to serve as a wing man for the destroyer class. The destroyer class was armed principally with two 6lb cannons in order to target machine gun bunkers as the tanks progressed across the obstacle belts. They could not however do much to defend against dismounted infantry. This shortfall was ameliorated by designing and building the escort tank, exclusively armed with machine guns, and tasked with defending the destroyer. The commission of the new class altered the total production numbers to 150, with 75 pairs of destroyer/escort tanks in total.<sup>41</sup> Together the two were expected to maneuver, through the belt, destroying fortified positions and as they came abreast to a manned trench, and then using their systems to suppress the trench while the infantry moved forward. Significantly, in April 1916, experimentation was prematurely curtailed when the new Commander of the BEF, Sir Douglas Haig, requested the shipment of as many tanks as available to France for use in the ongoing Somme offensive.<sup>42</sup>

The unprecedented number of British losses sustained in July and August of 1916 both drove the accelerated fielding of the tank corps and limited the ability to conduct more deliberate experimentation. The first major British offensive of the war, to include the massive stockpiling of artillery, increases in the number of units, and the movement

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<sup>41</sup> Swinton, Location 2867-75.

<sup>42</sup> Ibid., Location 2981-83.

of troops, was straining both logistics and personnel systems.<sup>43</sup> The losses in dead and wounded were staggering.<sup>44</sup> Correspondingly, there was an unprecedented need for replacement troops as well. For all units, what little time was available to train after arriving in France was prioritized to focus on internal division and brigade drills. There was little time or interest to commit newly arriving infantry or disengage already committed artillery units to cross-train with tanks on a new concept for their employment, particularly if the cross-training was to come at the expense of training in their primary tasks. By the end of August 1916, the Tank Corps was able to transport its second company size element to France. During a visit to this company, Swinton was struck by how “the Tanks were looked upon as a new kind of toy.” The company was routinely directed to conduct demonstration to allow officers to marvel at the new technology.<sup>45</sup>

### *Reducing Cost*

The priority for the newly formed unit was to develop the individual and crew skills that would be necessary to build and develop routines for maneuvering their new two tank formations. To that end the unit devised a training regimen for the rank and file that “was a combination of infantry soldier, gunner, machine gunner, motor mechanic and trick lorry-driver.” Using the newly devised unit routines, the training of unit members began upon their initial arrival. Furthermore, to inform the War Ministry of the

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<sup>43</sup> As an example, the third and final company of tanks to arrive in time to support the Battle of Flers-Courcelette only arrived the day before the attack, on 14 Sep. See *ibid.*, Location 3610.

<sup>44</sup> 1 Jul 1916 is considered the bloodiest day in the history of the British Army with over 57,000 casualties of which over 19,000 KIA. See Wynne, p. 117.

<sup>45</sup> Swinton, Location 3545.

appropriate allocation of men and equipment, the Tank Corps finalized its own manning documents, what they called a “charter”. This allowed the War Ministry to project manning requirements and direct initial and replacement personnel.<sup>46</sup> The Tank Corps also created new maintenance teams with specialized equipment and engineers that could both repair and fabricate replacement parts for the new class of vehicles they would introduce into the British war effort.

The next priority was to develop the more complex task of integrating within the combined arms formations of the fighting forces in France. By August of 1916, only six months after forming the Tank Corps, Swinton had generated three companies of tanks and all three were either in or in route to France. On 19 August, Haig provided an overview of where he intended to debut the tanks, although the date was yet undetermined.<sup>47</sup> To support the integration of the tank formation, Swinton embedded two planners, a Lieutenant Colonel and a Captain, within the BEF General Headquarters (GHQ) in France. Their primary task was to advise on the employment and rehearsals necessary to properly employ the new tank formations. The planning team would have little effect, as the senior of the two was fired just before their employment for being “difficult”.<sup>48</sup>

The BEF embedded planners did little to alter ongoing planning for the pending operation. To their surprise, the original “Training Note” had received little attention and attempts to facilitate its distribution were met with significant resistance. Insights on the

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<sup>46</sup> Ibid., Location 2820-86.

<sup>47</sup> Ibid., Location 3538.

<sup>48</sup> Ibid., Location 3580.

minimum level of tactical cross-training needed or planning support for upcoming operations were ignored because the advisors were deemed contentious and therefore ineffective.<sup>49</sup> The low level of influence wielded by the advisory effort at GHQ was made more debilitating by the fact that the Tank Corps was also constrained by the absence of institutional support.

During the time between the publication of the “Note” and the employment of tanks in the Somme, no institutional training system existed to support the BEF. Staff schools for training Battle Majors and Staff Captains, the key planners at brigade and division level, were discontinued in 1914 in order to accelerate the arrival of either new staff officers to support the expansion of the BEF or the replacement of staff officers to refill units who were sustaining heavy casualties. Consequently, the new staff officers arrived ill-trained and completely dependent on veteran commanders who in effect had to command, plan, and train their staffs simultaneously.<sup>50</sup> Expeditionary Force brigades and divisions were expending considerable resources to train their units on their already existing unit routines, and therefore had even less time to become familiar with new drills of questionable efficacy. The tank corps advisors at GHQ, who were seen as “difficult”, had little effect in mitigating this response. The result was that the tank’s debut was not used as a trial for a new independent combat arm, but rather as a way of supporting the

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<sup>49</sup> Ibid., Location 3579-87.

<sup>50</sup> Aimee Fox-Godden, ““Hopeless Inefficiency”?: The Transformation and Operational Performance of Brigade Staff, 1916-1918,” in *A Military Transformed: Adaptation and Innovation in the British Military, 1792–1945*, ed. Michael LoCicero, Ross Mahoney, and Stuart Mitchell (West Midlands: Helion, 2016), pp. 142-44. Also see Dominick Graham, “Sans Doctrine: British Army Tactics in the First World War,” in *Men at War: Politics, Technology and Innovation in the Twentieth Century*, ed. Timothy Travers and Christon Archer (New Brunswick: Transaction, 1982).



existing practice of massive infantry assaults. Commanders were simply not willing to risk investing in the new concept.

The tank's debut at the Battle of Flers-Courcelette during the Somme Campaign in September 1916, reinforced existing beliefs rather than inspire confidence in the initial application of armored warfare. As a result of the initial debut, Sir Douglas Haig would be convinced that the tanks should best be used as mobile armored protection for the infantry, an approach that would be repeated during the larger employment of tanks in Passchendaele (July 31, 1917) and larger still at Cambrai (November 1917).

### ***End of War Outcomes***

After their debut at the Somme, General Haig directed Swinton back to London to focus on building tank companies. Haig had a new commander appointed to direct the employment of tank formations in France, one with no previous association with the Tank Corps, and one that was acceptable at GHQ.<sup>51</sup> Then, quite abruptly, Swinton was replaced as the Commander of the Tank Corps.<sup>52</sup>

In November of 1917, at Cambrai, the Tank Corps would come close to demonstrating the potential of the concept. The attack at Cambrai was planned by a member of the Tank Corps, Lieutenant Colonel J. F. C. Fuller, expressly to maximize the employment of the concept. The overall intent was to collapse the German defensive belts and occupy abandoned positions.<sup>53</sup> Four hundred British tanks and six British

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<sup>51</sup> Swinton, Location 3690.

<sup>52</sup> Ibid., Location 3875.

<sup>53</sup> Larson, p. 60.

infantry division attacked along a 12-kilometer front. While the attack succeeded in collapsing the German lines, the German counterattack 10 days later largely erased all gains.<sup>54</sup> No concept for employment of tanks in the defense had been created, so during the counterattack, what few tanks were available were largely inconsequential. The Tank Corps formally assessed the Cambrai battlefield results, completing it in March 1918.<sup>55</sup> Those observations would be largely overshadowed by what would be the beginning of the final German offensive, “Operation Michael”. Starting on March 21st, the “the British lines were shattered, and their forces hurled back,” with tanks again playing a the largely irrelevant role.<sup>56</sup> The minor defensive value demonstrated during the German offensives cemented for those senior leaders that would lead the British army after the war, that the tank could not be the centerpiece for a new operational capability.<sup>57</sup> Instead, the strategy of attrition was firmly vindicated.<sup>58</sup>

To better appreciate the organizational resistance to the Tank Corps after the war, one need only look at the distribution of senior leaders within the British Army. The entire composition of generals in the British Army were from the established branches—Infantry, Cavalry and Artillery. No senior military leaders who served as a tank officer in WW1 would reach the rank of brigadier general before the war ended. The Tank Corps did not include any permanent colonels much less Tank Corps generals. Ten years later,

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<sup>54</sup> Bruce I Gudmundsson, *Stormtroop Tactics: Innovation in the German Army, 1914-1918* (New York: Praeger, 1989), pp. 139-40.

<sup>55</sup> No service-wide publications on the use of tanks existed prior to Cambrai. The first service wide publication on how to use artillery with tanks wasn’t issued by the general staff until after the lessons of Cambrai were analyzed. See Rosen, pp. 124-26.

<sup>56</sup> Larson, p. 61.

<sup>57</sup> Norman F Dixon, *On the Psychology of Military Incompetence* (New York: Basic Books, 1976), p. 112.

<sup>58</sup> Larson, pp. 64-65.

while the Tank Corps had not been eliminated from the force structure entirely, there were still no Tank Corps generals.<sup>59</sup>

### Analysis

The chapter now turns to analyzing whether agent-led adoption explains the Tank Corps' implementation effort for the armored warfare concept. This section begins with a review of the unique conditions existing at the time of the implementation that could also account for success or failure. Specifically, it is useful to assess how agent led adoption compares to other leading theories of diffusion. As discussed in the Chapter 1, the work of Posen and Rosen, are useful guideposts. Importantly, the argument here is not that other external conditions are irrelevant or mistaken in their explanations, but rather that the specific conditions described by agent led adoption are also necessary parts of a successful case.

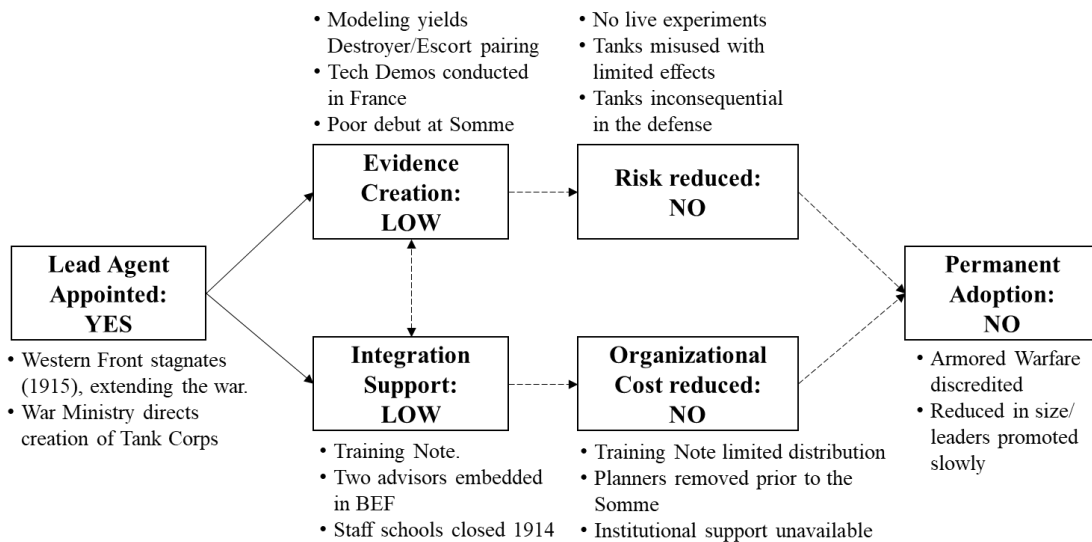
As highlighted by *Figure 3-1, Agent-Led Adoption Logic Flow for armored warfare*, the Tank Corps was unsuccessful in their implementation of armored warfare. The Tank Corps was unable to reduce risk, relying principally on technical demonstrations to overcome concerns about combat efficacy. They were equally ineffective in reducing cost, at least in part due to the closing of staff schools and due to their inability to embed planners and trainers within the BEF. Figure 3-1 aligns highlights of key events with the theory's logic points. Inside each critical point, an

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<sup>59</sup> Ibid., pp. 17-18. The author compiles the list from the British Half Yearly Army List of 1923. The second set of numbers are dated as 1932. The distribution by percentage in 1923 of Infantry, Cavalry, and Artillery is 70.8, 9.7, 19.4 respectively, accounting for 99.9%.

assessment in capital letters is assigned to indicate which outcome was supported by the evidence. The bulletized text aligns with the critical point closest to it and serves as an explanation for that assessment. As an example, referencing the first critical point on the left, it shows that there was both a significant external need, and a civilian response to that need, which contributed to the appointment of the lead agent. Before expanding on the shorthand representation in the figure to explain the key relationships between risk, cost and adoption outcomes, the special conditions of the case are addressed.

**Figure 3-9. Agent-Led Adoption Logic Flow for armored warfare**



### ***Special Considerations***

In the case of the Tank Corps, there are three special considerations. The first addresses the role of civilian influence. The second addresses the role of the War's sudden expansion. The third is to reconcile an alternative view of this case, particularly, the view that the failure of the implementation was due to the difficulty with organizing around common strategic metrics. Each will be considered in turn.

One of the principal explanations for military diffusion is that external pressure in the form of state peer competitors creates the fear of defeat and drives civilian intervention in favor of adoption. As noted, by Barry Posen, innovation is unlikely to occur at all with the direct involvement of civilian leadership to drive change within a military bureaucracy.<sup>60</sup> In this case, it was clear that civilian support was critical to both the initial production order as well as the establishment of the Tank Corps as the lead agent, both of which were directed by the War Office. Without their involvement it appears doubtful that the Tank Corps would have garnered enough support to have ever been established. Furthermore, it seems like the combination of support from senior military leaders (Sir John French) in concert with civilian leaders was at least a supporting factor to the instantiation of the lead agent. However, their support and directives are simply not enough and, in some cases, may even work to impose severe limitations on the implementation effort. As demonstrated here, the myriad of tasks requiring the attention of senior civilian leaders was extreme, precluding them from guiding the path of the tank corps from day to day. This allowed Haig to proceed without oversight in accelerating the debut of the capability beyond the lead agent's ability to build consensus about how to employ it. Regardless, armored warfare was not successfully adopted despite senior civilian support.

Related to civilian intervention is the fear of defeat. In this case, the sudden stagnation of the front and the explosive casualty rates of 1915 certainly created conditions of fear stemming from the possibility of defeat by the Germans. Importantly it

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<sup>60</sup> Posen, pp. 74-78.

also created the need for secrecy. The fear of defeat created the desire to find a solution to break the stalemate and the desire to leverage that solution for maximum benefit may have inadvertently contributed to suppressing activities that could provide undue warning to the Germans. Included in the list of suppressed activities was live experimentation with the new tanks. While the fear of defeat is postulated to increase the likelihood of successful diffusion, in this case it very well may have hindered efforts.

Lastly, Rosen argues that the inability to implement the innovation was due to the difficulty associated with the development of new strategic metrics.<sup>61</sup> Rosen considers this very case in his 1991 book, *Winning the Next War*. According to Rosen, in wartime, leaders with credibility within the dominant subcultures can drive the adoption of alternative metrics and create the conditions in which military diffusion occurs. In this case, he argues that the BEF was slow to adopt attrition as the critical strategic metric, which delayed a conclusion that the use of tanks was the most effective means of attrition.<sup>62</sup> This appears difficult to reconcile with Haig's leading role in publishing the 1909 Field Service Regulations.<sup>63</sup> This publication was the capstone document describing the British concept for war. In it, a campaign is described as a deliberate methodical contest to weaken the enemy until a decisive blow is feasible. With language that mirrors his pre-war concept, Haig's final Dispatch to the BEF, dated 21 March 1919, describes the war as a single cohesive war of attrition.<sup>64</sup> Haig's insistence on an attrition

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<sup>61</sup> Rosen, p. 35.

<sup>62</sup> Ibid., p. 116.

<sup>63</sup> General Douglas Haig was the Director of Staff Studies during the staffing and publication of Field Service Regulation, 1909. See Stone, in *The Sources of Military Change: Culture, Politics, Technology*, p. 191.

<sup>64</sup> Boraston, p. 320.

strategy employing the combat arms in their traditional roles reconciles with the evidence more so than his reticence to embrace attrition. In the context of agent-led adoption, the lead agent's inability to create a credible alternative to Haig's and the broader officer corps' traditional view, is part of the explanation for the failed implementation.

### ***Does Evidence Reduce Risk?***

The Tank Corps did little to assuage concerns about the risk inherent in implementing an untried capability in combat. From the time of their creation in February 2016 until their initial utilization in September 2016, there does not appear to be a single instance where combined arms experimentation was attempted in any deliberate fashion. While several demonstrations did occur during the build-up of platforms in England (even the King came to see a demonstration),<sup>65</sup> and while arriving in France,<sup>66</sup> the Tank Corps was unable to arrange for combined arms experiments to test the techniques for mutual support between the branches conceptualized by the designers. They were similarly unable to refine tactics against the enemy. While the limited modeling that enabled the design and production of the "escort" tank was constructive, it did not contribute to risk reduction. Essentially, the concept remained untested, and so tactical leaders had very little evidence upon which to base a decision to abandon the tactics and techniques they were familiar with for a new untested capability. The resulting debut at the Somme did not reflect the concept, and due to the misuse of the platforms, the tanks achieved only minor effects on the enemy. After the Somme, leaders

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<sup>65</sup> Swinton, Location 2680-84.

<sup>66</sup> Ibid., Location 3545-65.

were replaced, suppressing dissenting views of how to employ the new tank formations. Very little in the way of concept maturation occurred afterwards as evidenced by the lack of a coherent Tank Corps concept for the defense. While the case does not support the conclusion that evidence creation reduces risk, the absence of evidence creation did little to assuage concerns.

### ***Does Integration Support Reduce Organizational Cost?***

The Tank Corps did achieve several critical tasks essential to reducing the organizational cost of change. The unit was successful in publishing a “Training Note” with adequate detail about the concept for employment and the complimentary actions needed by the other branches to achieve success. The note was never published as doctrine nor was the existing doctrine ever amended. From the resistance experienced by the Tank Corps’ planners embedded at the BEF, one could surmise, as did Swinton,<sup>67</sup> that the training note received little support or distribution, something that Swinton should likely have overseen personally.

The training note was used internally to devise unit practices with good results. From the training note, the Tank Corps was able to devise a standardized unit footprint or charter, that enabled replacements to flow, however, the unique training requirements of those personnel were kept internal to the unit, rather than integrated into the initial entry training that was ongoing throughout Great Britain. While it is likely that this was partially due to the closing of staff schools that could have been leveraged to distribute

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<sup>67</sup> Ibid., Location 3571.



knowledge, the concept was not promulgated by advisors, taught to senior leaders or incorporated into other branch unit-level training or routines. After the Somme, the Tank Corps was reduced in responsibility to manufacturing tanks, unable to significantly affect the organizational cost of implementing the new concept.

### ***Permanent Adoption***

Agent led adoption predicts that both risk reduction and cost reduction are needed to moderate organizational resistance and improve the likelihood of permanent adoption. Permanent adoption is defined as the inclusion of the capability as part of the composite of capabilities believed necessary to fight future wars. At the conclusion of World War I, armored warfare, as presented by The Tank Corps' implementation effort, was not considered a viable alternative to attrition. The strategy of attrition adopted by the British Army required investments in the combat arms that would constitute a force designed for protracted war on the continent—infantry and artillery.<sup>68</sup> Consequently, the Tank Corps was not retained as a strong independent branch. While the Tank Corps was not dismantled, it was ignored by the post-war promotion boards and subordinated as a reinforcement for infantry. The absence of intuitional investment during the war simplified the reduction in size and significance. The British Army simply did not believe that the use of tanks would become a dominant aspect of future war. The inability of the lead agent to either reduce risk or reduce cost and the outcome of the case are all consistent with agent led adoption's predictions.

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<sup>68</sup> Larson, p. 104.

The next chapter considers another instance of failed implementation, that of the Tank Destroyer Center and its attempt to implement antimechanized defense. It differs in that unlike the Tank Corps, the lead agent was able to leverage institutional army capacity to propagate knowledge and lower the institutional cost of adoption. It would not be enough.



## CHAPTER 4: REDUCING COST: ANTIMECHANIZED DEFENSE IN WORLD WAR II

*“We didn’t know how soon war would come, but we knew it was coming. We didn’t know when we’d have to fight, but we knew it might come at any time, and we had to get together something of an Army pretty darn fast. We didn’t dare stop for the progressive and logical building of a war machine. As a result, the machine was a little wobbly when it first got going. The men knew it. The officers knew it. Everyone knew it.”<sup>1</sup>*

—LTG Lesley McNair

As in the previous chapter, this case explores the broader puzzle of why attempts at implementing innovative capabilities in wartime often result in failure. The case considered in this chapter examines the impact of the U.S. Army Tank Destroyer Center on the implementation of antimechanized defense in World War II. The Tank Destroyer Center’s attempt would be ultimately unsuccessful. While tank destroyer units would provide heroic support to combat actions in the European theater, at war’s end the capability they represented would be abandoned. Instead of pursuing specially designed defensive platforms like the tank destroyer, the U.S. Army would opt instead to let tanks fight tanks.

Like the British Tank Corps, the U.S. Army’s Tank Destroyer Center enjoyed several advantages that should have increased the likelihood of successful adoption. First, they enjoyed substantial senior level support from civilian leaders and from senior military elite. In both cases, the new military organizations needed to address a critical wartime challenge, one so severe that it raised the likelihood of defeat unless an adequate response was developed. Accordingly, a structural view of diffusion suggests a positive

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<sup>1</sup> Christopher R Gabel, “The U.S. Army G.H.Q. maneuvers of 1941” (The Ohio State University, 1981), p. 9.

outcome.<sup>2</sup> Additionally, the Tank Destroyer Center also enjoyed the support of a strong sponsor. The sponsor enjoyed a stellar reputation among the traditional branches. He not only advocated for it as a more effective means of killing tanks, he also exercised the authority to protect it throughout its development. Accordingly, an intraservice view of diffusion suggests that this type of sponsorship would also increase the likelihood of successful adoption.<sup>3</sup> Lastly, the Tank Destroyer Center enjoyed tremendous success in creating and sustaining the institutional momentum to facilitate implementation. Agent led adoption prescribes this as a necessary condition for success. Despite these advantages, antimechanized defense was not implemented.

This case will trace the events surrounding the creation, development and eventual disbanding of the Tank Destroyer Center. From its conception within the U.S. Army's War Department in 1940 to the final adjudication of its performance and subsequent removal from the Army program, the center was very successful at generating the organizations, training support and associated equipment in ways that reduced the organizational cost of diffusion for the Army. However, it failed to address perceptions of risk, leading to its misuse in combat and ultimately unsuccessful implementation.

While the first case is taken from World War I and this case is from World War II, they are not meant to provide a cohesive and comprehensive view of the wars. Instead, this analyzes the work of the tank destroyer center only, leaving the myriad of

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<sup>2</sup> The term "structural" refers to the neorealist school of international relations in which the structure of the international order provides substantial insight into the likely types of state interactions. Barry Posen's work on change in military organizations is based on this view. For more on realism, see Kenneth Waltz, *Theory of international relations* (Reading, Mass.: Addison-Wesley, 1979). As referenced in previous chapters, for more on civilian intervention and the threat of war see Posen.

<sup>3</sup> As noted in previous chapters, this intraorganizational explanation of diffusion was first proposed by Rosen.

historical anecdotes unrelated to tank destroyers for others. Additionally, this analysis is agnostic about whether the innovation was good or bad. It will be clear, that at the time, the Army was convinced that the Tank Destroyer Concept and associated doctrine had great potential. Whether they were accurate in their predictions is less relevant than the need to arrange the facts and conditions to inform a deeper understanding of how agent led adoption helps explain the diffusion of innovation within military organizations.

Like the previous chapter, the content follows in four sections before concluding. First, it opens by providing the background and prevailing beliefs and practices within the U.S Army at the time that the decision to attempt adoption was made. This includes a review of the education and qualifications for the main actors that would go on to shape the actions of the lead agent. Next, the case describes antimechanized defense as conceived by its proponents and supporters. Subsequently, the case transitions to the lead agent, the Tank Destroyer Center, to include its actions and accomplishments. The chapter then closes by analyzing the key relationships between risk, organizational cost and adoption.

### **Background**

The development of antimechanized defense during the interwar period was hampered by two major factors. The first was that U.S. Army leaders did not anticipate how the use of tanks would evolve. The Spanish Civil War did not serve as a

demonstration point for the successful application of armored warfare.<sup>4</sup> The German Army, while rebuilding in the 1930's, was still an unproven force.<sup>5</sup> The British Army while debating new concepts for the employment of tanks, remained unconvinced of their value.<sup>6</sup> As noted by military historian, William Odom, The U.S. Army simply "did not foresee the use of highly mobile, heavily armed and armored tanks in the coming blitzkrieg."<sup>7</sup>

Second, the U.S. Army never assigned proponentcy for antimechanized defense to any of its branches. The infantry and artillery schools both argued for ownership. The infantry argued that because it was a part of close combat it should be part of the infantry. The artillery argued that because the materiel solutions closely resembled their own, that it should be theirs.<sup>8</sup> Without a clear lead for developing doctrine and materiel, the effort languished. That changed in 1939.

By the end of 1939, The U.S. Army was preparing for war against Germany. On 1 September, six German Panzer divisions invaded Poland, collapsing the Polish defense in under a month.<sup>9</sup> By the spring of 1940, France would suffer a similar fate. In May, 10 Panzer divisions, as part of a cohesive combined arms assault, used concentrated thrusts

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<sup>4</sup> The "demonstration point" is the point at which a capability makes its debut allowing the relevant community to have enough information about the relative importance of the innovation. See Horowitz, p. 8.

<sup>5</sup> For details on the origins of German rearmament, see Dale C Copeland, *The origins of major war* (Cornell University Press, 2000), pp. 125-28.

<sup>6</sup> Mark D. Sherry, "Armored Force Organization," in *A History of Innovation: U.S. Army Adaptation in War and Peace*, ed. Jon T Hoffman (Washington, D.C.: Center for Military History, U.S. Army, 2009), p. 52.

<sup>7</sup> William O Odom, *After the Trenches: The Transformation of U.S. Army Doctrine, 1918-1939*, Texas A & M University military history series (College Station: Texas A & M University Press, 2008), p. 150.

<sup>8</sup> Ibid., pp. 150-51.

<sup>9</sup> Gabel, p. 7.

to penetrate, and pursue French forces. Although German rearmament preparations, which began in earnest in 1933, had not gone unnoticed, and despite having the benefit of an additional seven months to prepare, the French Army response was inadequate. It took only 6 weeks until France's eventual capitulation and subsequent occupation.<sup>10</sup>

Divided by branch politics, there was little consensus on a counter to the German's new capability. In July 1940, General Marshall complicated the dialog further by concentrating armored forces who felt that the best way to kill tanks was with other tanks.<sup>11</sup> Even though the U.S. Army considered the Polish and French defeat a "cause for alarm, if not desperation," a final long-term solution would have to wait until after the war was over.<sup>12</sup> While no agreement on how to proceed was evident, it was clear that the German Army would have to be confronted and the U.S. Army in 1941 was ill-prepared for the task.

### ***An Operational Need***

General Marshall, having been appointed as the Army Chief of Staff on the same day as Germany's invasion of Poland, was appropriately concerned with the lack of progress being made in developing an antitank capability. In April 1941, he called for a War Department sponsored conference to establish consensus within the Army on how to develop and implement antitank concepts and capabilities. The branches each had different positions, and none agreed on a single course of action.<sup>13</sup> Despite the lagging

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<sup>10</sup> Ibid., p. 04. Also see Eliot A Cohen and John Gooch, *Military Misfortunes: The Anatomy of Failure in War* (New York: Free Press, 2006), pp. 201-13.

<sup>11</sup> Sherry, in *A History of Innovation: U.S. Army Adaptation in War and Peace*, p. 55.

<sup>12</sup> Gabel, p. 9.

<sup>13</sup> Ibid., p. 12.



progress on developing a solution, in June 1941, Marshal directed the creation of a modified war plan with Germany calling for a credible U.S. land capability in Europe to counter the German threat. He submitted and received approval from President Roosevelt to build a land force capable of invading Europe in order to achieve victory.<sup>14</sup> By August of 1941, Marshall was faced with a strategic demand for countering the threat posed by the Panzer divisions as well as a dysfunctional institution with which to address the problem.

Major General Leslie McNair, at the time serving as the Army General Headquarters (GHQ) Chief of Staff, was a leading advocate for a separate pooled antitank formation, despite the protests of the existing branches.<sup>15</sup> Within the U.S. Army, he was largely seen as the foremost expert on the subject. While serving as the Commanding General of Fort Leavenworth, the academic center of the U.S. Army in terms of leader education and doctrinal development, he chartered and published a provisional manual in 1939, titled *Antimechanized Defense (Tentative)*. Having personally shaped many of its findings,<sup>16</sup> he would lead the coalition of advocates and sponsors of a separate antitank formation and eventually be regarded as the father of tank destroyers.<sup>17</sup>

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<sup>14</sup> Mark T. Calhoun, *General Lesley J. McNair: Unsung Architect of the U.S. Army* (Lawrence, KS: University Press of Kansas, 2015), p. 196.

<sup>15</sup> Both the Artillery School and the Infantry School printed Wedemeyer's article in their journals that month advocating for the antimechanized defense mission to be assigned to them. Albert Coady Wedemeyer, "Antitank Defense," *Field Artillery Journal* 31 (May 1941): p. 269.

<sup>16</sup> U.S. Army Command and General Staff School, *Antimechanized Defense (Tentative)*, by Leslie J. McNair (Fort Leavenworth, KS: The Command and General Staff School Press, 1939).

<sup>17</sup> Gabel, p. 19.

***Leslie J. McNair***

Lieutenant General McNair finished World War I as the youngest general in the American Expeditionary Force, being promoted to the rank of temporary brigadier general before redeploying as an instructor at the Fort Leavenworth “School of the Line” back at his permanent rank of major.<sup>18</sup> He would serve for close to 40 years before his untimely death on 25 Jul 1944 from U.S. Eighth Air Force bombs while observing troops in action in France just prior to the start of Operation Cobra.<sup>19</sup> One of the pivotal lessons gleaned from his experience as a protégé of General Pershing during WWI, a lesson that would affect his view of warfare for the remainder of his career, was the criticality of combined arms operations.<sup>20</sup> Combined arms warfare would drive how he eventually reorganized training at Fort Leavenworth as its Commanding General, and how he approached the training and preparation for the mobilization of the Army as the Chief of Staff for the Army’s General Headquarters, and eventually as the Commanding General of the U.S Army Ground Forces Command.

His interest with antimechanized defense developed before the events in Europe created a threat to U.S. interests. First, the current state of materiel development for anti-tank weapons dated back to World War I, the 37mm gun. In the 1930’s the Army had also adopted the use of the 50-caliber machine gun as an antiarmor weapon, but both were woefully inadequate.<sup>21</sup> Second, the armor force within the U.S. Army was disarray.

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<sup>18</sup> On his promotion to temporary BG, he was commissioned in 1904 from West Point and was promoted to temporary BG in October of 1918, only 14 years after his commissioning. The School of the Line was renamed the Command and General Staff School. See Calhoun, pp. 60-62.

<sup>19</sup> Ibid., pp. 321-22.

<sup>20</sup> For example, see his 1921 article in the *Field Artillery Journal*. See Leslie J. McNair, "Infantry Battles and Accompanying Guns," *Field Artillery Journal* 11 (1921): p. 135.

<sup>21</sup> Calhoun, pp. 190-96.

Despite the recent shift, occurring in 1939, of the armor force under a central proponent, its potential for quickly addressing an antitank requirement was uninspiring. The demonstration of armored warfare capabilities in both Poland and France only elevated the need. McNair's background and the current conditions pushed him towards what he believed to be an integrated combined arms solution in the form of a separate antitank force as part of the combined arms team. Ironically, he would eventually be criticized for the lack of a combined arms approach in the development of the Tank Destroyer Force.<sup>22</sup>

### **The Innovation**

At the time, the antitank problem at least was well understood even if consensus around what to do about it was not. A typical U.S. Infantry division had 24 assigned antitank guns, which were thought to be able to counter an attack of as many as 100 tanks. However, a German Panzer division had closer to 250 tanks. This concentration was a significant contributor to the success achieved by the Germans against the French, who while fielding more tanks than the Germans, were unable to mass effectively to prevent the German victory.<sup>23</sup>

In 1941, the centerpiece of the U.S. Army was the triangular infantry division, with three infantry regiments and four artillery battalions. These were purposely designed to be easy to transport overseas and to have as small of a logistical footprint as possible. This included minimizing the number of specialized units, limiting the size of

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<sup>22</sup> Gabel criticizes McNair, describing the *Tank Destroyer Tactics, FM 18-5*, as “fundamentally flawed” for being independent of the other branches. Gabel, pp. 1-2.

<sup>23</sup> Cohen and Gooch, p. 201.

the staff and restricting the number of motorized assets in the division.<sup>24</sup> To enhance the capacity of the infantry division, they would be augmented as needed with pooled special purpose capabilities to round out the combined arms package. These could be engineers or military police. McNair wanted to create an antitank force that could augment the division in a similar way.

### *Antimechanized Defense*

Written in 1939, *Antimechanized Defense (Tentative)* was designed to provide the fundamental principles associated with conducting operations against mechanized forces. Importantly, the tentative field manual was meant to be complimentary addition to the Army's capstone doctrinal publication, *FM 100-5, Tentative Field Service Regulations*, which did not consider the need to develop a robust antitank capability.<sup>25</sup> *Antimechanized Defense* specifically addressed the roles and missions of a battalion size antitank force within an infantry division, which until Germany's invasion of Poland, did not seem to need much attention. Additionally, it defined "tanks" and as being representative of "any type of armored combat vehicle or unit," not just tank pure formations.<sup>26</sup> Importantly, the manual prescribed conditions under which both a concentration of antitank assets was advisable as well as when it was not advisable, specifying that "antitank units should not, therefore, as a rule be given blanket, general missions of protecting the division, regiment, or battalion in a given situation" but rather specific instructions be provided to

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<sup>24</sup> House, pp. 105-06.

<sup>25</sup> United States Army, *Field Manual 100-5, Tentative Field Service Regulations--Operations*, by G.C. Marshall (Washington, D.C.: United States Government Printing Office, 1939).

<sup>26</sup> *Antimechanized Defense (Tentative)*, p. 1.

include the necessary levels of cooperation with other elements.<sup>27</sup> McNair would expand on the fundamental ideas contained in *Antimechanized Defense* during General Marshall's Antitank Conference of April 1941.

McNair presented two arguments. The first was related to the Army's lagging mobilization efforts and limitations on available shipping space. Like the infantry division, larger antitank formations could be designed to provide an economy of space on board available transports. This would also reduce redundancies in logistics and personnel, thereby allowing more units to ship faster in support of combat operations.<sup>28</sup>

The second argument concerned the physical cost of an antitank platform as compared to a tank. To McNair, it was a matter of simple economics. It was cheaper to defeat the enemy's tanks with dedicated antitank assets rather than with other tanks.<sup>29</sup> Together with what McNair saw as a flexible antimechanized concept that prescribed employing antitank assets in coordination with the other branches, he saw separate antitank formations as an optimal solution to counter the enemy's capabilities. He would subsequently test that theory in a set of large-scale experiments.

### ***Senior Leader Support***

In 1940, General Marshall appointed McNair as the chief of staff for the General Headquarters (GHQ), United States Army. The GHQ was established to oversee the mobilization of the U.S. Army, and General Marshall was its commanding general.

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<sup>27</sup> Ibid., pp. 13-14.

<sup>28</sup> Calhoun, pp. 237-38.

<sup>29</sup> Ibid., p. 235.

Dual-hatted as both the Army Chief of Staff and as the Commander, GHQ, he delegated the responsibility for the command's daily operations to McNair.<sup>30</sup> It is unsurprising that mobilization planning reflected McNair's views on combined arms as well as his views on antitank efforts. Seeing the biggest question needing resolution as the question of antimechanized defense, McNair arranged for army-level experiments as a large-scale confrontation that he described as "... a test of tank warfare and antitank defense." He would go on to state that the Army was out to determine "If and how we can crush a modern tank offensive."<sup>31</sup> The Louisiana and Carolina Maneuvers, scheduled to occur respectively in September and November of 1941, would be the largest live exercises ever done by the Army.

The exercises would put approximately 300,000 troops into the field, pitting tank and antitank formations against each other to test whether the U.S. troops were ready to fight in Europe against the German Army.<sup>32</sup> The September experiment in Louisiana would result in the armored force largely losing to antitank battalions arrayed within the divisional infantry regiments. The November "Carolina Maneuvers" would similarly see the armored forces losing to the mobile and recently renamed tank destroyer formations.

Based on the results of the Louisiana Maneuvers alone, Marshall was ready to endorse McNair's concept fully. On 7 October, between the experiments, Gen. Marshall would meet with his antitank project team to review the results. This project team, created after the April Antitank Conference, was tasked to observe the ongoing debate

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<sup>30</sup> Ibid., p. 215.

<sup>31</sup> Gabel, p. 97.

<sup>32</sup> Anonymous, "Second Battle of the Carolinas," *TIME Magazine* 38, no. 23 (1941/December/8 1941).

between tank and antitank advocates and develop options.<sup>33</sup> The project team recommended designs for the creation of antitank formations which Marshall approved. Consequently, Marshall also made the decision to rename antitank formations as “tank destroyers” believing that this would add a more aggressive psychological edge to the emerging concept.<sup>34</sup>

Following the Carolina Maneuvers, senior leaders wasted little time. Marshall ordered the stand-up of the Tank Destroyer Center (TDC) on 21 November 1941 under GHQ.<sup>35</sup> His project office and its lead planner, Lieutenant Colonel A. D. Bruce, would serve as the base organization for forming the TDC, and would be directed to build a center capable of training 220 battalions consisting of almost 200,000 soldiers. The center would implement a tank destroyer concept “as a developmental agency for doctrine and equipment and to provide centralized training for tank destroyer personnel and units.” Six days later, on 27 November, Secretary of War, Henry Stimson, would issue a War Department directive ordering the activation of 53 tank destroyer battalions organized directly under GHQ forming the initial tank destroyer force.<sup>36</sup> As far as Marshall and Stimson were concerned the exercise results justified the commitment of the resources outlined for the new Tank Destroyer Force. However, the debate between tanks and tank destroyers would remain a point of contention.

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<sup>33</sup> Gabel, p. 14.

<sup>34</sup> Ibid., p. 17.

<sup>35</sup> tankdestroyer.net, "Seek, Strike, Destroy", accessed 3 July 2019, <http://tankdestroyer.net/places/camphoodtexas>. Of note, tankdestroyer.net also contains a comprehensive bibliography of tank destroyer articles. See [www.tankdestroyer.net/things/articles](http://www.tankdestroyer.net/things/articles).

<sup>36</sup> Gabel, pp. 17-18.

### **The Lead Agent: The Tank Destroyer Center**

The creation of the Tank Destroyer Center would occur in the wake of controversy over the recently concluded experiments. MG Jacob Devers, who had recently replaced MG Chaffee as the Armored Force Commander, would argue that the rule book, which governed the adjudication of outcomes during an engagement, was biased towards the tank destroyers. This seems like a legitimate argument since McNair was the foremost advocate for antitank defense, as well as the ultimate adjudicator of results at the exercises. Additionally, he had personally been involved in drawing up the “umpire book” with rules to adjudicate wins and losses. He was also aware of the ongoing discussions to authorize the creation of a separate antitank arm.<sup>37</sup> McNair should have recused himself from any dealings with the adjudication of the results.

In McNair’s defense, he was also the Army’s foremost expert on large scale maneuvers, having executed annual events at scale previously. Here, however, the exercise wasn’t just a training event. He endeavored to test future systems and accordingly substituted performance parameters for weapon systems that had yet to be developed into the umpire book. The tank formations therefore lost using their current equipment parameters to formations with hypothetical capabilities. Devers’ reaction during the maneuvers and his continued antithesis towards the concept was justified. On the day the exercise terminated, he quipped, “We were licked by a set of umpires’ rules.”<sup>38</sup> McNair would disregard the complaints, and establish the Tank Destroyer Center as directed by the Army Chief of Staff, as a separate mechanized anti-tank

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<sup>37</sup> Ibid., pp. 14-17.

<sup>38</sup> Anonymous. “Second Battle of the Carolinas.”



formation within the Army, expanding its scope beyond that of the divisional antitank battalion.

Even as late as May 1942, after the TDC had been operational for six months and only a month before the first doctrinal manual on tank destroyer operations would be published, Devers and McNair would not be able to align in support of the implementation effort. Devers, now a subordinate of McNair due to McNair's promotion,<sup>39</sup> would recommend merging tank destroyers with his armored force. McNair would reject the idea. McNair's final word on the subject would be that the existing tank and tank destroyer doctrinal arrangements would stand, since "we have not yet had war experience which can be taken as a definite guide."<sup>40</sup>

### ***Reducing Risk and Organizational Cost***

As in the last chapter, a review of risk reduction and cost reduction follows before describing the efforts of the lead agent. The differences between creating evidence to reduce risk and providing integration support to reduce organizational cost is nuanced. Risk reduction is accomplished using models, live experiments and combat demonstrations, which are all forms for demonstrating how a capability would be employed and the effect it is likely to achieve in combat. The capture and packaging of that capability for distribution as part of the institutional memory of an organization reduces the organizational burden associated with learning and transitioning. It is

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<sup>39</sup> McNair was assigned as the commanding general of Army Ground Forces Command in March 1942. Army Ground Forces was responsible for training and preparation of ground forces for deployment in support of field commanders overseas. Calhoun, p. 246.

<sup>40</sup> David E Johnson and David Eugene Johnson, *Fast Tanks and Heavy Bombers: Innovation in the U.S. Army, 1917–1945* (Cornell University Press, 1998), p. 151.

referred to here as cost reduction and includes lead agent support to the development of doctrine, institutional training, and leader development. It also includes operational support such as the development and documentation of unit routines and unit training. The institutional and operational support are collectively referred to as integration support. Risk reduction and cost reduction are also interdependent. High-level evidence creation informs the efficacy of the integration support and quality integration support improves the veracity of evidence creation. They should form a virtuous cycle.

### *Reducing Organizational Cost*

The TDC would be formed in Fort Meade, Maryland, on 1 Dec 1941 with the initial responsibility to activate 53 new battalions.<sup>41</sup> The first battalion would relocate to the newly established Camp Hood, near Killeen, Texas, in April of 1942.<sup>42</sup> The center would have full authority and autonomy to manage all aspects of activating, training and deploying the Tank Destroyer force. The speed and robust capacity developed was only made possible by the personal guidance and resource allocation provided by McNair as the GHQ Chief of Staff and then as the Commanding General, Army Ground Forces. His direct lead, working daily issues at Camp Hood was MG A.D. Bruce, who in May of 1941 was still a Lieutenant Colonel.<sup>43</sup> The fast promotion, 4 ranks in 12 months, was also largely due to McNair and the autonomy he wanted for the center. As a major general, Bruce would have the same rank as the other branch school and therefore equal

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<sup>41</sup> Calhoun, p. 244. Also see Gabel, p. 17.

<sup>42</sup> tankdestroyer.net, See "Places" tab and select "Camp Hood, Texas"

<sup>43</sup> Gabel, p. 19.

stature. The autonomy as an equal branch also enabled the creation of tank destroyer doctrine to inform and guide the employment of the growing number of Tank Destroyer units coming out of Camp Hood. By their first anniversary on 1 Dec 1942, the TDC would have all the trappings of a major training installation, to include individual initial entry training, leader development training, unit training, officer candidate school as well as doctrinal development teams and materiel development capabilities.<sup>44</sup>

*FM 18-5, The Tank Destroyer Field Manual*, published 16 June 1942, was an extension of *Antimechanized Defense*, providing guidance on the utilization of antitank forces not assigned as part of a divisional infantry regiment. While the manual clearly described a preference for “close cooperation with friendly units of all arms,” few details related to the execution of combined arms efforts were contained in the manual.<sup>45</sup> The doctrine embraced the principle described by McNair, of a massed antitank reserve, capable of leveraging speed and overmatching killing power to conduct counterattacks against penetrations by armored forces.<sup>46</sup> The manual kept the same description of enemy armored forces as its predecessor, as a balanced combat team consisting of “motorized combat vehicles of various types, tank elements, and such appropriate elements of the arms and services as are required.”<sup>47</sup> Taking a cautious view, the manual warned against being limited by “preconceived convictions as to the employment of tanks.”

Furthermore, the manual stressed that “commanders who have based their actions upon

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<sup>44</sup> A. D. Bruce, “Camp's Paper Is Welcomed by General,” *Camp Hood Paper*, 10 December 1942, 1942, 1.

<sup>45</sup> George C. Marshall, *F.M. 18-5: Tank Destroyer Field Manual, Organization and Tactics of Tank Destroyer Units* (Washington, D. C.: United States Government Printing Office, 1942), pp. 7, 139-40.

<sup>46</sup> Gabel, p. 22.

<sup>47</sup> Marshall, p. 1.

the belief that hostile tanks would attack in a commonplace, orthodox manner have frequently met disaster.”<sup>48</sup> Overall it presented an aggressive, but balanced approach cautioning commanders to use good reconnaissance to inform decisions on tactics.

In keeping with Marshall’s vision, the idea of fomenting an aggressive spirit was addressed in more direct means than just its inclusion in the doctrine. Symbolically, the unit emblem, worn by all members of the tank destroyer force, was a black panther, baring its teeth, as it devoured a tracked vehicle, immediately feeding a mythos of the hunter. In training, the TDC inculcated aggressiveness through a culmination unit training event called the Tank Hunting Course. “Patterned after a course used in the training of British Commandos, the Tank Hunting Course in many ways epitomized the essence of tank destroyer training.” The course was the first instantiation of a live-fire training event used in the U.S. Army. The initial version required trainees to navigate a course through a Nazi controlled village, during which live ammunition would be fired overhead. The trainees would seek out and attempt to disable enemy tanks and attack enemy supply trains, with a variety of handheld and improvised weapons.<sup>49</sup> These techniques would also be captured in the doctrinal manual with a dedicated chapter that would describe the use of anti-tank mines, explosives, grenades, and small arms fire to ambush tanks under the appropriate tactical conditions.<sup>50</sup> The Tank Hunting course grew

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<sup>48</sup> Ibid., p. 6.

<sup>49</sup> Gabel, pp. 29-30.

<sup>50</sup> Marshall, pp. 123-26.

to become a week-long field exercise that included both the special dismounted course as well as mounted gunnery skills, leveraging the terrain available at Camp Hood.<sup>51</sup>

As clearly as could be conveyed, the primary mission for the force was killing tanks, but there was a recognition of other potential missions. The TDC developed training and codified secondary missions that leveraged the capabilities in the force design. These would include targeting amphibious forces, airborne forces, and infantry support for reducing fortified defensive positions like pill boxes. Updates in the doctrine would come as a result of observations from combat, increasing dramatically the importance of these secondary missions.<sup>52</sup>

### *Reducing Risk*

The first tank destroyer battalions to deploy were interim designs. Operation Torch began in November 1942. The fighting in North Africa lasted through May of 1943. During that time, seven tank destroyer battalion would deploy in support of combat operations. None of these would deploy with the capabilities described in the field manual. Early modeling by the TDC identified necessary improvements to the organizations used during the Louisiana and Carolina Maneuvers to enable the formations to compete against the German armored forces. The early modeling enabled the publication of a standard organizational structure by December 1941, only one month after the TDC was established and just days after the Japanese attack on Pearl Harbor and

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<sup>51</sup> Gunnery refers to training course that measures the ability of crews to accurately engage targets at various ranges under time constraints.

<sup>52</sup> Ernest C. Hatfield, "Utilizing Tank Destroyers as Artillery," *Field Artillery Journal* 35, no. 8 (August 1945), <https://search.lib.virginia.edu/catalog/u7208291>.

the official declaration of war against Germany. Refinements would culminate in June 1942 with a self-propelled heavy battalion design as the base structure.<sup>53</sup>

The final designs for the new tank destroyer combat vehicles were only just approved for production when the initial battalion arrived in Tunisia in November 1942. The delay was caused by disagreements between the TDC and the Army's Ordnance Department which no longer fell under the GHQ as the Army was undergoing a major organizational redesign.<sup>54</sup> The TDC requirements called for a vehicle that had "a low cost, readily mass-produced, light weight, high mobility, with a three-inch gun to be manned by a crew of five." The new Army Service Forces, which absorbed the ordnance department, ignored the TDC requirements and provided a different design. A special board was convened by the War Department to reconcile the differences. Called the Palmer Board, it would find a compromise solution, but would delay a final design until November.<sup>55</sup>

In lieu of the new platforms, the initial battalions continued to use the obsolete equipment in the current inventory and would deploy that way to North Africa. The older platforms lacked the penetrating power to disable a German tanks unless used from the rear or flank which given the openness of the desert was nearly impossible to accomplish.<sup>56</sup> The first of the modern designs, the M10, which at least provided parity

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<sup>53</sup> Gabel, p. 20. Of note, the self-propelled tank destroyers was organized with 35 officers and 807 enlisted men.

<sup>54</sup> Calhoun, p. 250. The new organizational structure created three subordinate commands to manage Army forces in training or otherwise employed within the U.S. These were the Army Ground Forces, which included the TDC and other branch schools, the Army Air Forces, and the Army Service Forces. Of note, LTG McNair was placed in command of Army Ground Forces.

<sup>55</sup> Gabel, p 27.

<sup>56</sup> Ibid., pp. 34-35.

with tanks employed by the Germans in North Africa was not available for use in combat until Mar 1943, too late to have an impact in North Africa.<sup>57</sup>

These shortfalls were exacerbated by two other battlefield developments. The German tanks of 1942 were improved designs from those used in 1939 and 1940, with better armor, making the tank destroyer's inferior firepower even more pronounced of a failing. Additionally, not only did the sheer expanse of the Tunisian desert limit the ability to infiltrate behind enemy tanks, when coupled with the poor maneuverability of those early deployers, it was also impossible to pool tank destroyers to counterattack hostile forces as anticipated by tank destroyer doctrine. Accordingly, "when the U.S. Army first encountered the Germans in Tunisia during 1942-1943, the tank destroyers proved a dismal failure."<sup>58</sup>

The TDC missed the crucial period between the establishment of the center and the initial deployment of the first seven battalions, from November 1941 to November of 1942, to experiment and demonstrate the actual capabilities of the new formations. As a result, commanders in North Africa were largely uninformed of the what they were getting, and how it was to be employed.<sup>59</sup> In November 1942, nearly simultaneous with the arrival of the first battalion in Tunisia, the TDC would initiate a leader development initiative for senior Army leaders and planning staffs to educate and better integrate the capabilities of the tank destroyer battalions. Unfortunately, the initial set of divisions that were putting the first tank destroyer battalions to use in combat were no longer available

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<sup>57</sup> Gabel, p. 27.

<sup>58</sup> House, p 113-14.

<sup>59</sup> Gabel, pp. 31-32.

to participate and would therefore lack an appreciation for the limitations of the initial deployers. Instead those operational commanders would “throw TD units into the fight early to give frontline troops an immediate antitank capability.”<sup>60</sup> This was disastrous since the tank destroyers were both technologically and doctrinally ill designed for individual “slugging matches” with enemy tanks. They lacked both the firepower and maneuverability that was supposed to be their hallmark.<sup>61</sup>

All three of the Corps Commanders in Tunisia would express their dissatisfaction with tank destroyers. George S. Patton would write a letter to General Marshall describing the effects of his assigned tank destroyer battalions, and would conclude that the “tactics taught at the Tank Destroyer School are not applicable to this theater.”<sup>62</sup> Omar Bradley would also go on record with his dissatisfaction.<sup>63</sup> McNair would also receive negative reports from Lloyd Fredendall, critical that some of his assigned tank destroyer units were attempting to hunt tanks with rifles.<sup>64</sup>

The rebukes were not limited to the operational commanders in North Africa. Devers, still in command of the Armored Force within the U.S., would argue that the tank destroyer concept “was not a practical concept on the battlefield.” He would be joined by the Chief of Ordnance in advocating for a heavier tank with which to kill other tanks.

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<sup>60</sup> Michael Doubler, *Closing with the Enemy* (Lawrence, KS: University Press of Kansas, 1994), p. 18.

<sup>61</sup> The Tank Destroyer Doctrine, FM 18-5, specifically warns against using tank destroyers in head to head match ups with enemy tanks. See Marshall, p. 19.

<sup>62</sup> Calhoun, p. 280.

<sup>63</sup> Christopher R. Gabel, “Tank Destroyer Force,” in *A History of Innovation: U.S. Army Adaptation in War and Peace*, ed. Jon T Hoffman (Washington, D.C.: Center for Military History, U.S. Army, 2009), p. 68.

<sup>64</sup> Calhoun, pp. 280-81.



Even tank destroyer advocates were disappointed, one claiming that “the whole organization and development of the tank destroyer will be a great mistake of the war.”<sup>65</sup>

### ***End of War Outcomes***

The poor performance in North Africa would cause the TDC to revise their training and doctrine. They would publish an update in July of 1944.<sup>66</sup> In the meanwhile, training material and instruction was updated. Even the culminating course, “Preparing for Tank Hunting” was modified to focus instead on exposing troops to battle conditions.<sup>67</sup> It would be too late. By July of 1944, key rising leaders within the US Army had already decided against the practicality of employing tank destroyers in large scale antiarmor operations. As the major offensive switched to Europe, the tank destroyers were largely relegated to supporting infantry combat actions in small distributed detachments, employing their guns to demolish obstacles and fortified enemy positions rather than other tanks. The new model tank destroyers were indeed more capable designs, but the improved capability was directed towards enhancing their growing focus on infantry support, not destroying tanks.<sup>68</sup>

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<sup>65</sup> Adam M Jungdahl and Julia M Macdonald, "Innovation Inhibitors in War: Overcoming Obstacles in the Pursuit of Military Effectiveness," *Journal of Strategic Studies* 38, no. 4 (2015): p. 490.

<sup>66</sup> George C. Marshall, *F.M. 18-5: Tactical Employment Tank Destroyer Unit* (Washington, D. C.: United States Government Printing Office, 1944).

<sup>67</sup> Calhoun, p. 281.

<sup>68</sup> For an description of how a Tank Destroyer unit was used to support artillery missions in World War II, see Paul B. Bell, "Tank Destroyers in the Roer River Crossing," *Field Artillery Journal* 35, no. 8 (August 1945), <https://search.lib.virginia.edu/catalog/u7208291>. For a comparison of tank destroyer platforms tankdestroyer.net, "Tank Destroyer Specifications Chart." For a discussion of changes to the types of missions executed by the tank destroyer forces in Europe, see Gabel, *See, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War 2*, pp. 49-52.

By the end of the war, the tank destroyer battalions would accomplish many feats of heroism and indeed provided a positive addition to the U.S. arsenal, however, they were not considered distinctly beneficial as compared to other existing capabilities. At the conclusion of the war, a series of studies were commissioned to analyze the entire spectrum of equipment and capabilities employed in Europe and to make recommendations on their future utility. Led by boards of General Officers, over 90 studies were conducted between June 1945 and June 1946. The “Study of Organization, Equipment, and Tactical Employment of Tank Destroyer” concluded that tank divisions had no need for tank destroyers. The study also concluded that a better alternative for future antiarmor protection is a tank, not a tank destroyer. Lastly, it concluded that the tank destroyer doctrine be rewritten and subsumed under the defensive doctrine of the armored force and that “tank destroyers as a separate force be discontinued.”<sup>69</sup>

### Analysis

The chapter now turns to analyzing whether agent-led adoption effectively explains the outcomes in the Tank Destroyer Center’s implementation effort for antimechanized defense. The analysis is based on both the theoretical guidelines established by agent-led adoption and the unique conditions existing at the time of implementation. Specifically, its useful to assess how agent led adoption compares to other leading theories of diffusion. As discussed in Chapter 1, the work of Posen and

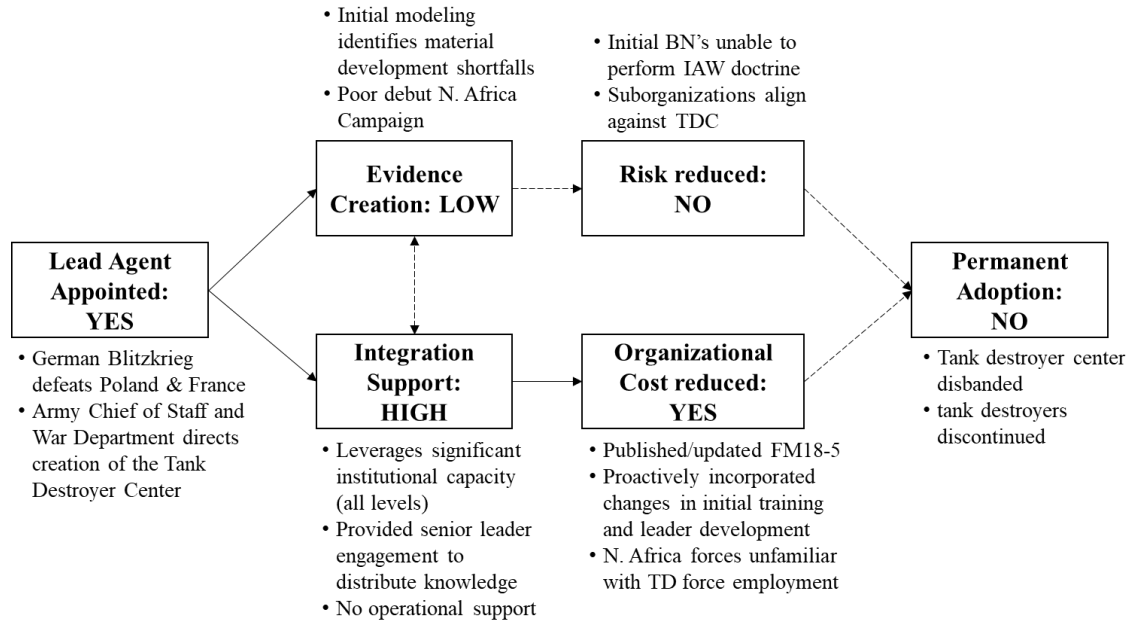
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<sup>69</sup> General Board United States Army Forces in the European Theater, *Organization, Equipment, and Tactical Employment of the Infantry Division: Report of the General Board, Report No. 15* (United States Forces European Theater, 1946), p. 6. Also see General Board United States Army Forces in the European Theater, *Organization, Equipment, and Tactical Employment of the Tank Destroyer Units: Report of the General Board, Report No. 60* (United States Forces European Theater, 1946), p. 29.

Rosen are useful guideposts. Importantly, the argument here is not that other external conditions are irrelevant or mistaken in their explanations, but rather that the specific conditions described by agent led adoption are also important indicators of success or failure.

As highlighted by *Figure 4-1, Agent-Led Adoption Logic Flow for antimechanized defense*, the Tank Destroyer Center was unsuccessful in their implementation of antimechanized defense. While they provided the integration support for successful implementation, the focus was on institutional support while providing little operational support to enhance the field units' capacity for integrating the innovation. The TDC did little to reduce risk and subsequently the capability was disbanded. Figure 4-1 aligns highlights of key events with the logic points for agent-led adoption as discussed in Chapter 2. Inside each critical point, an assessment in capital letters is assigned to indicate which outcome was supported by the evidence. The bulletized text aligns with the critical point closest to it and serves as an explanation for that assessment. As an example, referencing the first critical point on the left, it highlights how the German defeat of both Poland and France led to the decision by both the U.S. Army Chief of Staff and War Department to create the Tank Destroyer Center as a lead agent for implementing antimechanized defense. Before expanding on the shorthand representation in the figure to explain the key relationships between risk, cost and adoption outcomes, the special conditions of the case will be addressed.

**Figure 4-10. Agent-Led Adoption Logic Flow for antimechanized defense**



### ***Special Considerations***

In the case of the Tank Destroyer Center, there are four special considerations.

The first addresses the idea that the innovation was poorly conceived which in turn caused it to fail. The second considers the role played by the threat of defeat. The third addresses the role played by senior civilian and military elite in the diffusion process. Lastly, the analysis considers whether the Army had perceived of proper metrics to drive innovation. Each will be considered in turn.

First, a reasonable argument could be made showing that tank destroyers were just a bad idea which eventually ended appropriately in the dustbin of history. The argument might start by suggesting that if the decision to accept questionable results from

the Louisiana and Carolina Maneuvers had been different, the ongoing development of tanks would have shown Devers' prescience sooner. He is, after all, the one who quipped that "the weapon to beat a tank [was] another tank."<sup>70</sup> In their article, "Innovation Inhibitors in War", Jungdahl and MacDonald channel LTG Devers to make a similar argument. The authors label McNair as an obstructionist, who repeatedly blocked the development of an adequate heavy-type tank, favoring instead a cheaper, less capable weapon system for fighting tanks.<sup>71</sup> However, even if the innovation was of questionable merit, and McNair was obstructing other competing solutions to the antitank problem, why would General Marshall tolerate it. General Marshall had just centralized the Armored Force in 1940 in order to accelerate its development. Marshall also played a critical role in establishing the TDC and in getting the War Department to agree with reassigning all antitank battalions to the TDC. Marshall clearly thought both innovations had merit. Additionally, McNair was clear that he supported the notion that tanks were best at killing tanks, stating "I do not quarrel with the assertion that the best defense against tanks is by other tanks."<sup>72</sup> McNair simply thought it was more efficient to do so with antitank guns than with tanks. Additionally, the tank destroyer models developed later in the war were very effective at killing tanks. Both, the M18 and M36 models developed in 1943 and 1944 respectively, were considered excellent weapons.<sup>73</sup> In response then to whether it was poorly conceived or protected from other competing

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<sup>70</sup> Jungdahl and Macdonald, p. 490.

<sup>71</sup> Ibid.

<sup>72</sup> Calhoun, p. 235.

<sup>73</sup> House, p. 114. The author extols the penetrating power of these later tank destroyer systems.

notions, the answer is likely that the tank destroyer was neither. Tanks were under continuous development and improvement as were tank destroyers.

As discussed in the last chapter, the fear of defeat is a strong theory for explaining the diffusion of innovation. In this case, the national security crisis posed by the German defeat of France in six weeks accompanied by the British withdrawal across the English Channel was certainly a cause for concern. Barry Posen credits this fear of defeat for prompting the changes in the British Royal Air Force that enabled it to survive the German invasion attempt.<sup>74</sup> In the case of implementing antimechanized defense, it does not appear to have had the same effect. While not definitive, one could speculate that the desire to get the capability fielded quickly contributed to a premature decision to deploy the initial battalions with obsolete equipment. Regardless, the fear of defeat did not prompt successful diffusion.

Posen, goes on to theorize that the national strategic threats should cause civilian leaders to intervene in their militaries directly to adjust to the threat, thereby increasing the likelihood of adopting innovation.<sup>75</sup> In this case, Henry Stimson, the Secretary of War, was at least indirectly involved, but it would be hard to credit his being distracted as the precipitating cause of failure during the implementation by the TDC. This was Stimson's second appointment as the Secretary of War. He had also previously served as the Secretary of State. Strategic leadership was not unfamiliar to him. He was principally engaged in the rapid expansion of the Army and oversaw the building of the Pentagon and provided personal leadership over the Manhattan Project. Despite his other

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<sup>74</sup> Posen, pp. 94-104.

<sup>75</sup> Ibid., pp. 74-78.

foci, he also approved a reorganization of roughly 45,000 soldiers in creating the TDC, a decision that at time involved 1 of every 20 servicemembers in the Army.<sup>76</sup> He also approved the reorganization of the Army as it evolved from the GHQ to the Army Ground Forces, Air Forces and Service Forces. Clearly, he was very involved in the transformation of the Army during World War II and was a man with a great capacity and experience. As the Secretary of War from 1940 to 1944, he held the confidence of both Presidents Roosevelt and Truman, much as he had the other four administrations in which he served.<sup>77</sup> However, his involvement did not ensure the Tank Destroyer Center's success.

Rosen's research on military innovation directs attention at the importance of strategic metrics in wartime. According to Rosen, in wartime, leaders with credibility within the dominant subcultures can drive the adoption of alternative metrics and create the conditions in which military diffusion occurs. While Rosen does not consider this particular case, broadly the case shows that the army agreed about the need to kill tanks. While there was disagreement about the best means available to do so, the strategic metrics were clear. While Rosen does not argue that changing metrics will guarantee success, he does argue that it is a critical precondition.<sup>78</sup> Here, Rosen's argument holds. In the end, the Army did agree on a best way to kill tanks. That the Army preferred to

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<sup>76</sup> Calhoun, p. 244. The approval was for 53 battalions to be assigned to GHQ to become part of the Tank Destroyer Center. Each heavy tank destroyer battalion was designed to have 842 men. At the time, the U.S. Army consisted of just under 1,000,000 soldiers. The initial tranche of 53 battalions were assigned in late November 1941.

<sup>77</sup> Henry L Stimson and McGeorge Bundy, *On Active Service in Peace and War*, 1st ed. (New York: Harper, 1948).

<sup>78</sup> Rosen, p. 35.

use other tanks rather than tank destroyers is in part why this study of implementation is interesting.

### ***Does Evidence Reduce Risk?***

The Tank Destroyer Center did not do enough to mitigate the risk associated with implementing antimechanized defense. While initial modeling identified organizational and materiel development shortfalls, the lead agent fell short in providing a robust and impartial experimentation program. The cloud of ambiguity as to the risk inherent in the operational concept following the Louisiana and Carolina Maneuvers was never addressed. Instead the commensurate pressure to produce trained and ready units for immediate deployment overcame the impulse to continue experimenting and refining the concept with the other members of the combined arms team. The execution of additional experiments, in terrain matching the North African desert, using the actual platforms and battalion organizational structures that were to deploy in October and November of 1942, would have informed a more accurate projection of the capability, or alternately, accelerated a conclusion for discontinuing the program. Without a clear validation of both the doctrine and the organization that was to implement it, the promised benefits of the tank destroyer force would remain unconvincing. After their introduction and limited effects in North Africa, they were piecemealed out in support of infantry divisions, achieving many good outcomes, but not as antitank assets. Instead they were useful as tank surrogates, supporting infantry in the reduction of fortified positions or as additional artillery support. These combat experiences would eventually identify the value provided by the tank destroyer force in support of these secondary mission which would be



captured in the revised doctrine. However, it was too late to affect assessments of risk for what was supposed to be their primary mission.

Importantly, the need for the Palmer Board and the delays that the board caused were difficult to overcome. The disagreement between the Ordnance Department and the TDC continued for months before the Palmer board was authorized. Additionally, Brigadier General, W. B. Palmer, for whom the board was named, “criticized the Tank Destroyer Center for inflexibility and making unreasonable demands.”<sup>79</sup> The inability to compromise delayed the approval past the deployment window, where some modicum of collaboration might have enabled the initial battalions to have deployed with something other than their obsolete systems. While the TDC eventually got the designs they wanted approved, they poor debut in North Africa resulting from the pyric victory on design specifications prompted a united wave of resistance against the concept.

### ***Does Integration Support Reduce Organizational Cost?***

The Tank Destroyer Center was empowered to manage and control all the institutional support known at the time. This should have been a tremendous advantage, since they directly controlled the doctrinal development, training programs, and leader development aspects of organizational cost. Ironically, the independence and authority provided to the center and its subsequent ability to reduce the multiple sources of organizational cost, also served to isolate it from the rest of the Army. From Camp Hood, little effort was invested in integrating the emerging tank destroyer doctrine within

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<sup>79</sup> Calhoun, p. 280. Also see Gabel, *See, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War 2*, p. 27.

the more established branches. This outcome is doubly ironic in that it was oddly unaffected by McNair's career long practice of putting combined arms training in the forefront of his planning. While the TDC was able to rapidly publish a doctrinal manual for the new antimechanized force, and quickly integrate changes directed by McNair after receiving feedback from combat leaders, the center's independence and institutional concentration at Camp Hood enabled an underestimation of the amount of coordination required to integrate tank destroyers within the combined arms effects being generated to support the War.<sup>80</sup>

Importantly, no records were found indicating that the TDC trained, conducted, or deployed division level planning officers as operational embeds to coordinate integration, explain capabilities and provide advice to deploying division commanders or their operations teams. During the critical period between the end of the Carolina Maneuvers in November 1941 and the employment of the first tank destroyer battalion in Tunisia in November of 1942 no effort was made to educate deploying units on the antitank capabilities they would be receiving. Major General Bruce's late attempt at senior leader professional development to remedy this shortfall was too late to affect the outcomes in North Africa. It was reactionary. By then the combat demonstration had already tilted support for the concept in the wrong direction.

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<sup>80</sup> Gabel, *See, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War 2*, p. 26.

### *Permanent Adoption*

Are both reducing risk and organizational cost necessary to moderate organizational resistance and increase the likelihood of permanent adoption? The evidence suggests that they are. The General Board of the United States Army European Theater, who conducted and recorded the studies of all World War II organizations and equipment, concluded that tank destroyers were not suitable options for the mission they were designed to accomplish. They came to this conclusion despite a notable occasion in the European theater where a tank destroyer battalion prevented what might have otherwise been highly successful German penetration.<sup>81</sup> This conclusion came despite 24 of 53 battalions activated for service in the war having been recognized for distinguished gallantry in battle by France and Belgium.<sup>82</sup> This conclusion came despite 23 of 53 battalions receiving Distinguished Unit Citations issued by a U.S. Executive Order.<sup>83</sup> The U.S. Army remained unconvinced of the value of the innovation. While the accidental death of General McNair in 1944 also eliminated its most ardent supporter and may have made the decision to disband the capability easier, the lead agent pursued institutionalization of the new antimechanized force with vigor and at scale. However, reducing organizational cost wasn't enough to moderate resistance. In both previous cases the lead agent failed to address risk and cost and while the TDC was more effective than the Tank Corps, neither was ultimately successful.

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<sup>81</sup> United States Army Forces in the European Theater, *Organization, Equipment, and Tactical Employment of the Tank Destroyer Units: Report of the General Board, Report No. 60*, p. 13.

<sup>82</sup> See tankdestroyer.net, <http://tankdestroyer.net/things/articles/836-french-and-belgian-award-citations-to-tank-destroyer-units>.

<sup>83</sup> Ibid. See [http://tankdestroyer.net/images/stories/ArticlePDFs/DUC-PUC\\_Citations\\_WWII.pdf](http://tankdestroyer.net/images/stories/ArticlePDFs/DUC-PUC_Citations_WWII.pdf).

The next chapter considers yet another instance of failed implementation, that of the Civil Operations and Revolutionary Development Support (CORDS) and its attempt to implement counterinsurgency operations during the Vietnam War. It differs in that unlike the Tank Corps and the Tank Destroyer Center, CORDS would excel at reducing risk, achieving significant success in the two years that they operated under the auspices of Military Advisory Command. It would not be enough.



## CHAPTER 5: EVIDENCE IS NOT ENOUGH: COUNTERINSURGENCY IN VIETNAM

*"In the author's view, fortified by field experience, the greatest weakness of the U.S. advisory effort was not that it was too large or omnipresent, but that it didn't go far enough."<sup>1</sup>*

*– Robert Komer*

The Civil Operations Revolutionary Development Support (CORDS) was the lead agent responsible for implementing counterinsurgency (COIN) operations within the U.S. Army during the Vietnam War. While relatively successful in advancing Military Advisory Command-Vietnam's (MACV) COIN or pacification<sup>2</sup> efforts, creating credible evidence of its value, CORDS was not successful in altering the Army's preference for large scale combat operations. Instead of being incorporated in any meaningful way after the war, COIN remained a marginalized practice, outside of the Army's concept for future war.

Using agent led adoption as a theoretical guide, both the case of the British Tank Corps and the U.S. Tank Destroyer Center demonstrated that the lack of evidence creation made implementation very difficult. In this chapter and the next, the cases combine to show that while critical, evidence creation is not enough. Agent-led adoption suggests that the lead agent also must support the development of replacement routines and practices that alter organizational memory. Otherwise, the existing bureaucracy will continue propagating the old entrenched systems, while excluding new ones.

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<sup>1</sup> Komer, p. 127.

<sup>2</sup> Pacification as used here matches common use seen in Vietnam era historiography. It refers to the counterinsurgency practices implemented by the U.S. MACV and is chiefly used to distinguish these efforts from the conventional military tactics preferred by the U.S. Army at the time.

Of note, like the cases preceding it, this implementation effort enjoyed advantages that should have increased the likelihood of successful adoption. CORDS enjoyed the direct support of the President, the Secretary of Defense, and the Secretary of State. Additionally, the threat posed by guerrilla forces operating inside of South Vietnam undermined the Government of Vietnam, increasing its vulnerability to North Vietnamese attack. As mentioned, the work of Barry Posen suggests that these conditions both work to increase the likelihood of successful adoption since they align with incentives for state preservation.<sup>3</sup> In contrast, Steven Rosen argued that the Army's inability to reconcile around consistent strategic metrics, specifically the adherence to large-scale operations, doomed the implementation of COIN to failure.<sup>4</sup> The case presented here attempts to add to this debate by providing an alternate explanation of why attempts at implementing innovation in wartime often result in failure.

This case is not meant to be a comprehensive historical narrative of the War in Vietnam. Instead, like previous chapters, this is a focus on an instance where the lead agent features prominently and where its actions can be examined to assess their relative efficacy at moderating organizational resistance to change. The period of interest spans the time between late 1966 and early 1969, effectively beginning in the months before President Lyndon B. Johnson created CORDS through an executive memorandum, and the inauguration of President Nixon.

This case presents an analysis of whether the implementation effort was effective, not an evaluation of counterinsurgency operations. To be considered effective, the theory

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<sup>3</sup> Posen.

<sup>4</sup> Rosen, p. 103.

predicts that the lead agent would look to put progressively more live experimentation and/or combat demonstrations in place to mitigate the risk associated with the new method/capability. Additionally, the lead agent would engage in efforts to both alter the institutional systems that contribute to generating forces with the knowledge and ability to execute the new capability as well as support operational commands who would receive the new capabilities so that they could employ them in accordance with their design.

As before the chapter unfolds in four broad stages before closing. Initially, the case provides background and context to describe the operational need for change and qualifications of the key actors. Next, the case describes counterinsurgency operations. The case study then turns to the actions taken by the lead agent, in this case CORDS, to mitigate organizational resistance. The chapter then closes by analyzing the key relationships between risk, organizational cost and adoption.

### **Background: The Peoples' War**

In the two decades between the end of World War II and the standup of CORDS in 1967, the U.S. Army published five versions of what it considered to be its bible for conducting military operations. Field Manual (FM) 100-5, Operations, was published in 1949, 1954, 1956, 1958 and 1962.<sup>5</sup> This doctrine was the basis for existing training and education programs within the U.S. Army. It remained largely unchanged and accordingly, the soldiers and leaders in the U.S. Army that would fight in Vietnam would

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<sup>5</sup> Krepinevich, p. 39.



do so from the perspective that the same tactics used to fight the Germans, the North Koreans and the Chinese would serve to enable the South Vietnamese government to defeat both the insurgency in their own country and the specter of invasion from the North.

Each successive edition between 1949 and 1962 reflected only minor changes in the way the Army wanted to operate. Despite the inclusion of a chapter on COIN in the 1962 edition that would later be dropped, they each retained an attachment to a central operational concept.<sup>6</sup> Shaped by the victories achieved in World War II, the Army concept, or belief in how the Army ought to fight, emphasized “conventional, war and the reliance on high volumes of firepower to minimize casualties – in effect, the substitution of material costs at every available opportunity to avoid payment in blood.”<sup>7</sup> This central idea would permeate all the U.S. involvement in South Vietnam.

Additionally, the emergence of the Soviet Union as the principal rival to the United States reinforced the Army’s preferred mode of fighting. In the Army’s thinking, the principal contingency against which the Army needed to plan was against the Soviet Union and would require the employment of ground forces on the European continent to engage in large scale combat operations. In effect, the Army’s worst case was also its preferred case.<sup>8</sup>

This was the state of the Army in Vietnam in 1967. It held a pervasive preference for targeting the ground forces of an adversary with overwhelming firepower. This idea

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<sup>6</sup> United States Army, *Field Manual 100-5, Field Service Regulations--Operations*, by G. H. Decker (Washington, D.C.: United States Government Printing Office, 1962), pp. 136-43.

<sup>7</sup> Krepinevich, p. 5.

<sup>8</sup> Ibid.

permeated the kind of support exported to partner nations, to include the armed forces of Vietnam. U.S. Army training teams, ranging in quantity from the hundreds under Truman and Eisenhower to over 16,000 under Kennedy, mostly fixated on training their counterparts to fight and organize using existing U.S. Army doctrine for conducting conventional military operations.<sup>9</sup>

The transition from advisors to the first American combat troops occurred in response to a request in February of 1965, by General William C Westmoreland, Commander, MACV. The Johnson administration approved his request, ostensibly to free up the South Vietnamese Army (referred to as the Army of Vietnam or ARVN) from providing security for key facilities so that they would be available to conduct broader offensive operations.<sup>10</sup> Upon arrival, the incoming U.S. units were soon repurposed to join ARVN units in conducting deliberate offensive operations against the Vietcong.

The total number of combat forces deployed to Vietnam continued to grow through 1965. However, following the Gulf of Tonkin Incident and the Tonkin Gulf Resolution in August 1965, the total U.S. Armed forces in Vietnam increased more dramatically.<sup>11</sup> U.S. Forces jumped from 23,300 to nearly 185,000 by the end of 1965 and more than doubled to 385,000 in 1966.<sup>12</sup>

Westmoreland's theory of victory justified the rapid growth. True to the Army concept, he believed that the path to victory lay in the conduct of offensive operations

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<sup>9</sup> Ibid., p. 3.

<sup>10</sup> Nagl, p. 153. Also see Krepinevich, p 149.

<sup>11</sup> Passed nearly unanimously by Congress in 7 August 1965, The Gulf of Tonkin Resolution gave President Johnson broad unilateral authority to use force to protect American Forces in Vietnam to include the bombing of North Vietnam. See Krepinevich, p. 95.

<sup>12</sup> "Vietnam War Allied Troop Levels 1960-1973," last modified 06 December 2008, accessed 5 August, 2019. <http://www.americanwarlibrary.com/vietnam/vwatl.htm>.

maximizing the use of firepower. This was codified in Westmoreland's 1965 strategy for prosecuting the war in Vietnam. His strategy had two phases. Believing that the GVN could not be made stable and secure until the sources of instability were removed, the first phase was to conduct aggressive offensive operations on both sides of the border. Against the Democratic Republic of Vietnam (North), an armada of strategic bombing capabilities would be put into service. Within the Republic of Vietnam (South) enemy forces would be located and then destroyed with maximum use of artillery and firepower. The second phase would be executed sequentially and would shift the U.S. military focus to pacification efforts.<sup>13</sup> These two phases would take on entirely different lives and in the ensuing years, would be referenced as entirely different wars.

### ***An Operational Need***

Throughout 1965 and 1966, while the focus had increasingly turned towards committing more soldiers and materiel, the lack of progress led President Johnson towards a renewed emphasis on pacification. What little effort was aimed at pacification was poorly managed and often worked at cross purposes with each other. By 1966, President Johnson, being dissatisfied with what he referred to as the "other war", called for a series of presidential conferences. One of the key goals for these conferences was to improve pacification efforts in Vietnam.<sup>14</sup> The three conferences occurred in Honolulu in February 1966, in Manila in October 1966 and in Guam in March 1967.

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<sup>13</sup> Nagl, p. 154.

<sup>14</sup> See the "Presidential Emphasis on 'The Other War' and Press Reaction", in *Pentagon Papers*, by United States. Department of Defense. Office of the Secretary of Defense. Vietnam Task Force, United States. National Archives, and Records Administration (Washington, D.C: National Archives, 2011), Part IV.C.8.I.E. p. 28.

In the months leading up to the Honolulu Conference, MACV relentlessly pursued the enemy. Westmoreland's approach was to "'pile on' as many troops as were available, supported by close air support, artillery, and even B52 strikes, to kill as many of the Vietcong and North Vietnamese Army (NVA) soldiers as possible."<sup>15</sup> Despite the increasing tempo and size of the operations, as the months passed, MACV reports demonstrated a sense of dwindling optimism regarding a quick resolution to the war.<sup>16</sup> It was this lack of progress in the conventional operations that prompted President Johnson to look towards the pacification efforts for political top cover.

During this time period, the task of pacification was delegated to Ambassador Henry Cabot Lodge, who poorly synchronized the various efforts of the civilian agencies operating within the country. While various departments and agencies, to include the Central Intelligence Agency (CIA), the State Department, the U.S. Information Agency (USIA), the Department of Agriculture and others were committing assets to support pacification efforts, each entity was acting in accordance with the caveats and resources provided to it by its parent organization in Washington, D.C. The organizational structure within Lodge's country team did little to moderate the competing priorities.<sup>17</sup> Additionally, Westmoreland's existing strategy, to destroy conventional forces first and worry about pacification later, ensured that the pacification priorities were not going to improve if doing so meant diverting critical resources from military operations.<sup>18</sup>

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<sup>15</sup> Nagl, pp. 154-55.

<sup>16</sup> *Pentagon Papers*, IV.C.8.I.F pp.32-35.

<sup>17</sup> *Ibid.*, IV.C.8.I.D pp. 21-27.

<sup>18</sup> *Ibid.*, IV.C.8.I.F p. 35.

The Honolulu Conference, held in March 1966, made some improvement to the overall approach to pacification. The President directed the country team to organize all pacification efforts under the direction of the deputy chief of mission, Ambassador Porter. The President also appointed a “Special Assistant to the President for Peaceful Construction relating to Vietnam” to coordinate all pacification efforts across the government in Washington, D.C. Robert Komer, the acting National Security Advisor, was the selectee, with the authority “...to assure that adequate plans are prepared and coordinated covering all aspects of such programs and that they are promptly and effectively carried out.” Most importantly, the President’s directions, captured in a National Security Action Memorandum (NSAM) 343, *Appointment of Special Assistant to the President for Peaceful Construction in Vietnam*, also gave Komer direct presidential access.<sup>19</sup>

As the President’s special advisor, Komer’s initial task was to assess ongoing civilian pacification efforts. In his first update to the President in May 1966, Komer assessment was succinct, “the Civil side is a ‘mess’”. The Federal agencies each insisted on sustaining control of their programs. Additionally, Ambassador Lodge resisted implementing the Honolulu Conference reform by insisting that Porter’s primary responsibility was as the Deputy Chief of Station, not as the pacification program coordinator.<sup>20</sup>

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<sup>19</sup> The White House, *National Security Action Memorandum No. 343, Appointment of Special Assistant to the President for Peaceful Construction in Vietnam*, by Lyndon B. Johnson (Washington DC, 28 March 1966).

<sup>20</sup> Frank L. Jones, “Blowtorch: Robert Komer and the Making of Vietnam Pacification Policy,” *Parameters: U.S. Army War College* 35, no. 3 (1 September 2005): pp. 108-09.

At the Manilla Conference, held on 23 October 1966, Komer served as the principal arbiter between the two camps that were forming amongst the President's advisors. Komer was able to convince the Secretary of Defense, the Joint Chiefs of Staff, and the National Security Advisor to support transitioning responsibility for pacification to MACV. However, the CIA, U.S. Agency for International Development (USAID), USIA and Department of State all refused to have their civilians subordinated to the military. Komer brokered a middle ground, suggesting that a new entity, the Office of Civil Operations (OCO) be established with Ambassador Porter as the lead, and that Porter be relieved of all other responsibilities other than the coordination of pacification efforts. He was also able to get MACV to commit more resources to supporting provincial security. The initial standup of OCO however was too slow to suit President Johnson, and so he called for a third Conference to accelerate the pace of reform.<sup>21</sup>

The Guam Conference, held 20-21 March 1967, became a watershed moment in aligning senior leaders in support of expanding pacification efforts. To accelerate pacification, Komer recommended that OCO be integrated into MACV. To keep civil entities from falling under direct military control, Komer recommended that a civilian deputy position be created under the commander MACV and under the MACV Corps Commanders. The Civilian deputy would have full responsibility for pacification efforts. This construct would be called the Civil Operations and Revolutionary Development Support (CORDS) and codified in both the conference notes and a NSAM 362,

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<sup>21</sup> Ibid., pp. 111-12.

*Responsibility for U.S. Role in Pacification*.<sup>22</sup> Ambassador Lodge, resigned. His replacement, Ambassador Ellsworth Bunker, appointed during the Guam conference, was in full support of the idea and would go on to leverage the heavily civilian led structure of CORDS to maintain a close relationship with MACV.<sup>23</sup> Komer would be assigned as the first director of CORDS and given the rank of Ambassador and Deputy Commander, MACV.<sup>24</sup>

### ***Robert Komer***

Robert Komer's professional life took several turns before ending up as a special advisor to the President. He left his home state of Missouri to attend Harvard and then Harvard Law School. Before finishing his law degree, he was drafted into the Army in World War II, and was shipped to fight on the Italian front. After the war, he returned to Harvard, graduating instead from the Business School. Upon his graduation in 1947, he was hired into the fledgling CIA as an analyst, where he would work for 15 years before moving onto the National Security Council staff under the Kennedy administration as an advisor on Middle Eastern matters. It was during this time that he developed a close relationship with then Vice President Johnson and after Kennedy's assassination shifted from NSC advisor to white house insider.<sup>25</sup>

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<sup>22</sup> The White House, *National Security Action Memorandum No. 362, Responsibility for U. S. Role in Pacification (Revolutionary Development)*, by Lyndon B. Johnson (LBJ Presidential Library, 9 May 1967).

<sup>23</sup> Jones, p. 113.

<sup>24</sup> *Pentagon Papers*, IV.C.8.Summary p. ii.

<sup>25</sup> Gary Anderson, "Blowtorch: Rober Komer, Vietnam, and American Cold War Strategy," *Washinton Times*, 8 October 2013, Special, accessed 28 July 2019, <https://www.washingtontimes.com/news/2013/oct/8/how-blowtorch-bob-crafted-american-power/>.

As a Johnson insider he found himself working difficult issues. Just before becoming the center piece of Vietnamese pacification, he negotiated a Memorandum of Understanding (MOU) with Israel's prime minister, Levi Eshkol, establishing that Israel would not be the first country to introduce nuclear weapons in the middle east.<sup>26</sup> The Komer-Eshkol MOU is still in effect today. When the National Security Advisor (NSA), McGeorge Bundy resigned, in 1966, Komer became the interim NSA. His appointment represented a well-earned step in an outstanding career.

Described by his peers as an optimist that "dove into the fray with gusto," Komer was appropriately enthusiastic about the likelihood of implementing CORDS.<sup>27</sup> He saw the current conditions as supportive. Johnson's escalation of conventional military operations against the Vietcong and North Vietnamese forces in 1965 and 1966 made resources available to pacification that otherwise would not have been tenable.<sup>28</sup> Additionally, since the increased scale of military operations did not have the desired effect on ending the civil war, Johnson and his senior cabinet members were looking towards improving pacification efforts to better compliment the increase in military operations. Additionally, Komer's development of the new policy on pacification formed a coherent and aligned senior cadre prior to implementation. From Komer's perspective at the conclusion of the Guam Conference, success was highly probable.

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<sup>26</sup> Benny Avni, "Iran and Syria Eye Israel's Nukes," *Newsweek*, 17 October 2013.

<sup>27</sup> William Colby, "Foreward " in *Bureaucracy at War* (Boulder, Colorado: Westview Press, 1986), p. xi.

<sup>28</sup> Komer, p. 118.



### **The Innovation**

Prior to Vietnam, the U.S. Army experience in advising civil war-saddled allies and partners was principally focused on building a conventional force similar in structure to that of the U.S. Army.<sup>29</sup> When a similar approach in Vietnam did not quell the insurgency, MACV requested U.S. combat troops to compliment the capabilities of the ARVN. In 1965, the U.S. combat forces that arrived in Vietnam were trained to conduct high intensity warfare. The force structure, doctrine, initial entry training, leader development and unit operating procedures were all designed to obtain this end. Additionally, Army leaders like Westmoreland understandably held a bias for high intensity operations. Reinforced with the experience of victory in Europe, and the dismal initial defeat in Korea when the Army neglected these practices, Westmoreland's focus fixed directly on annihilating the enemy either through major engagements or through attrition.<sup>30</sup> Komer, instead advocated for a much stronger focus on protecting the population against the insurgency rather than exclusively focusing on annihilating the enemy.

### ***Counterinsurgency***

An insurgency, or more accurately in this case, a revolutionary war, is a political movement, usually protracted in nature, where an actor creates political support for a cause in order to gain popular support for replacing the established government. The cause serves as a symbolic call-to-arms. The real objective of the insurgent organizer is

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<sup>29</sup> Krepinevich, p. 5.

<sup>30</sup> Ibid., p. 165.

to undermine the population's belief in the established government to both protect them and to provide basic services (i.e., security, markets, and quality of life). By doing so they gradually win the support of the population. Whether that support is active, or passive is irrelevant. By robbing the existing government of popular support, the insurgent becomes capable of winning the war, even against a numerically larger force.<sup>31</sup>

The classic model follows the precepts laid down by Mao Zedong and adapted by General Vo-Nguyen Giap of the North Vietnamese Army and refined during his war against the French. Importantly, he published his observations in a book, *People's War, People's Army*, in 1962, while actively organizing to continue the struggle against the U.S. An insurgency against a much stronger enemy, according to Giap, must be fought using a strategy of exhaustion, and "must include several different stages: stage of contention, stage of equilibrium, and the stage of counteroffensive."<sup>32</sup> The first stage is about proselytization and conversion of citizens to insurgents. The second stage is about building capacity and bases of operation, which require violence to undermine confidence in the existing government's capabilities. The last stage aims to overthrow the government through force.<sup>33</sup>

An effective counterinsurgency, according to the theorist David Galula, combines military, judicial and political operations to win the wholehearted support of the populace. Military operations are necessary to destroy insurgent main forces and their bases of supply. Judicial operations are needed to enforce the rule of law (police force),

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<sup>31</sup> David Galula, *Counterinsurgency Warfare: Theory and Practice* (New York: Praeger, 1964), pp. 3-16.

<sup>32</sup> Vo Nguyen Giap, *People's War, People's Army* (Department of Defense, Washington, D.C. , 1962), pp. 45-46.

<sup>33</sup> Krepinevich, p. 7.

and judge fairly and openly those who allegedly break those laws (judiciary). Political operations include connecting the population to its government by providing services and inspiring support through able leadership. All three are essential.<sup>34</sup> Accordingly, those that favored this a balanced counterinsurgency approach were critical of the Army's overemphasis on conventional military operations.

Of note, a study commissioned by the Army Chief of Staff in mid-1965 to develop alternative courses of action for implementation in South Vietnam (SVN) recommended a shift in focus from enemy-centric military operations to more robust pacification programs that enhanced both security and the quality of governance. The study team, called the Program for Pacification and Long-term Development of South Vietnam (PROVN) group, recommended that the Ambassador ultimately hold decision authority for all U.S. military operations to appropriately incorporate political factors into a more coherent integrated scheme of operations. The study further recommended that security forces be aligned all the way down to province level under civilian authority in order to prioritize winning popular support for the government at the local level and denying that same support to the insurgents.<sup>35</sup> The study concluded in March 1966 but was not made available to the Joint Staff and Secretary McNamara until mid-summer.<sup>36</sup>

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<sup>34</sup> Galula, p. 87.

<sup>35</sup> *Pentagon Papers*, IV.C.8.III.C pp 74-77.

<sup>36</sup> Nagl, pp. 159-60.

### *Senior Leader Support*

The road to initiating the implementation of COIN in Vietnam is marked by the stepwise alignment of the President's cabinet. First, was getting the Department of Defense to champion the idea, and second was aligning the national security team behind the proposal. Last, was getting the MACV commander's support. This would enable the President to endorse the consolidated recommendation of his national security team.

The first step was the Department of Defense. Secretary McNamara with the advice of Komer, circulated a draft memorandum in mid-September 1966 advocating for pacification efforts to be consolidated under MACV's leadership and that consideration be given for the inclusion of a wide variety of civilian programs under this unified command structure.<sup>37</sup> Komer, appreciating that the military controlled the majority of the resources, felt that it was essential to have their support if pacification efforts were going to improve. He recommended approval of McNamara's position to President Johnson. However, Komer was effectively able to keep himself neutral allowing him to facilitate negotiations between the other key players. McNamara would finalize his position paper on 14 October 1966, days before the Manila Conference, recommending a greater emphasis on pacification.<sup>38</sup> However, as noted, the outcome of the conference fell short of McNamara's desired policy position, creating instead the OCO.

Going into the Guam Conference, Komer was still arbitrating between the two sides. The Department of Defense wanted control of all military operations whether conducted providing provincial or district security or conducted by ARVN or U.S. forces

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<sup>37</sup> , IV.C.8.III.D pp. 91-92. Also see Nagl, p. 166.

<sup>38</sup> *Pentagon Papers*, IV.C.8.III.D pp. 99-103.

hunting Vietcong. The Department of State and intelligence agencies were refusing to support a policy that required having their personnel subordinated under military control. Komer's grand bargain, the creation of the civilian deputy position within MACV, was enough to keep military support for consolidation and engender the support of the new US Ambassador, Ellsworth Bunker, as well as the CIA and National Security Advisor. The agreement would set the conditions for unity of effort in support of pacification.<sup>39</sup>

General Westmoreland would also go on record endorsing a bigger emphasis on pacification programs and would endorse Komer's recommendation to form CORDS as the implementation mechanism for COIN principles. Westmoreland's assessment of the PROVN study in May 1966, while not completely positive, did include his support for its recommendations to consolidate pacification programs and to create "a supra-agency staff" to achieve "the necessary degree of military-civil integration."<sup>40</sup> Furthermore, his strategy for 1967, published in a broad statement in August 1966, called for a major shift in focus for ARVN forces to support provincial security operations as part of a shift towards pacification efforts.<sup>41</sup> Westmoreland's support for transitioning OCO to CORDS and placing CORDS under MACV during the Guam conference, while unsurprising, was a critical part of gaining a full team endorsement<sup>42</sup>

The President had been overt in his support for a more robust pacification program but wanted consolidated support from his civilian executives. After the Manila Conference, Ambassador Lodge received a series of directives providing guidance that

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<sup>39</sup> Colby, in *Bureaucracy at War*, p. xi. Also see *Pentagon Papers*, IV.C.8.IV.C pp. 128-30.

<sup>40</sup> *Pentagon Papers*, IV.C.8.III.C p. 78.

<sup>41</sup> *Ibid.*, pp. 89-90.

<sup>42</sup> *Ibid.*, IV.C.8.IV.C p. 127.

Lodge would have a short trial period for consolidating pacification programs under a civilian lead who should be unfettered with any other duties. The first, issued on 4 November 1966, specifically warned that the President “had considered putting the entire program under COMUSMACV to achieve these ends; and this may ultimately prove to be the best solution”<sup>43</sup> By March of 1967, after only a few months, the President would accept Ambassador Lodge’s request for reassignment, and appoint Bunker to replace him. Ambassador Bunker endorsed consolidating pacification programs under MACV and was supportive of Komer’s appointment as Westmoreland’s deputy for pacification within Vietnam. Immediately following the Guam Conference, Komer returned with Westmoreland to Saigon to develop the specific language for the NSAM and then returned to Washington, D.C., where it was staffed and signed on 9 May 1967, signifying complete multilateral support for implementing COIN.<sup>44</sup>

### **The Lead Agent: Civil Operations and Revolutionary Development Support**

Between May 1967 and January 1968, CORDS implemented COIN operations under the auspices of MACV, adapted for the specific challenges identified as most pressing in Vietnam. It was a specially designed solution, custom tailored to alter current conditions. The most pressing condition was to overcome both the military and civilian predilection for keeping to their established practices, undeterred by changes in the operational environment. In his own words, Komer would describe CORDS as

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<sup>43</sup> Ibid., IV.C.8.III.D p. 107-09.

<sup>44</sup> Jones, p. 113. Also See *National Security Action Memorandum No. 362, Responsibility for U. S. Role in Pacification (Revolutionary Development)*.

correcting the “delayed and inadequate execution and practice owing mostly to the bureaucratic obstacles to generating such an atypical effort through existing institutions.”<sup>45</sup>

One of the principle ways in which CORDS corrected for prior execution was through unity of effort. The operating policy for CORDS stipulated that planning and execution were to be combined at all levels.<sup>46</sup> Komer considered it “a unique experiment in a unified civil/military field advisory and support organization, quite different from World War II civil affairs or military government.”<sup>47</sup> The principal negotiated arrangement during the Guam Conference was for Komer to work directly for General Westmoreland with the rank of Ambassador as an operational deputy. Additionally, every Corps level Commander was assigned a civilian deputy in charge of CORDS sponsored pacification activities. These unified teams were propagated to every province and district. In some cases, the civilians would work for a military lead, while in other places it would be reversed. Personnel were hired from across the entire government to include the White House, integrated as a unified civ-mil team under MACV.

Despite early support for CORDS, Westmoreland began to hedge on the likelihood of success almost as soon as it was established. A 12 May 1967 Washington Post article by Ward Just, claimed “Westmoreland, who wanted to take charge of the pacification program two years ago, is now reported to be deeply skeptical of the

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<sup>45</sup> Robert Komer, *Bureaucracy Does Its Thing: Institutional Constraints on U.S.-GVN Performance in Vietnam* (Santa Monica, CA: Rand Corporation, 1972), p. 111, accessed 6 August 2019, <https://www.rand.org/pubs/reports/R967.html>.

<sup>46</sup> Colby, in *Bureaucracy at War*, p. xii.

<sup>47</sup> Komer, *Bureaucracy at War: U.S. Performance in the Vietnam Conflict*, p. 119.

possibility of producing the kind of quick results the White House apparently wants.”

The article quotes Westmoreland as saying, “I did not volunteer for the job, but now that I’ve got it, I’ll do my best with it.”<sup>48</sup>

Either unfamiliar or unconcerned with senior civilian and military leader support for the program, some subordinate commanders also remained unconvinced that increased pacification efforts would result in the kinds of outcomes they were expected to achieve. Some divisions and corps continued to insist on the importance of body counts as the driving metric of success. One senior general recollected his prioritization scheme as follows: “I had two rules. One is that you try to get a very close meshing of pacification... and military operations. The other rule is that military operations be given first priority in every case.”<sup>49</sup> Importantly only about 6000 military service men worked with their civilian interagency team members to implement the new pacification program. The remaining 400,000+ were still supporting or conducting conventional military operations.<sup>50</sup>

### ***Reducing Risk and Organizational Cost***

As done in previous chapters, before describing the efforts of the lead agent, a review of risk and cost reduction follows. The differences between creating evidence to reduce risk and providing integration support to reduce organizational cost is nuanced. Risk reduction is accomplished through the visible demonstrations of how a capability

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<sup>48</sup> Pentagon Papers, IV.C.8.IV.C p. 130.

<sup>49</sup> This is a direct quote from LTG Julius Ewell during an interview with Andrew Krepinevich in April of 1979. LTG Ewell served as a division commander in Vietnam. See Krepinevich, p. 222.

<sup>50</sup> Ibid.



would be employed and the effect it is likely to achieve in combat. This evidence includes modeling and simulations, live experiments and combat demonstrations. The capture and packaging of that capability for distribution into the various forms that comprise the institutional memory of an organization reduces the organizational burden associated with learning and transitioning to the new practice and is referred to here as cost reduction. Cost reduction is accomplished through lead agent support to the development of doctrine, institutional training, and leader development. It also includes operational support such as the development and documentation of unit routines and unit training. The means for reducing cost are collectively referred to as integration support. Risk reduction and cost reduction are also interdependent. High-level evidence creation informs the efficacy of the integration support and quality integration support improves the veracity of evidence creation. They should form a virtuous cycle.

### *Reducing Risk*

Instantiated forward to support operations in Vietnam, CORDS would have to experiment and demonstrate capacity simultaneously. The initial task for CORDS was to incorporate existing pacification programs and then improve ongoing efforts to create increases in military, judicial and political linkages between the populace and the GVN. CORDS initially incorporated the Revolutionary Development (RD) program and the Police Field Force (PF),<sup>51</sup> both of which focused on improving the military protection at the local level. The RD program was created by the CIA in 1965 and consisted of 59-

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<sup>51</sup> Nagl, p. 166.

member paramilitary teams assigned to provide provincial security. The second was the Police Field Force (PF), created by the USAID to provide a paramilitary local security capability at districts and village level. These two programs were intended to operate as local security forces, protecting the villages from guerrilla forces and thereby preventing the creation of new bases of support for the insurgency. Both programs, according to Komer, were too small in scale and lacked a coordinated emphasis in territorial security to be effective.<sup>52</sup> In addition to providing an increase in resources for recruiting, training and sustaining these local forces, CORDS was also responsible for combining the oversight regimes for what was previously two distinct efforts and synchronizing those efforts within the larger ARVN operational framework. Under CORDS, they would report to a single overall U.S. provincial lead who in turn linked directly to a GVN counterpart.

One the principal detractors of local security operations was the existing ARVN practice of aligning militia and paramilitary forces under the ARVN division-level tactical commanders. This had the effect of pulling local security forces into larger conventional operations outside of their militia's local area, leaving hamlets and villages with no protection. CORDS successfully lobbied to remove the ARVN division commanders from the RF/PF chain of command, thereby removing direct pressure on the RF/PF forces for supporting non-local operations.<sup>53</sup> Additionally, CORDS was able to

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<sup>52</sup> Komer, *Bureaucracy Does Its Thing: Institutional Constraints on U.S.-GVN Performance in Vietnam*, p. 112. Also see Nagl, p. 64.

<sup>53</sup> *Pentagon Papers*, IV.C.8.IV.D pp. 132-34.

advocate and support funding for the creation of a national training center for RF and PF units to train, greatly increasing their overall readiness.<sup>54</sup>

An example of how improvements in judicial governmental practices were achieved was funding and support for a national program called "Chieu Hoi". The program encouraged both North Vietnamese and Vietcong defections and their subsequent reintegration within society.<sup>55</sup> Chieu Hoi had the effect of providing amnesty to citizens who were coerced into supporting the insurgency. Coupled with the Phoenix Program which sanctioned any means, to include the use of violence, to destroy the Vietcong infrastructure (VCI), the two programs combined to increase effective government control.<sup>56</sup>

To improve political conditions, CORDS establish a system of coordinated, synchronized advice, assistance and training at echelon to GVN leaders.<sup>57</sup> Examples included the creation of a system of metrics designed for assessing overall progress and an associated independent assessment team, called the CORDS Evaluation Branch, to ensure that the collection of those metrics were unbiased.<sup>58</sup> This was complimented with a practice of assessing and replacing underperforming GVN appointees. Additionally, CORDS efforts under the umbrella of MACV improved U.S. civilian influence over pacification efforts rather than hinder them as was argued by Ambassador Lodge the

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<sup>54</sup> Jeffrey Record and W. Andrew Terrill, *Iraq and Vietnam: Differences, Similarities and Insights* (Carlisle Barracks, PA: Strategic Studies Institute, U.S. Army War College, 2004), p. 25, <https://search.lib.virginia.edu/catalog/u4040730>. Also see Nagl, p. 166.

<sup>55</sup> Record and Terrill, p. 25.

<sup>56</sup> Nagl, p. 166. Also see Komer, *Bureaucracy at War: U.S. Performance in the Vietnam Conflict*, pp. 119-20.

<sup>57</sup> Record and Terrill, p. 25.

<sup>58</sup> Nagl, p. 166.

previous year. The scheme for appointing civilian deputies created a readily accessible conduit for the exchange of information between MACV and Ambassador Bunker's U.S. Mission.<sup>59</sup>

The results of the CORDS implementation in Vietnam was very positive. There were improved effects against VCI, improved coordination with SVN Gov officials, and improved the coordination and mutual support between the MACV HQ and the U.S. Mission. The successful combat demonstrations regularly created supporters within both the civilian and military subcultures deployed with CORDS. William Colby would credit the effort with motivating the GVN President to reorganize and produce a unified management structure to handle pacification programs, imitating the CORDS organizational structure.<sup>60</sup> General Creighton Abrams, who replaced Westmoreland in the Spring of 1968 as the commander of MACV, emphasized a "one war strategy," raising the prominence of CORDS efforts.<sup>61</sup> Despite these CORDS successes, within the institutional Army, COIN operations remained a marginalized practice with little impact on the way the Army would pursue preparations for future conflicts.

### *Reducing Organizational Cost*

One of the challenges with implementing COIN practices in Vietnam was that it was in direct contravention to the established "axiom of massive firepower liberally applied."<sup>62</sup> In other words, it violated established preferences for the use of firepower to

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<sup>59</sup> Komer, *Bureaucracy at War: U.S. Performance in the Vietnam Conflict*, p. 118. Also see Jones, pp. 114-15.

<sup>60</sup> Nagl, p. 166.

<sup>61</sup> Krepinevich, p. 254.

<sup>62</sup> *Ibid.*, p 6.

destroy enemy forces while reducing the exposure of friendly forces. The excessive use of firepower combined with limited discretion, inevitably did as much damage to the local population as it did to the Vietcong. To successfully implement COIN practices therefore required a change in the Army's preferred mode of fighting. To do this, CORDS would have to do more than create successful programs within the borders of Vietnam. It would require key investments by CORDS to enable COIN to at least coexist with other Army concepts that would drive future capability development.

Surprisingly, except for a CORDS sponsored training academy established for advisors coming to Vietnam, no changes occurred within the institutional Army.<sup>63</sup> The absence of change is significant because it runs contrary to the guidance provided by the President, the Secretary of Defense, and senior military leaders through their increasing support for pacification programs. Despite involvement in advising the ARVN since 1961, the U.S. Army had yet even to publish a COIN handbook or doctrine of any kind.<sup>64</sup> It is significant for another reason as well. As convincing and charismatic as Robert Komer apparently was, ably building consensus on a change to national policy regarding the prosecution of the war, and competently leading the implementation of CORDS under the MACV umbrella, he was equally unsuccessful in locking in those changes within the institution implementing the new policy.

In 1967 and 1968, newly commissioned infantry officers were arriving in Vietnam convinced that the principal objective of any of their military operations would first be to focus on and destroy Vietcong forces. This was because from 1966 to 1967

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<sup>63</sup> Nagl, p. 166.

<sup>64</sup> Rosen, p. 101.

counterinsurgency training within the infantry officer basic course was consistently reduced, in the end comprising less than 28% of the total training. While 28% may seem substantial, of the training that was labeled as counterinsurgency much of it consisted of the applying conventional force search and destroy tactics against irregular forces.<sup>65</sup>

The syllabi at the command and general staff college, a critical year-long mid-career professional education program for all up and coming field grade officers,<sup>66</sup> similarly eschewed COIN education. The course directors would include caveats in the operational environment, such as the presence of irregular forces, to categorically state that the training was on COIN. However, the reality was that these student-officers, who would go on to fill critical command and staff positions within the battalions, brigades and divisions fighting in Vietnam, would be immersed in hundreds of hours of instruction that directed the use of infantry exclusively to root out an enemy force with little attention to the nuances of COIN.<sup>67</sup>

Few articles were written by CORDS members about the achievements being made. In the *Military Review*, a professional journal published by the Command and General Staff College, the number of articles describing the complexity and opportunity associated with implementing COIN were a mere 10% of the total writing.<sup>68</sup> Senior advisors leaving CORDS did not go back to the varying military education centers or West Point to advocate for alternate doctrine or to update professional education syllabi.

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<sup>65</sup> Krepinevich, p. 49.

<sup>66</sup> Field Grade Officers refer to those officers in the rank of Major, Lieutenant Colonel. See United States Department of the Army, *DA Pamphlet 600-3, Commissioned Officer Professional Development and Career Management*, by Department of the Army Headquarters (Washington, D.C.: Government Printing Office, 2010), p. 9.

<sup>67</sup> Krepinevich, p. 51.

<sup>68</sup> *Ibid.*, p. 41.

In fact, the opposite happened. By the end of Vietnam, the Army was already well under way towards abandoning any view of COIN as a desired future capability. The next iteration of FM 100-5, Army Operations, published in 1976 would delete the remnants of any reference to counterinsurgency, guerrilla warfare, or irregular warfare.<sup>69</sup>

### *End of War Outcomes*

In the early morning of 31 January, the North Vietnamese communists launched their most aggressive offensive of the war. The Tet Offensive included 100,000 NVA regulars and guerrillas. They attacked provincial capitals in 36 of 43 provinces. The American forces were genuinely caught by surprise. In Saigon and Hue, the fighting would last several weeks before U.S. forces regained control.<sup>70</sup> The surprise was as much from the timing as it was from the actual decision to engage the U.S. Army in large scale open combat.

From the perspective of battlefield tactical outcomes, the attack was an unmitigated disaster. The casualty estimates as reported by MACV on the attacking forces exceeded 37,000, with 6,000 taken prisoners. The VCI, directed to actively participate in order to catalyze mass uprisings, suffered around 30% losses.<sup>71</sup>

From the perspective of strategic effects, it was the beginning of the North Vietnamese victory. A few months earlier, General Westmoreland had traveled to

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<sup>69</sup> The chapter on COIN was removed in 1976 as part of the first rewrite after the end of war in Vietnam. See United States Army, *Field Manual 100-5, Operations*, by Bernard W. Rogers (Washington, D.C.: United States Government Printing Office, 1976).

<sup>70</sup> Krepinevich, p. 239.

<sup>71</sup> Ibid.

Washington D.C. to provide a progress update to a Joint Session of Congress. During his presentation, he described the “war as being won militarily.”<sup>72</sup> Just prior to the Tet Offensive, on 17 January 1968, President Johnson gave his State of the Union Address. In it, Johnson mentioned the successes of the recent free elections in Vietnam, the repeated defeat of NVA forces in the field and the significant increases in “the number of South Vietnamese living in areas under Government protection.”<sup>73</sup> A representative data point of the President’s argument that the U.S was making progress was that 67% of the population lived in relative security and that number was expected to increase in the near term.<sup>74</sup> The Tet Offensive launched two weeks after the President gave the State of the Union address, and shocked senior leaders and the U.S. voters with the breadth and scale of the attack. While the fact that MACV and GVN forces presented the NVA with a tactical defeat served to reassure the Army that it was making progress, it did not lessen the political effect on the administration. On 22 March, President Johnson, convinced that he could no longer secure the Democratic nomination, announced that he would not run for reelection. A new policy of Vietnamization was put in place to transfer responsibility and overall lead for the war to the GVN.<sup>75</sup> In January 1969, Kissinger, the new National Security Advisor for President-elect Nixon, announced an acceleration to the Vietnamization effort and accompanying force reductions as they signaled the desire to negotiate a peace deal and find an honorable end to the war.<sup>76</sup>

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<sup>72</sup> Henry A Kissinger, "The Vietnam Negotiations," *Foreign Aff.* 47 (1968): p. 211.

<sup>73</sup> Lyndon B Johnson, "Transcripts from 1968 State of the Union Address," The Miller Center, accessed 4 August, 2019. <https://millercenter.org/the-presidency/presidential-speeches/january-17-1968-state-union-address>.

<sup>74</sup> Kissinger, p. 211.

<sup>75</sup> Nagl, p. 168.

<sup>76</sup> Kissinger, p. 234.



With the reduction in troop strength, CORDS also reduced its size and reach. New initiatives were limited. Komer departed Vietnam, and after a very short time as the Ambassador of Turkey, departed government service with the arrival of the new administration in late 1968. Peace negotiations and force reductions continued until 1973, but CORDS' influence effectively ended with the Tet Offensive.

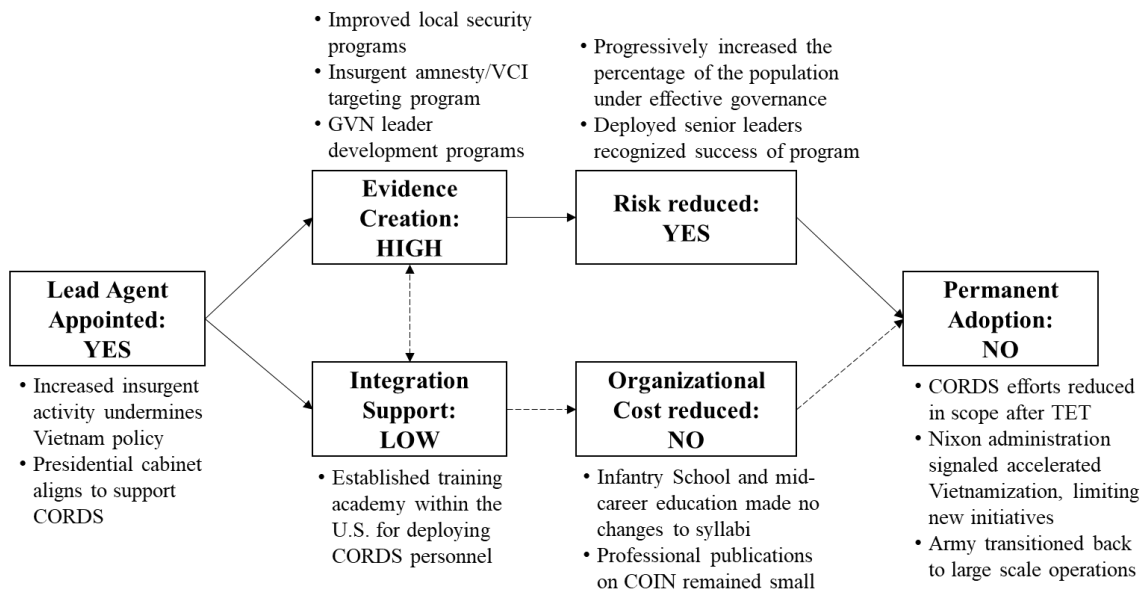
### **Analysis**

In previous cases, the analysis showed that supportive external conditions do not necessarily lead to successful adoption. Success is also dependent on the implementation effort moderating organizational resistance. In the first case, the implementation of armored warfare in World War I by the British Army, the absence of evidence creation contributed to the complete rejection of the new capability. In the second, the implementation of antimechanized defense by the U.S. Army in World War II, the lead agent provided a considerable amount of effort to reduce organizational cost, but no effort to conduct any of the possible action types that contribute to creating evidence. Unsurprisingly, despite the substantive investment in institutional capacity, the U.S. Army rejected the innovation.

As highlighted by *Figure 5-1, Agent-Led Adoption Logic Flow for COIN operations*, CORDS was similarly unsuccessful in their implementation of COIN. In this case, the implementation of COIN was accompanied by a panoply of successful demonstrations and other evidence producing accomplishments. However, the lack of effort dedicated to altering the systems of practice that generate replacement forces and guide institutional changes contributed to the reification of the older dominant practices

supporting large scale ground combat operations. Figure 5-1 aligns highlights of key events with the logic points for agent-led adoption as discussed in Chapter 2. Inside each critical point, an assessment in capital letters is assigned to indicate which outcome was supported by the evidence. The bulletized text aligns with the critical point closest to it and serves as an explanation for that assessment. As an example, referencing the first critical point on the left, it highlights how the increased efficacy of the insurgent activity prompted the alignment of President Johnson’s cabinet in support of CORDS and the implementation of COIN. Before expanding on the shorthand representation in the figure to explain the key relationships between risk, cost and adoption outcomes, the special conditions of the case will be addressed.

**Figure 5-11. Agent-Led Adoption Logic Flow for COIN operations**



### *Special Considerations*

As before, it is informative to appreciate how agent led adoption compare to other leading theories of diffusion. Specifically, the work of Posen, and Rosen are useful guideposts. Importantly, the argument here is not that other external conditions are irrelevant or mistaken in their explanations, but rather that the specific conditions described by agent led adoption are also important indicators of success or failure.

In the case of CORDS there are three special considerations of interest. The first is whether the fear of defeat affected the outcomes. The second considers the role of civilian intervention in the success or failure of the diffusion process. The last consideration is whether a set of coherent metrics were in place and whether these affected the outcome. Each will be considered in turn.

As discussed previously, a threat to the state is powerful and parsimonious explanatory variable. Posen's balance of power hypothesis for the diffusion of innovation suggests that in instances of high threat, successful diffusion is more likely.<sup>77</sup> The U.S. failure in Vietnam represented first and foremost the failure of policy, never posing an existential threat to the nation. The failure of that policy had dramatic implications on the ensuing election, being enough to convince Johnson to retire from politics rather than attempt to get reelected. On those grounds, the lack of a national threat would be consistent with the stalled and ultimately unsuccessful implementation effort.

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<sup>77</sup> Posen, p 74-78.

Civilian intervention was quite exceptional. From McNamara's initial emphasis on unifying pacification under a military authority to Komer's development of consensus on pacification across Johnson's national security team, all key civilian leaders were actively engaged in the events surrounding the formulation of CORDS and its execution. Despite these efforts, the Joint Chiefs of Staff were still able to resist pressure from McNamara, eventually setting the conditions for McNamara's resignation. On 19 May 1967, McNamara sent a memo to the President critical that the current policy in Vietnam still did not do enough to shift efforts towards pacification and away from attempting to attrit the Vietcong and North Vietnamese Army. His memo argued that bombing north of the border was ineffective and that the GVN was not holding up its responsibilities in the south. The memo concluded by recommending against any future increase in troop strength in contradiction to a request by Westmoreland to increase troop strength by 200,000. The Joint Staff challenged McNamara's assessment.<sup>78</sup> They instead requested that the President bring additional troops on active duty from the Army Reserve and increase expenditures in Vietnam by \$10B, claiming that the increase would insure victory.<sup>79</sup> The disagreement between the Secretary of Defense and the Joint Chiefs of Staff was leaked to the Senate Armed Services Committee which called for hearings in which McNamara was called to testify. On 25 August 1967, McNamara's position against escalation in contradiction to the military recommendation was made public, ahead of any formal decision by the President, which escalated tensions within the

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<sup>78</sup> Robert S McNamara and Brian VanDeMark, *In Retrospect: The Tragedy and Lessons of Vietnam* (Vintage, 1996), pp. 266-70.

<sup>79</sup> *Ibid.*, p. 265.

administration to such an extent that it culminated with McNamara announcing his pending resignation in November of 1967.<sup>80</sup> In this case, heavy civilian intervention failed to advance adoption of COIN by the U.S. Army.

Strategic metrics are also theorized as an explanatory variable for implementing innovation. While Rosen specifically addresses the implementation of COIN as a peacetime innovation, lacking the promotion pathways to set conditions for success, his theory for wartime innovation also applies.<sup>81</sup> Rosen theorizes that in wartime, leaders with credibility within the dominant subcultures can drive the adoption of alternative metrics and create the conditions in which military diffusion occurs.<sup>82</sup> Komer was an outsider, and as such may not have had the influence within the U.S. Army to alter the dominant role played by large scale ground combat in the design of operations in Vietnam. As such, his implementation of measures of effectiveness to grade district improvements was unique even successful in reforming some GVN corruption. It was not however enough to drive changes in the Army's long-term planning for future conflicts.

### ***Does Evidence Reduce Risk?***

As an organization, CORDS was overwhelming successful as overcoming perceptions of risk associated with implementing COIN. They were able to use existing programs as previous experiments that could be improved upon for subsequent iteration.

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<sup>80</sup> Ibid., pp. 284-91.

<sup>81</sup> Rosen, p. 100.

<sup>82</sup> Ibid., p. 35.

In this way, the reforms in support of the RF/PF forces increased local security dramatically. The increased capacity and performance of local security combined with the VCI defection inducing programs and reductions in GVN corruption, progressively increased the percentage of the overall population living under effective governance. These effects were noticeable as early as 1968.<sup>83</sup> The success induced both Abrams and McNamara to advocate for increasing the focus on CORDS related priorities. Specifically, the “one war” approach adopted by Abrams was based on the recommendation by his Long Range Planning Task Group to focus on the essential task of “providing security to the Vietnamese people”, not just “kill VC.”<sup>84</sup>

### ***Does Integration Support Reduce Organizational Cost?***

The institutional Army saw little of the Vietnam pacification programs. The lack of education, professional writing, and lessons learned inserted from the battlefield back into the training and education pipelines rendered the pacification experiences as anomalous, idiosyncratic, and inconsistent with the more dominant and better understood precepts of conventional warfare against a near peer.<sup>85</sup> It was these other dominant ideas that held sway as the Army transitioned away from Vietnam. At no time did Komer as the director of CORDS turn his attention or the attention of his allies in Washington towards adjusting the practices and routines being taught by the Army to the next set of soldiers being sent to Vietnam. Newly arriving leaders in Vietnam did not receive

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<sup>83</sup> Record and Terrill, p. 25.

<sup>84</sup> Krepinevich, p. 254.

<sup>85</sup> Downie, pp. 67-68.

specialized training. Officers serving as CORDS advisors did not transfer to subsequently serve as conventional force operations officers or commanding officers. Instead they arrived trained to execute conventionally, were directed by their unit practices to execute conventional operations.

McNamara's ouster is illustrative of the organizational resistance from the military services, but not enough to explain why Komer didn't pursue other avenues for reducing the organizational cost of change. Whether because he didn't have the time, or capacity or both, the historical record only captures his regrets in not doing more. According to Komer, "fortified by field experience, the greatest weakness of the U.S. advisory effort [to include CORDS] was not that it was too large or omnipresent, but that it didn't go far enough. In retrospect, it was too technical assistance oriented and not sufficiently performance oriented."<sup>86</sup> Komer regretted not focusing more on changing the expected standards of performance for MACV and GVN vis-à-vis the pacification effort. To create these adaptations would have required changes in the way the Army prepared its officers to appreciate the importance of COIN to the overall strategic objective in Vietnam. But this level of appreciation was unlikely without the necessary investments to alter training regimes, doctrinal guidance, professional education standards and other key institutional practices. In the short term, CORDS should have at least established a robust academy for indoctrinating all newly arriving MACV officers regardless of rank or pending assignment. Similarly, GVN personnel should have also participated in some at least nominal level of education as to the expected behaviors and outcomes needed for

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<sup>86</sup> Komer, *Bureaucracy at War: U.S. Performance in the Vietnam Conflict*, p. 127.

success against the Vietcong. As a result, very little in the way of changes to institutional memory occurred.

Two significant research studies conducted just prior to the conclusion of the war concurred with Komer's assessment that more effort was necessary. Both were commissioned by the Army Research Projects Agency looking comprehensively at pacification efforts in Vietnam. Both also sought to identify pertinent lessons to inform future conflicts.<sup>87</sup> The first was conducted by the Institute for Defense Analysis beginning in September 1970 and concluding in March 1972. "Based on the lessons learned in Vietnam (and in other insurgency situations, as well) a pragmatic doctrine of pacification should be developed. To the best of our knowledge, no such doctrine now exists, Vietnam notwithstanding."<sup>88</sup>

The second study, conducted by Rand Corporation, concluded in January 1972. The Rand Study had similar, albeit farther reaching conclusions than the IDA study. Rand recommended three levels of reform, each with escalating levels of resource needs. The first was to consolidate military resources for countering revolutionary conflict in a defense secretariat level agency, above the effects of more traditional military/service-oriented constraints.<sup>89</sup> The second level called for creating a 3-star military command at Fort Bragg, NC with global reach to execute such missions as may be necessary.<sup>90</sup> The

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<sup>87</sup> The first of the two studies was Chester L Cooper et al., *The American Experience With Pacification in Vietnam: Volume 1* (Alexandria, VA: Institute for Defense Analyses, 1972). The second was Hans Heymann Jr and William W Whitson, *Can and Should the United States Preserve a Military Capability for Revolutionary Conflict* (Santa Monica, CA: Rand Corporation, 1972), p. 2.

<sup>88</sup> Cooper et al., p. 58.

<sup>89</sup> Heymann Jr and Whitson, pp. 68-80.

<sup>90</sup> Ibid., pp 80-92.



third level of reform recommended by this study was for the creation of an interagency capability to manage all of it, either DoD and DoS led, with the ability to establish interagency task forces in particular countries as needed.<sup>91</sup>

Significantly, the common base line for both studies were the same. To effectively prosecute COIN operations, the U.S. Army as part of a larger inter-governmental effort, required the development of common practices, improved training regimes, improved incentive structures, and a common new doctrine.<sup>92</sup> None of these were pursued vigorously by CORDS.

### ***Permanent Adoption***

The recommendations made by the IDA and RAND Studies stand in stark contrast with the view developed by the Army in the early 1970's. Both ARPA commissioned studies recommended that the practices pioneered by CORDS should be retained as part of the set of necessary capabilities for future conflicts. The Army instead argued convincingly that the main threat faced by the nation was the possibility of conducting large scale ground combat as part of NATO. Therefore, or so the argument went, the entirety of the Army should be aligned against confronting the Soviets.<sup>93</sup> For

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<sup>91</sup> Ibid., pp. 92-95.

<sup>92</sup> Ibid., pp. ix-x.

<sup>93</sup> Donn Albert Starry, "A Tactical Evolution-FM100-5," *Military Review* LVIII, no. 8 (August 1978): p. 4. General Donn Starry was the 2d commanding general of the Training and Doctrine Command, established in 1973 to revitalize training, education and capability development within the U.S. Army. He served in Vietnam as a senior planner and brigade commander. Interestingly, his idea of COIN largely consisted of massing firepower against the enemy and not about retaining the political support of the population. For additional details see Donn Albert Starry, "Welcome to the Counterinsurgency Century," in *Press On!: Selected Works of General Donn A. Starry* (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, 2009).

the Army, the smaller threat posed by “other” wars was inconsequential. Of greater significance, was the interruption of the Army’s modernization process through its participation in Vietnam, which enabled the Soviets to become much stronger relative to the U.S. The relative increase in Soviet capabilities necessitated a critical focus on being able to fight large scale conventional wars.<sup>94</sup> As mentioned, the next edition of the Army’s capstone doctrine on Army Operations would omit any mention of Counterinsurgency Operations. Effectively, as described by Andrew Krepinevich, “the Army made little effort to preserve learning that had occurred during the war; rather, it expunged the experience from the services consciousness.”<sup>95</sup>

The next chapter considers the implementation of airmobile division operations during the Vietnam War by the 11<sup>th</sup> Air Assault Division (Test). It differs in that unlike the three previous cases, the 11<sup>th</sup> Division would excel at reducing risk, and at reducing organizational cost. The combination ensured that the implementation effort would be successful.

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<sup>94</sup> Starry, "A Tactical Evolution-FM100-5," pp. 3-4.

<sup>95</sup> Krepinevich, p. 260.





## CHAPTER 6: EVIDENCE AND COST REDUCTION: AIRMOBILE DIVISION OPERATIONS IN VIETNAM

*"The Armies of the World no longer need to be tied to the ground."*<sup>1</sup>

—Lieutenant Colonel Robert R. Williams

The story of the airmobile division focuses on events that occur between 1963 and 1965, two years before the creation of the Civil Operations and Revolutionary Development Support (CORDS) organization. This case traces the actions of the U.S. Army's 11th Air Assault Division (Test) from the conditions surrounding its designation as a lead agent in January 1963 through its employment in combat operations in the Ia Drang Valley in November of 1965. While both this and the previous cases occurred during the Vietnam era, these cases are not connected. Military Advisory Command-Vietnam (MACV) and the United States government considered these two efforts to be parts of different wars.<sup>2</sup> Unlike CORDS, the 11th Air Assault (Test) was able to balance both evidence creation through successively realistic experimentation, with cost reduction through the creation of doctrine, influencing branch training and education programs and through the creation of detailed unit routines. Both evidence creation and organizational cost reduction contributed to a successful combat demonstration in 1965 and subsequently, to an army-wide adoption of the innovation.

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<sup>1</sup> "VietnamWar50th.com," accessed 7 September, 2019.

<https://www.vietnamwar50th.com/education/posters/>. Williams would go on to retire as a Lieutenant General and be considered as the father of Army Aviation for his role as the commanding general of the Army Aviation school during the 11<sup>th</sup> Air Assault Division (Test) tenure at Fort Benning.

<sup>2</sup>, IV.C.8.I.E. p. 28.

In the three previous cases, external conditions were all consistent with conventional expectations of successful diffusion. Senior civilian leadership directed the change. The external security conditions placed pressure on the military to develop better capabilities for achieving decisive results.<sup>3</sup> Senior leaders within the service with the authority to direct change were also supportive of the effort.<sup>4</sup> State resources were not a limiting factor for diffusing the innovation.<sup>5</sup> Yet, the three previous cases were all examples of failed implementation efforts. In this next case, the initial conditions match the previous three, but here the implementation was a success. What distinguishes this success from the previous failed attempts are the actions taken by the lead agent, the 11 Air Assault Division (Test).

This chapter follows the same pattern established previously. It opens by providing the background and prevailing beliefs within the U.S. Army immediately before the decision to create and integrate airmobile divisions into the Army force structure. Next, the case will expand on the concept of Airmobile Operations, how it challenged competing ideas and of the support it received from key leaders. The case then transitions to a description of the lead agent, the 11th Air Assault Division (Test), to include its structure, actions and accomplishments. The chapter then closes by analyzing the key relationships between risk, organizational cost and adoption.

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<sup>3</sup> Both the influence of civilian leadership and the balance of power drivers are consistent with the work of Posen.

<sup>4</sup> Intraservice support is an essential component of the explanation for successful organization change proposed by Rosen.

<sup>5</sup> Horowitz.

## Background

The U.S. Army was not the first to use helicopters to enhance the mobility of combat troops. The first users were the U.S. Marines which successfully employed rotary wing aircraft for that purpose in October 1951. The U.S. Army eventually replicated their accomplishment in May 1953.<sup>6</sup> Significantly, the Army also established the Aviation School in 1953 at Fort Sill, Oklahoma, as part of its Artillery School. The mission of the school was “to instruct and train officers, warrant officers, and enlisted men of all components of the Army in the duties of Army Aviation personnel.”<sup>7</sup> In July 1954, the Aviation School became an independent entity, moving to Camp Rutger, Alabama.

That same year MG James Gavin, the youngest American general of WWII, and the only general officer to have four combat jumps in the war, provided a commentary about the lack of mobility in the armed forces. Wielding significant influence and fame, Gavin argued in favor of dramatically increasing ground mobility by adding a dimension of maneuverability heretofore not available. His article, “Cavalry, and I Don’t Mean Horses,” laid out a case for the use of helicopters and other air vehicles as a replacement for traditional cavalry. He published his argument for the use of air vehicles in a popular civilian journal, the Harper’s Magazine, appealing specifically to the American public. His passionate, easy, and somewhat colloquial writing style effectively argued that the traditional use of the horse was always simply a means of creating a mobility differential,

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<sup>6</sup> Sherry, "Airmobility," in *A History of Innovation: U.S. Army Adaptation in War and Peace*, p. 117.

<sup>7</sup> Richard P Weinert, *History of Army Aviation, 1950–62* (Fort Monroe, VA: Office of the Command Historian, U.S. Army Training and Doctrine Command, 1991), p. 93.

or the ability to deliver combat power faster than your adversary. First, he articulated how the use of helicopters on a nuclear battlefield could enhance the speed and space that could be traveled to achieve the desired levels of dispersion (of course in 1954, Gavin didn't account for just how fast nuclear yield would grow relative to the time distance manageable by a helicopter). Second, he explained how the use of helicopters significantly improved the sustainability of armed forces in the field, as they would no longer be limited by traditional ground routes. Lastly, he described the dramatic improvements possible in concentrating forces in order to screen activity from enemy reconnaissance.<sup>8</sup>

His article served to inspire a new generation of officers to learn how to fly and ushered in the development of the first organizational concepts with aviation companies organic to regular infantry and armored divisions. By 1957, these formations were captured as part of the Army's Pentomic Division concept with helicopter units serving as transportation and medical support. It wasn't until much later that the larger offensively purposed formations would come to exist as part of a combined arms team.<sup>9</sup>

### ***An Operational Need***

While the demand for airmobile capabilities was growing, the Army would proceed slowly. Throughout the late 50's the Army created and grew an Aviation branch, training junior helicopter pilots to operate and command these company-sized

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<sup>8</sup> James M Gavin, "Cavalry and I Don't Mean Horses," *Harpers* 208, no. 1247 (1954).

<sup>9</sup> Wayne M Dzwonchyk, *Aviation, Army Lineage Series* (Washington, D.C.: Center of Military History, United States Army, 1986), p. vii.



formations. The Army would also entice more senior combat leaders with experience in Korea and even WWII, to transfer into the new branch from their respected more traditional branches. Constrained by agreements with the U.S. Air Force to limit organic Army aviation, It wasn't until the demand for aviation support by U.S. advisors and their South Vietnamese counterparts increased that the Army would start to consider the use of airmobility as a tool in fighting unconventional war.<sup>10</sup> In Vietnam, the combination of terrain, poor infrastructure and enemy actions threatened to bog down what was at the time a road-bound South Vietnamese Army by forcing it to develop and defend road networks.<sup>11</sup> The increase in demand however would not by itself create sufficient momentum for the evolution of air mobile capabilities. It would instead require the explicit directive of the Secretary of Defense. As Rosen describes, "A more clear-cut case of successful civilian intervention to initiate or at least accelerate military innovation would, it seems, be hard to imagine."<sup>12</sup>

Based on demands in Vietnam and guidance from President Kennedy to expand the Army's capabilities against the full range of contingency operations, Secretary of Defense Robert McNamara would send the Army two memoranda to drive action in developing the use of rotary wing aircraft to enhance mobility.<sup>13</sup> The first was a short

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<sup>10</sup> Sherry, "Airmobility," in *A History of Innovation: U.S. Army Adaptation in War and Peace*. Also see John R Galvin, *Air Assault: The Development of Airmobile Warfare* (Hawthorn Books, 1969), pp. 277-78. Also see John J Tolson, *Vietnam Studies: Airmobility, 1961-1971* (Washington, D.C: Government Printing Office, 1989), pp. 55-57.

<sup>11</sup> Vietnam War "VietnamWar50th.com."

<sup>12</sup> Rosen, p. 86.

<sup>13</sup> James W Bradin, *From Hot Air to Hellfire: The History of Army Attack Aviation* (Novato, CA: Presidio Press, 1994), p. 108. Kennedy enacted a strategy of massive retaliation to replace Eisenhower's New Look strategy

note, sent on 5 October 1961, relaying his desire to the Secretary of the Army, that he conduct “a study of all Army aviation requirements.” Given only 6 weeks to comply, the Army provided the results of a recently concluded review, which made minor conservative recommendations.<sup>14</sup> In response, on 19 April 1962 the Secretary would send a more directive memorandum. In it, the Secretary expressed his disappointment in the Army's previous conservatism. The opening and closing of the memorandum capture the Secretary's critique and expectations. McNamara stated in the opening sentence, “I have not been satisfied with Army program submissions for tactical mobility. I do not believe the Army has fully explored the opportunities offered by aeronautical technology for making a revolutionary break with traditional surface mobility means.” His closing sentence is no less direct, “I shall be disappointed if the Army's re-examination merely produces logistics-oriented recommendations to procure more of the same, rather than a plan for implementing fresh and perhaps unorthodox concepts which will give us a significant increase in mobility.”<sup>15</sup>

The Secretary was very specific. He outlined how he wanted the new study managed to include detailed timelines and reporting requirements; that the results were to come to him directly; and in an unprecedented step, directed which Army officers would constitute the board who the Army would put in charge of the effort.<sup>16</sup> McNamara named Lieutenant General Hamilton Howze, the current commander of the 18th Airborne Corps, an Armor officer, and an Army Helicopter Pilot, as the director for the Tactical Mobility

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<sup>14</sup> Tolson, p. 17.

<sup>15</sup> Robert S. McNamara, “Memo from SECDEF to SECARMY Stahr on 19 April 1962,” in *Report of Army Tactical Mobility Requirements Board* (Fort Monroe, VA: Government Printing Office, 1962).

<sup>16</sup> Tolson, pp. 18-19.

Requirements Board. The board would come to be known after its director as the Howze board.

With the report due to Secretary McNamara's office no later than 1 September, they went to work quickly, leveraging people, equipment, installations, and ongoing exercises and experiments to answer the questions about feasibility and suitability. Over the 4.5 months of its tenure, the board would consider the use of airmobile capabilities over four discrete scenarios: War in Europe against the Warsaw Pact, A conflict against the Chinese Communists in Asia, a counterinsurgent effort like the one ongoing against the Viet Cong, and other minor threats as might occur in Latin America or Africa.<sup>17</sup> With the express guidance of the Secretary of Defense to access any resource they thought necessary, Howze would mobilize 13 general officers, 3200 military personnel, and 90 civilian analysts. He oversaw the design and execution of war games, of equipment demonstrations and troop field testing at various installations. He also employed the direct support of the U.S. Air Force to inform the Army's use of helicopters.<sup>18</sup>

Completing its final report on 20 August, the Howze board had one principal conclusion. "Adoption by the Army of the airmobile concept—however imperfectly it may be described and justified in this report—is necessary and desirable. In some respects, the transition is inevitable, just as was that from animal mobility to motor."<sup>19</sup>

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<sup>17</sup> Thomas Graves, *Transforming the Force: The 11th Air Assault Division (Test) From 1963 to 1965* (Carlisle Barracks, PA: U.S. Army War College, 2017), p. 8. Also see United States Department of the Army, *Report of Army Tactical Mobility Requirements Board*, by Hamilton H. Howze (Fort Monroe, VA: Government Printing Office, 1962), pp. 20-21.

<sup>18</sup> Tolson, p. 21.

<sup>19</sup> Howze board Final Report, p. 95.

The board recommended the creation of an airmobile division and an air cavalry brigade, both with greatly increased quantities of rotary wing aircraft at the expense of ground-based transportation systems. It would recommend innovative employment of artillery, cavalry, infantry, sustainment, medical evacuation, and command and control.<sup>20</sup> As pervasive as its recommendations were, the board also recognized that more work was necessary to refine the practices, expand the complexity of the concept, and subsequently implement either fully or in part, the board's recommendations.<sup>21</sup>

***MG Harry W. O. Kinnard Jr.***

Army senior leaders responded to the Howze board final report positively. General Earle Wheeler, the Chief of Staff of the Army (CSA), would use the fall of 1962 to visit innovative units and observe how they employed their helicopters. One such visit was to the 101st Airborne Division in Fort Campbell, Kentucky. While there the Assistant Division Commander, BG Harry W.O. Kinnard Jr., an infantry officer who learned how to fly helicopters as a senior officer, demonstrated the use of helicopters in urban terrain, landing troops on building rooftops. Later, General Wheeler would credit that visit as the genesis for his decision to assign the newly promoted MG Kinnard to stand up a lead agent to evolve, test, and codify air mobile practices for an Airmobile Division.<sup>22</sup>

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<sup>20</sup> Ibid., pp. 35-49.

<sup>21</sup> Ibid., p. 13.

<sup>22</sup> Galvin, pp. 280-81. Also see Graves, p. 21.

MG Kinnard's reputation was well established before his selection as the commander of the new airmobile division. In World War II, he served as the G3 for the 101st Airborne Division in Bastogne. There, he famously recommended the one-word response to the German request for the American division to surrender—his response was “Nuts!” He would also command an airborne infantry battalion in World War II.<sup>23</sup> In 1949, he attended the Air Command and Staff College, part of the newly created Air Force's officer professional development program. His career would bring him back for multiple tours within the 101st Airborne and continually fed his desire to find alternatives to the use of parachutes for aerial insertion of soldiers. After learning to fly helicopters, he conducted regular experiments with his soldiers in the 101st on airmobile applications.<sup>24</sup> He was a natural choice for command of the first experimental airmobile division. In February 1963, he took command of the 11th Air Assault Division (Test), extending the findings of the Howze board in ways that would permanently affect the way the Army would fight future conflicts.<sup>25</sup>

### **The Innovation**

Importantly, the results of the Howze board, of which the air assault division was the principal tactical innovation, were analyzed by a variety of entities simultaneously.<sup>26</sup> Since the results were forwarded directly from the President of the Board to the office of

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<sup>23</sup> Richard Goldstein, "Harry W. O. Kinnard, Who Said One Word Would Do, Dies at 93," *The New York Times*, 10 January, 2009.

<sup>24</sup> Galvin, pp. 280-81. Also see Graves, p. 21.

<sup>25</sup> Harry W. O. Kinnard, "Vietnam Has Lessons for Tomorrow's Army," *Army Magazine* (November 1968): p. 77. Also see Bradin, p. 111.

<sup>26</sup> Tolson, p. 22.

the Secretary of Defense, the Army subordinate commands, the Army Staff, the Army Secretariat, and the Joint Staff all were denied the opportunity to shape the recommendations or prepare responses. The Army Secretariat and Army Staff would respond supportively, but that would not be the case for either the joint staff or the other Army commands.

At the time, Army doctrine, as captured in the 1962 edition of *Field Manual 100-5, Operations*, only mentioned air mobility indirectly. Preceding the results of the Howze board, there was no mention of the emerging concepts for airmobility or the use of air assault operations, or even the advantages derived from Gavin's mobility differential construct. Instead, the capstone Army doctrine offered only that infantry divisions may use air assets to conduct "air transported operations, some of which are performed with organic Army aircraft."<sup>27</sup> This underwhelming endorsement for airmobile operations in the Army's literature reflected a general lack of creative investment by the Army in future capabilities.

In the late 1950's the general condition of the Army in comparison to the other services could be described as lethargic. As the Army Air Corps became the Air Force and the nuclear bomber force was under construction, "the amount of money available to the army, not only for research and development but for daily operations, decreased proportionately." Instead of investing to modernize, the Army opted to protect force structure, even if that meant keeping their formations lean and inexpensive. Army planners were directed to think "in terms of the possible." As late as 1960, studies

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<sup>27</sup> , p. 31.

reviewing the Army's investment strategy would make recommendations below the stated minimum need, accepting as a default that the Army would be under funded.<sup>28</sup>

With specific regard to the development of aviation capabilities, there also existed a standing agreement resulting from the creation of the Air Force, limiting the production of both rotary and fixed wing platforms within the Army. The Air Force defended this agreement on the basis that they could provide better and more economical support to Army infantry divisions using tactical air support.<sup>29</sup> This agreement was the basis for both the Air Force and the Marine Corps to testify before relevant congressional committees in mid-1963 about the redundancy and waste being introduced into the defense budget by the Army's growth of Aviation assets.<sup>30</sup> In one confrontation between the Chiefs of Staff for both the Air Force and the Army, the Air Force would argue that the growth of Army Aviation was a covert attempt to rebuild a new Army Air Corps.<sup>31</sup>

### ***The Airmobile Division***

An airmobile division provided more than a linear increase in capability. Existing concepts for airmobility identified two distinguishable levels of improvement. The first of the was akin to a truck company augmenting an infantry unit to facilitate its movement from point A to point B. Instead of trucks however, there would be helicopters and the speed and distance that could be traversed were significantly greater. The use of heliborne transportation assets required coordination and the exchange of Standing

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<sup>28</sup> Galvin, p. 275.

<sup>29</sup> Tolson, p. 57.

<sup>30</sup> Ibid., p. 32.

<sup>31</sup> Ibid., p. 13.

Operating Procedures (SOPs), but this modest level of planning was relatively straight forward, making this the easiest form of airmobile operation to execute.<sup>32</sup>

The second level of airmobility was integrated into the divisional footprint. Rather than the aviation assets belonging to an external organization, in this level the aviation assets were assigned to the division, enabling regular training and familiarity. Since combat troops were more familiar, and the assets were more accessible, they could be incorporated into operations with greater flexibility than merely movement between locations. However, these assigned helicopter assets were not specially designed to support major combat operations, nor were the combat troops custom designing their operations to leverage the use of helicopters. Lastly, the volume of rotary wing platforms available within the division limited the size of the possible operation to about one company at a time.<sup>33</sup>

The proponents of the airmobile division were envisioning a third level of improved capability. The concept called for the creation of an organization that was “specifically trained and equipped to exploit the continuing close tactical integration of heliborne lift as a primary means of maneuver, accompanied by readily available aerial fires and by highly responsive aerial reconnaissance and support systems.”<sup>34</sup> In this level, all elements of the combat formation would be augmented. Just as ground-based systems were custom tailored to support combat operations, the aerial platforms would be similarly modified. This was the level of implementation desired by Army senior leaders

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<sup>32</sup> Ibid., pp. 56-57.

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.



and they were willing to invest heavily with a dedicated semi-autonomous organization that was able to both invent and refine practices necessary to implement the concept.

While airmobility also increased the dependence on air superiority to protect air routes as well as increasing vulnerability at Landing Zones (LZ), the overall effect was very different from what existing combat organizations could deliver. Unlike dismounted infantry units, that could be employed in any set of conditions but had limited movement options, airmobile units could conduct vertical envelopments leapfrogging across the battlefield. "Unlike airborne units, which could attack a deep objective only to have to remain in place awaiting reinforcement and relief by ground forces, the airmobile division could move infantry and artillery as needed."<sup>35</sup> They could attack from any direction or in multiple directions, bypassing obstacles or enemy positions. They could concentrate or disperse rapidly, enabling it to extend its control of an area, maintain enemy contact or break enemy contact. They could quickly shift the concentration of forces and/or commit a reserve force. They could conduct operations in marginal weather, facilitating deception and surprise. Lastly, they could operate independent of road networks or ground lines of communication.<sup>36</sup> The airmobile division, in sum, was thought to be quite revolutionary.

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<sup>35</sup> Sherry, "Airmobility," in *A History of Innovation: U.S. Army Adaptation in War and Peace*, p. 123.

<sup>36</sup> United States Army, *Field Manual 57-35, Airmobile Operations*, by Harold K. Johnson (Washington, D.C.: United States Government Printing Office, 1967), pp. 2-4.

### *Senior Leader Support*

As mentioned, General Wheeler, the CSA, supported the concept. His visits to different pockets of aviation innovative experimentation is one example. Additionally, Wheeler anticipated the need to defend the conduct and findings of the Howze board. In September 1962, after the final report was submitted to the Secretary of defense, Wheeler directed key members of the Howze board to establish a cell working out of his office for the purpose of “preparing rebuttals for the various attacks that were coming from all directions.” This cell, originally expected to last only a few weeks, stayed in place throughout the strategic events of November 1962 that led to the Cuban Missile Crisis, and remained through Christmas, until the Secretary of Defense issued his assessment of the board results.<sup>37</sup>

While, the Howze board made significant recommendations about the organization and structure of an airmobile division, they also considered those initial ideas as a rough draft. The board astutely recognized that more maturation would be necessary and therefore recommended additional wargames, operations research and a “continuing program of field tests with the first units that become operational.”<sup>38</sup> On 7 January 1963, Secretary McNamara approved the recommendations of the Howze board and directed the Army to establish an experimental airmobile division.

By directing the creation of the Howze board and then subsequently approving its recommendations, Secretary McNamara, it would seem, all but guaranteed that this emerging concept for improving battlefield effects would be successful. Similarly, the

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<sup>37</sup> Tolson, p. 24.

<sup>38</sup> Howze board Final Report, p. 96.

Secretary of Army, Cyrus Vance, wasted no time in issuing instructions to General Wheeler. In turn, Wheeler notified MG Kinnard the very next day, ordering him to create and test the airmobile division to "see how far the Army can go – and ought to go – with the airmobile concept."<sup>39</sup>

Even with Secretary McNamara's support, there was still a need to implement the directive. As noted in the case of armored warfare, antimechanized defense, and counterinsurgency implementation, having senior leaders direct a major change is not enough to guarantee success. This left Kinnard with the responsibility of organizing and executing the myriad of administrative and operational tasks to create an organization and subsequently refine or invent its processes and practices.

### **The Lead Agent: 11<sup>th</sup> Air Assault Division (Test)**

On 15 February 1963, the U.S. Army brought the 11th Airborne Division out of retirement and designated it as the 11th Air Assault Division (Test). The new division would continue where the Howze board ended, "tasked with the mission of determining how helicopters could be integrated into tactical operations."<sup>40</sup> The Army rejected the repurposing of an existing divisional unit to this task in order to control for the existence of preconceived bias in the first operational unit, or the presence of organizational norms that could hinder the development of the airmobile concept. The designation of the 11th

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<sup>39</sup> Galvin, p. 280.

<sup>40</sup> Graves, p. 2.

Division as the lead agent was part of several measures taken by the Army to keep the unit independent.<sup>41</sup>

The Army also placed the 11th Division at Fort Benning, Ga, an installation with the maneuver space and infrastructure to support aggressive experimentation. As the home of the Infantry School, the experiments would be closely linked to this critical source of institutional knowledge, leveraging resources and giving the branch a sense of ownership over the concept. Simultaneously, by selecting a major general to lead the 11th, even if its actual footprint was initially smaller than a brigade, the Army prevented the Infantry Chief from exerting undue influence over the proceedings. Additionally, the 11th was relieved of all non-essential tasks or support requirements, allowing it to focus exclusively on their mission. Lastly, the army assigned the task of developing upcoming experiments and assessing the results to Combat Developments Command, keeping the 11th Air Assault from running and grading their own evaluations.<sup>42</sup>

Kinnard, having a record of encouraging experimentation and innovative thinking, introduced two additional features into the division that undoubtedly increased the rate of discovery and capability development. First, he created a “think group” or what might today be called a Commander’s Initiatives Group, or Commander’s Action Group. This element reported directly to MG Kinnard and would develop ideas ahead of the staff, enabling the distribution of tasks that were more clearly developed and therefore

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<sup>41</sup> Bradin, p. 111. Of note, the 11th Airborne Division was retired in 1958. During WWII, it participated in Sicily before being transferred to the Pacific theater where it played a key role in the liberation of the Philippines.

<sup>42</sup> Howze board Final Report, p. 96.

easier to implement.<sup>43</sup> Additionally, Kinnard established an Idea Center, “where anyone with a new approach or a better way to do a job could talk to a clerk and have his idea put in writing.” The center extended to the entire division the feeling that they could play a role in the development of the concept.<sup>44</sup> Despite these steps to keep the 11th Air Assault independent and outside of branch political maneuvering, there were those that remained unconvinced of the promise of improved battlefield effectiveness.

The Howze Report made a series of recommendations to not only grow the quantity of aviation resources within the infantry division, they also recommended the reduction of other capabilities to serve as bill payers. For example, the board recommended that nearly half of the trucks assigned to a normal division be eliminated. More concerning was the possibility of also losing fighting platforms. “He [Howze] was willing to sacrifice trucks, tanks, missiles, howitzers, and newly developed ground vehicles to get the required number of helicopters.”<sup>45</sup> These reductions served to threaten conventional beliefs about how the Army should fight. For those elements who believed that helicopters were far too exposed to ground fire and other air defense measures, they argued that against a sophisticated enemy, like the Soviet Union, the risk was too great to depend on aviation at the expense of ground-based systems.<sup>46</sup> For the relatively new Armor Force, the use of helicopters to destroy tanks threatened their views of anti-tank

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<sup>43</sup> Galvin, p. 282.

<sup>44</sup> Tolson, p. 52.

<sup>45</sup> Galvin, p. 278.

<sup>46</sup> The author of this article artfully lays out this argument before refuting it later in the piece. See Fred L. Walker, “Airmobile Forces Vulnerable?,” *Military Review* XLIV, no. 10 (October 1964), accessed 28 August 2019, <http://cgsc.contentdm.oclc.org/cdm/singleitem/collection/p124201coll1/id/660/rec/11>. Also see Bradin, p. 125.

operations. The more traditional artillerists saw a trend towards airmobile artillery as a loss in potential firepower available through heavier artillery platforms.

In another example, the Army's Strike Command, which was the Army's primary global contingency force, would collaborate with the U.S. Air Force to conduct a set of exercises, called GOLD FIRE I & II, that *de facto* attempted to defend parachute infiltrations against the air assault concept and affirm the Air Force's ability to provide air support to the Army. The first of the two exercises coincided with the 11th Air Assault's validation experiments in the Fall of 1964.<sup>47</sup> They used it to demonstrate the efficacy of the existing dependencies with the Air Force at all planning levels. The exercise would include a strategic airlift and airborne infiltration, continuous operational resupply via air drops, and tactical fighter support during engagements. The new CSA, General Harold Johnson, would comment as follows. "I had the rare privilege of seeing the 11th Air Assault one week and the other concept at the early part of the following week, and I would make a comparison of perhaps a gazelle and an elephant. The two are not comparable. Each of them has a role to play."<sup>48</sup> His comment, while not excluding the role of airborne operations, is also not overly supportive and speaks to the ongoing tensions in the Army over the new capability.

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<sup>47</sup> Tolson, pp. 54, 58. The dates for the validation experiment was 14 October to 12 November 1964. A description of EXERCISE GOLD FIRE I is available on p. 58. For perspective, also see 720th Military Police Battalion Reunion Association, "1964 Timeline," last modified 5 July 2017, accessed 31 Aug, 2019. [http://www.720mpreunion.org/history/time\\_line/1964/1964\\_tl.html](http://www.720mpreunion.org/history/time_line/1964/1964_tl.html).

<sup>48</sup> Tolson, p. 58.

### ***Reducing Risk and Organizational Cost***

As done in previous chapters, a review of risk reduction and cost reduction follows before describing the efforts of the lead agent. Risk reduction is accomplished through the visible demonstrations of how a capability would be employed and the effect it is likely to achieve in combat. This evidence includes modeling and simulations, live experiments and combat demonstrations. The capture and packaging of that capability for distribution into the various forms that comprise the institutional memory of an organization reduces the organizational burden associated with learning and transitioning to the new practice and is referred to here as cost reduction. Cost reduction includes lead agent support to the development of doctrine, institutional training, and leader development. It also includes operational support such as the development and documentation of unit routines and unit training. Its collectively referred to as integration support. Risk reduction and cost reduction are also interdependent. High-level evidence creation informs the efficacy of the integration support and integration support improves the veracity of evidence creation. They should form a virtuous cycle.

Between 1963, and 1965, the 11th Air Assault Division (Test) continuously modified the design, incorporated ideas to improve its overall effectiveness, and formed a more complete organizational solution for the airmobile Division.<sup>49</sup> During this period, they conducted two major risk reduction experiments as well as a myriad of smaller events culminating in a combat demonstration in November of 1965. The combination of smaller scale modeling and simulations with larger live experimentation enabled a

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<sup>49</sup> Graves, p. 31.

continuous cycle of innovation and problem solving. The 11th Division would also reduce the organizational cost for the Army to adopt airmobile divisions by facilitating the documentation and distribution of their practices and creating cadre to extend training and assimilation support, thereby enabling the institutions responsible for generating the capability at scale.

### *Reducing Risk*

The 11th Division started by assembling basic routines to create the more complex actions necessary for combat operations. These would be sequenced to test potential solutions in table-top exercises and examined in greater detail through modeling.<sup>50</sup> Once satisfied, the actions could be included as part of an increasingly complex series of experiments. The complexity would increase by increasing the duration of time, or the creativity of the enemy actions or by using live enemy surrogates.

In one occasion the division was conducting a table-top exercise focused on the procedures for integrating fixed-wing, ground-based artillery and small arms fire as part inserting forces into an LZ. The results of the simulation identified a gap in the availability of indirect fires for clearing an LZ just prior to an insertion. They discovered that a critical vulnerability existed just before a helicopter landed in an LZ, where the presence of enemy forces could threaten the operation. If the enemy ambushed the initial set of landing helicopters, then the remaining flight of incoming helicopters would have

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<sup>50</sup> As described in Chapter 2, for the purposes of this project a table-top exercise is a simulated scenario, in this case, of a theoretical future environment using innovative future forces and capabilities, that enables the participants to gain insights about possible approaches and requirements against anticipated future challenges. Modeling differs only in that rather than a wholly theoretical discussion, equipment and resources like the actual operating environment are included to enable performance assessments.



to hover or circle until ground-based artillery fire could be brought to bear on the LZ. In a worst-case, if the initial helicopters were grounded by fire, it would be impossible for the others to land and support the now isolated troops on the ground. In the meanwhile, the unit under fire would have to coordinate for suppressing artillery fire from ground-based artillery systems, a process that could take several minutes and leave room for the isolated force to be overrun.

To fill this gap, the 11th Division would iterate with working models of helicopter-mounted rocket artillery. These modified helicopters could fly with the transport ships, and immediately vector in and suppress enemy forces, thus enabling the remaining troop carriers to land and dismount soldiers. As the aerial artillery provided precise rocket fire based on direct observation, the ground-based systems could then be sequenced in to reinforce the air assault operation without a break in the barrage. The aerial rocket fire enabled the air assault to sustain the initiative. “An entire battalion of these specially equipped helicopters was eventually organized, and that battalion became a normal formation assigned to the Division.”<sup>51</sup> The unit would similarly discover the need for staging ammunition and fuel forward in support of ongoing airmobile operations as well as the development of improved command and control routines, all of which would have to be converted into training routines and SOPs to facilitate the distribution of knowledge.

Another critical component of the 11th Division’s success was the outsourcing of both the design and unit performance assessment for live experimentation to independent

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<sup>51</sup> Graves, p. 15. Also see Galvin, p. 283.

entities. Unlike the Louisiana and Carolina Maneuvers of 1941, where the same entity was responsible for the capability being tested as well as the test design and performance assessment, here an impartial organization established the evaluation criteria and test conditions, while a third conducted the evaluation.<sup>52</sup> This increased the neutrality of the outcomes. Kinnard would assume command of one of these two critical units, the U.S. Army Combat Development Command (USACDC), and would credit it with having designed the initial battery of 25 smaller tests as well as the design, and management of the two large scale experiments, AIR ASSAULT I and AIR ASSAULT II.<sup>53</sup>

The first of the two, AIR ASSAULT I, conducted in September 1963, was designed to evaluate the comprehensive execution of battalion and brigade level operations. Most significant, was the assessment of the new methods for conducting Command and Control (C2) using a flying C2 helicopter, a technique pioneered by the 11th Division. This helicopter would be equipped with extra radios and enable the commanders at echelon to sequence key resources (e.g., artillery, transport, medical evacuation, and tactical air support) as events unfolded below.<sup>54</sup> The careful procedures developed during smaller simulations were tested in a controlled live environment, enabling rigor and real time improvements. Additionally, the experiment enabled the identification of procedures that required further development prior to proceeding to the

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<sup>52</sup> Anonymous. Also see Gabel, *See, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War 2*, pp. 15-17.

<sup>53</sup> For a description of USACDC see Kamara, p. 8. For comments from author regarding USACDC's role in supporting the 11<sup>th</sup> Air Assault Division (test), see Kinnard, p. 78.

<sup>54</sup> While the layering of C2 assets in the air by echelon occasionally grew disproportionate, its use became common throughout Vietnam. See Van Creveld, pp. 255-56.

next level of live experimentation. As a result, Kinnard would direct the division to conduct 8 additional smaller simulations to test and improve techniques prior to the next assessment.<sup>55</sup>

The second exercise, AIR ASSAULT II, occurred from 14 October to 12 November 1964. Instead of focusing on brigade level operations, this one scaled up to set conditions for evaluating brigade and division level operations. Like some of its famous predecessors, this Carolina-based set of maneuvers also involved more than 35,000 personnel.<sup>56</sup> The opposing force selected for the experiment was the 82d Airborne Division. The flow of the exercise was fast paced and diverse. It included brigade-level attacks and defenses, cavalry screens, and day and night operations. It included operations in adverse weather to include initially, the presence of gale force winds and rain. The ranges across which the division fought were unprecedented. In their initial movement a brigade was transported over 100 miles.<sup>57</sup> In another sequence of maneuvers, a brigade assaulted across 41 miles to defeat another brigade in the defense. The 11th Division was able to operate in multiple directions simultaneously and with a much smaller reserve due to its increased mobility.

The outcomes were very positive. “AIR ASSAULT II satisfied Army planners that the airmobile division was well worth its cost.”<sup>58</sup> As a result of the AIR ASSAULT II, the operational participants, institutional evaluators and even the test community was

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<sup>55</sup> Galvin, pp. 283-85.

<sup>56</sup> Ibid., p. 285. Also see Tolson, p. 54. In addition to the Carolina maneuvers of 1941, this was also the stage for the Knollwood Maneuvers of 1943, which tested among other things, the concept for airborne operations.

<sup>57</sup> Tolson, p. 54.

<sup>58</sup> Galvin, p. 285-86.

convinced of the viability of the new concept. One of the battalion commanders in the division, Lieutenant Colonel (LTC) Hal Moore, who would go on to command a brigade and eventually retire as a Lieutenant General, the same commander who would lead the battalion fighting at LZ X ray in the Ia Drang Valley, would state that as a result of the experiment “the air assault concept was accepted as a valid methodology for combat.”<sup>59</sup> The commanding general of 82d Airborne stated that “seldom do we see a new military concept which can contribute so decisively throughout the entire spectrum of warfare.” MG Kinnard was of course similarly impressed with the capabilities demonstrated by his division. He would state unequivocally, that the division was a tremendous asset to the Army in the conduct of the full scale of military operations, from counterinsurgency to nuclear battlefields.<sup>60</sup> The evidence was sufficiently convincing that the Joint Staff cancelled GOLD FIRE II and voted to recommend the activation of an airmobile division for deployment to Vietnam.<sup>61</sup>

The full scope of assessment and recommendations would take a few months to assemble, but by June of 1965, Secretary McNamara would approve the first of five future airmobile divisions. On June 29th, the U.S. Army announced the deactivation of the 11th Air Assault (Test) transferring all its assets to a sister division stationed at Fort Benning. The sister division was the 2d Infantry and its colors were cased and exchanged with the Army division in Korea.<sup>62</sup> Deemed a more appropriate lineage for the new

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<sup>59</sup> Harold G Moore and Joseph L Galloway, *We Were Soldiers Once -and Young: Ia Drang, the Battle That Changed the War in Vietnam*, 1st ed ed. (New York: Random House, 1992), p. 13. Also see Graves, p. 17.

<sup>60</sup> Tolson, pp. 56-57.

<sup>61</sup> 720th Military Police Battalion Reunion Association, 1964 Timeline.

<sup>62</sup> Sherry, "Airmobility," in *A History of Innovation: U.S. Army Adaptation in War and Peace*, p. 124.

highly mobile force, the 1st Cavalry Division had its colors cased in Korea and redesignated at Fort Benning on 1 July 1965, as the first air assault division in the Army.<sup>63</sup> The newly named 1st Cavalry would also receive orders to deploy to Vietnam.

The division did not wait long to conduct its first combat operation. Arriving in September 1965, MG Kinnard remained as the commanding officer, and while having to overcome a significant challenge to deploy the division, one that will be discussed below, he and the division were ready within 30 days to conduct the culminating test of the Army's newest innovation. By late October the division would be involved in the first major combat operation against North Vietnamese forces conducted exclusively by the U.S. Army.<sup>64</sup>

MG Kinnard was ordered to conduct large sweeps of the Ia Drang Valley in order to find and attack the enemy. To do so, the division employed air cavalry assets, capitalizing on improved communications and response times. The division also established a rapid reaction force that could be directed to the enemy was located by the cavalry. Artillery and support would also be established via helicopter lift to shorten resupply and refuel times. Additionally, tactical air support from aerial artillery, ground

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<sup>63</sup> Galvin, p. 287. As a separate note, for those with an interest as I do, the 2d Division is still stationed in the Republic of Korea today as part of U.S. Forces Korea. Also see National Museum for the United States Army, "General Harold Keith Johnson," accessed 3 September, 2019. <https://armyhistory.org/general-harold-keith-johnson/>. Of note, the renaming of the 11<sup>th</sup> Air Assault was done under a new Army Chief of Staff. Wheeler, the previous Army Chief, who had directed the creation of the 11th Air Assault and hired Kinnard to lead it, had retired and was replaced by Harold K. Johnson. Coincidentally, Harold Johnson spent his formative years in Cavalry Units, to include his company command in WWII, and his Battalion Commands during the Korean War.

<sup>64</sup> Sherry, "Airmobility," in *A History of Innovation: U.S. Army Adaptation in War and Peace*, p. 124-25.

artillery and tactical air support would be leveraged to augment the forces internal mortars and firepower. In Kinnard's own words, "Here was airmobility's acid test."<sup>65</sup>

From 23 October to 26 November, the division would sustain an incredible tempo of operations. It would include both the successes of the LTC Hal Moore's 1-7 Cavalry at LZ X-Ray as well as the disappointments of LTC Robert McDade's 2-7 Cavalry at LZ Albany.<sup>66</sup> All three brigades of the 1st Cavalry Division would be sequenced into the fight. The tempo was both demanding and dynamic requiring both the infantry and pilots to depend on the SOPs they had carefully developed. The division was able to maintain contact with the enemy over a large area and for sustained periods, wearing down the enemy, and increasing the fidelity of intelligence reporting. The ability to regularly relocate artillery via airlift enabled the division to operate effectively at ranges that a regular division could not accomplish. Logistics operations were also an overwhelming success, enabling a continuous uninterrupted flow in support of the operation.<sup>67</sup> In summary, the airmobile division was able to deliver on the promise of increased effectiveness under combat conditions as it had during AIR ASSAULT II.

### *Reducing Organizational Cost*

The success achieved in this initial combat demonstration, in combination with the live experimentation that preceded it, were critical and necessary accomplishments to

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<sup>65</sup> Rosen, p. 93.

<sup>66</sup> See Moore and Galloway. Two of the four sections of the book focus exclusively on the conditions leading up to and events occurring during these two critical battles of the Pleiku Campaign. Also see Nagl, p. 155.

<sup>67</sup> Galvin, pp. 289-97.

support implementation. As critical were the division investments in documenting and distributing the basic knowledge they gained.<sup>68</sup> Prior to the Howze board, very little in the way of institutional support to airmobility existed. The Aviation school was invested in training pilots to fly, but not as part of a cohesive air-to-ground team conducting combat operations. The members of the 11th Division had to invent ways to fuel and rig, fly and land in formation, deconflict airspace with fixed-wing aircraft, how to cycle fires into an objective, how to airlift artillery, and how to configure squad loads. Nothing about airmobility had been turned from the tacit knowledge held by small pockets of leaders across the Army to published collective knowledge that could be centrally accessed.

While the evidence they created triggered belief that an airmobile division could achieve better combat outcomes, the accompanying distribution of knowledge reduced the difficulty associated with actually producing the new capability.<sup>69</sup> The division was able to influence the development of doctrine, leader development, and training at military branch schools. Additionally, they created detailed SOPs with battle drills to support unit training and inform parallel work at branch schools. These same SOPs would also enable support to other units integrating airmobility practices.

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<sup>68</sup> For descriptions of how very little in the way of existing doctrinal support existed prior to the 11<sup>th</sup> Division, see Tolson, p. 52.

<sup>69</sup> Albert Bandura, *Social Learning Theory* (Morristown, N. J.: General Learning Press, 1971), p. 79. Bandura refers to a person's belief that a behavior will lead to certain outcomes as "outcome expectations". He refers to the conviction that one can successfully execute the behavior required to produce the desired outcomes as "efficacy expectations".

One of the first accomplishments by the 11th Division was to inform the development of an initial doctrinal publication on airmobile operations. As the Howze board completed its final report, it formally recognized the close relationship it had sustained with the USACDC, which was the Army's principle entity responsible for doctrine.<sup>70</sup> This USACDC special relationship continued with the 11th Division. Together the two entities collaborated to shape the initial publication of special texts and instructions that would ultimately be combined as part of the first full doctrinal publication called Field Manual 57-35, *Airmobility Operations*.<sup>71</sup> The field manual would include an overview of Army aircraft and their associated safety procedures. It would also include instructions for preparing equipment for transport both within and loaded beneath the aircraft. It would also include familiarization with the existing weapon systems as well as the most common techniques for assembly, movement and reorganization of aircraft transporting troops for both movement and assaults.<sup>72</sup>

While the 1963 version of Field Manual 57-35 was inadequately detailed for combat operations, its early production sensitized Army institutional training and professional education to the introduction of the airmobile division. Not only did it sensitize instructors to the ongoing experimentation efforts, it mandated them to update their courses appropriately. Subsequent improvements would be incorporated as these changes were validated by the 11th Division/1st Cavalry Division.<sup>73</sup> This same cycle of

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<sup>70</sup> Howze board Final Report, pp. 10, 95-96.

<sup>71</sup> United States Department of the Army, *The United States Army Combat Developments Command: First Year June 1962-July 1963*, by Lloyd P. Van Court (Fort Belvoir, VA: U.S. Army Combat Developments Command, 1963), p. 41.

<sup>72</sup> United States Army, *Field Manual 57-35, Airmobile Operations*, by Earle G. Wheeler (Washington, D.C.: United States Government Printing Office, 1963), pp. 39-41.

<sup>73</sup> Graves, p. 17.



collaboration, publication and iterative improvement would continue, enabling what would start as a unit routine to end up as official doctrine and subsequently proliferated through training schools.

Unit routines were used to standardize performance within the division. These detailed instructions governed the execution of the myriad of complex tasks required in the division to carry out successful operations. Initially having only one assigned battalion, the division used that battalion to both develop, and just as importantly, to document these standing drills to enable subsequently assigned battalions to quickly absorb and replicate the latest developments.<sup>74</sup> In addition to unit routines, new training methods and performance measures were formalized. "Dozens of techniques were assimilated – formation flying, aerial artillery to neutralize landing zones, assault doctrine, air lines-of-communication, control of airspace over the division – all these would mean a wide variety of totally new problems" that would also be solved and codified.<sup>75</sup> These solutions would be exported to a branch sponsor that would incorporate the methodology into their course material. One example was the formalization of Pathfinder Operations.

The division developed methods to liberate themselves from the ground routes that governed the movement of trailer-mounted artillery and truck-based resupply operations. Instead of depending on ground movement, the division could reconnoiter, and establish temporary landing zones inside enemy territory for the express purpose of receiving critical combat equipment. Using heavy lift helicopters, the division could

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<sup>74</sup> Ibid., p. 14.

<sup>75</sup> Galvin, pp. 281-82.

effectively “jump” light howitzers to destinations independent of road access. These more austere locations could be continuously supplied with ammunition by air and had the benefit of increasing the speed of displacement and dramatically extending the range of operations that could be supported by artillery fire.<sup>76</sup> Similarly, this technique of jumping critical equipment to temporary landing zones was adapted to free logistics from the existing road network. The division documented techniques for jumping specially designed fuel bladders to forward locations along with ammunition, effectively creating a mobile resupply capability. These forward-located “refuel-rearm points” enabled helicopters to drastically shorten the time needed to resupply, thereby increasing their availability to support ongoing operations.<sup>77</sup>

To conduct the initial reconnaissance and establishment of landing zones in enemy occupied territory, the 11<sup>th</sup> Division established a Pathfinder Detachment. The 11th Division was the only unit in the Army to have one.<sup>78</sup> This detachment supported the transfer and inclusion of the techniques pioneered as part of its unit routines into the Fort Benning training course for Pathfinders, allowing the Army to standardize and scale that knowledge to other units.<sup>79</sup> This course was the principal source of training and certification within the Army, and with support from the 11th Division published the first Pathfinder Operations field manual in 1963 shifting the focus from transportation facilitation to combat management of an LZ under fire, and including guidance for

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<sup>76</sup> Ibid., p. 283.

<sup>77</sup> Graves, p. 15. Also see Galvin, p. 283.

<sup>78</sup> Graves, p. 30.

<sup>79</sup> Tolson, p. 82.

support to airmobile operations up to the brigade level, matching the level of testing completed so far by the 11th Division.<sup>80</sup>

Other refinements were made to the organizational structure as compared to that of the original Howze Report. Key among them were the inclusion of detailed organizational footprints for the combat support battalions (engineers and military police) and combat service support battalions (medical, signal, maintenance and logistics). As expected, the modified structure also called for the addition of the newly designed aviation rocket battalion and deletion of a ground-based rocket battalion. It also included a designation for three of the eight infantry battalions to remain designated as airborne battalions, retaining additional flexibility.<sup>81</sup> Importantly, it also reduced the original number of fixed wing platforms and limited their role to tactical observation and surveillance operations.<sup>82</sup>

Another indicator of the division's successful influence within Army training centers is seen in the final preparations of the division for deployment to Vietnam. The 11th Division, with its eight authorized infantry battalions and other critical assets, grew from a single battalion over the course of its two-year testing and experimentation period. They were able to hand select the most talented people in the Army as part of this epoch. However, after two years of experimentation "many of the soldiers were due to rotate, or to leave the service." Those soldiers within 60 days of ending their enlistment were

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<sup>80</sup> United States Army, *Field Manual 57-38, Pathfinder Operations*, by Earle G. Wheeler (Washington, D.C.: United States Government Printing Office, 1963). The previous edition of FM 57-38 was called *Pathfinder Guidance*. Also see Tolson, p. 82.

<sup>81</sup> Graves, p. 29.

<sup>82</sup> Sherry, "Airmobility," in *A History of Innovation: U.S. Army Adaptation in War and Peace*, p. 124. Also see Galvin, pp. 280-88. Also see Tolson, pp. 51-57, 59-62.

simply separated from the unit altogether. The overall effect was a 30% reduction in division strength just ninety days prior to the division's deployment to Vietnam. This left the division short nearly 2,700 personnel, "many of them in critical positions such as pilots, crew chiefs, and aviation mechanics."<sup>83</sup> With such little time, repeating the rigor of the last two years was not feasible. However, the work in creating standardized unit training, unit routines, the support to course managers, the publications of special instructions, all contributed to moderating this challenge. The new division soldiers arrived with an initial appreciation for the division missions and the tasks they would be expected to accomplish. The existing unit SOPs and trained unit cadre accelerated the pace at which these new troopers would learn the division's critical practices.<sup>84</sup> The detailed work enabled the division to absorb new arrivals fast enough to be ready for its combat demonstration a few weeks after arriving in Vietnam.

The 1st Cavalry Division would remain in high demand after the Ia Drang Campaign. It would operate in three of the four Corps regions and its tenure in Vietnam would include the largest airmobile operation ever conducted.<sup>85</sup> When coupled with the Army's one-year rotation scheme for leaders in Vietnam, these best practices were reinforced and distributed at increasing speeds. The updated FM 57-35, *Airmobility Operations*, published in 1967, included drills, planning considerations, and operational details that were directly pulled from the work of the 1st Cavalry Division.<sup>86</sup>

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<sup>83</sup> Graves, p. 41.

<sup>84</sup> Moore and Galloway, p. 25. LTG Moore specifically credits the unit platoon sergeants.

<sup>85</sup> Sherry, "Airmobility," in *A History of Innovation: U.S. Army Adaptation in War and Peace*, p. 126. For details about Operation Pegasus, see Karl M. Woktkun, "1st Cavalry Division's Effectiveness in Conducting Airmobile Operations during Operation Pegasus" (U.S. Army Command and General Staff College, 2016), accessed 14 August 2019, <https://apps.dtic.mil/dtic/tr/fulltext/u2/1022296.pdf>.

<sup>86</sup> Johnson, pp. 68, 91-125.

The success of the 1st Cavalry Division prompted many smaller tactical formations to replicate the same tactics and techniques. Accordingly, the high demand for airmobility capabilities would suggest that the creation of the original 5 division directed by Secretary McNamara would have progressed quickly. That was not the case. "Ultimately, only two divisions ever operated tactically under the airmobility concept."<sup>87</sup> While the 11th Air Assault Division (Test) was slowly transformed into a full airmobile division while still in Fort Benning, the 101st Airborne Division was reorganized while deployed to Vietnam as the second airmobile division. Arriving in Vietnam in December of 1967, they would completely assimilate the equipment, training routines, new formations, becoming fully operational by the summer of 1968. The speed with which the 101st was able to assimilate the new knowledge serves as a testament of the performance of the its predecessor.<sup>88</sup>

### ***End of War Outcomes***

According to Kinnard, who would go on to command the USACDC, the effects of the 11th Air Assault and 1st Cavalry division were so pervasive that one could call all elements of the U.S. Army in Vietnam as being airmobile.<sup>89</sup> Another noted Army aviator and aviation scholar, Colonel (Retired) John Bradin, would credit the division by stating that "the efforts of the 11th Air Assault Division cemented airmobile doctrine into the soul and fiber of the Army."<sup>90</sup> From assaulting soldiers into battle and evacuating the

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<sup>87</sup> Dzwonchuk, p. viii.

<sup>88</sup> Kinnard, p. 78.

<sup>89</sup> Ibid.

<sup>90</sup> Bradin, p. 111.

wounded, to providing supplies, gunship support, and reconnaissance, airmobile operations were more than the utilization of helicopters. The retired army aviator, Lieutenant General John Tolson would conclude his authoritative history on airmobility by describing the uniqueness of the concept as having two integrated parts. First was “the ability to integrate the capabilities of these aircraft into an organization designed for their use by people specially trained for their use.” The second part was the ability to achieve total integration which was “only possible in a unit which “owns” its helicopters.”<sup>91</sup> General Westmoreland would call the 1st Cavalry Division’s performance a clear demonstration, “beyond any possible doubt,” of the validity of the airmobile concept.<sup>92</sup>

Accordingly, it would shift in prominence within the Army’s capstone doctrinal references. The 1962 version of Field Manual 100-5, *Operations*, would briefly mention the use of airmobility in small scale operations, but only in the context of a conservative and risk averse set of operations.<sup>93</sup> The term “airmobile division” was not mentioned, nor would it be expected to be mentioned as the manual was published in February 1962 and Secretary McNamara would not commission the Howze board for another two months. The next iteration, however, was more deliberate. In 1968, FM 101-5 provides a separate chapter titled “Airmobility”. A description of the Airmobile Division had equal status throughout the document with the other division types.<sup>94</sup> Most importantly, the writing

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<sup>91</sup> Tolson, p. 254.

<sup>92</sup> Ibid., p. 83.

<sup>93</sup> Decker, pp. 104-05.

<sup>94</sup> United States Army, *Field Manual 100-5, Operations*, by W. C. Westmoreland (United States Government Printing Office, 1968).

would be imbued with far greater aggressiveness, describing its purpose as that of engaging in combat.<sup>95</sup> The 1976 iteration, would elevate airmobility again, describing it as an essential part of future battles as well as highlighting the airmobility as part of the array of modern weapons on the battlefield.<sup>96</sup>

Airmobility operations would continue to be a vital part of the U.S. Army's arsenal of capabilities. Notably, it featured in the execution of OPERATION JUST CAUSE in December 1989, supporting the insertion of forces into Fort Amador.<sup>97</sup> Fourteen years later, it still featured prominently in OPERATION IRAQI FREEDOM. In March and April 2003, the 101st Division would employ the airmobile concept to clear enemy forces in An Najaf, a critical area south of Baghdad, securing the final approach that would topple the regime.<sup>98</sup> Today, the capability is a vital part of the Department of Defense credible deterrence efforts, featured in countless demonstrations to include those of the 75th Ranger Regiment and other special operations units.<sup>99</sup>

### Analysis

The chapter now turns to analyzing whether agent-led adoption effectively explains how the 11th Air Assault (Test), in their capacity as a lead agent for the U.S. Army, contributed to the successful implementation of the airmobile division concept. Some may claim that this case is perhaps an overdetermined success story. To account

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<sup>95</sup> See Chapter 8 on Airmobility in *ibid.*, p. 8-1.

<sup>96</sup> , pp. 1-2, 2-21 through 2-22.

<sup>97</sup> Graves, p. 43.

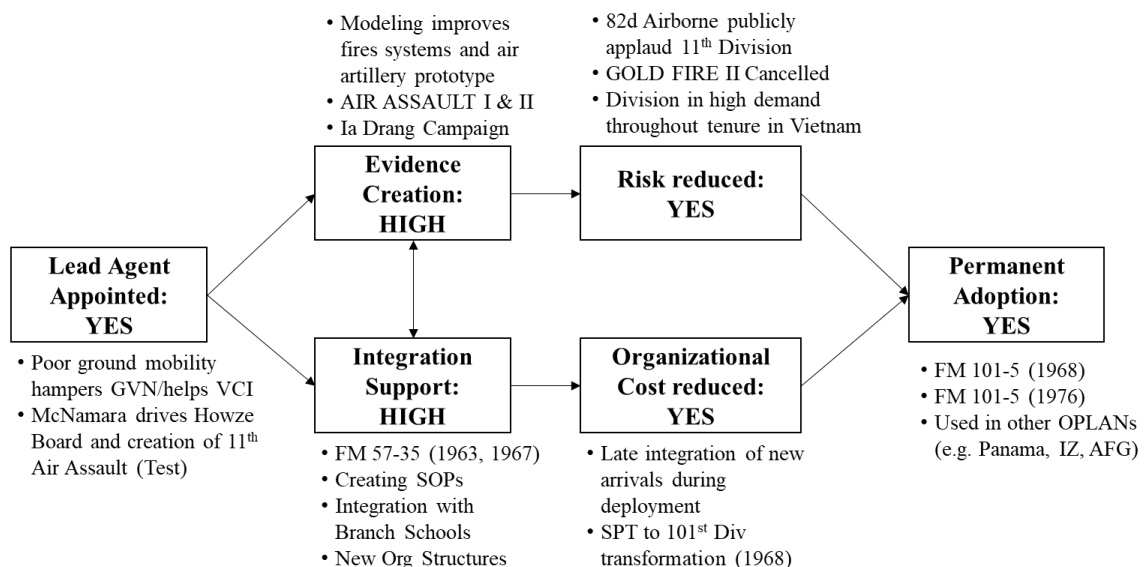
<sup>98</sup> Gregory Fontenot et al., *On Point: The United States Army in Operation Iraqi Freedom*, 1st Naval Institute Press ed. (Annapolis, Md: Naval Institute Press, 2005), pp. 215-19.

<sup>99</sup> For example see 75th Ranger Regiment, "75th Ranger Regiment Capabilities Demonstration", posted 11 July, 2019, accessed 9 September, <https://www.youtube.com/watch?v=QVdQ8l3KWLs>.

for this, it is important to review the list of other circumstances that may have also contributed to success. However, the argument here is not that other external conditions are irrelevant, but rather that the specific conditions described by agent led adoption are also necessary parts of a successful case.

As highlighted by *Figure 6-1, Agent-Led Adoption Logic Flow for the airmobile division*, the division succeeded at implementing the airmobile division concept. As before, the figure aligns highlights of the historical record with the theory's logic. As an example of how to reference the figure, start with the first critical point on the left. It highlights the lack of ground mobility that hampered GVN and U.S. advisory efforts, which subsequently motivated Secretary of Defense McNamara in directing the appointment of the lead agent. Before expanding on the shorthand representation in the figure to explain the key relationships between risk, cost and adoption outcomes, the special conditions of the case will be addressed.

**Figure 6-12. Agent-Led Adoption Logic Flow for the airmobile division**





### *Special Considerations*

There are three special considerations of interest. First, as in prior cases, how critical was the role of civilian leadership in the Army's implementation of the concept for an airmobile division. As mentioned, Posen theorized that the military requires civilian intervention to change its approach to war.<sup>100</sup> This idea remains important today. In this case, there is no doubt that Secretary McNamara's insistence that the Army take a bold new look at increasing mobility was a motivating factor in the decision to attempt adoption. The last sentence of his 19 April 1962 letter to the Army is illustrative of McNamara's position. "I shall be disappointed if the Army's re-examination merely produces logistics-oriented recommendations to procure more of the same, rather than a plan for implementing fresh and perhaps unorthodox concepts which will give us a significant increase in mobility."<sup>101</sup> However, it should be noted that this was the second time McNamara ordered the Army to do this. The Howze board was the second round of directed effort by McNamara to better utilize air mobility. The opening sentence of the same letter describes his frustration. "I have not been satisfied with Army program submissions for tactical mobility." McNamara not only directed a second study but did so with very specific guidance and then directed the creation of a lead agent to help implement the results. Whether that alone was the motivating reason for successful

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<sup>100</sup> Posen.

<sup>101</sup> McNamara, in *Report of Army Tactical Mobility Requirements Board*.

implementation is less clear. As noted in the three previous cases, this factor regularly falls short in explaining outcomes.

Importantly, Rosen argued against Posen's theory using this case. Rosen instead argued that the Army had initiated steps over the preceding 10 years in support of airmobility with the creation of an Aviation Branch and the transfer of veteran successful leaders to serve as mentors and defenders of the Aviation branch. According to Rosen, it was this factor that propelled the program forward, more so than the Secretary's episodic involvement.<sup>102</sup> The evidence here also shows support for Rosen's explanation. Both Howze and Kinnard were senior veterans of the more established branches when they acquired their Aviation credentials. They both played pivotal roles in guiding implementation forward. Despite their involvement, without the critical contributions of the lead agent as opposed to just Kinnard, it is difficult to explain success. While leaders like Howze and Kinnard may have helped guide new officers in the becoming part of the aviation branch, the availability of pilots, while an issue, wasn't a propelling factor in the implementation effort. Pilots were enablers, but not in of themselves significant. The collective development and documentation of new tactics and procedures and their distribution across the Army is what propelled the innovation into the forefront. Additionally, Rosen's explanation does little to explain how resistance both from the Air Force, and from the Army advocates for containing the Soviets in Europe were convinced to align behind the airmobile division.

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<sup>102</sup> Rosen, pp. 85-93.

Third, did the national policy decision to change the U.S. military role in Vietnam from an advisory based effort to a direct combat role affect the success of the implementation. This question is also a position that is consistent with Posen's argument for military change. He suggests that changes in national defense policy that result from an external threat tends to make military service members more amenable to the imposition of new techniques by civilian leaders. Particularly, if the change translates into additional resources and autonomy.<sup>103</sup> In this case, the external threat was limited, suggesting the possibility that increased resources were a more compelling reason behind the developing consensus around the airmobile division. However, when the Army selected the airmobile division to deploy to Vietnam as part of the force expansion, the Army was aware of the President's reluctance to call up the reserves. This presidential restraint forced the Army to source increases to MAC-V at the expense of forces arrayed in Europe.<sup>104</sup> With the substantial increase to the size of the force in Vietnam jumping from 23,300 to nearly 185,000 by the end of 1965, the Army was stretched thin and likely getting thinner.<sup>105</sup> Accordingly, consensus was not incentivized with an increase in force structure. Its far more likely that the success of AIR ASSAULT II served to reduce risk in the employment of the new capability by validating the concept and that the newly formed confidence drove the division's selection for deployment.

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<sup>103</sup> Posen, pp. 74-78.

<sup>104</sup> Moore and Galloway, p. 26.

<sup>105</sup> "Vietnam War Allied Troop Levels 1960-1973."

*Does Evidence Reduce Risk?*

The 11th Air Assault test conducted multiple risk reduction events in the course of their time at Fort Benning from 1963 to 1965, as well as having an overwhelmingly successful combat demonstration in the Ia Drang Valley. Importantly, the modeling, simulations and limited experiments conducted by the Howze board was perceived by those participating in them as insufficient.<sup>106</sup> They recommended that more was necessary. This is consistent with the theory, which also suggests that modeling and simulations are insufficient for successfully mitigating risk.

The live experiment, AIR ASSAULT I, demonstrated that brigade level operations were not only tenable, but that many of the concerns regarding indirect fire ranges and ground resupply were invalid. AIR ASSAULT II pitted the new airmobile division against the vaunted capabilities of the 82d Airborne Division, the premier ground force within the Army's Strike Command. The success of the 11th Air Assault, despite poor weather conditions and inclusive of record setting assault distances, did much to assuage concerns about the effectiveness of the unit. Their performance not only convinced the commanding general of the 82d Airborne, who in some ways was directly competing for resources, but also convinced the Joint Chiefs who cancelled the Air Force led competing experiments and recommended the division deploy to Vietnam.<sup>107</sup>

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<sup>106</sup> Howze board Final Report, p. 96.

<sup>107</sup> Tolson, p. 56.

***Does Integration Support Reduce Organizational Cost?***

The 11th Division also contributed significantly to reducing the organizational cost of change. The critical step of supporting an initial doctrinal publication, initiated changes in the institutions that are responsible for generating capacity in the Army. Rather than wait for that process to proceed unguided, the division directly interjected tactics and techniques developed and captured in their unit SOPs to support institutional training. They also modified their organizational structures as discoveries during experimentation occurred.

These timely updates ultimately enabled the Army to redirect replacements and materiel to grow the division and to eventually deploy it to Vietnam. The divisions' ability to be combat ready just weeks after arriving, having integrated thousands of late arrivals as well as the new equipment they received is strong evidence of the disciplined approach to creating methods for easing the distribution of knowledge within the division.<sup>108</sup> The benefits of their work in creating institutional knowledge for the execution of airmobile operations was extended to the 101st Airborne, who was able to transition from an airborne to an air assault division in months by leveraging the work and receiving assistance from the 1st Cavalry Division. Both divisions remained in Vietnam becoming some of the last elements to leave the country (1971 for 1<sup>st</sup> Cavalry Division and 1973 for the 101<sup>st</sup>).

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<sup>108</sup> Moore and Galloway, pp. 25-26.

### ***Permanent Adoption***

Are both reducing risk and organizational cost necessary to increase the likelihood of permanent adoption? Permanent adoption is the inclusion of the capability as part of the composite of capabilities believed necessary to fight future wars. This kind of consensus about the airmobile division is evident in the updates that occurred within the Army's capstone doctrinal manuals. As discussed previously, doctrine is a lag indicator of organizational learning. It represents the culmination of agreements between the branches affected by that doctrinal publication and senior leaders. In cases where it is imposed, it tends to be less representative of a consensus view. In this case however, the next version of FM 101-5, *Operations*, published in 1968, represented a dramatic change in the acceptance of airmobility and the airmobile division. Coincident with the 101st conversion from an airborne to an air assault division, which further supports the acceptance of the concept, the new capstone doctrine described the integration of an airmobile division within all aspects of military operations. It is also evident in the inclusion of the concept in subsequent iterations of the same capstone document.

The evidence does not support a conclusion that adoption was directly caused by the lead agent's actions. Causation is a difficult standard and beyond this work. However, there is a strong correlation. The 11th Division and the 1st Cavalry Division worked closely with doctrine writers to update reference material such as FM 57-35, *Airmobility Operations* (both 1963 and 1967) and institutional training relevant to the airmobile division. The language between the 1967 version of *Airmobile Operations* and the capstone doctrine is quite consistent, with the latter referencing the former. The

continued utilization of 1st Cavalry Division as a critical capability in Vietnam through 1971, when it redeployed, further attests to the linkage between the lead agent and permanent adoption. Furthermore, the widespread use throughout Vietnam of the tactics and techniques pioneered by the 1<sup>st</sup> Cavalry Division also supports the linkage.

This case closes all the empirical evidence presented in this work and signals the final concluding discussion points. The next chapter begins by looking at trends across all the cases described in the project. Next it will draw out implications of the argument for theory to include ideas for future research. Lastly, the final chapter will turn to a discussion of implications for ongoing lead agent implementation efforts. The Army is currently involved in one such major effort, the implementation of Army Futures Command, a new modernization initiative. Conditions for success are considered along with desirable organizational characteristics before proposing recommendations for action.





## CHAPTER 7: CONCLUSIONS AND LESSONS

*“It’s difficult to make predictions, especially about the future.”<sup>1</sup>*  
—Various

This project began with a puzzle concerning the diffusion of military innovation during wartime. Why do military organizations often fail to adopt innovation even when it promises to increase military effectiveness? To answer the question, a theory was developed focusing on a gap in the literature of military diffusion. While theories for explaining the decision to adopt are well represented, less work exists to explain implementation. The theory, agent-led adoption, argues that in cases where implementation within the parent military is led by a special purpose suborganization, or lead agent, these efforts have a history of success and failure that hinges on the lead agent’s ability to moderate organizational resistance by managing risk and organizational cost. Both efforts were necessary for the organization to successfully adopt the innovation. Three questions were postured to drive an analysis of the theory. Does evidence reduce risk? Does integration support reduce organizational cost? Are both reducing risk and organizational cost necessary to increase the likelihood of permanent adoption?

This concluding chapter compiles the findings of the sample cases and finds support for the theory. Those findings follow by first describing major trends in the cases as they relate to the three key questions listed above. The second section goes beyond the direct analysis of the theory, generalizing for future research. By applying the insights,

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<sup>1</sup> This turn of phrase is most likely from an old Danish proverb but is often ascribed to both Yogi Berra and Mark Twain.

the final section assesses the current implementation of the U.S. Army's new operating concept called Multi-Domain Operations as managed by the Army Futures Command. The assessment and recommendations are meant to provide policy makers with insights for future action.

### Trends

As mentioned, overall the cases suggest support for the theory. The cases show that lead agents can alter implementation outcomes to increase the likelihood of adoption. Furthermore, the two conditions, risk and organizational cost, both merit continued attention to draw out additional details about critical decisions during implementation. A deeper look at evidence creation to reduce risk and integration support to reduce organizational cost would provide sharper distinctions, allowing for a better appreciation of the relative importance of each. This section follows in three parts aligned with the three analytical questions considered throughout the work. As a reference, see *Figure 7.1 Distribution of Cases by Variable Type*. The figure enables the visual identification of

**Figure 7-13. Distribution of Cases by Variable Type**

		<i>Effect of evidence creation on reducing risk</i>	
		High	Low
<i>Effect of integration support on reducing organizational costs</i>	High	<u>Permanent Adoption</u> Stormtroop BN      AWG 11 <sup>th</sup> Air Assault    REF CIED-TF	<u>Partial Adoption</u> <b>Tank Destroyer Center</b> 162d Infantry Trng Bde ARCIC
	Low	<u>Partial Adoption</u> <b>CORDS</b>	<u>Organizational Rejection</u> <b>The Tank Corps (WWI)</b> 8 <sup>th</sup> Ranger Co. KMAG

cases as they align in each of the outcomes defined by the two variables. Cases highlighted in bold text identify the major cases covered in chapters three through seven.

### ***Does Evidence Reduce Risk?***

Briefly reviewing risk, it results from cultural beliefs in the efficacy of dominant forms of warfare. These beliefs work to resist the adoption of new ideas and are tied to past performance that resulted in desirable outcomes, like winning. An innovation may promise gains in effectiveness, but those gains are hypothetical until proven otherwise. Until proven, the innovation increases the perception of risk, be it strategic or operational, forming a firewall inhibiting the implementation effort. Risk reduction refers to actions that break down or remove these firewalls completely. Evidence creation reduces risk by creating alternatives to the established practice that demonstrate increased military effectiveness, shifting perceptions of risk away from the innovation.

The case studies suggest that the presence of certain forms of experimentation creates evidence that can explain risk reduction and at least partially, permanent adoption. In the first three major cases (armored warfare, antimechanized defense, and counterinsurgency), the lack of suitable experimentation contributed to failure, while active experimentation advanced the viability of the airmobile division, validating the concept and contributing to success. Of note, there were mitigating reasons in some cases constraining the actions of the lead agent. The Tank Corps was constrained by the need for secrecy and from pressure to introduce the new capability sooner.<sup>2</sup> The Tank

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<sup>2</sup> The name “tanks” was derived from a code name given the machines for their resemblance to water tanks. See Swinton, Location 3139.

Destroyer Center was similarly constrained by pressure to support the North Africa Campaign. Furthermore, pressure to introduce an innovation before adequate experimentation is complete aligns often with failed implementation attempts (four of seven in the sample). In addition to the Tank Corps and the Tank Destroyer Center, both the introduction of small unit patrolling by the 8<sup>th</sup> Army Ranger Company, and of the KATUSA program in Korea were constrained in their ability to conduct adequate experimentation. The exigency of U.S./Korean collapse to Pusan created a constraint on the lead agent much like the Tank Destroyer Center experienced, pressuring both the lead agents to attempt combat demonstrations ill-prepared to execute the innovation as designed.<sup>3</sup> This pressure from the parent military does not alleviate the lead agent's responsibility to make recommendations and/or take adequate precautions to mitigate failure, but it does provide a cautionary note for the parent military about maturing the innovation through experimentation prior to executing combat demonstrations.

Additionally, this study supports the need to distinguish experimentation types clearly in future research. Unlike other studies, where this variable has been used as a dichotomous lever (the pertinent military either did or did not experiment), the findings here suggest that such approximations are too broad.<sup>4</sup> A future iteration of this study would need increased nuance beyond the three types used in order to more fully consider effects of each individually and of different combinations. While the three basic

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<sup>3</sup> For a description of the conditions surrounding the 8<sup>th</sup> Army Rangers, see Eugene G. Piasecki, "Eighth Army Rangers," *Veritas: Journal of Special Operations History* 6, no. 1 (2010): pp. 35-37. For information on the challenges affecting the KATUSA initiative, see Martin Blumenson, "K.A.T.U.S.A.," *Military Review* (August 1957): pp. 52-53.

<sup>4</sup> Two examples include Horowitz; Cohen.

distinctions used here were helpful, a more refined analysis could better inform the minimum level of experimentation needed to increase the probability of success.

For example, if the presence of all three types are ideal, is the absence of one reliably distinctive? One of the suppositions integrated within the description of experimentation was that modeling of its own accord was insufficient to reduce risk. The case studies support this presumption. In the six cases where risk reduction was low (see Figure 7-1), modeling was used by four without a noticeable effect on the outcome (Tank Corps, 8<sup>th</sup> Army Ranger Company, 162 Infantry Training Brigade, Army Capabilities Integration Center). In the six cases where risk reduction was high, the lead agent did some form of modeling in all six. This suggests that modeling in general does not carry much value as an experimentation tool except when combined with other forms of experimentation. Substantively, this means that a military may be open to some forms of experimentation, but still fail to overcome the lingering attachments to established practices, reinforcing the cautionary note to avoid dichotomous definitions of experimentation. Just because the organization is open to experimentation does not mean that they are executing the kind of experiments that increase the likelihood of adoption.

Separately, something not considered in the study, but increasingly relevant is virtual experimentation. Virtual experimentation enables users to manipulate avatars in simulated environments. The type, heavily dependent on readily available automation support, has only matured enough to be used broadly over the last 20 years.<sup>5</sup> The advent

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<sup>5</sup> As an example, Mahnken outlines the forms of experimentation that serves as indicators of innovative discovery but omits the use of virtual environments. See Thomas G. Mahnken, "Uncovering Foreign Military Innovation," *Journal of Strategic Studies* 22, no. 4 (1999).

of these increasingly detailed synthetic virtual environments blurs the value derived from live experimentation, suggesting that future studies should also include virtual experimentation as a viable form of evidence creation.

***Does Integration Support Reduce Organizational Cost?***

Organizational cost represents the energy expended by an organization to reduce the effects of friction in warfare. An organization reduces friction by standardizing activity, which is done through access to institutional or organizational memory. Large complex organizations invest heavily in artifacts that make access to organizational memory easier. These artifacts include standing operating procedures, doctrine and formal training. Integration support refers to the support provided by a lead agent to reduce organizational cost by facilitating changes to these artifacts, thereby enabling changes to existing behaviors at scale.

The case studies suggest that the lead agent's actions associated with integration support, whether institutional or operational, do help explain changes in organizational cost, and together with risk, explain adoption outcomes. Within the four major case studies, two were assessed as having high levels of integration support and two were assessed as having low (see Figure 7-1). The ones assessed as high made key investments in developing the institutional military systems to propagate the innovation at scale. Both the Tank Destroyer Center and the 11th Air Assault Division (Test) were directly involved in the initial development of tactical doctrine, leader development, and institutional training. The Tank Corps and Civil Operations Revolutionary Development Support (CORDS) did not make similar investments. Consequently, in the latter cases,

potential adopters had to both document the techniques and deliver the training to their members in order to implement the capability within their suborganizations. This responsibility in addition to the burdens imposed on them while fighting, was something neither was able to accomplish. Of note, the Tank Corps was constrained in their efforts because staff schools were closed, restricting direct access to a central clearing house for incoming leaders heading to infantry divisions on the Western front.<sup>6</sup> No constraints existed for CORDS, however they did not attempt to provide institutional support. Not only did CORDS fail to address any institutional features that might have increased organizational awareness and access to counterinsurgency (COIN) fundamentals, the little doctrine that did exist was rescinded.<sup>7</sup>

Additionally, eight of the twelve cases in the sample were coded high for integration support. Included in those eight cases were the five cases of permanent adoption (see Figure 7-1). Consistent with the theory, institutional support was significant to building consensus for adoption. Less clear is whether a certain subcategory of institutional support was more relevant than others. In all eight cases where the lead agent provided institutional support, all four subcategories were present (i.e., doctrine, leader development, initial entry training, organizational designs). In the four cases where integration support was coded low, only one or fewer of the subcategories were present. It would be interesting to single subcategories out, and to couple types of institutional

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<sup>6</sup> For additional information on the lack of staff training within the British Army in World War I, see Fox-Godden, in *A Military Transformed: Adaptation and Innovation in the British Military, 1792–1945*, p. 142.

<sup>7</sup> For more on the lack of tactical doctrine, see Rosen, p. 101. The deletion of the COIN Chapter from the Army's capstone doctrine can be seen in .

support in order to more finely parse the effects of each. To do so, however will require a larger sample size.

Importantly, doctrine is regularly used in security studies as a proxy for successful adoption. This research supports that conclusion but adds a caveat. Like experimentation, doctrine is too encompassing of a term. From the way soldiers walk in formation to the way that an army fights to defeat a near peer state, the entire range of activity is all potential subject matter for military doctrine. Operational doctrine, or capstone doctrine as it is also often called, is typically used to highlight that organizational change has indeed occurred.<sup>8</sup> This study supports that the development of operational doctrine, while often slow to manifest (a lag indicator), is a good proxy for adoption. The caveat here is that tactical doctrine, like antimechanized defense and airmobile operations, is not suited for similar use. Tactical doctrine is a necessary action to precipitate adoption rather than an indicator that adoption has occurred. This study uses tactical doctrine as part of family of proxies for the independent variable and finds the creation of tactical doctrine to describe a new capability is an important cost reduction tool. Operational doctrine on the other hand is included as a viable indicator of permanent adoption (the dependent variable). The former, when coupled with evidence creation, increases the likelihood of the latter. Importantly, tactical doctrine alone does not appear sufficient to motivate adoption. COIN tactical doctrine existed but was not enforced. The Tank Corps' training guidance was similarly ignored. When doctrine is to

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<sup>8</sup> Examples of work that use doctrine as a proxy for organizational change include Posen; Downie; Nagl; Benjamin M. Jensen, *Forging the Sword: Doctrinal Changes in the U.S. Army* (Stanford, CA: Stanford University Press, 2016).



be used to signify change, some care should be taken to distinguish between the two types.

### ***Permanent Adoption***

The third analytical question guiding the case studies was whether both reducing risk and organizational cost were necessary to increase the likelihood of permanent adoption? Permanent adoption is the inclusion of a new capability as part of the composite of capabilities believed necessary to fight future wars. Because military organizations tend to eschew new capabilities, permanent adoption is more likely if organizational resistance is moderated. The theory specifies that evidence creation and integration support work jointly to moderate organizational resistance by reducing risk and organizational cost. In the cases outlined throughout the project this proposition holds, but more can be said. The overarching review of the cases suggest three additional insights. The first is about the interaction between variables. The second is time. The third insight is about consensus building.

First, the strength of the interaction between experimentation and integration support should be better analyzed. While the theory suggests that high or low performance has a disproportionate effect on the outcome, a more nuanced coding scheme for the independent variables would refine that relationship. For example, a moderate integration support effort and high experimentation effort could be enough to moderate resistance? In a hypothetical world, if CORDS had invested early in trainers for the combat branches and the mid-career education programs, coupled with their early successes in Vietnam, could they have generated enough support across the Army to have

preserved or expanded COIN in the U.S. Army's capstone doctrine? Alternately, a modest experimentation effort and robust integration effort could be enough.

Hypothetically, if the Tank Destroyer Center had conducted even battalion level live experiments with the new platforms, would the information generated from that been enough to shape their use in North Africa? A deeper look at the full sample with greater nuance in the model as described previously would be helpful in furthering the insight. However, it is worth noting that even a modest effort in support of one coupled with robust support in the other independent variable could be enough to succeed. No effort on one of the two however it likely to cause adoption to fail.

Secondly, the tide of battle can bring tremendous pressure on an army to introduce new capabilities earlier than planned. However, the decision to commit the innovation early can yield suboptimal results. The Tank Corps debuted tanks at the Somme only six months after standing up due to pressure from General Haig to ship as many tanks as were available to France regardless of whether the training and doctrine to use them was well understood.<sup>9</sup> The Tank Destroyer Center waited only 12 months between being established and sending the first battalion to its combat demonstration in North Africa. Instead, both should have pressed for more time. The Tank Corps had yet to experiment with tanks in mass. The Tank Destroyer Center had yet to field the new platforms or experiment with them to showcase the new concept.<sup>10</sup> Only the 11th Air Assault was able to manage the implementation effort deliberately, taking 32 months and completing an impartial live experiment and detailed integration support before

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<sup>9</sup> Swinton, Location 3138.

<sup>10</sup> Gabel, *See, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War 2*, pp. 31-32.

conducting its combat demonstration. If the lesson to be discerned is that the variance in available time is somewhat unpredictable, then what steps serve as guidance for future lead agents? These cases suggest that since both action areas, evidence creation and organizational cost, are necessary considerations for success, they should be pursued as parallel activities. Additionally, to mitigate against early commitment of the innovation, a running estimate of the chances of success, given their state of maturity, would be of value to inform decision makers.

Lastly, agent-led adoption captures large levers that influence outcomes, but those levers may create a ripple of secondary events that collectively may be significant in building consensus. Mathematically, these secondary events are the unmodeled portion of the equation, lumped into the error term until such time as it can be explained in some other way. Anecdotally, these secondary effects are often referred to as luck. For example, the development of a standard organizational structure as part of the 11th Division's institutional support had the secondary effect of creating the space for a panoply of negotiated decisions. These decisions relate to consensus-building as follows. The implementation of the airmobile division undoubtedly benefited from the selection of a European threat scenario and not the scenario in Vietnam. This made the experiments more appealing to those in the Army which held the view that the Army should focus on threat posed by the Soviet Union. The Armor School may have supported the concept but was likely more supportive after the decision to create only a small discrete number of airmobile divisions, keeping the number of armored divisions constant. Similarly, infantry traditionalists were likely placated by the increase in the number of airborne

battalions. The total number of artillery battalions in the Army were also increased, which likely appealed to the artillerists. Even the naming convention adopted for the division may have had the secondary benefit of appealing to those who saw a future expansion for the role of cavalry on the modern battlefield.<sup>11</sup> These organizational design decisions, of which any individual one could have turned out differently without affecting the outcome or the coding of institutional support, collectively may have been instrumental to building consensus. This negotiation is unmodeled in the theory and for now is explainable only as a lucky break. Rather than expect luck, an active effort to monitor potential secondary effects is quite important and should be accounted for in the implementation plan.

### **Generalizing**

If wartime implementation is dependent on effectively moderating resistance, then what does that imply more broadly for scholars going forward? An item to consider is whether the diffusion of military power is best explained as a single process with parsimonious causes as is often described or instead as a more complex set of interdependent variables. Another is whether the same the relationships between risk, organizational cost and adoption apply outside of wartime. This might be the case if the need for credible deterrence in peace was as compelling a reason for change as the fear of defeat in wartime. A third consideration is whether a set of characteristics is discernable

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<sup>11</sup> Graves, pp. 27-29.

that might optimize a lead agent's ability to guide implementation? Each will be considered in turn.

### *Diffusion is Complex*

Throughout this research, the initial conditions leading up to the appointment of the lead agent were assessed and recorded. In all cases, the initial conditions provided an urgent operational need for change, prompting senior civilian or military leaders to direct implementation of a new capability. This had the effect of controlling for external pressure on the military as an explanation for success. As all twelve included an urgent need, but only five were able to successfully adopt, something else must explain the outcomes.

Ryan Grauer has suggested that rather than consider diffusion as having a singular cause affecting its progress from the initial "Knowledge" stage through the "Confirmation" stage, one should instead consider that diffusion is much more complex.<sup>12</sup> Grauer states that "outcomes at different stages of the diffusion cycle are likely driven by unique factors." He argues that while international competition may drive the decision to attempt adoption, that same competition does not regulate the rate and scale of diffusion as this is more likely determined by the implementation effort itself.<sup>13</sup> Grauer is joined by other scholars in this assessment about the limited effects of external pressure on the diffusion process. Downie argues that institutional factors, like how an army modifies its

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<sup>12</sup> For more on the Innovation-Decision Process, see Rogers, *Diffusion of Innovations*, p. 170.

<sup>13</sup> Grauer, p. 303.

institutional memory, can block civilian influence.<sup>14</sup> Nagl also agrees, arguing along with Williamson Murray that "the potential for civilian or outside leadership to impose a new vision of the future on a reluctant military service whose heart remains committed to existing ways of fighting is, at best, limited."<sup>15</sup> Rosen also concludes that civilian leaders "do not appear to have had a major role in deciding which new military capabilities to develop."<sup>16</sup> Grauer's assessment is also supported by this research. In this sample, external conditions that may have prompted civilian intervention, did not seem to compel implementation success. Importantly, this conclusion does not suggest that external pressure is irrelevant to implementation, only that it is insufficient to explain success.

### ***Wartime versus Peacetime Implementation***

Are peacetime and wartime implementation efforts motivated by different factors? While the analysis of diffusion is commonly separated into these two distinct and clearly defined states, what if an alternative conceptualization of war and peace enabled them to be considered as a continuous cycle. Consider that regardless of whether a major state is engaged in armed conflict, it competes constantly to advance its own interests using means both above and below the threshold of armed conflict. For example, the ongoing competition in the South China sea between China and the U.S. represents a contest of wills between adversaries to include the use of military

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<sup>14</sup> Downie, p. 173.

<sup>15</sup> Nagl, p. 215. Also see Barry and Williamson Murray Watts, "Military Innovation in Peacetime," in *Military Innovation in the Interwar Period*, ed. Williamson and Allan Millett Murray (Cambridge: Cambridge University Press, 1996), p. 410.

<sup>16</sup> Rosen, p. 255.

capabilities to demonstrate resolve. This conceptualization of great power rivalry, one that is expressed in the 2017 National Security Strategy, suggests that there is always an incentive to implement new capabilities if those capabilities promise to improve military effectiveness and thereby improve either credible deterrence or wartime success.<sup>17</sup>

If we modify the conditions under which Agent-led adoption operates to the following three items, then we can generalize beyond wartime cases. The first condition is that the senior military elite and civilian leaders of the military support the decision to attempt adoption. The simplest logic for this condition is that otherwise, adoption would not have been imposed. The second condition is that because the decision is imposed from the top, the change is funded appropriately. Three, that if the state is imposing it and allocating assets against it, then they perceive some great need to have the capability in question. With these three conditions replacing the wartime constraint, we could effectively consider agent-led adoption as applicable to any implementation effort in peace or war with a designated lead agent.

### ***Desirable Features of a Lead Agent***

Analysis of the foregoing cases also suggests that a parent military would benefit from a subset of desirable organizational features or characteristics that historically, if inherent in the lead agent, tend to make them more effective in accomplishing their task. Together these features inform the selection and/or organizational design of a lead agent. The case study chapters provided background on each case demonstrating that it was

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<sup>17</sup> The White House, *National Security Strategy*, by Donald Trump (Washington, D.C., 2017).

unlikely that logrolling, nepotism, or deliberate sabotage of some kind was a cause of failure. In every case in the sample, key leaders were accomplished, demonstrating expertise in the subject area as part of earning their selection atop the implementing organization. More, however, can be said about the desirable features that the parent military could consider building into the design for an ideal lead agent. The analysis suggests four. They are access to decision makers, authorities to alter institutional memory, dedicated experimentation capacity, and political acumen.

#### *Access to Senior Decision Makers*

A careful review of the evidence suggests that one of the key features needed within a lead agent is guaranteed organizational access to the military elite and civilian leaders under whose authority the lead agent is operating. As noted by General Donn Starry in his 1983 article entitled, "To Change an Army", "someone at or near the top of the institution must be willing to hear out arguments for change."<sup>18</sup> Access to decision makers may be granted through several methods. One is through an existing personal relationship, which enables key members of the lead agent to keep the senior military or civilian leader informed. Another is through formal organizational hierarchy, the kind that would make the lead agent a direct report to the elite. The last way is through a formal governance structure where reports and decisions are brought directly to the senior organizational elite on a reoccurring basis even if the lead agent is not a direct reporting entity.

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<sup>18</sup> Donn Albert Starry, "To Change an Army," *Military Review* LXIII, no. 3 (March 1983).



On the day that Secretary McNamara approved the recommendations of the Howze board and directed the Army to pursue rotary winged advancements to improve ground mobility, Army Chief of Staff Earle Wheeler knew exactly who he wanted to lead the 11th Air Assault. He selected Brigadier General Harry Kinnard to lead the effort, a leader who enjoyed the personal trust of senior leaders. The personal trust between Wheeler and Kinnard developed in part from Kinnard's distinguished career as an infantry officer and tremendous performance dating back to World War II. The trust was also developed through Kinnard's demonstrated expertise with rotary wing aircraft. Kinnard had followed in the steps of Major General (MG) James M. Gavin, the famed parachuting general officer from World War II, who learned to fly helicopters as a senior officer.<sup>19</sup> It was only a few weeks before the Secretary's approval of the Howze Board Final Report that Wheeler was visiting with Kinnard at Fort Campbell where Kinnard was the deputy commanding general. During that visit, Kinnard personally flew a helicopter in an urban training area to show the Army Chief how helicopters enabled the use of rooftops as a point of access for soldiers conducting urban operations. This combination of experience and expertise not only led to Kinnard's selection to command the 11th Air Assault Division (Test), it also prompted Wheeler to grant the 11th Division unique access to senior decision makers within the Army to quickly resolve potential issues.<sup>20</sup> General Wheeler moved on to become the Chairman of the Joint Chiefs and was replaced by General Harold Johnson who also favored Kinnard's organization with

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<sup>19</sup> Gavin.

<sup>20</sup> Galvin, pp. 280-81; Graves, p. 21.

regular and reoccurring access.<sup>21</sup> As a result, the 11th Division was able to appeal directly to senior leaders for critical and timely resolutions of issues.

This was not the case with the Tank Corp, who lost access to the War Ministry after the its establishment. Prior to becoming the commander of the Tank Corps, Ernest Swinton served as the public affairs officer for the War Ministry. As such he was a direct report to the Minister himself. The Tank Corps was not a direct report and as the newly designated commander, he could no longer utilize his position's alignment to gain access. As such the Tank Corps was not able to share concerns with introducing the new capability at the Somme. Without proper integration within the unit routines common on the Western Front, it would not be possible to develop an appreciation for the mechanical capabilities and limitations of the tank that were essential if the British Expeditionary Force (BEF) was to employ the new concept well. Unfortunately, that level of integration was lacking still in September of 1916. While access to senior leaders may or may not have changed the decision to commit those resources so soon, the issue is that the Tank Corps could not even make the case for tactical patience to the appropriate leader. Swinton himself was not informed of the pending commitment of his three companies until it was too late to even be present in the headquarters.<sup>22</sup>

#### *Authorities to Alter Institutional Memory*

Robert Komer was uniquely empowered via the National Security Action Memorandum he authored for the president to have influence over key interagency

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<sup>21</sup> Tolson, p. 58.

<sup>22</sup> Swinton, Location 3619.

entities. These authorities were present both during his tenure as the special advisor to the president and as the Deputy to the Commanding General for Pacification in Military Advisory Command-Vietnam (MAC-V). While not amounting to a takeover of another cabinet level entity, it did prevent the other senior officials from constraining or vetoing his implementation initiatives unilaterally.<sup>23</sup>

Although Komer failed to leverage his authority to influence internal Army operational, training and education nodes, Komer was structured to succeed with the authority to expedite the integration of the innovation within the Army's institutional memory. The lead agent is constrained when the authority to leverage these critical nodes (e.g., basic branch schools, intermediate or mid-career officer education) is not available as was the case for the Tank Corps in World War I where these nodes were closed to accelerate the provision of troops to units on the front.<sup>24</sup>

Informal authority is also an effective means of conveying on the lead agent the ability to access entities across the parent military. While the 11th Division was provided with unprecedented formal authorities, by co-locating them with a critical institutional node whose support was essential to success, the division was better able to provide integration support. The 11th Air Assault was posted on Fort Benning, which was also the infantry branch school.<sup>25</sup> Most of the changes created by the airmobile division would affect the fighting ability of infantry divisions. Their early integration enabled the

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<sup>23</sup> Jones, p. 114.

<sup>24</sup> Fox-Godden, in *A Military Transformed: Adaptation and Innovation in the British Military, 1792–1945*.

<sup>25</sup> Sherry, "Airmobility," in *A History of Innovation: U.S. Army Adaptation in War and Peace*, p. 122.

exposing of a larger proportion of the force to the concept and experimental results sooner.

The best example of broad authorities from the sample cases is the Asymmetric Warfare Group (AWG) which was established in March 2006 with the directed mission to observe, collect, develop, validate and disseminate emerging tactics, techniques and procedures to mitigate or defeat specified asymmetric threats.<sup>26</sup> The sweeping authorities included an organizational design with an extensive collection of senior liaison officers that would be assigned to provide institutional support to key nodes within the Army. Additionally, a special assessment program was authorized to select, and train personnel screened for high performing personalities, to provide operational support to brigades and brigade combat teams both at home station and while deployed globally. Lastly, the organization was authorized for direct liaison with any Department of the Defense agency that could conceivably support their unique problem-solving mission set. This combination of authorities, emanating directly from the Secretary of the Army John M. McHugh enabled a robust and rapid infusion of ideas and tactics to hasten the transition from major combat operations to effective stability operations in both Iraq and Afghanistan. For their efforts, the organization was awarded an Army Superior Unit Award for operations in support of Operation Iraqi Freedom and Operation Enduring Freedom.<sup>27</sup>

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<sup>26</sup> United States Department of Army, *General Order #2: Establishment of the United States Army Asymmetric Warfare Group*, by Francis Harvey (Washington, D.C., 2006). Also see United States Department of the Army, *Operational and Organizational (O&O) Concept for the Asymmetric Warfare Group*, by Operations G 3/5/7 Deputy Chief of Staff (Washington, D.C., 2005), pp. 10-19.

<sup>27</sup> United States department of Army, *Memorandum for Commander, SUBJ: Army Superior Unit Award*, by John W. McHugh (Fort Knox, KY, 22 July 2014).

*Dedicated Experimentation Support*

Another critical feature of a lead agent is its ability to both conduct the necessary experimentation and to have access to independent assessments of those experiments to limit the perception of bias. As noted by Starry, “Changes proposed must be subjected to trials. Their relevance must be convincingly demonstrated to a wide audience by experiment and experience, and necessary modifications must be made as a result of such trial outcomes.”<sup>28</sup> Starry implies that assessments must be impartial in order to discern the “necessary modifications.” This insight is visible in the conflicted results concerning antimechanized defense during the Louisiana and Carolina Maneuvers in 1941.

During the maneuvers, the instruction book for assessing the engagements between tanks and antitanks, affectionately called the “umpire book”, was written by the antitank architect Lieutenant General (LTG) Leslie McNair. The umpire book used performance standards that did not exist on any military platforms on hand, and effectively granted a significant advantage to the antimechanized defense elements. In hindsight it seems easy to agree with MG Jacob Devers, the commander for the opposing force during that experiment, who felt that the rules were skewed against him, an assessment that cast a long shadow over the rest of the implementation effort.<sup>29</sup> When compared with the 11th Air Assault Division, and the AIR ASSAULT II live experiment, one sees a very different assessment scheme. In AIR ASSAULT II, the experiment was

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<sup>28</sup> Starry, "To Change an Army."

<sup>29</sup> Anonymous.

developed by an external entity, the U.S. Combat Development Center. Additionally, the observers were from another independent organization, the 2d Infantry Division.<sup>30</sup>

These observations suggest that including in the design for the lead agent the capacity to plan, manage and access independent assessment teams seems highly beneficial. Variations could include a dedicated experimentation force as was done in the 11th Division or one might see a dedicated assessment structure as was done by CORDS in order to adjudicate the results of pilot programs and monitor their continuing performance.<sup>31</sup> Its absence as a design feature for the lead agent, however, severely limits the lead agent's ability to moderate organizational resistance.

### *Political Acumen*

This last feature represents the need to inculcate in the lead agent's team members an appreciation for the political context in which the lead agent will operate. In other words, the lead agent is better served if it possesses across its team, a deep understanding for the types of likely responses, both for and against implementation that are likely to manifest among peer suborganizations and the flexibility to adjust the approach appropriately. As the word "acumen" implies, the lead agent should have a keenness and depth of perception, discernment, or discrimination in the interactions it has with other elements, something that is likely to only come from insider-level exposure to the internal processes and process owners. Vaugh and Villalobos when talking about executive level

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<sup>30</sup> Graves, p. 16.

<sup>31</sup> Nagl, p. 166.

policy Czars supporting the White House, described this feature as the extent to which an approach “fits within the political moment.”<sup>32</sup>

When Ridgeway sought to resurrect the performance of infantry units throughout 8th U.S. Army through a resurgence of small unit patrolling, he commissioned the 8th U.S. Army Ranger Company, led by 2LT Ralph Puckett. As a new graduate of the Infantry Basic Course and Airborne School, while accomplished as far as training and fitness were concerned, his combat experience was limited. In fact, Puckett was purposefully selected for his lack of experience, as the belief expressed by LTC McGee, the staff officer assigned the task of recruiting unit members, was that an officer would be more aggressive sans combat experience than the other way around.<sup>33</sup> What was overlooked however was that an officer with WWII experience, perhaps a major, would have possessed a better appreciation for how infantry battalions and brigades operated and how they were likely to react as a result of the Ranger Company’s arrival at their location. Battalion and brigade staffs and commanders would likely see a new infantry company with little if any experience and very junior leaders. This observation coupled with their being sent from Corps HQ to improve the battalion/brigade fighting skills, would create a sense of cognitive dissonance. Subsequently, initial planning for their inclusion in the ongoing operations would be limited, both because of doubt in their martial prowess and hesitancy to lose the Corps’ asset. A more experienced officer would have a better chance of analyzing these political realities and act accordingly to sensitize the team and adjust its behavior to assuage concerns.

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<sup>32</sup> Vaughn and Villalobos, p. 171.

<sup>33</sup> Piasecki, p. 43. See Footnote 1.

Similarly, the selection of the Lieutenant Colonel (LTC) Andrew Bruce to manage the Tank Destroyer Center may have also had negative effects on the political acumen exercised by the Tank Destroyer Center. MG Andrew Bruce was promoted from the rank of LTC to MG (three ranks) by LTG McNair in less than a year mainly to provide Bruce and the fledgling center with organizational parity when compared to the other branches. He lacked however the experience that comes along with a more deliberate promotion history. With no service as a division senior leader, he could not anticipate the kinds of challenges that would cascade around the integration of the early tank destroyer battalions in North Africa and the way that those early combat actions would shape later opinions about the capability.<sup>34</sup>

### **Recommendations for Army Futures Command**

The four design features identified above enable a lead agent's ability to reduce risk and organizational cost. They therefore provide the means to provide an objective assessment of ongoing agent-led implementation efforts. This final section leverages the design features to assess the current implementation of the U.S. Army's new operating concept called Multi-Domain Operations (MDO).

The section begins by describing the lead agent managing this implementation effort—the U.S. Army Futures Command (AFC). Perhaps one of the largest and most

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<sup>34</sup> Engineering and production disagreements delayed early production until Spring of 1943. As a result, the Tank Destroyer Center allowed the first tank destroyer battalions to deploy to North Africa with obsolete gear. The division staffs had little knowledge of how to employ the battalions and the tactical doctrine published by the center was untenable with the obsolete equipment. The overwhelmingly negative assessment resulting from these early deployers set a negative tone that would endure until the end of the war despite notable accomplishments in Europe. See Gabel, *See, Strike, and Destroy: U.S. Army Tank Destroyer Doctrine in World War 2*, pp. 27-32.



comprehensive transformations of the last 45 years, AFC follows at least in spirit if not in deliberate action, recommendations dating back to the post-Vietnam War studies on counterinsurgency operations. In Heymann and Whitson's 1972 study on Preserving a Military Capability for Revolutionary Conflict, the analysts recommended that successfully transforming the military for such a radical departure of its past practices would require the consolidation of military resources in a department level agency and/or the creation of a standing major command singularly focused on carrying out those functions.<sup>35</sup> Army Futures Command follows the latter recommendation, created to "provide the army with the infrastructure needed to cycle the process of wartime adaptation rapidly for sustained battlefield superiority in a conflict with peer adversaries like Russia and China."<sup>36</sup> After describing AFC, the section briefly describes the Multi-Domain concept being implemented before using the agent-led adoption design features—access, authorities, experimentation capacity and political acumen—to assess AFC.

### ***What is Army Futures Command?***

A description of AFC is incomplete unless it starts first with AFC's predecessor. In 2003, the U.S. Secretary of the Army created the Army Futures Center, later (2006) renamed the Army Capabilities Integration Center (ARCIC), as a lead agent to support the Secretary in determining and integrating force requirements and synchronizing the

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<sup>35</sup> Heymann Jr and Whitson, pp. ix-x.

<sup>36</sup> Hassan M. Kamara, "Future Conflict, Adapting Better and Faster than the Adversary," *Acquisition, Logistics and Technology Magazine*, January, 2017, p. 11.

development of force modernization solutions across the Army. The center provided the management structure for identifying military capability gaps and directing analytical support in the interest of sustaining momentum in the Army's ongoing conflict (Global War on Terror) and to better prepare for future conflicts.<sup>37</sup> As the Global War on Terror continued, senior leaders realized that while the U.S. was optimizing to target non-state actors, both China and Russia were investing heavily in military capabilities, achieving significant gains, even eclipsing some advantages in relation to the U.S. If the U.S. Department of Defense was going to retain and recapture previous margins of advantage, it would require a new strategy. National Security Advisor, LTG H. R. McMaster crafted a new National Security Strategy focusing the Department of Defense on great power competition.<sup>38</sup> The Army's response to the new strategy was to replace ARCIC with a standing major command that consolidated modernization resources from across the Department of the Army to create unity of command and more importantly unity of effort.<sup>39</sup> Although ARCIC's main responsibility was to recommend appropriate modernization actions to Army senior leaders,<sup>40</sup> it by no means enjoyed exclusive access or coordinating authority to assemble a coherent set of recommendations. The shortfalls inherent in ARCIC extended beyond its lack of influence over combat development

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<sup>37</sup> Army Capabilities Integration Center within the U.S. Army Training and Doctrine Command, *Information Paper, SUBJ: Why Was the Army Capabilities Center Created (A.R.C.I.C.)?*, by John Wiseman (Fort Eustis, VA, 1 March 2018). Also see United States Department of Army, *General Order #4: Redesignation of the United States Army Training and Doctrine Command Futures Center as the Army Capabilities Integration Center*, by Francis Harvey (Washington, D.C., 2006).

<sup>38</sup> 2017 National Security Strategy, p. 3.

<sup>39</sup> United States Department of the Army, *General Order #10: Establishment of United States Army Futures Command*, by Mark T. Esper (Washington, D.C., 2018).

<sup>40</sup> The term "Army senior leaders" refers to the top four executives within the Department of the Army—the Secretary, the Under Secretary, the Chief of Staff, and the Vice Chief of Staff.

activities. While it was successful at integrating its practices into existing institutional systems, those practices were arcane. It never fully demonstrated how the processes it governed improved modernization efforts. Additionally, its participation in the requirements process, a necessary antecedent to effective materiel development, contributed to a poor procurement record, including the cancellation of the Future Combat System (FCS) family of interrelated programs in 2009.

AFC was created to lead the Army future force modernization enterprise. To effectively unify its disparate pieces, its commander, General John M. Murray would execute what he called "a startup executing a significantly complex merger."<sup>41</sup> The Army established the command, officially assuming its full operational responsibilities in July 2019, to "realign elements of the modernization enterprise and bring unity of effort to the future force development process."<sup>42</sup> The reason behind the massive reorganization is the implementation of Multi-Domain Operations (MDO), an ambitious new warfighting concept that seeks to reverse the declining efficacy of U.S. deterrence.

### ***What is Multi Domain Operations?***

Multi-Domain Operations departs from previous operating concepts in three critical ways. First, it recognizes that a static depiction of war and peace is no longer a useful paradigm for considering military capabilities. Military power more generally is a relative valuation. As described by General (R) David Perkins, former commander of the

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<sup>41</sup> John M. Murray, "Army Futures Command Fireside Chat," accessed 27 October, 2019. <https://sxsw.delltechnologies.com/afctech>.

<sup>42</sup> United States Department of Army, *Army Modernization Strategy*, by Ryan McCarthy (Washington, D.C.: Office of the Secretary of the U.S. Army, 2019), p. 1.

U.S. Army Training and Doctrine Command, “You are either winning or losing, present tense. Seldom will conflict result in a permanent win or loss.” A continuum of conflict exists where states cycle between competition short of armed conflict, armed conflict and then a return to competition.<sup>43</sup> Second, MDO also recognizes that the traditional domains of military conflict—land, sea, and air—are insufficient to describe current and future competition and conflict. Currently and with increasing frequency, the U.S. is contested in these as well as in the space and cyberspace domains. Advantages in one domain are dependent if not contingent on the others.<sup>44</sup> Third, as described by Secretary of the Army, Ryan McCarthy, in the 2019 Army Modernization Strategy, MDO recognizes that adversaries have invested to undermine U.S. deterrence through the creation of layered stand-off capabilities that

“...separate the U.S. and her allies in time, geography and function. They hope to deny our ability to project combat power, thereby creating *de facto* spheres of influence. Our competitors will do this through a combination of long-, mid-, and short-range weapons systems, conventional forces, integrated air defenses, electronic warfare and jamming, cyber-attacks, and denial of space-based capabilities, such as reconnaissance, navigation, and communications, as well as an array of political and informational tools.”<sup>45</sup>

Resulting from these conditions, the U.S. Army is implementing initiatives to integrate new materiel platforms, command and control capabilities, multidomain lethal and nonlethal fires, and improved leader development and education to increase the range of strategic options available to senior leaders to “counter coercion, unconventional

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<sup>43</sup> Perkins, p. 11.

<sup>44</sup> Ibid., p. 10.

<sup>45</sup> 2019 Army Modernization Strategy, p. 5.

warfare, and information warfare directed against partners.”<sup>46</sup> By increasing the range of options, the joint force hopes to reestablish credible deterrence against near peer revisionist states and retain the existing international rules-based order. This broad objective is underpinned by tangible tasks that include materiel delivery and integration, breakthroughs in research and development, new strategic partnerships with industry and academia, hardening of installations against cyber and informational attacks, and budget reform.<sup>47</sup>

### ***Applying Agent-Led Adoption Design Features to Army Futures Command***

Is AFC postured to guide the kinds of sweeping initiatives envisioned under the Multi-Domain Operations framework? The design features—access, authorities, experimentation capacity, and political acumen—provides some insight to inform Army-level planners and policy makers. A review of current AFC efforts through this lens suggests that they are in some ways ideally postured to implement the changes envisioned by the Secretary. There are however several recommendations to preempt potential sources of organizational resistance.

#### ***AFC Access***

Army Futures Command, by virtue of its status as an Army Command (ACOM) is positioned well within the organizational hierarchy to have regular and reoccurring

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<sup>46</sup> United States Department of Army, *U.S. Army Training and Doctrine Command Pamphlet 525-3-1: The U.S. Army in Multi-Domain Operations 2028*, by Stephen J. Townsend (Fort Eustis, VA: U.S. Army Training and Doctrine Command, 2018), p. vii.

<sup>47</sup> 2019 Army Modernization Strategy, pp. 8-11.

access to Army senior leaders. As an ACOM, the organization reports directly to the Army Secretary and Chief of Staff.<sup>48</sup> Additionally, the organization was designed with its senior leader designated as a four-star general, one of only twelve serving on active duty. This is even more significant when put in context. The last time the U.S. Army created or restructured an ACOM was 1973 when Training and Doctrine Command was established to unify institutional functions across the service.<sup>49</sup> Additionally, the AFC commanding general, General John M. Murray, is a person easily identified as an accomplished and trusted agent among the more established branches of the Army. As a career infantry officer and former Infantry Division commander with combat experience at multiple levels of command, his conventional ascendance through the ranks is both traditional and well earned.<sup>50</sup> The structural alignment to enable direct access and the trust and *bona fides* of the commander, combine to enable AFC to challenge existing practices and resolve conflicts with support from Army senior leaders.

#### *AFC Authorities*

On the surface, it also appears that the authorities granted to AFC are ideally suited to enable successful implementation. The General Orders establishing the organization enable AFC to have direct command influence at critical institutional nodes within the Army. Additionally, AFC is authorized direct access to the Assistant

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<sup>48</sup> Freedberg.

<sup>49</sup> Army Capabilities Integration Center within Training and Doctrine Command, *Information Paper, SUBJ: Disestablishment of Combat Developments Command (CDC)*, by Robert Merkl (Fort Eustis, VA, 21 August 2018).

<sup>50</sup> John M. Murray, "GEN John M. Murray," Association of the United States Army, last modified 2019, accessed 21 October, 2019. <https://www.ausa.org/people/gen-john-m-murray>.

Secretary of the Army for Acquisitions Logistics and Technology. This office is congressionally authorized as the chief acquisition executive for the Army, responsible for managing all programs for the development of and sustainment of Army platforms. This access is formalized with the cross assignment of a senior acquisition general officer to AFC to both coordinate transitions of design projects to formal contracted programs and to provide AFC with constant oversight of those ongoing programs. This feature is a marked improvement from the authorities granted ARCIC, the AFC predecessor. Additionally, AFC acquired as a subordinate entity all the assets previously assigned to ARCIC as well as the assets and management structure associated with the Army's Research, Development, and Engineering Command. Together, these two assets provide AFC with the unity of effort over the concept development and science and technology sectors of the Army, both critical to managing and designing major reform initiatives.<sup>51</sup>

Army Futures Command also acquired the modernization directorates within the Army's branch schools providing AFC direct access to critical institutional hubs, however clarity over how this asset will operate is still unresolved. This lack of clarity affects the command's ability to access and modify key aspects of institutional memory during implementation. Critical among those are doctrine, leader development, institutional training and organizational designs. Prior to the stand up of AFC, the modernization directorates were responsible for managing these critical levers, with approval authority for changes to those levers vested in another ACOM, Training and Doctrine Command (TRADOC). After the stand up, the modernization directorates were

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<sup>51</sup> United States Department of the Army. *General Order #10: Establishment of United States Army Futures Command*.

merged into AFC, but the approval authority for changing those critical levers remained in TRADOC. In practice, the governance of these directorates continues as a source of tension inhibiting AFC's implementation effort. The lack of consensus revolves around who is responsible for designing future capabilities and who is responsible for integrating them into the Army. While AFC is clearly responsible for the former, it is not clear who should be responsible for the latter. The disagreement, principally characterized by the lack of clarity over the demarcation of this responsibility, challenges the implementation of Multi-Domain Operations. The problem is exacerbated by an internal AFC disagreement about the distribution of these authorities. In other words, both internal and external role clarity about manipulating these levers is unclear. To resolve this conflict, AFC recently launched a study to make recommendations. Whatever the specific structural recommendations, from a policy view, The U.S. Army should provide AFC with veto-proof access to the key levers of change. That could be done by shifting approval authority for those changes to AFC or by creating a shared governance structure to manage those tensions deliberately. Whatever choice is adopted, resolving it sooner is important to sustaining momentum.

#### *AFC Dedicated Experimentation Capacity*

Army Futures Command is designed with a comprehensive experimentation capability. As part of the standup, AFC acquired a subordinate organization to execute live experiments, called the Joint Modernization Command (JMC). It also acquired a



modeling and simulation organization called The Research and Analysis Center.<sup>52</sup> While AFC's experimentation capacity is robust, a potential challenge for AFC is that the current organizational design places the MDO concept writers under the same entity responsible for the experimentation design and the assessment of results. In its current form, the entity responsible for experimentation design, for modeling design and for advancing the concept all fall within the same suborganization. From an external perspective, this alignment, like the alignment that existed between McNair and the Tank Destroyer Center during the Louisiana and Carolina Maneuvers, provides the appearance of bias in the experimentation results. Importantly, the claim is not that bias is purposely injected into the evaluation. Rather, the claim is that the independence and therefore veracity of the experimentation effort, whatever type is used, will remain in doubt if this alignment continues.

Additionally, the experimentation capacity, the JMC, was originally created to conduct experiments involving tactical echelons below the brigade level. Multi-domain operations however principally affect operational echelons beginning with the division moving up to theater army. To resolve both issues, requires changes to AFC's organizational structure.

First, AFC will have to consider increasing the size and experience levels organic to JMC. By increasing the rank structure and subordinate capacity, you enable the organization to both replicate the necessary echelons to test the concept but also to increase its independence from the innovation itself. Rather than being an internal

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<sup>52</sup> Ibid.

component of the concept development effort, AFC should cultivate JMC's role as an impartial adjudicator.

Secondly, AFC should look to acquire the capability to transition from live experimentation to combat demonstrations with greater alacrity. The current process of conducting combat demonstrations requires multiple years of planning to field the capability to conventional unit, train them appropriately in its use, deploy the unit as part of a rotation force or contingency, and then test the new capability during a suitable demonstration. This process could be accelerated with the acquisition of subordinate entities aligned with JMC who could specialize in these activities.

Two possible candidates include the Asymmetric Warfare Group and the U.S. Army Rapid Equipping Force (REF). Recall that the AWG is a specialized organization, designed to promote adaptability across the Army, by collecting, analyzing and developing strategies to mitigate the effects of specified threats. The REF, another specialized organization, was designed to enable access to off the shelf technology in support of ongoing conflicts. Created with unique acquisition authorities, it successfully demonstrated the capacity to define and resource material solutions within weeks as opposed the years. They created embedded training teams within institutional nodes as well as operational commands to enable integration and while originally created to focus on OEF and OIF, was expanded to support global contingencies.<sup>53</sup> As subordinates of

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<sup>53</sup> Steven A. Silwa, "U.S. Army Rapid Equipping Force (F.Y. 14 Magazine)," (2014), [https://issuu.com/karaewell/docs/20150330\\_rapid\\_equipping\\_force](https://issuu.com/karaewell/docs/20150330_rapid_equipping_force). Also see H. Kennedy, "Rapid Equipping Force Taking Root," *National Defense* (1 October 2006), <https://www.nationaldefensemagazine.org/articles/2006/10/1/2006october-army-rapid-equipping-force-taking-root-chief-says>.

JMC, these two organizations would enable the rapid transition of capabilities validated during live experimentation to gain further validity under combat conditions in support of operational commands (e.g., a joint task force, special operations command, army service component command, or other sub-unified entity). The AWG would be responsible for operational support to units conducting operations with the new capability, and the REF would provide material improvements to iteratively incorporate lessons.

#### *AFC Political Acumen*

Political acumen represents the ability of the lead agent to anticipate the range of responses, both for and against implementation, that are likely to manifest within the various parts of the parent organization's bureaucracy. Not only must the lead agent appreciate the range of responses, it must be prepared to accommodate or leverage those actions to advance implementation. Army Futures Command is currently positioned well in this regard because top leaders throughout the organization were selected for demonstrated prowess in the management of those same processes. Of the eight general officers, seven are accomplished experts in either budget programming, or capability development. Of the top three, all are institutional insiders, intimately familiar with the business systems that underpin Army operations, and able to strategically influence those systems when necessary to nudge decisions in support of implementation.<sup>54</sup> Going forward, the command would be well served by continuing to select from among the

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<sup>54</sup> Murray, "GEN John M. Murray."; Eric J. Wesley, "LTG Eric J. Wesley," Association of the United States Army, last modified 2019, accessed 28 October, 2019; Jim Richardson, "Major General Jim Richardson, Commanding General, AMCOM," last modified 4 October 2014, accessed 29 October, 2019. [https://www.army.mil/article/139420/major\\_general\\_jim\\_richardson\\_commanding\\_general\\_amcom](https://www.army.mil/article/139420/major_general_jim_richardson_commanding_general_amcom).

Army's senior leaders, those with demonstrated proficiency in managing the Army's business systems.

### **In Closing**

The range of challenges facing the U.S. and her allies are significant. In a recent publication by the U.S. Army's Training and Doctrine Command about the future operational environment out to 2050, they suggest that the confluence of global trends such as climate change, shifting demographics and resource scarcity, combined with challenges to the global order by revisionist states, and technological advances in automation, artificial intelligence, additive manufacturing, nanotechnology, and bioengineering all are leading to a new wave of military innovation that will change the character of warfare.<sup>55</sup> To paraphrase a line often ascribed to Yogi Berra, predictions, especially about the future, are difficult, however, the existing political tensions created by these trends, both domestically and internationally certainly increase the possibility that a minor crisis could inadvertently escalate. Major powers are looking at modernization to increase military effectiveness and are strategic about implementing change. Hopefully, this work will prove useful in decoding why some of these modernization efforts will succeed and others will not.

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<sup>55</sup> U.S. Army Training and Doctrine Command, *TRADOC Pamphlet 525-92: The Operational Environment and the Changing Character of Warfare*, by Theodore Martin (Fort Eustis, VA, 2019).

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