LIBERTY UNIVERSITY

DEPARTMENT OF HISTORY

IF THE BALLOON GOES UP: A HISTORY OF U.S. ARMY MANEUVERS AND THEIR EFFECTIVENESS, 1902-1944

A Dissertation Submitted

by

Randall S. Wells Jr.

In Partial Fulfillment of the Requirements of the Degree

Doctor of Philosophy in History

Presented to the Department of History in the College of Arts and Sciences at Liberty University Lynchburg, Virginia

2024

Doctoral Dissertation Committee:
Director:
Reader :
Reader:

Abstract

The historiography surrounding U.S. Army military readiness exercises and their effectiveness in improving or increasing the resultant fighting power of Army Ground Forces is an untouched field of study. This work fills that historical gap by exploring and analyzing a series of U.S. Army readiness maneuvers conducted for forty-plus years that sought to closely replicate the actual conditions of combat that Army Ground Forces were expected to encounter. In doing so, it reveals the criticality of ensuring effective military readiness exercises accomplish their primary intent, which is to use actual military vehicles, aircraft, naval vessels, weapons, and tactics to facilitate conditions that stress the participants to validate whether military forces are capable and prepared to project combat power when duty calls. Historically, the nineteenth-century Prussian army was likely the first military force that planned and executed military readiness exercises, or maneuvers as they are also known, which proved highly beneficial. The U.S. Army embarked upon a similar path of conducting readiness exercises shortly after their involvement in the Spanish-American War. From 1902 to 1944, the United States Army planned and conducted numerous readiness exercises to prepare troops for fighting in two world wars. The outcomes of those readiness exercises revealed that the United States Army was less than adequately prepared for the combat they encountered against the Imperial German Army and German Wehrmacht.

Front Matter

Acknowledgments

Regarding this research endeavor, it should be evident that the lion's share of the research, writing, and conclusion are personal to me. However, I would be remiss if I did not acknowledge the outstanding debt I owe to those who have assisted me in varying ways and degrees.

First and foremost, I wish to thank my personal Saviour, the Lord Jesus Christ, for giving me the physical and mental stamina to complete this project. On more occasions than I could count, I prayed for His wisdom and guidance throughout this journey, and His faithfulness to see me through was reliable as always.

I would also like to thank and acknowledge the assistance of my wife Denise as she helped me pore through stacks of archival material, my father, U.S. Marine Corps veteran Randy Wells Sr., Mrs. Brenda Yarborough for proofreading the manuscript, and my two sons, Josh and JohnMichael Wells, for rooting for their dad.

Additionally, I want to thank my dear sister-in-law, Shari Bellish, for taking time out of her busy schedule to conduct archival research on my behalf. She took countless photos of primary source documents and manuscript material and sent them my way.

I want to thank the professional staff at the United States Army Heritage and Education Center and Matthew Ridgeway Hall for their help in arranging materials for my visit, their back-and-forth communication, and their willingness to do whatever I required to make my research profitable. Also, the staff at Bryn Mawr College in Pennsylvania were extremely helpful in providing me with period photographs.

Although Dr. Cary Roberts may not remember our brief conversation in October 2017, it's important to acknowledge his significant role in influencing my decision to pursue a

postgraduate degree in History, ultimately leading to the completion of a terminal degree. His support, academic expertise, and valuable advice have been invaluable. I wouldn't have chosen my dissertation topic without his guidance.

I would also like to thank Dr. Scott Catino, my Dissertation Chair, for his patience with my tendency to overthink and second-guess myself, especially when preparing for the defense. Knowing that Dr. Catino is a distinguished expert in counterterrorism and a U.S. Army veteran brought me a sense of comfort that only fellow military veterans can understand.

I sincerely thank Mr. Craig Gilliam and Mr. David Rash for enabling me to operate and drive a U.S. M-60A1 Patton tank. This experience greatly aided my research on U.S. Army tank development for parts of my dissertation. The opportunity to explore the interior and drive a tank was genuinely exhilarating. I am incredibly thankful to both individuals for their instrumental role in supporting me on this academic journey.

List of Figures

Table of Contents

Chapter 1

Introduction

A popular idiom used in today's military when discussing the eventualities of armed conflict is "If the balloon goes up." This statement originated from the Great War when observation balloons were sent to locate enemy troop positions. When one side observed an enemy balloon going up, it usually meant an attack was soon to follow.[1] Therefore, "if the balloon goes up" has become a discussion point for leaders to ascertain how well-prepared their troops are for war.

This work will explore and analyze the history and evolution of U.S. Army readiness exercises from 1902 to 1944. It will address the following research question: Were those military readiness exercises effective in preparing troops for the combat they encountered in Europe during two world wars? While the term "effective" is somewhat broad and subjective, for this study, effective refers primarily to the fighting power of the American Expeditionary Force (infantry) during the Great War and the Army Ground Forces (AGF), i.e., the infantry and armored forces during World War II.

Objectives will determine the significant readiness exercises examined, the size of forces involved, and the emphasis on overall assessments of the exercises. This will be followed by an analysis utilizing the Department of Defense (DoD) framework of Doctrine, Organization, and Training (DOT) to determine whether the described exercises proved operationally effective for the purpose for which they were intended by those who planned and executed them. In other words, were those exercises successful in readying the participants to engage the enemy in combat?

[1] William Safire, "Balloon Goes Up on War Words," *New York Times*, February 3, 1991.

Chapter two will examine the significant readiness exercises that prepared U.S. Army troops to fight in the Great War. Chapter three will analyze the efficacy of those pre-Great War exercises and discuss substantial lessons learned from the American Expeditionary Force's (AEF) performance in France. Chapters four through eight examine the extensive peacetime exercises or maneuvers intended to prepare U.S. forces for World War II. Chapter nine will analyze the effectiveness of the peacetime maneuvers after U.S. Army forces encountered the Wehrmacht (German military) in combat and examine one wartime exercise. Before tackling this weighty subject, defining what constitutes a military readiness exercise, commonly termed a maneuver or maneuvers, is imperative. Some may even refer to these events as "war games."

Quite simply, a military readiness exercise is a focused event or activity that is facilitated through action to assess or validate policies, training, procedures, and capabilities that a military organization can use to achieve planned objectives by ascertaining the state of readiness of their respective constituents. It cannot be overemphasized in this study that readiness exercises are <u>not</u> to train the troops, although training most certainly is a collateral outcome of readiness exercises. An exercise evaluates or validates the effectiveness of training that should have already occurred before the exercise. Readiness exercises are vital in preparedness, whether for the military or civilian emergency response capabilities. A well-executed exercise provides a low-risk environment to familiarize personnel with roles and responsibilities they would reasonably be expected to accomplish during contingency or emergencies.

The U.S. military relies upon various types of readiness exercises to validate preparedness. For example, a drill is an operations-based exercise designed to validate a single operation or function. Evaluating how fast pilots can sortie their fighters to intercept adversarial aircraft would be one example of a drill. Tabletop exercises are discussion-based exercises

intended to generate a dialog of various issues to facilitate decision-making. A "sand table" would be one example of a tabletop exercise used by the U.S. Army. Having unit commanders seated around a table while a facilitator briefs an unfolding exercise scenario is another example of a tabletop exercise.

On the other hand, a functional exercise is more of an operational-based event explicitly designed to test and evaluate combat or response capabilities in a realistic, real-time environment with somewhat limited resources. An active shooter exercise conducted on a military installation would be an example of a functional exercise. And then, there are the full-scale exercises, which are the main focus of this work. A full-scale exercise is an operations-based exercise that is the most complex and resource-intensive of all exercise types and typically involves multiple agencies, organizations, and units and initiates the real-time movement of resources.[2]

Military readiness exercises are not a new thing. In some fashion, the world's militaries have always exercised their combat capabilities, and one must go back to history's earliest recorded instances of armed conflict to determine *why* military readiness exercises were designed in the first place.

It is certainly no secret that military troops have always prepared for war. From the first recorded details of armed conflict, the book of Genesis speaks of the patriarch Abraham arming his servants to carry out a military raid to rescue his wayward nephew Lot from a coalition army comprised of four ancient kingdoms located in the region of ancient Iraq and Iran.

When Abraham received word that his nephew had been taken captive in a raid upon Sodom, the Scripture details how Abraham armed more than 300 men, divided his army to attack

[2] Department of Homeland Security, Homeland Security Exercise and Evaluation Program (HSEEP), 2020, 2-6-2 11.

from different directions, and struck at night, guaranteeing a surprise assault.[3] Indeed, to anyone familiar with military tactics, numerous details made Abraham's raid a model of military prowess and established his reputation as a tactical genius.

In the book *Battles of the Bible: A Military History of Ancient Israel* (1997), authors Chaim Herzog and Mordechai Gichon state that Abraham represented the prototype of the Noble Warrior of antiquity.[4] Therefore, it should be reasonably apparent that Abraham trained himself and his men for battle during his lengthy lifetime.

Records of ancient Near Eastern conflicts involving New Kingdom Egyptians and Western histories detailing the ancient Greeks, Macedonians, and Romans using varying tactical formations abound in military historiography. As one example, the ancient historian Polyaenus described how King Philip II accustomed his Macedonians to constant exercise, as well in peace, as in actual service: so that he would frequently make them march three hundred furlongs, carrying with them their helmets, shields, greaves, and spears; and, besides those arms, their provisions likewise, and utensils for everyday use.[5] One might refer to this by the common phrase "train the way you fight."

Even the Roman gladiatorial system employed specialized trainers in schools called *ludi*, which utilized a disciplined method to train ancient warriors for close-quarters combat that became a foreshadowing of the "friendly versus friendly" mock combat that would develop over the centuries.[6]

---

[3] Gen. 14:1-16.
[4] Chaim Herzog and Mordechai Gichon, *Battles of the Bible: A Military History of Ancient Israel* (New York: Barnes & Noble Publishing, 1997), 35.
[5] Polyaenus, *Strategems of War*, trans. R. Shepherd (London: Printed for George Nicol, Bookseller to His Majesty, 1793), 4.2-10.
[6] Konstantin Nossov, *Gladiator: Rome's Bloody Spectacle* (Great Britain: Osprey Publishing, 2009), 142.

At some point in history, military leaders realized the necessity of expanding martial training to a level greater than simply having single soldiers spar with one another using wooden swords and shields. With the increase in the size of armies, the advent of industrialization, and the rise of nation-states, combat commanders grasped the need to teach a sense of *esprit de corps* and a mutual dependency upon their fellow soldiers. This greatly reformed the readiness aspect of their forces and better prepared them to face the enemy and anticipate as many variables as possible.

A great example of this involved the ancient Greeks. Between 700 and 650 B.C., Greek city-states developed a game-changing tactical innovation to ancient warfare known as the *phalanx*. The phalanx ultimately departed from the Homeric style of warfare, in which individual acts of bravery were celebrated.

The phalanx was a formation of approximately 60-70 men called hoplites because of the armor they wore into battle. The breadth of the phalanx was usually about eight men across and about the same amount of men deep, giving a total formation of around 64 warriors, each armed to the teeth and clad in bronze armor from head to toe.[7] In the ancient world, the Greeks completely revolutionized armed combat with the advent of the phalanx. The phalanx starkly contrasted the fighting depicted in Homer's *Iliad*, for it was an ordered block of men expected to maintain a formation.[8]

Herodotus is the only primary source that details the Greek phalanx. The actual phases of hoplite warfare constituted five different maneuvers. The *preparation* phase involved two opposing Greek armies forming across from each other, much like opposing football teams might

[7] Arther Ferrill, *Origins of War from the Stone Age to Alexander the Great, 2nd Revised Edition* (Boulder, CO: Westview Press, 1997), 99-103.
[8] J. E. Lendon. *Soldiers and Ghosts: A History of Battle in Classical Antiquity* (Locations 470-471). Kindle.

form up during kickoff. The *charge* phase began when the battle commenced. Both sides moved towards one another around 4-6 miles per hour, and when they got to within a couple hundred yards of each other, they charged.[9]

In his *History of the Peloponnesian War*, Thucydides described the culmination of the charge phase, known as *othismos* (mass push), which involved the violent collision of opposing formations. Each rank pushed into the rank in front until the opponent gave way and routed or turned to flee. This involved the *trope* (mass turning to flight) phase, where most casualties occurred due to warriors tossing their shields aside in retreat. The *aftermath* phase involved the recovery of the dead and wounded.[10]

The Greek phalanx represented the first coordinated effort whereby individual hoplites locked their shields together. As a result, they were trained to fight as a cohesive unit. Each hoplite was essentially dependent upon the warrior next to him. While this proved immensely effective for about 500 years, the ancient Greeks could never genuinely train for the unanticipated variables involved in a war, something Carl Von Clausewitz would later describe as the "fog of war."[11] For example, imagine the catastrophe that would have ensued had Greek hoplites from the city of Athens divided their phalanx into two "opposing" sides and then rushed one another with spears. It became apparent that more reforms were needed.

In 338 B.C., King Philip II and his Macedonians edged out the Greeks for Asia Minor hegemony at the Chaeronea battle. Almost immediately, Philip introduced his reforms and wholly overhauled the Macedonian army. Rather than wielding the six-foot dory spear those

[9] Herodotus. *The Histories*, Book 2: 113.
[10] Thucydides, *The History of the Peloponnesian War*, trans. Thomas Hobbes (London: Bohn, 1843), Book IV: 96.
[11] Carl Von Clausewitz, *On War*, trans. Colonel J.J. Graham (Military Strategy Books, 2009), 24, Kindle.

Greek hoplites had used, Philip outfitted his troops with a fourteen-foot *sarissa* that resembled a medieval Swiss pike.[12]

Additionally, using the lessons learned from his experience with Theban General Epaminondas, Philip taught his men close-order drill. He combined his cavalry with his infantry, thus creating the world's first combined arms force. His famous son, Alexander, would further perfect this combined-arms system as he cut a swath of conquest through the Persian empire during his short reign.[13]

Like his late father, Alexander introduced his methodology for training his forces. He drilled them in complex movements, offered prizes for individual acts of bravery, and ensured his men competed against one another in athletic games. While these innovations reassured Alexander that he led a "fit to-fight army," the Macedonian army still echoed the Homeric influence of the ancients. Soldiers drilled, marched, and fought, but no organized method existed to assess their readiness for battle, nor anticipate the fog of war. Moreover, the training imposed upon ancient armies was analogous to modern-day "boot camp" or basic training.

Indeed, the historiography of Western civilization chronicles the results of such military training. However, it was not until the mid-eighteenth century that military preparedness exercises, whereby Prussian leaders created a simulated combat environment to test the decision-making processes of their subordinate commanders and troops under quasi-realistic conditions, emerged as an innovative method of preparing troops for war.

Ulrich Bräker, a soldier assigned to the 13th Prussian Infantry and veteran of the Seven Years' War, records in his autobiography how Frederick the Great initiated mock battles

[12] Peter Green, *Alexander of Macedon, 356-323 B.C.: A Historical Biography* (Berkely: University of California Press, 1991), 15-19.
[13] Ibid., 20-21.

(maneuvers) involving "opposing" forces in thick forests and uneven terrain. Everything from artillery drills, bridge crossings, and flanking maneuvers encompassed what eventually became a routine practice for the Prussian army and thus birthed the practice of military maneuvers.[14]

These mock battles became known as the "autumn maneuvers," and their utility assisted the Prussian monarch in determining the practicality of various forces and how rapidly they could cover ground once ordered. One significant drawback, however, was that the inherent unreality of these maneuvers left Frederick with a false impression as to the actual readiness of his army.[15]

Following Frederick the Great, the General Staff of the Prussian Army formally introduced the concept of systematic wargaming. Known as *Kriegsspiel* (war game), the Prussians created a table-top board game in which opposing forces were identified by colored pieces placed on a paper or wooden map representing a particular battlefield. A roll of the die determined turn-based moves, and specific rules governed gameplay.[16] Compared to modern-day wargames produced by the Avalon Hill, Hasbro, and Milton-Bradley companies, the basic principles have not changed since 1824.

The Prussians discovered that playing *Kriegsspiel* provided a means of assessing the opposing participants' decisions, how and why they were made, and their effect on subsequent gameplay. This produced a mechanism whereby a leader could analyze a campaign before marching his troops to war. Additionally, *Kriegsspiel* afforded players the continual adjustment of strategies and tactics in response to developing results. As a result, nineteenth-century

[14] Ulrich Bräker, *The Poor Man Of Toggenburg being The Life And Times Of Ulrich Bräker*, trans. Margaret Clare Britton (London, 1788), 70.
[15] Franz Ludwig Haller Von Königsfelden, *Militärischer Charakter und Merkwürdige Kriegsthaten Friedrichs des Einzigen* [Military Character and Strange Military Behavior of Frederick the One] (Berlin, 1796), 134.
[16] Wilkinson H. Spenser, "The Practical Value of the Kriegsspiel," *Journal of the Royal United Service Institution* 32 (1888): 70.

Prussian generals realized that the actual value of wargaming lay in its unique ability to highlight the effect of the human factor in warfare.[17]

Indeed, of all the Prussian officers who participated in the Battle of Königgrätz (1866), most of these men would have had some exposure to *Kriegsspiel* during their military careers, and when one considers all the nineteenth-century Prussian military innovations, *Kriegsspiel* likely had the most significant and most prolonged impact.[18]

One Prussian officer enjoyed a reputation as a frequent *Kriegsspiel* player since his time as a young lieutenant in 1828. He had used *Kriegsspiel* for staff exercises in Magdeburg, Germany.[19] That man's name was Helmuth Von Moltke, and he was the man primarily responsible for the formation of the Prussian (German) General Staff.[20]

Moltke was the military genius responsible for Prussia's seminal victories over Denmark in 1864, Austria in 1866, and France in 1871, thus ensuring German unification and solidifying his place in the pantheon of history's great generals. Moltke transformed the Prussian way of war in three respects.[21]

First, he focused significant attention on the initial deployment of the Prussian army. Second, he introduced the principle of concentric operations, thus portioning off parts of his army to operate from disparate points of origin. Third, and most importantly, he devised a tactical environment within the Prussian military whereby commanders allowed subordinate officers the latitude to execute mission tactics in the best manner they saw fit. This was termed

---

[17] Peter P. Perla, "War Games, Analyses, and Exercises," *Naval War College Review* 40, No. 2 (1987): 46-47.
[18] Jorit Wintjes, "Not an Ordinary Game, But a School of War," *Vulcan: the international journal of the social history of military technology* 4, No. 1 (2016): 54.
[19] Ernst Heinrich Dannhauer, "Das Reißwitzsche Kriegsspiel Von seinem Beginn bis zum Tode des Erfinders 1827," *Militair-Wochenblatt* 59, No. 56: (1874): 529.
[20] Robert M. Citino, *The German Way of War: From the Thirty Years' War to the Third Reich* (Lawrence, KS.: University Press of Kansas, 2005), 149-53.
[21] Hughes, *Moltke on the Art of War*, 171.

Auftragstaktik, and the United States has since admired and emulated this German art of war. It owes its successful implementation to a Prussian General Staff confident and able to think on their feet, something learned no doubt from playing *Kriegsspiel*.[22]

But when did board games like *Kriegsspiel* and Frederick's annual maneuvers transition to the live field training exercises of the twentieth century involving flesh and blood soldiers, massive amounts of equipment, and thousands of square miles? And how could moving tiny pieces around on a one-dimensional platform prepare troops for armed conflict involving real bombs, bullets, and the potential for death? There is a significant difference between war games, basic training, and military readiness exercises, all of which have their part in preparing troops for armed conflict.

A war game is a simulation model whose sequence of events is interactively affected by decisions made by players representing opposing sides and whose operation does not involve the movement of actual military forces.[23] *Kriegsspiel,* as mentioned earlier, is an excellent example of this, as is the use of sand tables that are still used today by military forces. In 1913, H.G. Wells wrote *Little Wars*, a whimsical primer designed to teach little boys about wargaming. Wells is the forefather of the popular, miniature-based wargames like Warhammer, Guild Ball, and Axis and Allies.[24]

Boot camp, or basic military training, is a predetermined regimen of activities designed to quickly familiarize and indoctrinate a civilian into military life, complete with all that encompasses such a life. While many equate military training and a readiness exercise (maneuver) as the same thing, there is a marked difference. A military readiness exercise

[22] Maj. Michael J. Gunther, *Auftragstaktik: The Basis for Modern Military Command?* (Pickle Partners Publishing, 2012), Loc 83, Kindle.
[23] Perla, "War Games, Analyses, and Exercises," 44.
[24] H.G. Wells, *Little Wars* (United Kingdom: Frank Palmer, 1913), 23-24.

involves the actual movement, support, and operation of trained military forces under the observant eyes of exercise controllers (umpires) who are present, *not to train* but to *evaluate* training that has already been accomplished and determine its effectiveness. Moreover, readiness exercises are pretty costly as equipment must be tested and maintained, a region must be selected, troops must be transported and fed, and such exercises typically last more than a few hours.[25]

The historical and practical significance of military readiness exercises is undoubtedly pertinent to what the U.S. military faces today as the old aphorism that generals always fight the last war, meaning armies train how to fight better under conditions they most recently experienced, seems to hold consistently. Indeed, some U.S. units are still training their combat troops to expect conventional chemical attacks from near-peer competitors when those same nations have brazenly demonstrated the aggressive use of asymmetrical technologies such as unmanned aerial systems (UAS), hypersonics, cyber-attacks on critical network infrastructure and lone-wolf hostile actor attacks.[26]

The research methodology for this project involved examining the practical aspects of military readiness exercises or *maneuvers* along with their participants and resultant outcomes and formulating a historic synthesis from the U.S. readiness exercises conducted from 1902 to 1944. To that end, a comprehensive literature review will provide a foundation for the topic, identify gaps in the historiography, and understand the relevant debates. Obtaining and researching after-action reports (AARs) of various military exercises through archival sources,

[25] Randall Wells, Wing Inspection Team (WIT) Training, 412th Test Wing, Edwards Air Force Base, Ca., 2023.
[26] Katherine K. Elgin and Peter Gilbert. "How the Army is (Not) Preparing for the Next War," The War Room, September 25, 2019.

government pamphlets, and first-person accounts provided primary information for a cogent analysis.

While there exist some journal, newspaper, and magazine articles that briefly touch on the history of military readiness exercises, very few secondary monographs have been written detailing specific military readiness exercises that have occurred during the twentieth century, and only two specifically address U.S. Army readiness exercises conducted leading up to World War II. However, none of these examines the overall effectiveness of these exercises and their resultant outcomes on the combat performance of those who took part in them. Therefore, adequate coverage of pre–Great War readiness exercises represents an untapped field of study. This work fills a void that has hitherto been left unresearched.

Arguably the most comprehensive work that provides a synthesis of various military maneuvers that occurred within the United States during the twentieth century is Jean R. Moenk's *A History of Large-Scale Maneuvers in the United States, 1935-1964* (1969). Moenk described six multifaceted maneuvers, some involving only U.S. Army forces and some joint exercises involving Army, Navy, and Air Force personnel. However, he never adequately addressed whether or not those large-scale maneuvers benefited the individual soldier as opposed to small unit exercises. Mr. Moenk argued against large-scale military readiness exercises.[27] He also failed to address U.S. Army maneuvers before the Great War or during the 1920s or 1930s, thus leaving this historical gap untouched.

Perhaps the earliest treatment of the disastrous pre-Normandy rehearsal exercise known as Exercise Tiger is Edwin P. Hoyt's *The Invasion Before Normandy: The Secret Battle of Slapton Sands* (1985). Hoyt has written extensively on World War II, particularly on operations

[27] Jean R. Moenk, *A History of Large-Scale Army Maneuvers in the United States, 1935-1964* (Fort Monroe, VA: U.S. Continental Army Command, 1969), 331.

conducted in the Pacific Theatre. Hoyt's thesis is that Exercise Tiger was a significant disaster deliberately concealed by the Allies, lest details of the D-Day landings leak to enemy intelligence.[28]

Richard T. Bass, author of *The Brigades of Neptune: U.S. Army Engineer Special Brigades in Normandy* (1994), wrote *Exercise Tiger: The D-Day Practice Landing Tragedies Uncovered* in 2008. Bass' monograph is similar to Hoyt's book on the same subject. In 2017, Bass followed up his initial study on Exercise Tiger with *Exercise Tiger: Casualty Cover-Up Revealed* (2017). This book addressed the controversial numbering of actual casualties from Exercise Tiger. Bass also wrote about the training that went into Exercise Tiger in *Spirits of the Sand: The Story of the United States Army Assault Training Center in North Devon* (2014). Unfortunately, none of Bass's books contain footnotes or a bibliography.[29]

Nigel Lewis' *Exercise Tiger: The Dramatic True Story of a Hidden Tragedy of World War II* (1990) also detailed the lead-up exercise held at Slapton Sands in the United Kingdom in April 1944. Like Bass, Lewis followed up his monograph in 2017 with a four-part series entitled *The Cover Plan Conspiracy, The British and Exercise Tiger, 1944* (2017). Lewis posits that Exercise Tiger was secretly enmeshed within the Allied deception plan for Normandy (Operation Bodyguard) and that both the British and American governments attempted to cover up the loss of some 700 military personnel at the hands of Nazi patrol boats.[30]

Wendy Lawrance's *Exercise Tiger: The Forgotten Sacrifice of the Silent Few* (2013) and

---

[28] Edwin P. Hoyt, *The Invasion Before Normandy: The Secret Battle of Slapton Sands* (Cooper Square Press, 1999).
[29] Richard T. Bass, *Exercise Tiger: The D-Day practice landing tragedies uncovered*. East Sussex: Tommies Guides, 2008); Richard T. Bass, *Exercise Tiger: Casualty Cover Up Revealed* (Tommies Guides, 2017); Richard T. Bass, *Spirits of the Sand: The Story of the United States Army Assault Training Center in North Devon* (Menin House, 2014).
[30] Nigel Lewis, *Exercise Tiger: The Dramatic True Story of a Hidden Tragedy of World War* II (Prentice Hall Direct, 1990).

Ken Small's *The Forgotten Dead: The True Story of Exercise Tiger, the Disastrous Rehearsal for D-Day* (2018) are similar works written about the disastrous World War II dress rehearsal for the D-Day landings. Lawrance highlighted the April 1944 combined-arms exercise on the Slapton Sands beach in England and detailed the numerous disasters that befell American soldiers and sailors, some due to friendly fire and some due to outright negligence by senior leaders. Lawrance also delved into the alleged government coverup that ensued due to more than 700 American deaths at the hands of German fast attack boats that infiltrated the exercise area.[31]

Similarly, Ken Small's *The Forgotten Dead* also detailed the unfortunate events that characterized the Allied practice run for the Normandy invasion. Small focused on two primary reasons for this exercise's failure: a lack of security precautions and communication coordination…two repeating hallmarks of ineffective readiness exercise outcomes.[32] There is also a memorial website, Exercise Tiger Memorial.co.uk, that contains several video interviews with survivors of the ill-fated Exercise Tiger operation.

Exercise Tiger was undoubtedly not the only exercise designed to prepare troops for the Normandy invasion. The U.S. military participated in more than a dozen exercises, most code-named for animals and some of which involved only specific segments of the Overlord plan. Exercise Tiger stands out because of the significant loss of life and the fact that Nazi patrol boats intervened.

Aside from the limited historiography of World War II-era military readiness exercises conducted overseas, historiography focuses on several military exercises held within the continental United States (CONUS). For example, Dr. Christopher R. Gabel, a US Army

[31] Wendy Lawrence, *Exercise Tiger: The Forgotten Sacrifice of the Silent Few* (United Kingdom: Fonthill Media, 2013).
[32] Ken Small, *The Forgotten Dead: The true story of Exercise Tiger, the disastrous rehearsal for D-Day* (Osprey Publishing, 2018).

Command and General Staff College faculty member, authored *The U.S. Army GHQ Maneuvers of 1941* (1992), which examined the most extensive American readiness exercises ever conducted on U.S. soil.[33]

Known as the Louisiana Maneuvers, Gabel relied heavily on the papers of U.S. Army Chief of Staff General George C. Marshall to outline the U.S. Army's corps-versus-corps field exercises involving nearly half a million troops and covering more than 3,400 square miles of east Texas and west central Louisiana.[34] However, like Moenk's work, Gabel neglected to address U.S. Army exercises outside the scope of those planned and executed by General Headquarters (GHQ), and he did not evaluate whether those maneuvers were effective in preparing the AGF for combat in the European Theatre of Operations (ETO).

George Edwin Patrick Murray wrote his master's thesis on the Louisiana Maneuvers in 1972. Published at Kansas State University, Murray's *The Louisiana Maneuvers, September 1941: Practice for War* is very similar to Gabel's work in that Murray pointed out that General Marshall's overriding reason for conducting the maneuvers was to focus national attention on the weaknesses of the post-WWI American Army, particularly equipment shortages.[35]

Another account of the Louisiana Maneuvers is found in *A History of Large-Scale Army Maneuvers in the United States, 1935-1964*. Moenk covered the Louisiana Maneuvers and detailed the history of military maneuvers from the initial attempts in 1935 through the 1964 Desert Strike exercises. Contrary to this work's conclusion, Moenk claimed that the "maneuvers

[33] Christopher R. Gabel, *The US Army GHQ Maneuvers of 1941* (Center of Military History United States Army Washington, D.C., 1992).
[34] Ibid., v.
[35] G. Patrick Murray, "The Louisiana Maneuvers: Practice for War," *Louisiana History: The Journal of the Louisiana Historical Association* 13, No. 2 (1972): 121.

of 1940 and 1941 prepared the American nation for the campaigns of North Africa and Europe."[36]

Paul Dickson's *The Rise of the G.I. Army, 1940–1941: The Forgotten Story of How America Forged a Powerful Army Before Pearl Harbor* (2020) chronicles the massive military state-side maneuvers that took place in Tennessee, Louisiana, and the Carolinas and explains how those exercises transformed a fledgling U.S. Army into a fighting force capable of squaring off against the battle-hardened Wehrmacht.[37] Unfortunately, Dickson stopped short of demonstrating how those exercises did that.

Another source briefly mentioning a state-side World War II maneuver exercise is an article written for the Central Oregonian by Steve Lent entitled "Crook County part of the Oregon Maneuver." The only thing Lent mentioned in his short article is that more than 10,000 acres of central Oregon were selected in 1943 to exercise the U.S. military's coordination of armor, artillery, infantry, and air operations by conducting mock encounters with "opposing forces" (OPFOR).[38]

Like Lent's brief article, Bill Carey's coverage of the Tennessee Maneuvers in The Tennessee Magazine showcases another example of World War II readiness exercises conducted within the United States as a dry run for the anticipated combat in France, Belgium, and Germany. The area of middle Tennessee was chosen due to its geographic similarity to Western Europe, much like Slapton Sands, because it resembled Utah Beach in France.[39]

---

[36] Moenk, *A History of Large-Scale Army Maneuvers in the United States, 1935-1964*, 70.
[37] Paul Dickson, *The Rise of the G.I. Army, 1940–1941: The Forgotten Story of How America Forged a Powerful Army Before Pearl Harbor* (New York: Atlantic Monthly Press, 2020).
[38] Steve Lent, "Crook County part of the Oregon Maneuver." Central Oregonian, August 16, 2019. https://pamplinmedia.com/ceo/164-features/436054-346680-crook-county-part-of-the oregon-maneuver
[39] Bill Carey, "Tennessee in Training: Tennessee was a big staging area for World War II Army maneuvers." The Tennessee Magazine, May 2022. https://www.tnmagazine.org/tennessee-in-training/

Besides Carey's article and similar articles written for newspapers and magazines, the only monograph detailing the Tennessee Maneuvers is Woody McMillin's *In the Presence of Soldiers, The 2nd Army Maneuvers & Other World War II Activity in Tennessee* (2010). McMillin's book is the first attempt at describing the Tennessee Maneuvers in detail. It provides a solid chronological timeline of the maneuvers while incorporating them into the state's history. Unfortunately, McMillin's bibliography relied heavily on magazine and newspaper articles. Moreover, no official military reports, AARs, letters, or orders are mentioned.[40] Thus, McMillin's book falls short regarding primary source research.

Not only did the U.S. Army conduct readiness exercises before and during World War II, but the U.S. Navy was also proactive in readying their sailors for a potential war against the Japanese in the Pacific Theatre of Operations (PTO). The exercise known as Fleet Problem XXI ironically involved a simulated attack on Pearl Harbor and was carried out during the spring of 1940. This exercise is extensively detailed in Record Group 64 of the National Archives (NA) Microfilm Publications.[41]

Albert A. Nofi's article, *To Train the Fleet for War: The U.S. Navy Fleet Problems, 1923-1940* (2010), makes extensive use of Naval War College archives to highlight each of the U.S. Navy's twenty-one "fleet problems" conducted between the Great War and World War II. Nofi examined how the specificity of the Japanese threat during the prewar years led to successful innovation in U.S. naval readiness due to an iterative series of significant fleet maneuvers.[42]

---

[40] Woody McMillin, *In the Presence of Soldiers, The 2nd Army Maneuvers & Other World War II Activity in Tennessee* (Nashville, TN.: Horton Heights Press, 2010); Joshua G. Savage, "Thank God It's Only Maneuvers!:" Tennessee and the Road to War," (master's thesis, East Tennessee State University, 2014), 8.

[41] Records Relating to United States Navy Fleet Problems I to XXII 1923-1941, Microfilm Publication 964, Roll 31, Records Group 64. Records of the National Archives and Records Administration.

[42] Albert A. Nofi, *To Train the Fleet for War: The U.S. Navy Fleet Problems, 1923-1940* (Annapolis, MD.: Naval War College Press, 2010), 18.

Peter P. Perla's *The Art of Wargaming* (1990) combines a history of professional wargaming, revealing that the origin of military readiness exercises dates as far back as the Roman Empire when Roman consuls used crude sand tables with abstract icons to represent military units in battle. Dr. Perla credits McCarty Little for developing naval wargaming that the U.S. Naval War College has since used.[43]

Playing War: Wargaming and U.S. Navy Preparations for World War II (2016) by former naval officer and shipbuilding executive John M. Lillard draws extensively on the Naval Historical Collection at Newport and several oral histories and personal paper collections. Lillard concluded that the Naval War College maneuvers played a crucial role in preparing the U.S. Navy for World War II but concedes that while these maneuvers revealed advances in the use of naval aviation, they did not lead to significant improvements in anti-submarine capabilities.[44]

Not much exists besides secondary monographs when considering historiography relating to Cold War-era military readiness exercises. However, numerous official government reports are now unclassified and available via internet search engines, on-site research, and archival research institutes.

For example, Operation Steel Pike I (1964) was history's largest peacetime amphibious readiness exercise. However, books have yet to be written about this significant exercise involving 28,000 U.S. Marines storming a beach in Spain. A hearing from the 89th U.S. Congress, dated March 1965, and a couple of short, colorized videos are examples of the limited primary sources that give details of this event.[45] There are surviving veterans who took part in

[43] Peter P. Perla, *The Art of Wargaming* (Annapolis, Maryland: Naval Institute Press, 1990), 17-23.
[44] Corbin Williamson, review of *Playing War: Wargaming and U.S. Navy Preparations for World War II,* by John M. Lillard, *Journal of Military History* 81, No. 4 (2017): 1192.
[45] *Hearings before the United States House Committee on Merchant Marine and Fisheries, Operation Steel Pike I,* 89th Cong., 1st sess., March 16-17, 1965. UNCLASSIFIED.

this exercise, and the Historical Branch of the United States Marine Corps at Quantico, Virginia, contains an extensive collection of archival material on Steel Pike I.

Similar in scope to Operation Steel Pike I, a series of joint Korea-U.S. maneuvers known as Team Spirit, involving more than 100,000 U.S. and Republic of Korea (ROK) troops, became the most significant U.S. Pacific Command's (PACOM) exercise during the Cold War. However, nothing has been published about it besides a case study by Dr. John F. Farrell for the Air Force Research Institute in 2009, published in the *Air and Space Power Journal*. Other than Dr. Farrell's case study, no secondary monographs detailing this series of readiness exercises spanned from 1978 to 1993.[46]

Aside from infantry and amphibious landing exercises, the U.S. Air Force and U.S. Navy have conducted large-scale aerial combat maneuvers since 1975. The Red Flag exercises, hosted several times yearly by the U.S. Air Force in the Nevada desert, provide realistic air-combat training for U.S. military pilots.

As previously noted concerning Cold War-era military readiness exercise historiography, few secondary monographs regarding Red Flag exercises have been published. Scott Cuong Tran and Nick Tran's *Aircraft of Red Flag: The Ultimate Air-to-Air Combat Exercise* (2022) is more a compendium of the assorted aircraft involved in these maneuvers than a detailed analysis of their efficacy in preparing U.S. pilots for air-to-air combat.[47]

Reports from various Red Flag exercises exist, but some remain classified as they could potentially reveal vulnerabilities to nations hostile to the United States. U.S. Air Force Lieutenant Colonel Joseph W. Locke authored a paper for the Air University entitled *Air*

[46] Dr. John F. Farrell, *Team Spirit: A Case Study on the Value of Military Exercises as a Show of Force in the Aftermath of Combat Operations* (Alabama: Air Force Research Institute, 2009).
[47] Scott Cuong Tran and Nick Tran, *Aircraft of Red Flag: The Ultimate Air-to-Air Combat Exercise* (Key Publishing, 2022).

Superiority at Red Flag: Mass, Technology, and Winning the Next War (2009). Lt. Col. Locke focused on understanding the relationship between technology, mass, and attrition in aerial warfare, which helps shape operational and strategic force decision-making. Over half of *Air Superiority at Red Flag* is filled with numerous metric charts geared towards those who want to create data sets to study statistical outcomes.[48]

Like the U.S. Air Force, the U.S. Navy has been busy conducting aerial combat exercises at their own TOPGUN naval fighter weapons school at the Naval Air Station Miramar, California. Dan Pederson, the founder of the TOPGUN program, published *TOPGUN: An American Story* in 2019. Pederson delved into the lessons learned from aerial combat missions during Vietnam and how that motivated him in 1969 to start an aerial combat training program that utilizes the OPFOR principle mentioned earlier.[49] *TOPGUN: An American Story* reads more like a personal memoir and was likely released to coincide with Hollywood's release of the popular sequel *Top Gun: Maverick.*

The U.S. Navy magazine *Proceedings* provides more of a history of TOPGUN than Pederson's book, and it relies heavily on an unclassified study submitted to Naval Air Systems Command called the "Ault Report," named for Captain Frank Ault, the leader of the study team. Captain Ault and his team conducted an in-depth three-month study of air-to-air missiles, aircraft, and radars, as well as the training and tactics of aircrews during Vietnam.[50]

Piggybacking on John M. Lillard's *Playing War*, Professor Roger Thompson's *Lesson Not Learned: The U.S. Navy's Status Quo Culture* (2007) documented the alleged coverups, lies,

[48] Lt Col. Joseph W. Locke, *Air Superiority at Red Flag: Mass, Technology, and Winning the Next War* (Alabama: Air Force Research Institute, 2009), vii.
[49] Dan Pedersen, *Topgun: An American Story* (New York: Hachette Books, 2019), 3-8.
[50] Frank W. Ault, Report of the Air-to-Air Missile System Capability Review, July-November 1968, vol. 1 (Naval Air Systems Command Washington DC).

incompetence, and the unwillingness of the U.S. Navy to learn and adapt to a rapidly changing battlespace. Thompson assessed the various near-peer competitor naval exercises conducted in the late 1990s and concluded that the Navy's current exercise methodology is seriously flawed due to the inherent unrealism scripted into its rigid design. According to Thompson, U.S. Navy leaders come away from these exercises with a chimerical outlook on the readiness of the Fleet.[51]

As one example, Thompson mentions the 1998 UNITAS exercise, in which OPFOR submarines chose to go "off script" and elected to sit quietly on the ocean floor rather than moving around to provide surface ships an easy target. He also discussed Exercise Tandem Thrust 1999, a "free-play" exercise whereby participants were not held to rigid controls like UNITAS.[52]

And speaking of rigid controls during readiness exercises, the U.S. Army conducted a host of nuclear warfare exercises that spanned the early years of the Cold War. Most of these were atomic weapons tests, similar to the famous Trinity test of July 1945. Interestingly, historians have focused secondary works on these tests. Some of these include Scientific journalist Mark Wolverton's *Burning the Sky: Operation Argus and the Untold Story of the Cold War Nuclear Tests in Outer Space* (2018), Rod Buntzen's *The Armageddon Experience: A Nuclear Weapons Test Memoir* (2019) and John C. Hopkins and Barbara Germain Killian's *Nuclear Weapons Testing at the Nevada Test Site the First Decade* (2013). While incredibly detailed, none of these books describe the readiness exercises accompanying many nuclear tests during the 1950s.

[51] Roger Thompson, *Lesson Not Learned: The U.S. Navy's Status Quo Culture* (Annapolis, MD.: Naval Institute Press, 2007), 2-4.
[52] Ibid., 9-10,

From 1951 to 1957, the U.S. Military held a series of readiness exercises known as the Desert Rock Exercises at the Nevada Proving Grounds. The historiography of these nuclear weapons exercises consists almost solely of reports prepared for the Defense Nuclear Agency.

The Desert Rock exercises included Buster-Jangle, Tumbler-Snapper, Upshot-Knothole, Teapot, and Plumbbob. Nearly 22,000 American troops took part in these nuclear weapons exercises, and the details have been documented in technical reports submitted to the Defense Nuclear Agency. Yet, historians have to publish substantial monographs that detail these exercises. Additionally, an analysis of radiation exposure in U.S. Marine Corps personnel was submitted to the Defense Nuclear Agency in 1981.[53]

While the United States military has conducted internal readiness exercises designed specifically for U.S. forces for more than 80 years, the Return of Forces to Germany (REFORGER) and Rim of the Pacific (RIMPAC) exercises represent perhaps the most significant international gathering of military forces for the sole purpose of enhancing interoperability.

REFORGER was a series of North Atlantic Treaty Organization (NATO) annual military exercises conducted from the late 1960s to early 1990s to validate the ability of NATO allies to rapidly deploy forces to Europe to reinforce NATO positions on the continent and to demonstrate Western commitment to defend against Warsaw Pact aggression.[54]

While historians and analysts have written about REFORGER, there is a shortage of secondary sources highlighting its importance as a catalyst for influencing U.S. and NATO diplomatic relations. Numerous archival primary sources, press releases, and after-action reports

[53] EXERCISE DESERT ROCK V, Las Vegas NV. Marine Corps Report, May 1953. AD-A078 567. UNCLASSIFIED. U.S. Army Heritage and Education Center, Carlisle, PA.
[54] Defender Europe 20 Military Exercise, Historical (REFORGER) Exercises, and U.S. Force Posture in Europe. Congressional Research Service, January 14, 2020, 1.

are available through the U.S. Army Heritage and Education Center (USAHEC) and the National Archives and Records Center.

Ingo Trauschweizer's *The Cold War U.S. Army: Building Deterrence for Limited War* (2008) examined REFORGER within the context of evolving post-World War II military doctrine and the shifting emphasis away from Mutually Assured Destruction (MAD) in the 1950s to the need for conventional defense forces.[55]

Trauschweizer stresses the importance of maintaining a conventional warfighting capability against the USSR to avoid the dangers of a nuclear war. Still, he eschewed pertinent details on how the REFORGER exercises were conducted from an operational or tactical level.[56]

Nate Jones' *Archer 83: The Secret History of the NATO Exercise That Almost Triggered Nuclear War* (2016) is the only other significant secondary monograph examining REFORGER. This book illustrates how the REFORGER exercise in 1983 nearly triggered a nuclear exchange between the U.S. and Soviet Union because the Soviets were convinced that the United States and NATO were prepping for a nuclear first strike.[57]

Like REFORGER, the early RIMPAC exercises reflected the Cold War context in which they were conceived, with a clear enemy in mind and consistent exercise structure. Exercise participants were divided into one of two groups, the Orange or Blue Force, with the Orange Force representing different classes of ships from the Russian Navy. Blue Force units represented NATO naval forces. The opposing forces would depart Pearl Harbor and proceed to the Pacific Missile Range Facility (PMRF) to evaluate gunnery and missile firing. This was

[55] John Jozef Raadschelders, "REdeployment of FORces to GERmany (REFORGER): Military Exercises with a Diplomatic Purpose" (master's thesis, The Ohio State University, 2021), 13.
[56] Ingo Trauschweizer, *The Cold War U.S. Army: Building Deterrence for Limited War*, Modern War Studies (Lawrence, KS.: University Press of Kansas, 2008), 30.
[57] Raadschelders, "REdeployment of FORces to GERmany (REFORGER)," 13.

followed by holding operations supporting a carrier task force conducting strikes and missile firings, concluding with a contested transit and reentry into Pearl Harbor.[58]

Studies related to the RIMPAC exercises consist primarily of news and magazine articles that cover a particular year's RIMPAC exercise iteration. No secondary books describe the history of RIMPAC or its effectiveness in preparing troops for war. Michael Fabey's *Crashback: The Power Clash Between the U.S. and China in the Pacific* (2017) briefly mentions RIMPAC but is more focused on elucidating the national security issues the United States is currently facing in the South China Sea with the People's Liberation Army Navy (PLA(N)).[59]

During the late twentieth century, military readiness focused on conducting "the ability to survive and operate" (ATSO) exercises. These exercises involved Chemical, Biological, Radiological, Nuclear, and high yield Explosives (CBRNE) defense-type scenarios that U.S. planners assumed would be the method of attack from near-peer adversaries.

These exercises typically involved a mock deployment for a select number of individual troops tasked from a specific Test or Air Base Wing, Squadron, or Battalion. Once those deployers processed through a deployment line, they were transported to a simulated "downrange" environment to replicate a forward operating base (FOB) in the Pacific or European theatre.

A cadre of exercise controllers then staged mock chemical and ground attacks against exercise participants, who wore chemical protective ensembles over their camouflage utilities, to validate how they would survive and operate in a contested, degraded, operationally limited (CDO) environment. The Installation Commander determined the level of contestation and type

[58] Honae Cuffe, "50 Years of Exercise RIMPAC," *Royal Australian Navy Sea Power Semaphore*, 8 (2011), 1.
[59] Michael Fabey, *Crashback: The Power Clash Between the U.S. and China in the Pacific* (New York: Scribner, 2017).

of hostile threats. While these exercises were somewhat practical and in keeping with defense doctrine, the reality of twentieth-century conflicts involving Army, Air Force, and Naval forces never allowed U.S. forces to apply those ATSO skills learned during actual combat.

Ultimately, military readiness exercises are pre-coordinated, staged events that intend participants to act and react to pre-determined criteria so that evaluators, observers, or umpires can accurately assess operational readiness. Like a Hollywood movie, they are scripted and contain theatrical elements designed to suspend the players' disbelief.

It deserves emphasis to note that military maneuvers or readiness exercises are not primarily designed to replace training, although training is often an adjunct benefit of readiness exercises. A military organization does itself a gross disservice if it views readiness exercises as the only venue for training. Maneuvers are specifically intended to validate the training that has already been or *should* already have been, accomplished, thereby providing military leadership a "snapshot" of whether or not their military forces are prepared to go to war.

Historically, the scope and scale of readiness exercises conducted by the United States military have aligned with what military historian Russel F. Weigley termed a strategy of annihilation. This is based upon the doctrinal principles of concentration and mass to overwhelm enough of the enemy's forces to force a decisive and quick victory.[60]

This crusading spirit of annihilation became the blueprint for how the U.S. military would wage war throughout the mid to late nineteenth and twentieth centuries. However, there existed a scarcity in the application and utility of practical readiness exercises designed to adequately prepare the postbellum U.S. Army for war on a foreign shore because the primary mission of the U.S. Army was patrolling forts on the frontier, escorting west-bound settlers and

[60] Russel F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (Bloomington: Indiana University Press, 1973), 142.

keeping hostile Native Americans at bay.[61] The concept of enlarging the military and shipping citizen soldiers to a foreign land to protect U.S. interests had never been fully articulated, and this became evident as President McKinley declared war on Spain on April 11, 1898.[62]

[61] Allan R. Millett and Peter Maslowski and William B. Feis, *For the Common Defense: A Military History of the United States from 1607-2012* (New York: Free Press, 2012), 221-27; Weigley, *The American Way of War*, 67.
[62] William McKinley, Message to Congress Requesting a Declaration of War With Spain, Online by Gerhard Peters and John T. Woolley, The American Presidency Project.

Chapter 2

Readying the Army for War

"The most important question that confronted us in the preparation of our forces of citizen soldiery for efficient service was training."[63] ~ Gen. John J. Pershing

The state of the U.S. military, notably the U.S. Army, at the turn of the nineteenth century was anything but stellar. America's involvement in the Spanish-American War helped verify this salient point. The individual performances of those who fought that war included noteworthy examples of bravery, first-hand accounts, and the Secretary of War's reports, revealing how unprepared the U.S. Government was to wage war on a foreign shore.

Secretary of War Russell A. Alger reported that at the outset of the war with Spain, the U.S. Government was inadequate to meet the emergency. According to Secretary Alger, the War Department was impotent in accumulating the required materials for offensive war, particularly in firearms. He lamented the fact that the War Department was only able to furnish 53,508 .30-caliber Krag-Jorgensen rifles and 14,895 .30-caliber Krag-Jorgensen carbines, a supply "barely sufficient to meet the requirements of the increased regular army."[64]

Less than twenty years later, AEF Commander General John J. Pershing would echo Alger's disappointment at American readiness. Pershing noted the "deplorable situation as to munitions" and the War Department's indecisiveness regarding which type of machine gun to adopt.[65]

In his account of the Spanish-American War, famous Rough Rider Teddy Roosevelt bewailed the lackluster performance of the slow-loading Krag-Jörgensen against Spanish

[63] John J. Pershing, *My Experiences in the World War*, vol 1. (New York: Frederick A. Stokes, 1931), 133.
[64] Russell A. Alger, *The Spanish American War* (New York: Harper & Brothers, 1901), 12-13.
[65] Pershing, *My Experiences in the World War*, 32.

guerillas armed with top-loading Spanish Mausers.[66] The firing rate of the Krag compared to the Mauser was inferior to the range, stopping power, and accuracy.

The U.S. Army was also issued wool uniforms to fight in a humid, tropical climate led by a 62-year-old, 300-pound sickly general.[67] Moreover, there exists little to no evidence to suggest that the U.S. Army conducted any pre-deployment readiness exercises before shipping troops off to Cuba. Unfortunately, protecting the continental United States and its coastlines appeared to be the preeminent concern for Congress over adequately readying its men for war in a foreign land.[68]

Secretary Alger averred that if Congress had allowed the War Department to use some portion of the $50,000,000 set aside for offensive preparations instead of focusing on coastal defense, much could have been accomplished in the way of getting ready for the impending action.[69] A year later, Alger's successor would not only echo similar sentiments on the unpreparedness of the U.S. military but outlined a way ahead that would hopefully prove successful at readying U.S. armed forces for war on foreign shores. In a 1902 address to the House Committee on Military Affairs, Secretary Elihu Root stated, "If we should go to war tomorrow, you would find the same kind of confusion which existed at Tampa, and if you do not learn to act upon those lessons…whenever we go to war the same kind of confusion will exist."[70]

His assessment of the readiness state of the U.S. Army after the Spanish-American War led him to conclude that, among the four things vital to the preparation of an army for war, "the

---

[66] Theodore Roosevelt, *The Rough Riders* (New York: P.F. Collier & Son, 1899), 117-122
[67] Burton W. Folsom, "Russell Alger and the Spanish-American War," Mackinac Center for Public Policy, December 7, 1998.
[68] Alger, *The Spanish American War*, 8.
[69] Ibid., 14.
[70] Testimony of December 13, 1902, reproduced in National Defense Act: Historical Data Relating to Present Law, Hearings before the House Committee on Military Affairs, 69th Congress, (Washington: Government Printing Office, 1927), 116.

exercise and training of the officers and men of the Army in the movements of large bodies of troops by brigade, division, and corps under conditions approaching as nearly as possible those to be anticipated in executing the plans devised for their action in war" was paramount."[71]

Secretary Root possessed the foresight to understand that for U.S. forces to be adequately prepared for war, a modern rendition of the eighteenth-century mock battles staged by Frederick the Great was required. He worked assiduously at convincing Congress to not only approve increasing the size of the Army but also garnered an appropriation of $10,000 to survey four prospective sites to serve as permanent camps for instructing Regular Army and National Guard troops.[72] One of those sites, Fort Riley, Kansas, became the first location of what would become a staple for state-side U.S. military readiness exercises during the years leading to America's participation in the Great War.[73]

The selection of Fort Riley initially came about thanks to Lieutenant General Philip H. Sheridan's 1884 annual report to Congress. Sheridan, a noteworthy Civil War U.S. Cavalry officer, envisioned Fort Riley as the ideal location for all cavalry purposes, an establishment worthy of the United States for training.[74] The following year, General John M. Schofield, who was in charge of the Military Division of the Missouri, ordered a light artillery school to be established at Fort Riley.[75]

Between Generals Sheridan and Schofield, the two persuaded Kansas Senator Preston Plumb to obtain Congressional funding to "build a suitable post and establish a school of cavalry

---

[71] Elihu Root, *Five Years of the War Department Following the War with Spain, 1899-1903*. (U.S. Government Printing Office, 1904), 59-62.
[72] H.O.S. Heistand, "Requirements of a Maneuver Site and the Measures Necessary to Secure the Same," *Journal of the Military Service Institution* 132 (1904): 470. (hereinafter cited as *JMSI*)
[73] Charles D. McKenna, "The Forgotten Reform: The Institution of a System of Field Maneuvers in the U.S. Army, 1902-1912," *Army History* 21 (1991/1992): 18.
[74] Woodbury F. Pride, *The History of Fort Riley* (Cavalry School, Book Department), 1926, 187.
[75] John M. Schofield, *Forty-Six Years in the Army* (New York: The Century Co., 1897), 427.

and light artillery at Fort Riley."[76] It would seem all was in place to press ahead with holding maneuver exercises at Fort Riley.

In 1902, the War Department tasked the Department of the Missouri commanding general, Major General John C. Bates, with executing the first set of maneuvers to be held at Fort Riley. However, fiscal constraints and a lack of support essentially left Maj. Gen. Bates flying solo on getting the maneuvers off the ground.[77]

Fortunately, Bates assembled a "think tank" of U.S. Army officers, headed by Colonel Arthur L. Wagner, to design the program to be followed and the scope of the maneuvers that would be carried out at Fort Riley. In his *Organization and Tactics* (1906), Col. Wagner stated, "The best school for acquiring a knowledge of organization and tactics is furnished by war experience."[78] Wagner believed that the most valuable body of experience from which to draw when it came to developing a viable program of readiness maneuvers for the U.S. Army came from the professional armies of Europe and historical battle examples.[79]

One can see the European influence on early readiness exercises conducted by the U.S. Army in a report submitted by the Military Information Division (MID) to the Adjutant General's Office. This report, entitled *The Autumn Maneuvers of 1899* (1900), entailed a series of annual maneuvers conducted by the armies of Austria-Hungary, Germany, Great Britain, Italy, and Norway.[80]

In the *Autumn Maneuvers of 1899*, Bates, Wagner, and others involved in designing the Fort Riley maneuvers had access to a practical blueprint for how European armies conducted

---

[76] Ibid.
[77] McKenna, "The Forgotten Reform," 18.
[78] Arthur L. Wagner, *Organization and Tactics* (Kansas City, MO.: Franklin Hudson Publishing, 1906), vi.
[79] Ibid., viii.
[80] War Department, *The Autumn Maneuvers of 1899: Austria-Hungary, Germany, Great Britain, Italy and Norway* (Washington: Government Printing Office, 1900), 1-127.

their readiness exercises in the years leading up to the Great War. Indeed, the *Autumn Maneuvers of 1899* contained numerous examples worthy of emulation by the U.S. War Department for designing and executing readiness exercises.

Concerning Austria-Hungary's September 1899 maneuvers, "opposing" forces were divided into two forces, each given a color designation (Blue vs. Red). Archduke Franz Ferdinand, whose assassination in 1914 would ignite the Great War, was given command of the Blue force. Ferdinand was ordered to advance on the position of the opposing force to take ground or drive his opponent back across a river.[81]

Under the Kaiser, Imperial Germany also participated in similarly designed exercises in the fall of 1899. Known as the "Kaiser Maneuvers," battlefield realism was prioritized. Artillery was used, specially constructed field communication lines were laid, hospitals were established, and the weather had no bearing on the execution of the maneuvers.

Moreover, the number of troops participating was astounding compared to the diminutive size of the U.S. Army at that time. The total number of "combatants" involved in the Kaiser Maneuvers numbered some 64,000 men, while the total number of maneuver participants during the Fort Riley maneuvers numbered approximately 5,000 troops.[82]

To introduce added "stressors" or what modern military exercise designers term *rigor*, railways were prohibited for transporting participants, telegraphic and telephonic lines were forbidden, forcing troops to rely upon signal balloons.[83] Umpires were selected to enforce the rules and provide post-exercise observations for each set of maneuvers. This practice is still

[81] War Department, *Autumn Maneuvers of 1899*, 12-15.
[82] Ibid., 31.
[83] Ibid.

performed today during military readiness exercises. It is typically executed by those with a high degree of subject matter expertise (SME) in their evaluating area.

According to the MID, the most novel feature of the Kaiser Maneuvers concerned the employment of three Maxim machine gun batteries, which fired blank cartridges at approximately 60 rounds per minute. No other nation during the Autumn Maneuvers utilized the machine gun as efficiently as the Imperial German Army did.[84]

Those in charge of setting up and conducting the Fort Riley exercises strove to achieve as close an example to the European model as possible, and in some respects, they were successful. According to a *Harper's Weekly* article, Fort Riley boasted 20,000 acres and embraced nearly all the "topographical conditions liable to be met with by an army in the field."[85] Moreover, the intention of the War Department to have conditions faithfully portray those of war was demonstrated by the thorough equipping of the various detachments from the Engineer, Signal, and Medical Corps.[86]

Although Col. Wagner, Col. George B. Rodney, and Lt. Col. E.J. McClernand were charged with planning the Fort Riley exercises, the man charged with reporting on the maneuvers was a National Guard officer named Major John Henry (J.H.) Dockweiler.[87] An engineering officer with the National Guard of California, Secretary Root personally selected Maj. Dockweiler to witness and participate in the ten-day maneuvers.

Upon his arrival, Major Dockweiler was given maps of the camp along with a schedule of exercise events. As they were called, the maneuver exercises involved 5,000 men, including the

---

[84] Ibid., 45.
[85] "Our First Annual Military Maneuvers," *Harpers Weekly*, September 20, 1902.
[86] Ibid.
[87] J.H. Dockweiler, *Report on Maneuver Division, Camp Root, Fort Riley, Kansas, September 1902- October* (Sacramento: W.W. Shannon, 1903), 3.

Regular and National Guard cavalry, engineers, artillery, and infantry (no armor branch existed then).[88] The maneuver exercises commenced on September 20, 1902, with the arrival of troops and the setting up of Camp Root.

A close order drill and the dissemination of the overall schedule to the officers followed this. Lectures on various topics, ranging from sanitation to entrenchments, were provided each day to the men. The actual maneuver exercises consisted of simulated attacks on selected outposts, the building of field and pontoon bridges to cross the Kansas River, and "contact" between two opposing forces code-named the "Blues" and the "Browns" (based upon the postbellum blue uniforms and khaki uniforms worn during the Spanish-American War). A large field hospital was set up, complete with all the equipment needed for battlefield surgery, and umpires were chosen to assess the operational maneuvers.[89]

Another purpose for the maneuver exercises was to conduct service field trials for a new type of artillery gun for the U.S. Army called the Ehrhardt Gun, which was of German design and fired fixed ordnance at a muzzle velocity of 1,750 feet per second. A lightweight Krag-Jörgensen rifle and Luger semi-automatic pistol were also tested during the exercises.[90]

In his fifty-page report, Major Dockweiler noted several aspects regarding the scheduling of daily events, the lecture material, the composition and equipping of the field hospital, sanitation practices, and the types of cannon ordnance available. Additionally, he mentioned that attack and defense movements were scheduled for three days during the exercise. Still, he gave no detail in his report regarding what those attack and defense movements entailed, what types of

[88] Ibid., 3-4.
[89] Ibid., 15.
[90] "The Fort Riley Manoeuvres and the New Armament," *Harpers Weekly*, October 4, 1902.

weapons were involved, or the resultant outcomes. Most of the maneuver exercise involved observing units marching toward their opposing force and practicing rear-guard movements.[91]

In what could no doubt have proved beneficial to the U.S. Army and National Guard, Major Dockweiler compiled a list of miscellaneous observations and recommendations regarding the exercises. However, the only thing he recommended, aside from his opinion that individual marksmanship training was badly needed, was that "a National Guard officer from each arm of the service be detailed to a similar arm of the Regular Army."[92] Unlike the *Autumn Maneuvers*, little was mentioned regarding the post-exercise performance of the infantry, cavalry, or artillery, which was somewhat surprising considering Col. Wagner functioned as chief umpire.[93] Dockweiler did, however, provide voluminous notes on the engineers, no doubt due to that being his military expertise. Unfortunately, the entire exercise schedule could not be completed due to heavy rainfall.[94]

Even though the Fort Riley exercises did not come close to matching those held in Europe three years earlier, the War Department felt the maneuvers were worthwhile for three reasons. First, they represented the initial attempt to mix Regular Army and National Guard forces in encampment and field duties. Second, high-ranking officers gained an opportunity to command more significant numbers of troops in tactics versus drill, and third, like all readiness exercises, the maneuvers revealed tactical and organizational vulnerabilities, which warranted improvement.[95] President Roosevelt was even slotted to review the exercise.[96]

---

[91] Dockweiler, *Report on Maneuver Division*, 5-36.
[92] Ibid., 49.
[93] Pride, *The History of Fort Riley*, 233.
[94] Dockweiler, *Report on Maneuver Division*, 8.
[95] BGen. William H. Carter, Report of Observations Made During Army Maneuvers at Fort Riley, Kansas, 1902, 23 October 1902, 1-6.
[96] "Army Mobilization: Grand Encampment and Review at Fort Riley, Kansas," *The Argus*, August 21, 1902, *NYS Historic Newspapers*.

The following year, the War Department would again stage a series of fall maneuvers, this time at Camp Young in West Point, Kentucky. President Theodore Roosevelt directed the Adjutant General to select Colonel Walter Fieldhouse as the "duly accredited representative" to report on the fall maneuvers.[97] Col. Fieldhouse compiled a report similar in scope to Maj. Dockweiler's report the previous year.

Somewhat differently executed than the Fort Riley maneuvers, the Fall Maneuvers at West Point, Kentucky, saw both State Militias and Regular Army troops participate. In addition to U.S. Cavalry, Artillery, and Infantry troops, the governors of Indiana, Kentucky, Michigan, and Wisconsin were invited by the Secretary of War to send their respective infantry militias to the exercises. This amounted to nine infantry regiments, one infantry battalion, an artillery battery, and associated support personnel, or about 10,460 men.[98]

The Fall Maneuvers occurred from September 28 to October 13, 1903, and were spread over 28,000 acres about 28 miles west of Louisville, Kentucky. Regarding the selection of West Point as a suitable location to stage the exercises, Col. Fieldhouse noted that "it is doubtful whether a better selection could have been made for the execution of military problems and maneuvers, and for the establishment of a camp based upon the actual conditions such as an army would be confronted in times of war."[99] Moreover, according to Col. Fieldhouse, the challenges posed by the terrain prevented the nineteenth-century tactics of linear formations, forcing battlefield commanders to march their troops in parallel column formations.[100]

---

[97] Walter Fieldhouse, *Fall Maneuvers West Point, Kentucky 1903: Report of Colonel Walter Fieldhouse, Inspector General, Accredited Military Representative of the State of Illinois* (Springfield, IL: Phillips Bros., State Printers, 1904), 3.
[98] Ibid., 4.
[99] Ibid., 12.
[100] Ibid., 22.

The rules for the Fall Maneuvers at West Point were more fully articulated in Col. Fieldhouse's observations than Maj. Dockweiler's. For example, umpires were instructed to wear white armbands on the left arm, collision with opposing forces was prohibited, and the firing of blank cartridges was discontinued at 100 yards from the "enemy" force. To rule a unit *hors de combat*, its losses had to amount to one-third of its initial strength or be in such a condition that it could not reasonably expect to press the fight.[101]

Like the Fort Riley maneuvers, opposing forces were delineated as "Blues" and "Browns." In many ways, the rules for the Fall Maneuvers very much resembled those of modern-day living history war reenactments, complete with strict weapons inspections to ensure no live rounds were introduced.[102]

The scenarios comprising the Fall Maneuvers' scope were developed as a series of "problems" pre-ordained by the umpires. For example, Problem No. 1 entailed the Blue Army, based along the Ohio River at Louisville, Kentucky, and the Brown Army, based on the Cumberland River near Nashville, Tennessee. According to Col. Fieldhouse, the "brown army has advanced to the vicinity of Louisville...the blue army, supposed to have been forced back in previous operations, had been strongly reinforced and now resumes the offensive."[103]

Observers then watched how each opposing force would perform, given periodic updates regarding the relative position of "enemy" forces. Typically, these actions involved tactical problems in which one side discovered and then "attacked" the rear guard of the retreating opposing force. In nearly every scenario involving cavalry and infantry, the principal object was to demonstrate the ability of an advance guard and rear guard to protect its flanks against a

[101] Ibid., 18.
[102] Jenny Thompson, *Wargames: Inside the World of 20th Century War Reenactors* (Washington: Smithsonian Books, 2004), 154-55.
[103] Fieldhouse, *Fall Maneuvers*, 22.

mounted cavalry charge and to discover the enemy within an allotted time set by the umpires.[104] These exercise objectives hearkened back to anachronistic Civil War tactics. They revealed the hesitancy of U.S. Army leaders to fully embrace the technological benefits of the Industrial Revolution, mainly when it came to employing the Maxim machine gun.

After the Fall Maneuvers, Col. Fieldhouse noted several observations and areas for improvement that, once implemented, could increase the efficacy of future readiness exercises for the U.S. military and the U.S. Army. He noted that the exercise "playing field" was too small and should be enlarged to at least 40,000 acres to accompany more than 20,000 troops. Col. Fieldhouse also suggested that the U.S. Army transition from the blue to an olive drab uniform as those wearing brown uniforms during the maneuvers were hard to spot in the stubble fields. To Col. Fieldhouse, this represented a significant advancement for the Army, and wearing such a uniform "will greatly reduce casualties in actual warfare."[105] Interestingly, he later stated that in future wars, opposing armies wearing similarly colored uniforms would only add to the difficulties and perplexities of distinguishing friend from foe.[106]

Additionally, Col. Fieldhouse noted that two complete infantry regiments were required to dig trenches and lay 8,000 feet of barbed wire in front of the completed trenches on the third day of the exercise. The troops were shown the newly introduced Model (M) 1903 Springfield bolt-action rifle. Nothing was mentioned regarding the Ehrhardt Gun or German Luger testing and use during the Fall Maneuvers.[107]

More than 10,000 men took part in the Fall Maneuvers, and according to Col. Fieldhouse's report, the exercises appeared to have shown substantial improvement over the Fort

[104] Ibid., 25.
[105] Ibid., 14, 32.
[106] Ibid., 59.
[107] Ibid., 33-38.

Riley maneuvers a year earlier as he praised the infantry for their ability to fire twelve rounds every thirty seconds from the new M1903 Springfield. He noted that the final day of maneuvers represented the "most realistic and spectacular of any of the war problems" executed during the sixteen-day exercise.[108]

Discussion on the Fort Riley and Fall Maneuvers of 1902 and 1903 prompted a dialogue over how and how *often* future U.S. military readiness exercises should be conducted. Some officers approved of the camp of instruction methodology. In contrast, others, like Maj. Gen. Bates and Col. Wagner, desired a strategic scenario that pitted two large opposing forces against each other over a significant distance versus having opposing forces stationed within view of one another. The U.S. Army got its way as Congress appropriated a million dollars for the planning and executing of the next series of maneuvers scheduled for 1904, which would constitute the most extensive such stateside U.S. Army maneuvers ever executed up to that time.[109]

Maj. Gen. Henry C. Corbin was responsible for executing what became known as the Manassas Maneuvers. Maj. Gen. Corbin served with the Union Army in 1862 as a second lieutenant with the Army of the Cumberland, assigned to the Ohio Infantry. A Civil War veteran, Corbin was no stranger to combat as he had spent a decade fighting Native Americans in the southwest and battled Confederate forces in the western theatre of the Civil War. In 1900, President Garfield appointed him as Adjutant-General of the U.S. Army.[110] It would seem Maj. Gen. Corbin was the right man for the job, mainly because he had seen so much combat and would have understood what it took to validate the fighting power of his men.

---

[108] Ibid., 57.
[109] "The Manassas Maneuvers," *Alexandria Gazette* (Alexandria, VA), August 9, 1904. *Chronicling America: Historic American Newspapers*. Lib. of Congress.
[110] "GEN. CORBIN DEAD: Noted Officer Passes Away in New York Hospital," *The Washington Post (1877-1922)*, September 9, 1909, 1.

The exercise was named the Manassas Maneuvers because Union and Confederate troops had fought in that area forty-three years earlier at the First Battle of Manassas (1861). However, it was not just the same area that caused war planners to refer to the exercise as the Manassas Maneuvers. Maj. Gen. Corbin, Col. Wagner, and others concocted a scenario for the maneuvers eerily reminiscent of what had transpired in July 1861.[111]

According to a September 1904 edition of the *National Tribune* article entitled "War Dress Rehearsal: The Mimic Campaign on the Historic Fields of Manassas," details for the maneuver scenarios included stationing the one army on the Potomac River with the primary mission of guarding the Capital, while the opposing army operated in the Shenandoah Valley.[112]

Like the maneuvers conducted the previous two years, Col. Wagner again served as chief umpire, along with fifty assistants. Like the Fort Riley and Fall Maneuvers, tactical problems were planned and executed for the thousands of troops who partook in what the *Washington Times* called a "big battle cyclorama." National Guard and U.S. Army forces were divided into opposing armies…the Blues and Browns.[113]

Echoing back to that steamy summer in July 1861, several civilian on-lookers flocked to view the Manassas Maneuvers. Between ten and fifteen thousand spectators were anticipated, prompting one of the promoters of the maneuvers to issue an instructional pamphlet to address the number of inquiries he received about how to best watch the exercise. A grandstand was erected at a local railway so those paying a premium could watch the event.[114] Period

---

[111] McKenna, "The Forgotten Reform," 19-20.
[112] "War's Dress Rehearsal." The Mimic Campaign on the Historic Fields of Manassas, *National Tribune* (Washington, DC), September 15, 1904, 2. *Chronicling America: Historic American Newspapers*. Lib. of Congress.
[113] "Things You Will Want to Know About Big Army Maneuvers," *Washington Times* (Washington, DC), Sep. 4 1904, 7. *Chronicling America: Historic American Newspapers*. Lib. of Congress.
[114] Tish Como, "Effects of the 1904 Army Maneuvers on the Greater Manassas Community," *Prince William Reliquary* 9, No. 1 (2010): 2-5.

photographs of the grandstand depict men and women adorned in their "Sunday best" seated on bleachers holding umbrellas to keep the sun off their heads.

The closest comparison to this public allowance to view the Manassas Maneuvers would be an air show where hundreds of civilian citizens can see their hard-earned tax dollars at work as the U.S. Air Force shows off its latest and most outstanding examples of air power. Like today's modern air shows, one could imagine food and beverage vendors at the Manassas Maneuvers selling their wares to those enjoying the spectacle.

Unlike the previous two annual maneuver exercises, new rules crafted by the Army's general staff governed the Manassas Maneuvers. Rather than observing rear-guard flanking attacks, river crossings, and assaults on outposts, two large-scale movements of division-sized forces, divided into two engagements, were the order of the day. Approximately 30,000 soldiers participated, or about half of the entire strength of the U.S. Army in 1904.[115]

The week-long maneuvers commenced on September 6, 1904, with Problem No. 1, which involved a throwback to when Union troops, led by Gen. Irvin McDowell, advanced toward Confederate troops to protect Washington in July 1861. However, history did not quite repeat itself this time as the Blue Army, under the command of Ulysses S. Grant's eldest son, Maj. Gen. Frederick Dent Grant marched westward towards the Brown Army stationed in the Shenandoah Valley.[116]

As Problem No. 1 began on September 5, 1904, Maj. Gen. Grant's forward division (Blue) was located at Manassas, Virginia, while simulated (fictitious) reinforcements were a day away at Fairfax Courthouse, Virginia. Gen. J. Franklin Bell's advance division (Brown) was located at Thoroughfare Gap, where an imaginary division of reinforcements was two days away

[115] "War's Dress Rehearsal," 2.
[116] "Things You Will Want to Know About Big Army Maneuvers," *Washington Times*, 7.

at Front Royal. Both commanders were notified of their "enemy's" situation. Both opposing commanders were free to employ unlimited initiative in tactical situations.[117]

Per the scenario, Maj. Gen. Grant's Blue Army immediately struck Gen. Bell's Brown Army on September 6, pushing them back through the Thoroughfare Gap before Gen. Bell could muster his imaginary reinforcements. Gen. Bell's task was maintaining a blocking position against Maj. Gen. Grant's reinforced Blue Army for two days. For this objective, Gen. Bell elected to establish a five-mile-long defensive line that bisected the maneuver zone.[118]

On the morning of September 7, Maj. Gen. Grant attacked the Brown Army's left flank but "lost" five companies. Pressured by the forty-eight-hour time constraint, the Blue Army shifted their forces and attacked the Brown's left flank with noticeable success. Nevertheless, Gen. Bell was able to reposition his right flank and was able to block the Thoroughfare Gap, thus ending Problem No. 1.[119]

Problem No. 2 began on September 8 and ended the next day. It entailed the Brown Army advancing towards the Blue Army's position at early daylight, effectively cutting their line in two and forcing a retreat back to their base of operations.[120] Tasked with defending the Stone Bridge against Bell's reinforced Brown Army, Grant's Blue Army remained in a blocking position as the exercise ended. On September 10, exercise participants staged a grand review at Wellington Station, ending the Manassas Maneuvers.[121]

Several lessons were learned during the Manassas Maneuvers, and some innovative practices informed the decisions of those in charge regarding how the next iteration of military

---

[117] "The Problem of the Movement of the "Two Armies," *Manassas Journal*, September 5, 1904. *Prince William County Historical Newspapers,* 2.; McKenna, "The Forgotten Reform," 19.
[118] O'Donnell, *At Manassas*, 5.
[119] Ibid., 6.
[120] "War Dress Rehearsal," *National Tribune*, 2.
[121] O'Donnell, *At Manassas*, 6.

readiness exercises would be developed and executed. One new twist for the U.S. Army involved the first-ever employment of an "auto-telegraph car," which allowed Signal Corps troops to string telegraph wire faster than sending men out on foot to do this laborious task.[122] Additionally, including internal combustion engine vehicles would become a familiar addition to future U.S. military exercises.

According to the rules set out by the team of umpires, determining a "winner" during the maneuvers was not of primary concern; instead, a determination was made regarding which side properly executed troop positions and movements and solved tactical problems without pre-coordination. This caught Col. Wagner's and his umpires' attention as the previous two maneuvers consisted of pre-staged forces, leaving little opportunity for commanders to apply critical thinking to the scenarios provided.[123]

Unfortunately, the scope and scale of the Manassas Maneuvers placed unreasonable demands on the umpires to facilitate adequate coverage of all the activities that transpired. Quite frankly, the amount of troops and Maj. Gen. Corbin's overemphasis on initiative chafed certain high-ranking officers adhering to the doctrine that unrestrained initiative held no place in actual combat.[124] As will be explored in later chapters, this resistance by officers to individual initiative in decision-making marked the genesis for centralized command during readiness maneuvers.

One of those officers, Brig. Gen. Tasker H. Bliss questioned whether these maneuver exercises were beneficial. Brig. Gen. Bliss argued that by providing advance publications of exercise orders to battlefield commanders, such as had been done during the Manassas Maneuvers, commanders would be inclined to establish semi-permanent camps, affording U.S.

---

[122] "Things You Will Want to Know About Big Army Maneuvers," *Washington Times*, 7.
[123] Report submitted by Chief of Staff Lt. Col. John G.D. Knight to the Adjutant-General, 18 August 1904.
[124] Brig. Gen. Tasker H. Bliss, Memorandum on Second Maneuver Problem (September 8-9, 1904) at Manassas, 5 December 1904, 5-10, Doc. No. 991366, Records Group 94.

forces little more in the way of readiness training than what they were already receiving at their permanent stations. Instead, the General suggested mobilizing two opposing forces at a significant distance from one another and then having one force repulse the other to capture some tangible objective.[125]

While it may be argued that this was precisely what had transpired during the 1904 Manassas Maneuvers, it must be remembered that those maneuvers were planned more as a public spectacle to help northern and southern troops overcome their sectional animosities than as a means to effectively determine whether U.S. Army troops were ready for foreign-based conflict. Moreover, certain congressmen questioned whether American taxpayers had received an adequate return on their investment regarding the Manassas Maneuvers, and, as a result, funds were withheld for the 1905 maneuvers.[126]

At the end of 1905, Secretary of War and future U.S. President William Howard Taft pushed for a resumption of annual maneuver exercises for both National Guard and Regular Army troops, asserting in his annual report to the War Department that the "combined maneuvers of the Army and Militia…were very successful and of great value to the troops engaged."[127] How he could know whether or not they were of great value to the troops involved remains a mystery. As a civilian politician, Secretary Taft likely measured success by the amount of spectators present to watch the big show. Nevertheless, Congress appropriated $700,000 the following summer for more maneuver exercises.[128]

---

[125] U.S. War Department, *Reports on Camps of Instruction*, 1910, III-1: 6-7.
[126] U.S. Congress, Senate, *Hearings Before the Committee on Military Affairs of the Senate on the Bill Making Appropriation for the Support of the Army for the Fiscal Year Ending June 30, 1906*, 23 January 1905, 15.
[127] *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1905.* Vol. 1., 31.
[128] McKenna, "The Forgotten Reform," 23.

Over the next few years, maneuver (readiness) exercises were carried out in a similar scope and scale to those executed previously. The numbers of National Guard, Regular Army, and Militia forces varied. However, the conceptual plan still involved a camp of instruction methodology, meaning units would confine their maneuvers to established outposts or camps. However, this would all change when Francisco Madero was elected Mexico's President in 1911, prompting U.S. President Taft to deploy 30,000 U.S. troops to the border.[129]

The simmering turmoil along the Mexican border was precisely the impetus Brig. Gen. Bliss had been awaiting to persuade the War Department's "top brass" to consider a reappraisal of how U.S. readiness exercises were conducted. Conceived as "maneuver campaigns," the new series of readiness exercises would involve the defense by one force of a large site against an assault by the opposing force. The maneuver campaigns would occur as unscheduled iterations of an evolving scenario from the first day to the end of the exercises.[130] The first such maneuver campaign occurred in August 1912 and was commanded by Brig. Gen. Bliss. It was named the Connecticut Maneuver Campaign.

The Connecticut Maneuver Campaign exemplified the most robust and complex readiness exercise ever conducted to that time in U.S. military history. Brig. Gen. Bliss selected August 10-20, 1912, as the dates for the exercises and chose the regions of Danbury, Bridgeport, Seymour, and New Haven in the State of Connecticut for the exercise area. Over 17,000 Regular and Organized Militia forces took part in the maneuvers, most comprised of militia sent from New York, New Jersey, Massachusetts, Connecticut, Maine, and Vermont. The 5th U.S.

[129] Matt M. Matthews, *The US Army on the Mexican Border: A Historical Perspective* (Fort Leavenworth, KS.: Combat Studies Institute Press, 1959), 60.
[130] McKenna, "The Forgotten Reform," 21.

Infantry, 10th U.S. Cavalry, 3rd U.S. Field Artillery, 1st Battalion of Engineers, Signal Corps, an Aviation Section, and a Field Hospital comprised the 2,324 Regular Army forces.[131]

Once the various troops arrived via railway to the maneuver location, they were divided into Red and Blue (as opposed to Brown and Blue) divisions, respectively, and directed to establish a rudimentary field camp, approximating actual battlefield conditions. Tactical lines of communication were under the complete control of corresponding division commanders through Signal Corps functions, and the aviation section was in charge of all aerial scouting and reconnaissance.[132]

Before the start of the maneuvers, Brig. Gen. Bliss prepared and submitted a letter to the War Department on June 14, 1912, outlining the general instructions for conducting the maneuver campaigns. Essentially, each maneuver campaign was designed to continuously evolve a single general situation from the first to the final day of the ten-day exercise. Moreover, minimal leeway was granted to individual soldiers to "think on their feet" during tactical problems. All maneuvering forces were always under strict and complete control of their division commander, who exercised this control in person or through his chief umpire.[133] Rules of Engagement (ROEs) were also provided, which was new to the U.S. Army's readiness exercise construct and continues to be employed in present-day readiness exercises.

For example, the ROEs stipulated that except for emergencies, dismounted infantry were to be marched at most five miles during their initial march. Additionally, portions of their packs were carried on wagons so the soldiers did not have to bear what to some was no doubt considered too heavy a burden. Soldiers only carried their full pack on the way to the maneuvers

[131] Brig. Gen. Tasker H. Bliss, *Report of Brigadier General Tasker H. Bliss, U.S. Army, Commander of Maneuvers and Chief Umpire, Connecticut Maneuver Campaign*, August 10-20, 1912, 4-7.
[132] Ibid., 16.
[133] Bliss, *Report of Brigadier General Tasker H. Bliss,* 2.

or on the way home. For Regular Army troops, fuel and forage, as well as authorized livestock to accompany them, was provided by the Quartermaster's Department. While these accommodations emphasized comfort for the participants, they likely did little to prepare them for what they would face in France a few years later.[134]

A color designation system was devised to visually identify the various exercise controllers in what could only be described as a marked improvement over the earlier U.S. maneuvers. This represented yet another practice that continues to be used today. Command staff, including the Chief Umpire, wore a broad white band around their hat. Provost Marshals wore a broad orange band, and members of the Red Division wore a broad red band, while Blue Division players wore a broad blue band. Those present to observe wore a broad white armband on the right arm above the elbow, and newspaper reporters wore a broad red band in the exact location.[135]

Currently, at least in the U.S. Air Force, readiness exercise controllers wear either red or black colored vests to signify their role during an exercise as either an inspector (umpire) or controller. Safety observers wear green vests, and commanders and observers wear blue vests. Exercise players (participants) wear their regular duty uniform to avoid confusion. This practice has successfully eliminated misperceptions during exercise play and clarified roles. It traces its genesis back to the Connecticut Maneuver Campaign of 1912.

In keeping with the established maneuver methodology, all infantry troops during the Connecticut Maneuver Campaign were allowed blank ammunition by the Chief Ordnance Officer, Eastern Division, for their shoulder weapons. At that time, the issued shoulder weapon

[134] Ibid., 3, 11.
[135] Ibid., 18-19.

included the M1903 Springfield rifle. Field artillery crews were given blank cartridge cases for their 3-inch field guns and blank .38 caliber rounds for sidearms.[136]

In a novel approach to these maneuvers, a narrative (scripted scenario) was drafted to give participants a measure of realism. The imaginary scenario entailed a European power (Red) unexpectedly precipitating a war with the United States (Blue) on June 25, 1912, defeating its principal fleet and blockading the remainder in Hampton Roads, Virginia, on June 30.[137] On June 25, the United States ordered the concentration of the Regular Army to war strength, the Organized Militia was called into service, and the President called for 500,000 volunteers. On July 20, the Red force began landing an expedition of 100,000 men near Buford, Massachusetts, rapidly overcoming a weak element of the Blue forces.[138]

This scripted scenario for the maneuvers indicated that before August 10, the Red and Blue forces were assumed to have already been engaged, as outlined in the narrative summary of (imaginary) events. The *Buffalo News* reported the overarching theme of the maneuver exercise entailed the Blues defending a city from an attack from a foreign army (Reds) that had been steadily advancing from Boston for an unspecified period.[139]

Once all the participants arrived at their initial bivouac (temporary camps) sites, they actively participated in the campaign. The period from August 10 to 15 was designated as the *instructional* period of the campaign and entailed commanding generals directing the schedule of movements furnished to them by the Chief Umpire. The instructional period was designed to familiarize the troops in camp with extended order drills, combat deployments, and local

---

[136] Letter from Chief of Staff Colonel WM. A. Mann to Adjutant-General, July 30, 1912, GO No. 25, Headquarters Eastern Division, Governors Island, New York in *Report of Brigadier General Tasker H. Bliss, U.S. Army, Commander of Maneuvers and Chief Umpire, Connecticut Maneuver Campaign*, August 10-20, 1912.
[137] "REDS AND BLUES TO WAGE WAR," *The Yonkers Statesman*, August 7, 1912. *Newspapers.com*
[138] Bliss, *Report of Brigadier General Tasker H. Bliss*, 44-45.
[139] "STAGE IS NOW SET: WAR GAME IS BEGUN," *Buffalo News*, August 10, 1912, *Newspapers.com.*

problems in minor infantry tactics. Umpires were over these programs and observed the overall quality of the instruction.[140]

Following the instructional period, the tactical portion of the maneuvers commenced. Interestingly, no entrenchments, gun pits, or obstacles were permitted to be constructed. Umpires assumed the troops to "already" be entrenched, gun pits available, etc., so long as the proper orders for executing such tasks were issued through the appropriate command lines. During modern-day readiness exercises, this is called a *simulation* and is usually reserved for those tasks that could not reasonably be accomplished due to financial constraints or placing undue stress on personnel. However, when an army is prepping for actual combat, simulating tasks that will likely be required during a war is detrimental to combat effectiveness and, therefore, should never be simulated. This can cause a negative training aspect for all involved, and most certainly, it did for the troops that partook in the Connecticut Maneuver Campaign.[141]

Regarding the actual firing of weapons during the exercise, field artillery units were directed to fire only one blank (ranging) round per deployed battery. The umpire observing this action would then point out where the shell was supposed to have landed. Once the umpire determined the "accuracy" of shell placement, batteries would fire single shots at 30-second intervals, demonstrating effective fire discipline. Moreover, the firing of machine guns was simulated by having machine gun crews fire five pistol shots into the air in rapid succession. Why no one in charge thought to employ "dummy" targets to give artillery batteries and machine gun crews tangible objects to aim at is anyone's guess.[142] Even modern-day war reenactors aim their blank adapted weapons at opponents, reinforcing marksmanship fundamentals. However,

[140] Bliss, *Report of Brigadier General Tasker H. Bliss,* 24.
[141] Ibid., 27.
[142] Ibid., 28.

this was not done; therefore, it displayed a negative training effect and robbed exercise participants of the opportunity of training as they would fight.

Regarding actual "contact" between opposing forces, 100 yards was the official halt distance. Per the pre-determined ROEs, should a force succeed in approaching within 100 yards of the "enemy" force without being detected, captures could be effected by giving the command, "Halt, surrender!" The umpire would then consider the opposing forces' numerical strength, the ground's nature, and other circumstances and choose whether actual capture was possible. Troops captured were then held by their captors until the termination of that day's maneuvers.[143]

As air-powered flight debuted with the Wright Brothers in 1903, the military was anxious to test the new system. During the Connecticut Maneuver Campaign, the aviation section was tasked with aerial scouting and reconnaissance, which would be utilized significantly during the Great War. To replicate as much as possible actual wartime conditions, both Red and Blue force pilots were instructed to ascend not less than 2,000 feet above the ground before beginning their scouting and reconnaissance and continue above that altitude until it became necessary to make a landing. For pilots who had the information as to their elevation, each airplane was supplied with a recording barograph (a device that records the barometric pressure over time in graphical form).[144]

Because the U.S. Cavalry was an integral component of the U.S. Army then, cavalry attacks were also part of the maneuvers. Mounted cavalry receiving a charge at a halt were declared defeated, as were cavalry units deploying or struck in the flank, even if numerically superior. The defeated force was required to retire 300 yards before the victor was allowed to

[143] Ibid.
[144] "Up-To-Date Warfare to be Expounded in "Connecticut Maneuver Campaign,"" *The Post-Star*, August 8, 1912. *Newspapers.com.*

pursue. If cavalry should succeed in reaching opposing artillery batteries, the victor was determined based on the ability of the attacking cavalry to either disable or carry off the pieces.[145]

One factor that deserves mention regarding the maneuvers was the impact such a large-scale military operation had on the local population. During the Manassas Maneuvers in 1904, exercise participants caused significant damage to civilian property. The *Washington Times* reported, "Every farmer is at work counting up his losses and putting a big valuation on the crops that were destroyed…The storekeepers are ordering fresh stocks of canned goods to replenish their exhausted supply, and all the county is trying to estimate how much it lost and how much it gained by having the soldiers of these United States cavort over its land."[146]

The War Department was more sensitive to the potential damage the Connecticut maneuvers might cause to the surrounding countryside and laid out specific rules to prevent such damage. No one was permitted to fire near houses, barns, or haystacks when it concerned local civilians. Private property, including orchards and cultivated fields, was strictly off-limits for camps or bivouacs without the owner's consent. Marching troops not otherwise engaged in tactical movements were confined to paved roads. Officers and noncommissioned officers (NCOs) were held responsible for wanton damage committed in their presence.[147]

Even the forests, lakes, streams, and ponds were considered. Troops could only bathe, swim, wash their clothes, or water their animals under orders from Brig. Gen. Bliss or a Provost

[145] Bliss, *Report of Brigadier General Tasker H. Bliss,* 41.
[146] "Manassas Settles Down To Quiet Rural Life," *The Washington Times*, September 13, 1904, 12. *Chronicling America: Historic American Newspapers*. Lib. of Congress.
[147] Bliss, *Report of Brigadier General Tasker H. Bliss,* 31.

Marshal. Four men carefully placed and monitored all campfires, and organizational commanders were responsible for ensuring all campfires were extinguished correctly.[148]

The Connecticut Maneuver Campaign ended on August 18. Due to inclement weather, many troops were delayed getting to their entraining points on time. However, all were eventually returned to their base of operations. In Part III of his report, Brig. Gen. Bliss provided his comments and recommendations, known today as an after-action report (AAR) or Post Incident Exercise Summary (PIES).

Brig. Gen. Bliss began his summary by critiquing how troops were subsisted (fed) during the exercise. Upon a recommendation made by the Chief of Commissary, Eastern Division, troops participating in the Connecticut Maneuver Campaign were to be subsisted with a garrison ration. Individual soldiers purchased garrison rations, which differed from field (combat) rations. The problem with this type of rationing system during the Connecticut Maneuver Campaign involved coordinating commissary store employees, and the choice of food was at the discretion of the inexperienced officers.

Brig. Gen. Bliss stated, "This method of rationing troops in the field is far from satisfactory."[149] The haversack ration that was standard at that time proved inadequate to sustain soldiers for long periods. He recommended that a more suitable field ration be made available for the troops.[150] While some may perceive this as a negative outcome of the Connecticut Maneuver Campaign, these observations pushed leadership to effect positive changes for future exercises.

The next area of his summary concerned methods of transportation. Some of his observations included that draft animals were either insufficient in quantity or of poor quality.

---

[148] Ibid.
[149] Ibid., 173.
[150] Ibid., 175.

While some organizations used automobile trucks, it was noted that "these were in many cases ponderous and entirely unsuited for the purpose."[151] He also mentioned that many wagons were overloaded and thus unable to get the troops some of their required gear, and he recommended the standardization of field transportation for the success of any future maneuvers.

Brig. Gen. Bliss noted that disseminating special instructions (SPINS) well before the maneuvers was another area that needed improvement. He recommended detailed instructions be sent to officers of militia units, staff umpires, and provost marshals six months before the commencement of an exercise.[152] This represents another area practiced today during military readiness exercises, as detailed SPINS are prepared and published well before the scheduled exercises to ensure the exercise is executed as seamlessly as possible.

Regarding the tactical performance of the soldiers involved in the exercise, little was mentioned other than march discipline not being up to par, fire discipline being poor, men not taking cover, and the principles of combat not being understood.[153] These shortcomings, while undoubtedly significant, had been identified and observed during previous readiness exercises, so this was nothing new. Astonishingly, no reforms were introduced that might have improved the readiness posture of the U.S. Army. Sadly, this would come to light as the AEF made its way to Europe in 1917 and engaged the Germans in battle.

[151] Ibid., 179.
[152] Ibid., 180.
[153] Ibid., 185.

Chapter 3

Analysis of Prewar Readiness Exercises

"No plan survives first contact with the enemy."[154]
~ Helmuth Von Moltke

The individual American soldier's bravery, conduct, and performance during the last six months of the Great War were commendable and exemplary. Despite inadequate preparation, these men answered their nation's call. They garnered the respect of the German Army, who, according to Gen. Pershing, "was without doubt more nearly perfect and powerful than any that had ever before existed."[155] Much of this respect bequeathed by the Kaiser's troops can be attributed to Gen. Pershing and his unyielding commitment to train an effective American fighting force to "make up for the defects of training at home."[156]

Those defects originated in the application the U.S. Army relied upon to prepare its forces for war. That application was repeatedly used in planning and executing prewar readiness maneuvers. Using the DOT construct, the following analysis will address the overall ineffectiveness of prewar readiness exercise preparation.

The types of prewar readiness exercises designed and executed by the U.S. Army revealed gross inadequacies in the overall combat effectiveness (fighting power) as American troops, under the command of Gen. Pershing, first arrived in France in 1917. Indeed, doctrine, or how a nation wages war, remains the paramount catalyst for combat effectiveness. According to Gen. Pershing, the only training, except ordinary routine, any U.S. forces received during the year before 1917 was given to the troops then in Mexico and those stationed along the border.[157]

---

[154] Daniel J. Hughes, ed. and trans., *Moltke on the Art of War: Selected Writings* (New York: Ballantine Books, 2009), Loc. 61, Kindle.
[155] John J. Pershing, *My Experiences in the World War*, 2 vols (New York: Frederick A. Stokes, 1931), 15.
[156] Ibid., 137.
[157] Ibid., 18.

Of course, Gen. Pershing primarily referred to the Punitive Expedition of 1916, whereby U.S. troops engaged Pancho Villa's banditos in response to their incursion across the border into Columbus, New Mexico, on March 9, 1916.

A week later, a force of more than fourteen thousand U.S. regular army troops under the command of Gen. Pershing operated in northern Mexico to chase down Villa and his men with the sole intent of capturing him and ending hostilities.[158] Future World War II General George S. Patton Jr. was part of Pershing's expedition and wrote extensively in his diary about his experience during that campaign, which functioned as a maneuver exercise just before America entered the Great War.

In one of his diary entries, dated April 9, 1916, Patton mentioned using airplanes to conduct aerial reconnaissance to ascertain Pancho Villa's whereabouts. On April 11, he noted a firefight between the 6th U.S. Infantry and some of Villa's men.[159] One could perceive that the "training" received during the Punitive Expedition was essentially a "baptism by fire" for the American infantry. But were the Punitive Expedition and the stateside maneuver exercises sufficient enough to prepare doughboys for the attritional style of warfare epitomized in the trenches of France?

Before the Punitive Expedition, the maneuver exercises conducted at Fort Riley, West Point, Manassas, and Connecticut symbolized the type of limited warfare so ingrained into U.S. military doctrine. A review of the details of the earlier maneuvers demonstrates that more attention was placed upon individual marksmanship and open maneuvers versus using artillery or

[158] Arthur S. Link, ed., *The Papers of Woodrow Wilson*, vol. 36 (Princeton University Press, 1981), 287.
[159] George S. Patton Papers: Diaries, 1910-1945; Annotated transcripts; 1916, War Diaries of George S. Patton, Library of Congress, 15-16.

the machine gun as a force multiplier for advancing infantry. It must be remembered that this was part and parcel of how the U.S. military envisioned battle and consequently influenced its martial doctrine.

Indeed, leading up to the Great War, U.S. Army officers schooled at the West Point Military Academy in New York and Fort Leavenworth, Kansas, were still instructed in tactical precepts proven successful by generals who fought the American Civil War. In digesting strategic doctrine from Ulysses S. Grant during his Wilderness, Spotsylvania, Cold Harbor, and Petersburg campaigns, American Army officers entered the twentieth century convinced that the superior weight of military force that the United States could bring to bear against nearly any rival would guarantee success regardless of other factors.[160] This martial doctrine was conceptualized during the latter part of the Civil War and labeled annihilation by historian Russell F. Weigley.[161]

What American officers and infantry instructors either failed to realize or eschewed the need to modernize with the times was that the war they soon encountered in France was a far cry from fighting human-centered battles with small, mobile units in the American Southwest or the Philippines. During those conflicts, as well as the maneuver exercises conducted before 1917, the emphasis was on the ascendency of infantry.[162]

A cursory review of AARs from the Fort Riley, Fall, Manassas, and Connecticut Maneuvers reveals that advancing infantry across the open ground was the premier emphasis in nearly every iteration of those exercises. Consequently, the umpires who evaluated those

---

[160] Peter Paret, ed,. *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* (Princeton, New Jersey: Princeton University Press, 1986), 440.
[161] Russel F. Weigley, *The American Way of War: A History of United States Military Strategy and* Policy (Bloomington: Indiana University Press, 1973),142.
[162] Mark E. Grotelueschen, *The AEF Way of War: The American Army and Combat in World War I* (New York: Cambridge University Press, 2007), 14.

maneuvers reasoned that if infantry performed according to the entrenched doctrine of the times, they would be successful and ready to face the Germans. However, during those same maneuvers, the coordination of artillery barrages ahead of advancing infantry or using machine guns to augment infantry attacks was nonexistent. This was disconcerting because this was precisely the type of warfare on the Western Front. There are a few reasons that help explain this doctrinal myopia.

First, the supremacy of infantry had been much written about by those generally perceived to be "experts" in their field. During the Battle of Spotsylvania (1864), an innovative officer named Col. Emory Upton, with Gen. Grant's approval, departed from the accepted linear infantry attack doctrine and led a groundbreaking columnar attack into the Confederate-controlled Mule Shoe on May 10, 1864. Confederate reinforcements eventually repulsed the attack, but not before Col. Upton's infantry assault had rendered Confederate cannon batteries ineffective.[163] Two years later, Col. Upton authored his manual on infantry tactics and submitted them to the Secretary of War on January 13, 1866.[164]

On August 1, 1867, the U.S. Army officially adopted Upton's infantry tactics. It was a marked upgrade over the previous infantry manuals, essentially English translations of early nineteenth-century Napoleonic manuals. Much to the delight of future rising U.S. Army infantry commanders, Col. Upton was hailed as an expert primarily because he advocated the importance of infantry. In his *Infantry Tactics Double and Single Rank. Adapted to American Topography and Improved Fire-Arms* (1875), Upton foreshadowed the importance of massed riflemen by stating, "While attacks in masses have been abandoned, a preponderance of men and of fire, in

[163] Isaac O. Best, *History of the 121st New York State Infantry* (Chicago: J.H. Smith, 1921), 126-129.
[164] Peter S. Michie, *The Life and Letters of Emory Upton: Colonel of the Fourth Regiment of Artillery, and Brevet Major-General, U.S. Army* (New York: D. Appleton and Company, 1885), 40.

the future as in the past, will have to be relied upon to carry positions which they are beyond the power of skirmishers."[165]

Second, in 1905, the seminal *Field Service Regulations* (*FSR*) was published and detailed how the U.S. Army was to be organized and fight. These *FSR* were consecutively published, eventually becoming what are today known as Army Field Manuals (*FM*s). These *FSR* were compiled by some of the most experienced and respected U.S. Army officers at the time and constituted official Army policy on combat.[166] Naturally, the prewar readiness maneuvers adhered strictly to *FSR* "gospel."

The 1914 *FSR* became the bedrock of official American combat doctrine throughout the entire Great War period. However, right before America entered the war, the subject matter of the *FSR* relied more upon the French influence on warfare, as taught at the West Point Military Academy, than on existing or nascent technological innovations that had occurred in weapons systems. This was mainly due to the teachings and influence of Dennis Hart Mahan, a graduate of and professor at West Point for forty-one years.[167]

Before Professor Mahan was appointed an instructor at West Point, the principal emphasis of instruction was on engineering, mathematics, and philosophy. This was so vital to the educational philosophy of West Point that in 1830, Mahan was hired by West Point Superintendent Sylvanus Thayer to oversee the engineering department of the academy.[168]

---

[165] Bvt. Maj.-Gen. Emory Upton, *Infantry Tactics Double and Single Rank. Adapted to American Topography and Improved Fire-Arms* (New York: D. Appleton and Company, 1875), viii.
[166] Grotelueschen, *The AEF Way of War*, 14.
[167] F.A. Mahan, "Professor Dennis Hart Mahan," *Professional Memoirs, Corps of Engineers, United States Army, and Engineer Department at Large* 9, No. 43 (1917): 72.
[168] Michael A. Bonura, "French Lessons at West Point: How Napoleonic strategy and tactics influenced generations of American officers," *MHQ: The Quarterly Journal of Military History* 27, No. 1 (2014): 103.

Contrary to popular belief, the antebellum curriculum at West Point did not chiefly consist of infantry tactics. In fact, of the total number of classroom instructional hours for a four-year program, only 29 percent was devoted to military tactics. Mathematics, science, and engineering dominated the remainder of the curricula. How, then, did America's Civil War generals learn infantry tactics? After all, more than three-quarters of all West Point graduates who fought in the Civil War graduated between 1833 and 1861.[169]

According to Mahan's son, his father had personally known and instructed nearly all of the noteworthy generals of the American Civil War.[170] During his tenure at West Point, Mahan completely overhauled his engineering course. He accomplished this by creating a unique synthesis that mixed French doctrines with the realities of warfare in North America. The result was a core curriculum emphasizing the importance of the infantry offensive attacking the enemy's position with the bayonet.[171]

It was, therefore, no surprise that the 1914 *FSR* contained principles such as "fire superiority ensures success" and the importance of amassing "all troops" on the battlefield. Indeed, these all echoed back to the nineteenth-century French tactics taught by Mahan and used extensively by Generals Grant and Lee to annihilate the enemy.[172]

Not surprisingly, American troops sent to France were expected to achieve "fire superiority" by bringing to bear as many riflemen as possible to deliver a veritable sheet of hostile fire. While the M1903 Springfield was undoubtedly a superb shoulder weapon, the Army and its commanders emphasized its long-range accuracy more than its fire rate. At its best, the

---

[169] James L. Morrison Jr., "Educating the Civil War Generals: West Point, 1833-1861," *Military Affairs* 38, No. 3 (1974): 108.
[170] Mahan, "Professor Dennis Hart Mahan," 73.
[171] Bonura, "French Lessons at West Point," 103.
[172] U.S. War Department, Office of the Chief of Staff, *Field Service Regulations United States Army, 1914, Corrected to July 1, 1914* (Washington, D.C.: GPO, 1914), 67. [hereinafter referred to as *FSR*, 1914, Corrected to July 1, 1914]

Springfield was still a far cry from the faster-firing automatic rifles and light machine guns that had become predominant during the Great War.[173] This policy, of course, made the rifleman the decisive element of battle and rested the focus squarely on manpower and single-shot accuracy rather than on overwhelming firepower.[174]

So assured of the doctrinal superiority of individual riflemen with fixed bayonets against a European foe, the 1914 *FSR* boasted, "The infantry is the principal and most important arm, which is charged with the main work on the field of battle and decides the final issue of combat. The role of the infantry, whether offensive or defensive, is the role of the entire force, and the utilization of that arm gives the entire battle its character. The success of the infantry is essential to the success of the combined arms…if the enemy is so near that a charge is practicable, recourse to the bayonet must be unhesitating."[175]

In addition to the *FSR*, *Infantry Journal's* publication began circulation in 1904. The United States Infantry Association published the journal, a compilation of articles written by active-duty infantry officers. In one edition of the *Infantry Journal*, 2nd Lieutenant Roger H. Williams of the 7th Infantry wrote an article entitled "Bayonet Combat Instruction," again underscoring the importance of infantry related to U.S. Army combat doctrine.[176]

The problem with this was that the Great War was an artillery and machine gun war. Therefore, ordering soldiers "over the top" with fixed bayonets while charging out into a murderous wall of machine gun fire proved suicidal, as the first day of the Somme Offensive

[173] Grotelueschen, *The AEF Way of War*, 15.
[174] *FSR*, 1914, Corrected to July 1, 1914, 68, 72.
[175] Ibid., 68, 80.
[176] Lieutenant Roger H. Williams, "Bayonet Combat Instruction," *Infantry Journal* (11 July 1914 to June 1915), 390.

(1916) revealed. The Germans were so effective with their Maxim machine guns that they could mow down two entire brigades of the British 8th Division in the first hour of the battle![177]

Moreover, any hope that official Army guidance would flex according to the situation unfolding in Europe was chimerical. Official policy guidance, such as the *FSR* and the *Infantry Journal*, revealed no significant developments regarding infantry tactics and the employment of machine guns and artillery, as was evidenced during prewar maneuvers.[178]

Third, the man tasked with training and leading the AEF against the Germans initially proved stubborn when subsuming the role of infantry to artillery and machine guns. Gen. Pershing had seen first-hand the value of what a skilled rifleman could do against enemy forces. After all, he fought the Apache on the Western frontier, the Spanish in the Spanish-American War, and the Moro in the Philippines and commanded the Punitive Expedition. According to one biographer, Pershing's "love affair with the rifle continued through the end of World War I, and it took a long time to convince Pershing that new artillery doctrine and massed machine guns had become a more important factor in war than well-trained marksmen."[179]

Gen. Pershing firmly believed that the only way to gain initiative against the Germans was to drive them from the trenches and engage them in open combat. "It is here," Pershing declared, "that the infantryman with his rifle… determines the issue."[180] Criticizing his Allies, he stated, "The French infantryman, as has been already stated, did not rely upon his rifle and made little use of its great power. Our mission requires an aggressive offensive based on self-reliant infantry."[181]

---

[177] John Ellis, *Eye-Deep In Hell: Trench Warfare in World War I* (New York: Pantheon Books, 1976), 93-94.
[178] Grotelueschen, *The AEF Way of War*, 23.
[179] Jim Lacey, *Pershing* (New York: Palgrave Macmillan, 2008), 10-14.
[180] Pershing, *My Experiences in the World War*, 20.
[181] Ibid., 553.

Even after arriving in France and seeing first-hand the effects of static warfare, Gen. Pershing was both chagrined and disgusted to see that British and French troops, who had been fighting the Germans since 1914, relied primarily on artillery barrages versus rifle and bayonet-armed infantry.[182] A shift, or some may term it a revolution, had occurred in the way of war, and the U.S. military establishment was slow in catching up.

Between the outbreak of war in 1914 and Wilson's declaration against Imperial Germany in April 1917, what infrequent training the Army did manage to execute adhered firmly to such traditional doctrine. As mentioned, readiness maneuver methodologies consisted primarily of close-order or extended-order drills across open ground, occasional cavalry movements, and marksmanship practice with blank adapted rifles. Surprisingly, training on the two weapons systems that came to dominate Great War combat, the machine gun and artillery, did not necessitate a shift in doctrine. Why was this?

Mark Grotelueschen argued this "doctrinal stasis resulted from an unwillingness to believe the Army would soon have to fight on such a scale or in such an environment, and an inability to devote the resources to preparing for possible operations in Europe while meeting other existing demands."[183] Those "other demands" no doubt referred to keeping America's border with Mexico intact.

Moreover, believing and teaching that the rifleman represented the apotheosis of all AEF attacks not only marginalized the impact of auxiliary weapons such as artillery, stokes mortars, and Lewis guns but also impeded the utilization of nascent technologies like tanks, chemical weapons, and aircraft. None of those weapons could be fully utilized in a doctrine that inflexibly

[182] Grotelueschen, *The AEF Way of War*, 31.
[183] Ibid., 24.

sought to preserve the traditional role and methods of the rifleman as described in what amounted to obsolescent regulations and journals.[184]

Therefore, America's doctrinal approach to readiness maneuvers in the years leading up to 1917 did not reflect the actualities of what the AEF experienced on the Western Front. Gen. Pershing laid most of the blame for this on the General Staff and its lack of organization. It must be remembered that the initial U.S. Army divisions were formed not necessarily to project combat power but as an administrative tool to facilitate efficient mobilization. Moreover, the U.S. infantry structure had not been revised since 1899.[185] Before the passage of the National Defense Act in 1920, the size of the U.S. Army was about 75,000 officers and enlisted soldiers. Still, not all of them partook in the prewar maneuvers, and not all were organized into divisions for rapid mobilization.[186]

Those who participated in maneuver exercises before the Great War were organized according to established U.S. Army policy. When Secretary of War Elihu Root established the General Staff in 1903, it was decided to enlarge army units from what had historically been the basic unit (regiment) to a division.[187] Patterned loosely off the European model of dividing soldiers into divisions, a typical U.S. Army division before the Great War was comprised of three infantry brigades, a cavalry regiment, an artillery brigade, an engineer battalion, a signal corps company, and four field hospitals…known more commonly as a triangular division.[188]

---

[184] Ibid., 35-36.
[185] Army War College, *A Modern Organization for the Regular Army and Its Use as a Model in Organizing Other Forces* (Washington, D.C.: GPO, 1916), 9.
[186] John B. Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades.* Army Lineage Series (Washington, DC: Government Printing Office, 1998), 29.
[187] Ibid., 24-25.
[188] U.S. War Department. *Field Service Regulations: United States Army, 1905, With Amendments to 1908* (Washington, D.C.: GPO, 1908), 12.

A single U.S. Army division during the Fort Riley maneuvers would have totaled around 10,000 soldiers. However, only half were organized as a single division during those maneuvers, which differed from a division-strength unit. It did not reveal how much mobilization efforts would be required to transport an entire division into actual combat.

While the reason behind involving only half the strength of an actual division during the Fort Riley maneuvers is not given in Major Dockweiler's report, one is left to wonder why the War Department neglected to involve as many Army and National Guard personnel as possible, which may have ensured standardized training across the service and provided leaders an accurate assessment of how long it took to mobilize the force.[189]

This was slightly rectified during the Manassas Maneuvers in 1904, as two divisions were mobilized and participated. However, subsequent maneuver exercises (Connecticut) involved single division-sized forces. Because by June 30, 1913, the Regular Army's total strength was about 80,000 men, the War Department could have organized a series of maneuver exercises involving all four infantry divisions to ascertain the effectiveness of mobilization and combined arms efforts. That was not to be the case, however, and from the Mexican border crisis of 1911 up to when the first American soldiers sailed for France in 1917, Army leaders and politicians quibbled over how U.S. Army and National Guard troops should be organized.[190]

In 1912, Secretary of War Henry L. Stimson directed the General Staff to develop a robust military policy to increase the organized citizen soldiers' peacetime strength and efficiency.[191] Not a novice by any means, Secretary Stimson served as Secretary of War under Presidents William H. Taft, Franklin D. Roosevelt, and Harry S. Truman. He was also Governor-

[189] Dockweiler, *Report on Maneuver Division*, 4.
[190] Wilson, *Maneuver and Firepower*, 29-30.
[191] U.S. War Department, *Report on the Organization of the Land Forces of the United States* (Washington, D.C.: GPO, 1912), 14.

General of the Philippines under Calvin Coolidge and Secretary of State under Herbert Hoover.[192]

Stimson's policy was realized in the Stimson Plan, which organized divisions and cavalry brigades for immediate employment as an expeditionary force. Additionally, Stimson's plan called for reorganizing the National Guard to supplement the Regular Army in times of war. As a result, sixteen divisions were created: three infantry, one cavalry, and twelve National Guard.[193] However, this organizational reformation was not exercised during the 1912 Connecticut Maneuvers.[194]

Additional tension along the Mexican border in 1916 provided the first real test for the new organizational structure and Army mobilization methods. On June 16, 1916, President Wilson federalized all National Guard units in response to a hostile raid across the border. However, this revealed injurious flaws in Stimson's plan. Some states' mobilization locations were inaccessible, supplies insufficient, and many Guard units were under-strength and poorly trained.[195]

For many veteran military leaders, particularly Gen. Pershing, this was unacceptable, and the War Department again returned to the "drawing board," eventually drafting the National Defense Act of 1916, which mandated that the U.S. Army be comprised of Regular Army, National Guard, and Reserves, thereby enlarging the force for sustained frontal attacks.[196] But how to organize this enlarged force still presented a problem. After all, the last thing American

[192] Papers of Henry Lewis Stimson. National Archives (NA).
[193] Wilson, *Maneuver and Firepower*, 31-32.
[194] Bliss, *Report of Brigadier General Tasker H. Bliss,* 6-7.
[195] Ibid., 36.
[196] Ibid., 37.

policymakers wanted was for AEF soldiers to bog down in the stalemate that had come to characterize Great War combat.

According to Richard W. Kedzior's *Evolution and Endurance: The U.S. Army Division in the Twentieth Century* (2000), advances in weapons technology, communication systems, and transportation methods significantly influenced division reorganization and redesign.[197] In response, the War Department reorganized the division design according to the historic tenets of modern warfare: mobility and firepower. Similar in precept to the European division model, the new "square" division design consisted of two infantry brigades of two regiments each, one field artillery brigade, an engineer regiment, a machine-gun battalion, a signal battalion, division supply and sanitary trains totaling about 28,000 men.[198]

However, as the Great War would soon reveal, sustainable firepower proved more important than mobility and maneuver, something that was not factored into prewar readiness exercises that still utilized outdated troop organization that more resembled Civil War formations than twentieth-century divisional structure. While the square division possessed tremendous firepower, it could not fully capitalize on its assets and was hampered by insufficient combat support personnel and equipment.[199]

To that end, the Adjutant General of the U.S. Army directed Colonel Chauncey B. Baker of the Quartermaster Corps to embark upon a six-week mission to Great Britain, France, and Belgium in the summer of 1917 for the primary purpose of observing training camps and various military establishments to essentially gain some insight as to how America's allies were doing it.

---

[197] Richard W. Kedzior, *Evolution and Endurance: The U.S. Army Division in the Twentieth Century* (Santa Monica, CA.: Rand, 2000), 3.
[198] John J. Pershing, *Final Report of General John J. Pershing, Commander-in-Chief American Expeditionary* Forces (Washington, DC: U.S. Government Printing Office, 1920), 5.; Russel F. Weigley, *History of the United States Army*, 1st ed. (New York: Macmillan Publishing, 1967), 386.
[199] Kedzior, *Evolution and Endurance*, 10-11.

Following the Baker Mission's (as it was called) return to Washington, Col. Baker submitted a 34-page report detailing everything from how divisions were organized to what types of weapons Allied armies were fielding.[200] Several recommendations were made.

One of the more critical recommendations made by the Baker Mission concerned the organization of the infantry. According to Col. Baker, the 1917 Tables of Organization did not "satisfactorily meet the demands of the present situation on the western battle front." Col. Baker asserted, "No one seems to be able to state authoritatively what the typical army, army corps, and even division should properly consist."[201]

Coordination between infantry and artillery also proved ineffective due to antiquated communication methods, which slowed prospects for successful offensive attacks. Much to the dismay of Gen. Pershing, the square division lacked coordination, was unwieldy, and was challenging to support logistically. Thus, it instigated a significant alteration to the existing divisional structure that would occur following the war.[202]

Frederick the Great once said, "War is not an affair of chance. A great deal of knowledge, study, and meditation is necessary to conduct it well."[203] One could argue that Frederick spoke of doctrine when he made this statement. A more contemporary author affirmed that "doctrine is the underlying basis of effective military training."[204]

While doctrine and organization are undoubtedly foundational to the successful prosecution of readiness maneuvers, as has been addressed, there is simply no substitute for

---

[200] Col. Baker to CoS, U.S. Army. Subj. Report. Baker Mission to England and France, July 26, 1917 in *United States Army in the World War, 1917-1919*: (hereinafter *USAWW*) *Organization of the American Expeditionary Force*, vol. 1 (Washington: Center of Military History, United States Army, 1948).
[201] Ibid., 74.
[202] Kedzior, *Evolution and Endurance*, 11.
[203] Frederick the Great, *Instructions for His Generals*, trans. General Thomas R. Phillips (Mineola: Dover Publications, 2005), Loc. 873. Kindle.
[204] James W. Rainey, "The Questionable Training of the AEF in World War I," *Parameters* 22, No. 1 (1992): 91.

impactful training. General Douglas MacArthur stated, “In no other profession are the penalties for employing untrained personnel so appalling or so irrevocable as in the military.”[205] Training is the fleshing out of the “knowledge, study, and meditation” that formulates doctrine. It is the litmus test that validates whether or not the doctrinal, organizational, and tactical theories formulated on paper will prove capable when the bullets start flying.

In the years leading up to the Great War, the peacetime maneuver or readiness exercise was the only mechanism for validating realistic combat training above and beyond the traditional basic training (boot camp). The prewar readiness exercises executed from 1902 until 1912 could hardly be expected to replicate combat's horror, confusion, conditions, and utter chaos.

Indeed, Helmuth Von Moltke said, “Peacetime maneuvers, even those on the largest scale, allow only a very incomplete picture of actual war…[the] handling of large army units is not to be learned in peacetime.”[206] While Moltke was no doubt correct, analysis reveals that although the Fort Riley, Fall, Manassas, and Connecticut exercises strove for realism, those maneuvers fell short of preparing soldiers for the Western Front. In many respects, it was as though they barely tried.

Since time immemorial, infantry soldiers have understood the concept of taking cover. While doctrine and tactics may not have emphasized this principle during the age of linear volley fire, the advent of rapid-firing weapons like the machine gun certainly *should* have convinced even a novice that taking defensive cover was paramount to preserving one’s life in modern battle.[207] And yet, this principle was surprisingly neglected during prewar readiness maneuvers.

---

[205] U.S. War Department, *Report of the Secretary of War to the President 1933* (Washington: GPO, 1933), 21.
[206] Helmuth Von Moltke, *Moltkes Militärische Werke*, vol. 4, teil 3: *Moltkes Kriegslehren: Die Schlacht* (1912), 173-4.
[207] Jeremy Black, *War and Technology* (Bloomington: Indiana University Press, 2013), 102.

In his report on the 1912 Connecticut Maneuvers, Brig. Gen. Bliss observed during the exercise that "men did not take cover…in combat, not enough use was made of cover."[208] Perhaps as a means of defending this egregious error in training, he noted that the principles of combat were not well understood, as the general idea of an infantry attack still tended towards the old normal attack.[209] In other words, nineteenth-century training tactics still permeated the U.S. Army.

This was not isolated only to the Connecticut Maneuvers. Col. Walter Fieldhouse, reporting on the Fall Maneuvers of 1903, noted that "some of the enlisted men exposed themselves unnecessarily to the enemy and unmasked their positions" or "sat calmly on rail fences eating apples while on the firing line."[210] Obviously, a sense of urgency and importance for why they were exercising was either ignored or not enforced by leadership. This may have been due to the absence of real bullets flying overhead. Col. C.A.P. Hatfield, one of the umpires during the 1908 Pine Camp of Instruction maneuvers, underscored this suggestion when he stated, "It is unfortunate that there is no known means of bringing home to our troops, and especially to our untrained militia, the necessity for seeking cover at all times, but thus far the only successful method is to be found in actual warfare when the flying bullets relentlessly seek out and destroy all those foolish enough to convert themselves into targets."[211]

Sadly, the results of such negligent maneuvers were revealed during the Great War. In a memorandum sent on May 18, 1918, from 1st Infantry Division commander Major General Robert L. Bullard to the Chief of Staff, Maj. Gen. Bullard wrote, "For the same number of troops

[208] Bliss, *Report of Brigadier General Tasker H. Bliss,* 184-5.
[209] Ibid.
[210] Fieldhouse, *Fall Maneuvers*, 47.
[211] U.S. War Department, *Camps of Instruction, 1908. Reports of Officers of the United States Army* (Washington, D.C.: GPO, 1909), 32.

engaged on our corps front, American losses are from two to four times as great as those of the French. There is but one conclusion: our men, either from ignorance or carelessness, are *not taking cover*.[212] (emphasis mine)

Enforcing cover as a basic combat principle was one of many areas needing improvement in executing prewar maneuvers. The weapons systems that necessitated the need to seek cover, the machine gun and artillery, were also neglected as topics of readiness training in the AEF despite the importance of training soldiers in what Moltke called the "mutual support of the arms."[213] The main reason for this was related to doctrine, but more specifically, it was due to the inflexibility of old-school officers who had been taught antiquated tactics and their tactical myopia when capitalizing on the defensive advantage.

If there was one thing that the Great War starkly revealed, it was the ascendency of the defensive over the infantry offensive. The Civil War method of maneuvering lines of riflemen to deliver mass firepower had proved futile by the time of Grant's 1864 Overland Campaign. To underscore this point, Maj. Gen. John M. Schofield remarked after the Battle of Franklin (1864) that "victory was almost sure to be on the side of the defense."[214] Astonishingly, marching troops into position, cavalry charges, and extended order movements characterized the scope of prewar exercise maneuvers.[215]

Indeed, the Great War shattered any hopes that the "war to end all wars" could be won by offensive maneuvers. The deadly concentrated fire of the machine gun coupled with modern artillery bombardment had given a tremendous advantage to the defensive position.[216]And while

---

[212] Memorandum from Maj. Gen. Robert L. Bullard to U.S. Army Chief of Staff, May 18, 1918 in *USAWW*, vol. 4 (Washington: Center of Military History, United States Army, 1948), 266.
[213] Moltke, *Moltkes Militärische Werke*, 154.
[214] John M. Schofield, "Franklin," (Notes), undated, John McAllister Schofield Papers. Library of Congress, Box 93.
[215] Fieldhouse, *Fall Maneuvers*, 46.
[216] David M. Kennedy, *Over Here: The First World War and American Society* (New York: Oxford University Press, 2004), 174.

leaders like Gen. Pershing still stubbornly advocated Civil War-styled frontal assaults, he was certainly not alone in this ideology as the 1914 *FSR* proclaimed, "fire superiority is the first and most important requisite to success…depends mainly upon the volume of the fire," and "a combination of a frontal with a flank attack promises the best results."[217] This explains why prewar readiness training mainly focused on individual marksmanship, rifle fire superiority, and movements to envelop the enemy.

To be clear, it was not that the War Department could not provide more relevant training topics during readiness maneuvers, topics that would likely have better-prepared doughboys during their time in France. Instead, as James W. Rainey noted in his article on AEF training, "Officers of the War Department staff and agencies could not break free from the grasp of their own experience. Their military heritage had consigned them throughout their careers to small units on frontier posts operating under leisurely circumstances."[218]

This blinkered view of prewar training hamstrung the necessary adjustments during the years leading up to and even into the first few months of the war, primarily because the War Department lacked a frame of reference to effect needed changes.[219] Rather than including what was most needed as part of readiness exercise scenarios, training in particular subjects, such as defense against poison gasses, hand grenades, bayonet fighting, etc., was covered in pamphlets issued periodically by the War Department.[220]

Even a novice can understand that trying to instill "muscle memory" and the needed combat skills into soldiers bound for the Western Front by reading Army pamphlets is akin to

[217] *FSR*, 1914, Corrected to July 1, 1914, 82.
[218] Rainey, "The Questionable Training of the AEF in World War I," 99.
[219] Ibid., 99-100.
[220] U.S. War Department, *Infantry Training: Prepared at the Army War College August 1917* (Washington, D.C.: GPO, 1917), 12-13.

trying to master karate from reading about it in a book. It cannot be done. What was sorely needed was a robust program of training maneuvers that would validate proficiencies in elements of defensive trench warfare, the use of machine guns, flamethrowers, and whatever else the AEF could be expected to encounter on the battlefield. And if there was one man who possessed the wherewithal to modify stateside training, it was General John "Blackjack" Pershing.

It would be fair to suggest that Gen. Pershing waffled back and forth regarding what he considered training priorities for the AEF. On the one hand, he was an ardent disciple of the prewar doctrine laid out in the 1914 *FSR,* as evidenced by his emphasis on infantry as the "prime essential to military success."[221] Conversely, he expressed concern over acquiring machine guns before America entered the war, noting the purchase of the Hotchkiss model from the French because the War Department had not definitively decided which type to adopt for the AEF.[222]

Interestingly, despite his propensity to place more faith in the individual rifleman over modern weaponry, Gen. Pershing was undoubtedly not a neophyte regarding the machine gun's lethality. He had an opportunity to observe Japanese maneuvers in 1907, which motivated him to conduct exercises involving machine guns in the Philippines that same year, in 1910, and again in Texas in 1914.[223]

Surprisingly, the inclusion of like-minded exercises of the sort Gen. Pershing implemented in the early 1900s was not developed during stateside maneuvers. Col. Fieldhouse's report on the West Point, Kentucky exercise in 1903 stated, "The principle objective was to demonstrate the ability of infantry troops to protect their flanks against cavalry attacks."[224]

---

[221] "General Pershing's Opinion of Infantry," *Infantry Journal* 11, No. 1 (July-August 1914): 83.
[222] Pershing, *My Experiences in the World War*, 32.
[223] James W. Rainey, "Ambivalent Warfare: The Tactical Doctrine of the AEF in World War I," *Parameters* 13, No. 1 (1983): 37.
[224] Fieldhouse, *Fall Maneuvers West Point, Kentucky 1903*, 25.

Nowhere in his entire report are machine guns even mentioned, much less included as part of the exercise scenario, which again supports the assertion that the U.S. Army, particularly the ground force, was stuck fighting the last war.

A fair attempt at this, however, was made by including machine guns in prewar readiness exercises as early as 1908 when they were used at the Pine Camp maneuvers. However, because no suitable attachment existed for firing blank ammunition, their presence during the exercise was unknown to the "opposing" side. Simulated fire of these guns, necessary because of no firing attachments, was of no benefit to exercise participants and only tended to bring about derisive criticism of the maneuvers from both the "players" and evaluators.[225]

It was not until the 1912 Connecticut Maneuver Campaign that working blank-firing machine guns were used, but even then, Brig. Gen. Bliss remarked that the machine guns were "untrustworthy and comparatively ineffective weapons in the hands of untrained men."[226] His observation is logical, as men who had not been trained to use a weapon could hardly be expected to use it effectively during a readiness maneuver. Additionally, that same year, Congress sanctioned the War Department's proliferation of machine guns, which meant an entire infantry regiment was limited to only four machine guns.[227]

Thus, machine guns represented yet another area that maneuver planners failed to routinely include within the scope of their exercise scenarios, which constituted a significant error in judgment as the machine gun was the undisputed force multiplier during the Great

[225] Report of Maj. Gen. Frederick D. Grant to Adjutant-General of the Army in *Camps of Instruction, 1908: Reports of Officers of the United States Army* (Washington: GPO, 1909), 13.
[226] Bliss, *Report of Brigadier General Tasker H. Bliss,* 39.
[227] Colonel Leonard P. Ayres, *The War with Germany: A Statistical Summary* (Washington: Government Printing Press, 1919), 65.

War.[228] Gen. Pershing noted that although "Congress had appropriated $12,000,000 for the procurement of machine guns by 1916, it was reported that "we had less than 1,500 guns."[229]

Gen. Pershing went on to mention that the development of the machine gun as an infantry weapon had been carried to a high degree of perfection, especially in the German Army, where its value was more fully appreciated than among the Allies. As in nearly every other preparation area, the United States fell far behind her Allies.[230]

Furthermore, earlier U.S. divisions were seriously handicapped in their preparation stateside by the shortage of machine guns available for training, with several units not even receiving them until well after they arrived in France.[231] So important was the machine gun that Gen. Pershing averred that in the battles he had witnessed, western Allies had essentially forsaken the use of the rifle because "machine guns, grenades, Stokes mortars, and one-pounders had become the mainstay for the average soldier."[232] And yet, an emphasis on the use, maintenance, and tactical employment of machine guns was lacking in prewar readiness training, as was adequately training soldiers to encounter poison gas.

The Great War was the first modern war in which the terrifying and unpredictable use of poisonous gasses were employed on the battlefield. On April 6, 1917, when President Wilson declared war on Imperial Germany, the U.S. Army not only lacked defensive equipment for chemical warfare but also had no existing plans to develop or even manufacture gas masks or any similar defensive equipment to counter enemy gas attacks. Sadly, even *if* a U.S. gas mask had been issued for readiness exercises, the U.S. Army would have had no idea how to conduct

---

[228] Bernard and Fawn M. Brodie, *From Crossbow to H-Bomb: The Evolution of the Weapons and Tactics of Warfare* (Bloomington: Indiana University Press, 1973), 145, 190.
[229] Pershing, *My Experiences in the World War*, 32.
[230] Ibid., 118.
[231] Ibid.
[232] Ibid., 136.

defensive gas training.[233] Readiness maneuvers continued to occur stateside after the development of the U.S. gas mask in 1915, but there is no evidence that its use was included in maneuver exercises. Unfortunately, this oversight might have been remedied had War Department officials included such training in pre-deployment exercises. Instead, the U.S. military chose the path of least resistance and decided to be reactive rather than proactive, an unfortunate trend that continues today.[234]

On August 15, 1917, AEF General Order 108 authorized the organization of technical engineer troops to be billeted as "Gas and Flame" Corps. The War Department directed these soldiers to report to Washington, DC, where they were formed as the 1st Gas Regiment. Unfortunately, with no one to instruct them in offensive or even defensive gas warfare, the only training they received stateside involved close-order drills. Surprisingly, they received no special training in gas warfare whatsoever, and by the time they sailed for France in December 1917, they left without gas masks![235]

The summer of 1918 saw a marked increase in the enemy's use of gas warfare, which prompted the War Department to issue an Army regulation requiring every soldier leaving the United States to possess a certificate indicating he had completed gas training. At that time, no other military skill required such validation. Regrettably, the requirement was typically ignored,

---

[233] Maj. Charles A. Heller, *Chemical Warfare in World War I: The American Experience, 1917-1918*, Leavenworth Paper No. 10 (Ft. Leavenworth, KS.: Combat Studies Institute, U.S. Army Command and General Staff College, 1984), 38.

[234] As an example, a focus on counterinsurgency operations and defending against chemical attacks rather than prepping soldiers to fight a peer adversary (China/Russia) continues to represent the majority of readiness training. (See Maj. Gen. Patrick J. Donahoe and John Spencer's "A Status Check on the Army's Preparation for the Next War," Modern War Institute, July 6, 2021.)

[235] General Order No. 108, August 15, 1917, cited in U.S. Army, A. E. F., 1917-1919, "History of the Chemical Warfare Service, American Expeditionary Forces, First Gas Regiment," 14 pts. in 1 vol. (Bound typescript; Fort Leavenworth, KS: General Service School, n.d.), 4.

and most soldiers continued to arrive at the Western Front sans the benefit of adequate gas defense training.[236]

That is not to say such training did not exist. In August 1917, the War College Division published an infantry training pamphlet that "recommended" infantry divisions carry out a 16-week program of intensive military instruction before shipping overseas. A survey of this training program revealed the training consisted of 40 hours of weekly classroom lectures supplemented with occasional rifle range time. Out of 640 hours of instruction, only 12 were devoted to "anti-gas instruction." Most of the 16-week training program consisted of rifle and bayonet training, evincing Gen. Pershing's contempt for the defensive strategy of attritional warfare.[237]

To apply a "Band-Aid" to the situation, one U.S. division directed that its men bound for France undergo "anti-gas instruction" aboard ship as they crossed the Atlantic. However, this stopgap attempt to familiarize U.S. doughboys with anti-gas defense was inadequate.[238] As a result, most Great War doughboys found themselves in a chemical combat situation, having received an insufficient amount of defensive gas training and with no concept of what that training even meant. This was tantamount to suicide and caused unnecessary casualties.[239]

For example, near the Seine River, Private Moses King of the 305th Infantry had trouble seeing through his gas mask because his eyepieces fogged up. When he voiced his concerns, his company commander (whose vision was compromised) ordered Pvt. King to remove his facepiece but keep the nose clip and mouthpiece in place. This "pernicious habit," the Chief of

---

[236] Heller, *Chemical Warfare in World War I*, 43.
[237] U.S. War Department, *Infantry Training*, 20-25.; Kennedy, *Over Here*, 173.
[238] Memorandum No. 65, HQ, 80th Division, Camp Lee, VA, 14 May 1918, uncatalogued Division Gas Officer Reports, MHI. Carlisle Barracks, PA.
[239] Edgar Dow Gilman, "Chemical Warfare. Lectures Delivered to the Reserve Officer Training Corps, University of Cincinnati: Gas Projector Attacks," *Chemical Warfare* 8 (15 July 1922):14.

the Chemical Warfare Service noted in September 1918, "has been the cause of many casualties," and the practice "condemned at every opportunity." Despite the Chief's scathing rebuke, the practice never waned, and the increased use of mustard gas by the Germans resulted in a significant number of Allied casualties suffering from eye damage because of the careless routine.[240]

Regrettably, the AEF never found the key to effective education and training for gas warfare's offensive and defensive aspects. A significant advantage could have been obtained if both offensive and defensive training had been integrated into all aspects of instruction and then validated during scenario-based readiness maneuvers.[241]

While stateside training did include some measure of gas defense instruction, it was lecture-based. It did not offer practical exercise scenarios that might have instilled the tactile skills necessary to rapidly don a gas mask and rehearse combat duties while wearing it. Moreover, had U.S. Army leaders studied German gas doctrine before the AEF entered the war or bothered to review observer reports, leadership may not have had to surmount such doctrinal obstinance relative to the tactical employment of poisonous gasses.[242]

That obstinance arguably led to a significant percentage of combat-related casualties. According to Major Charles A. Heller's *Chemical Warfare in World War I: The American Experience, 1917-1918* (1984), approximately 27.3 percent of all AEF casualties, dead *and* wounded, were caused by gas attacks.[243] Among the 53,402 combat-related deaths attributed to AEF soldiers during the war, 2.73 percent died due to gas deaths alone.[244]

---

[240] U.S. Army, A. E. F., 1917-1919, *Defensive Measures Against Gas Attack,* No. 253 revised (France, November 1917), 8.
[241] Heller, *Chemical Warfare in World War I*, 93.
[242] Ibid., 94.
[243] Ibid., 91.
[244] Michael Duffy, "Weapons of War: Poison Gas," *firstworldwar.com*, August 22, 2009, https://www.firstworldwar.com/weaponry/gas.htm

Compared with the 2,037,000 combat-related deaths suffered by German soldiers, less than .5 percent of those who died during the war were killed due to poison gas.[245] This is quite astounding when one realizes that the Germans had been fighting the Great War for the entire four years, while the AEF only participated in the war for the final seven months. Yet, the Germans sustained significantly fewer deaths related to poison gasses than did their American opponent.

One can only surmise from this staggering variance that the Kaiser's soldiers possessed a working understanding of how and when to employ gas masks in combat. It is highly doubtful they simply instinctively knew the practical nuances of gas warfare and how to defend themselves against its horrifying effects. More probable, yet uncertain, is that they received quality training in using the device and were then exercised on its use during simulated scenarios before engaging the enemy on the Western Front.

Unfortunately, this pattern of obstinate thinking by U.S. policymakers involving innovative weapons systems would be echoed many times. After the war, in his final report to the Secretary of War, Gen. Pershing lamented the gas situation when he declared, "Whether or not gas will be employed in future wars is a matter of conjecture, but the effect is so deadly to the unprepared that we can never afford to neglect the question."[246]

The flamethrower was another new and horrifying weapon that debuted during the Great War. Among all the controversial weapons used during the Great War, perhaps no other instilled a sense of abject terror into the heart of a soldier who found himself up against an enemy with a flamethrower. Indeed, the use of the flamethrower during the Great War, along with poisonous gasses, has been the subject of many a debate on the morality of employing such horrific

[245] Ibid.
[246] Pershing, *Final Report of General John J. Pershing*, 76-77.

weapons. However, it should be understood that Western armies' use of such weapons did not begin with the Great War. There is solid evidence that reveals that chemical weapons and incendiaries were used during the American Civil War.[247]

German engineers had successfully developed a portable flamethrower between 1900 and 1910, but it was in 1915 that the fearsome apparatus initially appeared in combat on the Western Front.[248] In fact, some AEF soldiers even managed to capture the device from dead German soldiers in March 1918 but had no idea how to operate the weapon in a tactical environment because they had never been trained stateside nor had an opportunity to have such training validated during prewar maneuvers. This was not their fault, however.

When the United States entered the war, there were no flamethrowers in the U.S. Army's Table of Organization and Equipment (TO&E) allowance and no plans to employ them in combat. As mentioned previously, AEF General Order 108 authorized the establishment of the "Gas and Flame" Corps, but by the time the United States could evaluate two competing patents of flamethrowers, the war ended, and subsequent testing was scrapped.[249] It would not be until U.S. Marines, attempting to flush out dug-in Japanese troops on Guadalcanal in 1942-43, would first use the flamethrower in combat.[250]

Unfortunately, early twentieth-century readiness exercises involving the employment of machine guns, flamethrowers, use of gas masks, and grenade handling were either very limited or nonexistent. Instead, the maneuvers previously mentioned consisted mainly of small infantry engagements that relied primarily on the rifle, bayonet, and wide, sweeping maneuvers.[251]

---

[247] See Guy R. Hasegawa's *Villainous Compounds: Chemical Weapons and the American Civil War* (Southern Illinois University Press, 2015).
[248] Bruce N. Canfield, *U.S. Infantry Weapons of the First World War* (Lincoln, RI.: Andrew Mowbray Publishers, 2000), 267.
[249] Ibid.
[250] Lt. Col. Orbie Bostick, "Mercy Killers," *Chemical Warfare Bulletin* 30, No. 1 (February-March, 1944), 16-17.
[251] Grotelueschen, *The AEF Way of War*, 12.

Frankly, the AEF was woefully unprepared for what they encountered in the Great War, and this can be primarily blamed on inefficient readiness exercises. When the time came for U.S. troops to deploy to France, many men had little to no experience, and training methods at home had not improved. Faced with the looming possibility of entering the European War, readiness exercises like those that had occurred since 1902 were essentially shelved as the AEF stumbled through ad hoc training to face a battle-hardened adversary on the Western Front. But was it enough? More importantly, was that training the indisputable catalyst in "putting the final nail in the Kaiser's coffin," as the collective memories of the war seem to assume?

There is a common tendency to attribute Allied victory in the Great War to the arrival of the AEF six months before the Armistice as if the blood and sacrifice of millions of French, British, and Australian soldiers were of minimal effect upon the Central Powers. One reason for this is the amount of pro-American historiography related to the AEF's participation in the war. James L. Stokesbury's *A Short History of WWI* (1981) notes that the Germans had been mistaken in their assessment that Americans were not sufficiently warlike to fight.[252] Stokesbury is careful to avoid denigrating prewar readiness training. Geoffrey Wawro's *Sons of Freedom: The Forgotten American Soldiers Who Defeated Germany in World War I* (2018) asserts that, but for American forces at Belleau Wood and Château-Thierry, the Germans would have won the war.[253]

Another reason for this skewed conclusion may be due to a notion of American exceptionalism, nationalistic fervor, or the belief that the mere presence of American soldiers somehow deflated the martial spirit of the German Army. However, it must be remembered that

[252] James L. Stokesbury, *A Short History of World War I* (HarperCollins, 1981), Kindle, Loc. 4325.
[253] Geoffrey Wawro, *Sons of Freedom: The Forgotten American Soldiers Who Defeated Germany in World War I* (New York: Basic Books, 2018), xxiv.

Great Britain and France had done the lion's share of the fighting and dying long before Gen. Pershing and the AEF arrived in France. America's contribution was undoubtedly impactful, but it was not exclusive to the Allied victory nor symbolic of superior training.

Some historians would even argue that it was due more to smothering German machine guns with American flesh versus a qualitative superiority in open warfare tactics.[254] This was undoubtedly the impression Captain Edward G. Herlihy of the 38th Infantry Regiment gave in an article written for the Infantry Officer's school in 1926 when he described a "wave of yelling Americans" charging German grenadiers with bayonets during the Second Battle of the Marne.[255]

In his statistical summary report submitted to Secretary of War Newton D. Baker on May 31, 1919, Col. Leonard P. Ayres reported that for the duration of the entire war, AEF troops were only engaged in battle for a total of 200 days, participating in 13 major operations, with only two being distinctly American.[256] The Battle of Cantigny, regarded mainly as the AEF's baptism by fire and a singular American victory, was a joint effort. More than half of the supporting artillery was French; supporting tanks were French; the supporting air power was French; heavy mortars were French, and even the flame throwers (which AEF soldiers could not have operated with any efficiency) were French![257]

Moreover, post-war reports provided by Allied and enemy commanders substantiate the inadequacies of AEF training. Marshal Phillipe Pétain, Commander of the French Army, stated in a May 1, 1918 report, "American units arriving in France have only had, up to the present,

---

[254] Rainey, "The Questionable Training of the AEF in World War I," 100.
[255] Jonathan Gawne, ed., *Lessons Learned in Combat: WWI – The Early AEF* (Framingham, MA.: Ballacourage Books, 2014), 330.
[256] Colonel Leonard P. Ayres, *The War with Germany: A Statistical Summary* (Washington: Government Printing Press, 1919), 101.
[257] Gawne, *Lessons Learned in Combat*, 171.

very incomplete instructions. This instruction was approximately limited, during their stay in camp, in the United States, to gymnastic exercises, close order drill, rifle fire and drill in field warfare, which consisted too much of small operations, having but little relation to actual warfare, such as attack and defense of convoys, requisitions, etc. They have but slight knowledge of specialties (grenades, F. M., machine guns, etc.)."[258]

British Chief of the Imperial General Staff (C.I.G.S.), Field Marshal William R. Robertson, wrote a memo to London on January 12, 1918, three months after AEF troops had been in combat. His general impression was "that America's power to help us to win the war - that is, to help us to defeat the Germans in battle - is a *very* weak reed to lean upon at present."[259]

Arguably, one of the most seminal figures in U.S. military history, Gen. George C. Marshall, concluded that the AEF "found it difficult to carry out any operation exactly according to Hoyle, because of the limited amount of training and complete lack of experience on the part of the men and the young officers, and the frequent lack of material and other means which, theoretically, were supposed to be available."[260]

Lt. Col. Hermann Von Giehrl, Chief of Staff of the German 16th Army Corps, authored *Das Amerikanische Expeditionskorps in Europa 1917-18* (1922). Remarking on his initial impression of the AEF's 1st Division, Lt. Col. Von Giehrl noted, "The training of these troops appeared to be inadequate. Especially little value appeared to have been attached to firing practice."[261] Regarding tactical leadership and training, he suggested that "the tactical training of

---

[258] Report from Marshal Pétain to Armies of the North and Northeast, May 1, 1918 in *USAWW*, vol. 3 (Washington: Center of Military History, United States Army, 1988), 292.
[259] Memorandum from C.I.G.S to London, Jan. 12, 1918 in *USAWW*, vol. 3 (Washington: Center of Military History, United States Army, 1988), 16.
[260] George C. Marshall, *Memoirs of My Services in the World War 1917-1918* (Boston: Houghton Mifflin, 1976), 122.
[261] Lt. Col. Hermann Von Giehrl, *Das Amerikanische Expeditionskorps in Europa 1917-18* (E.S. Mittler & Sohn, 1922), Loc. 355. Kindle.

the American infantry was, to be sure, insufficient, for the American soldier behaved awkwardly and was very incautious."[262]

Lt. Col. Von Giehrl's analysis also revealed that the AEF willingly eschewed their Allies' trench warfare tactics and relied upon grit, determination and a passionate spirit of martial elán to drive the Germans from their trenches. According to Lt. Col. Von Giehrl, "the American soldier attacked with vigor and courage, almost with too much boldness…he willingly bore the heavy losses, which, by reason of his slight military training and his clumsy tactics, were exceedingly great."[263]

Supporting James W. Rainey's conclusion on the quantity of AEF soldiers, war correspondent Colonel Frederick Palmer had the opportunity to report first-hand on the Meuse-Argonne Campaign. In his book *Our Greatest Battle (The Meuse-Argonne)* (1919), Col. Palmer attributed the sheer numerical superiority of the AEF over the battle-weary Germans as the key to American success. He remarked how "every German soldier knew with what freshness and initiative the Americans fought. If we had been slow in preparing, once our enormous preparations came to a head in the immense numbers we were now throwing into battle…the effect was all the more impressive upon the German soldier."[264]

This does not suggest that the AEF was incompetent or incapable of standing independently. It was and displayed an admirable record during the Meuse-Argonne Campaign. However, much of the AEF's stellar combat performance during the final few months of the war was due to its ability to adapt to the ad hoc training Gen. Pershing oversaw and joint training with the British and French. It was certainly *not* due to the prewar readiness training conducted

[262] Ibid., Loc. 459.
[263] Ibid., Loc. 574, 579.
[264] Frederick Palmer, *Our Greatest Battle (The Meuse Argonne)* (New York: Dodd Mead, 1919), 287-88.

in the United States. Had those exercises been effective, there would have been little need for Gen. Pershing to have insisted on what is today termed as “just-in-time” training. This dissertation again highlights this deficiency and serves as a reminder for future exercise planners to ensure they plan and conduct effective exercises that prepare forces for expected combat. As the U.S. Army discovered, the interwar years provided an opportunity for improvement and lesson learning.

Chapter 4

The Interwar Classroom

"*It would not be wrong to describe their maneuvers as bloodless combats, and their combats as sanguinary maneuvers*." ~ Josephus[265]

As in any war, there is always an abundance of post-war criticism, analysis, fault finding, and blame shifting. The Great War was no different. Following the Armistice in November 1918, military leaders and reformers realized the gravity of issues concerning the army's preparation (or lack thereof) for overseas combat. In Congress and the U.S. Army, reformers ardently reviewed the U.S. military's performance through statistical analysis, AARs, and post-war memoirs. They advocated change, resulting in "the most extended series of hearings on army organization in the history of both Houses."[266]

After the congressional hearings, Congress passed the National Defense Act of 1920. This act reorganized the general staff, expanded the army, and led to the creation of Training Regulations Number 10-5 (referred to as TR 10-5). TR 10-5 was a compilation of training materials similar to the Infantry Journal, which provided instructional articles to U.S. troops to supplement the Field Service Regulations (FSR). According to U.S. Army Major Gregory C. Hope, TR 10-5 marked a significant moment in army training doctrine history and outlined how the army would train for war.

During most of the 1920s and 1930s, the diminutive size of the U.S. Army hindered the possibility of conducting large-scale maneuvers as a continued emphasis on drawing down the

[265] Josephus (of Jerusalem, first century A.D.), describing the Roman army during the First Jewish Revolt. Quoted in Michael Grant, *The Army of the Caesars* (New York: M. Evans and Company, Inc., 1974), xxviii.
[266] U.S. War Department, "Report of the Chief of Staff to the Secretary of War 1920," (Washington, D.C.: GPO, 1920), 18.

military permeated through Congress. In fact, at no time during the 1920s or early '30s did active Army strength even approach the level of 280,000 authorized by the National Defense Act of 1920.[267]

Nevertheless, one of the first opportunities for the U.S. Army to validate its interwar training came when AEF troops were still in Germany, serving as an occupying force. As early as 1920, brigade-level officers of the American Forces in Germany (AFG), as it was called, prepared operational orders and training directives for the occupying force, which, in this case, constituted soldiers of the 3rd Army located at Koblenz.[268]

U.S. Army Major General Henry T. Allen served as military governor in the occupied region of the Rhineland. He set about to ensure only the most highly qualified soldiers served in Germany. Assisting him in this endeavor, the War Department agreed to allow Maj. Gen. Allen "pick of the litter" as it pertained to weeding out any soldier he felt incapable. This had the effect of giving Maj. Gen. Allen a "dream team" cast of self-starters with which to train, drill, and eventually rotate back to the States, as well as providing a tangible deterrence should Germany decide to renege on the Versailles Treaty.[269] Arguably, no one else proved better suited to execute the rigorous readiness training leading up to the Great War than Maj. Gen. Allen.

For one thing, he had an impressive track record, shown by his aggressive training in the 90th Division before the war and the 8th Corps in France after the war. Moreover, despite being a lifelong cavalryman, he was a disciple of the combined-arms approach to warfare, a trait the interwar German Army would master when the Wehrmacht invaded Poland in 1939.[270]

---

[267] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 2.
[268] Dean A. Nowowiejski, *The American Army in Germany, 1918-1923: Success Against the Odds* (Lawrence, KS.: University Press of Kansas, 2021), 41-43.
[269] Ibid., 90.
[270] Ibid., 94.

In August 1920, Maj. Gen. Allen issued his doctrinal instructions regarding how the forthcoming readiness maneuvers would be executed. Maj. Gen. Allen's "Battle Instructions" differed from all previous guidance in providing the first-ever link to the AEF's performance during the war, ensuring traceability in designing exercise scenarios.[271]

Incidentally, this same methodology of determining traceability is practiced today as military exercise planners evaluate recent combat performance to define and establish models for relevant training scenarios. To emphasize a previously established point, readiness exercises are not explicitly designed to train military forces. Instead, they aim to validate that the proper training has already been accomplished.

After careful analysis of the Allies' battle performance in France, Maj. Gen. Allen's planning team designed mock force-on-force exercise scenarios to validate the efficacy of the in-country training directed by Gen. Pershing just a few years earlier. All that was needed was a suitable training area to carry out what became known as the Fall Maneuvers of 1921 or the AFG Maneuvers of September 1921. Since one of the stipulations of the Versailles Treaty was that Allied forces would occupy a portion of the Rhineland, a demilitarized zone bordering western Germany, the U.S. 3rd Army would have an ideal location for holding their maneuvers as there were no cumbersome fences to traverse, the ground was suitable for digging trenches and no advance notice was required to local bürgermeisters (mayors) except when using ball ammunition (full metal jacketed rounds).[272]

---

[271] Ibid., 104.

[272] William L. Shirer, *The Rise and Fall of the Third Reich: A History of Nazi Germany* (New York: Simon and Shuster, 1960), 529; Major C.B. Hodges, "Fall Maneuvers, 1921: American Forces in Germany," *Infantry Journal* (December 1921): 620; Forrest C. Pogue, *George C. Marshall: Education of a General 1880-1939* (New York: Viking Press, 1963), 190.

The Fall Maneuvers of 1921 fell into a period of training that began on April 1, 1921. They extended until October 31, 1921—the first two periods covered training in drill, firing proficiency, and defensive warfare. The third period, the actual exercise period, served as an opportunity to validate the training accomplished during the previous two training periods.[273] As in all previously conducted U.S. readiness maneuvers, umpires were present to control, evaluate, and report on the exercise.

The focus and design of the Fall Maneuvers displayed a marked improvement over the exercise methodology of the prewar era, as it facilitated a comprehensive validation of training effectiveness versus simply *conducting* the training. This policy continues today as exercise planners carefully distinguish the training of troops from the validation of that training.[274]

For the Fall Maneuvers of 1921, two infantry brigades took to the field on Friday, September 16, 1921. The 1st Brigade comprised a headquarters company, infantry regiment, provisional motorized machine gun battalion, field artillery battalion, provisional troop of cavalry, and detachments of ordnance and military police companies.[275]

Encamped across from the 1st Brigade, the 2nd Brigade consisted of the same makeup as the 1st Brigade except for one additional infantry brigade, thus giving the 2nd Brigade a slight numerical advantage. Designated as Reds and Blues, respectively, each brigade commander spent several days maneuvering into position to obtain favorable ground from which to either "attack" or "defend" against the opposing brigade.[276]

---

[273] Hodges, "Fall Maneuvers, 1921," 620.
[274] Federal Emergency Management Agency (FEMA), Department of Homeland Security Exercise and Evaluation Program (HSEEP) Course, 19-75.
[275] Hodges, "Fall Maneuvers, 1921," 622.
[276] Ibid.

The exercise scenario delineated the Mosel River as the geographic boundary between the two hostile "states," Red to the north, Blue to the south. Period photographs taken during the Fall Maneuvers of 1921 depict encampments that look like they were taken during the Civil War, complete with horses and wagons.

The overall objective of the exercise scenario involved the Blue army crossing the Mosel at night to advance into Red territory with the ultimate goal of defeating them in offensive combat. Aerial reconnaissance was used with photographs delivered to Blue Brigade Headquarters, which enhanced the realism of the exercise.[277]

On September 17, the 1st Brigade (Red) detailed a company of infantry to camp about a mile and a half in front of the Blue line. Red troops then affixed lines of small white flags on sharp stakes to denote the presence of additional infantry with similarly placed red flags, which represented machine guns. The waving of either colored flag signified that a portion of the line was firing into the opposing force. Both sides were provided blank ammunition.[278]

The actions mentioned above represented the preliminary phase of the exercise. They were designed primarily to validate whether large concentrations of troops could conduct a night march in relative secrecy while establishing outposts for observation. An innovative method to assess these measures involved sending certain Red army troops into the Blue's outpost zone to get "captured." Red troops were coached on the information they should divulge to validate whether the Blue army's intelligence network functioned adequately.[279]

On Monday, September 19, the attack phase of the exercise commenced with the Blue army advancing towards their initial objective. The Red army, with lines of white flags and well-

[277] Ibid., 623.
[278] Ibid.
[279] Ibid., 624.

placed machine guns denoted by red flags, together with blank ammunition, put up a dogged resistance, retreating from one position to another as the Blue forces pushed them back.[280]

As the day wore on, the Medical Department participated in the mock combat as selected soldiers were given what amounted to modern-day combat wound tags, which allowed medical officers serving as umpires to validate the effectiveness of medical treatment on various battlefield injuries. This enabled sound analysis of how a field hospital might function during combat.[281]

On Tuesday, September 20, the Red Army conducted a simulated air attack. Airplanes flew low over Blue troops, and rifles with blanks were used to simulate raking machine-gun fire. Defending troops took cover in hastily prepared trenches, essentially crude dirt roads with embankments, as each opposing force awaited orders from respective commanders to attack. For the next ten days, similar activities fulfilled the third period of the Fall Maneuvers.

The third and final period of the Fall Maneuvers of 1921 ended on September 30, and for the next thirty days, commanders and umpires compiled their results. Something new from the U.S. Army's maneuver plan involved formulating a corrective action plan (CAP) to remedy deficiencies identified during previous field training. This practice, which is still applied today, facilitated a focus on specific shortcomings that could be validated during future exercises.[282]

As in previous U.S. Army readiness maneuvers, spectators were on the scene to admire, record, and photograph the happenings. After the Fall Maneuvers concluded, a formal pass and review was conducted with a grandstand for General Pershing and other high-ranking U.S. Army

[280] Ibid.
[281] Ibid.
[282] Hodges, "Fall Maneuvers, 1921," 621.

officers. (See Fig. 1) In fact, several foreign general officers were present, some of whom remarked that no such training maneuvers could ever be staged in their armies.[283]

Figure 1
Pass and Review, Fall Maneuvers 1921[284]

Although the Fall Maneuvers of 1921 represented the most robust and thorough attempt at conducting readiness maneuvers for the postwar U.S. Army up to that time, the scope and scale were still reminiscent of prewar maneuvers. Soldiers wore their doughboy uniforms, trenches, and barbed wire dominated the simulated battlefield, and the square division was still

[283] Ibid., 625.
[284] "Pass and Review, Fall Maneuvers 1921," Maneuvers of American Forces in Germany, 1921 September, Box: 2, Folder: 10. Alma A. Clarke papers, BMC M84. Bryn Mawr College.

the predominant organizational construct. Five years later, the U.S. Army participated in its first joint Army-Navy exercise.

Following President Theodore Roosevelt's direction that the U.S. Army govern the newly constructed Panama Canal, the Army began building defensive fortifications in 1911. The Panama Canal Department was one of the first examples of a geographic command and an obvious portent for today's unified combatant commands, i.e., U.S. Central Command (USCENTCOM), U.S. European Command (USEUCOM) and U.S. Indo-Pacific Command (USINDOPACOM).

The primary purpose behind the Panama Maneuvers of 1926 was to validate how well defending forces could fend off a major attack on the Pacific entrance to the Panama Canal. Scheduled for January 14 to March 1, 1926, the Panama Maneuvers consisted of three minor joint Army-Navy exercises, each designed to validate interservice cooperation with an emphasis on command and control (C2).[285]

The initial step in the exercise involved the issuance of a warning order (WARNORD) informing military elements of the Panama Canal Department that war was imminent with foreign powers and that all units should be prepared to carry out missions as directed in their respective localized defense plans.[286] Interestingly, starting a readiness exercise by issuing a WARNORD is the current procedure for U.S. military readiness exercise methodology.

During the first phase of the exercise, a portion of the U.S. Fleet, acting as the OPFOR, was assumed to be an advanced observation force whose primary mission included attacks against the Atlantic side of the Canal, general observation, stealth landings, espionage, and

[285] First Lieutenant Leonard E. Lilley, "The Panama Maneuvers," *Infantry Journal* (October 1926): 396-399.
[286] Ibid., 396.

sabotage. This first portion of the Panama Maneuvers was designed mainly as a command exercise to test the intercommunication between Army and Navy leadership.

On January 15, 1926, a long-distance naval patrol reported the presence of OPFOR submarines approximately 50 miles from Cólon. During that evening, attempts were made to bypass harbor defenses, and small parties of OPFOR infantrymen landed to try and sabotage communications. Harbor defense weapons were brought into action, and searchlights were turned on to illuminate smaller OPFOR vessels. The first phase of the Panama Maneuvers terminated at 12:28 AM on January 16, 1926.[287]

Several lessons learned emerged from this first portion of the Panama Maneuvers. The tactical use of harbor searchlights required further study and testing. The importance of radio silence before the beginning of the attack was emphasized to both attacking (OPFOR) and defending forces, as the OPFOR maintained radio silence while the defenders did not. This allowed the OPFOR to pinpoint the position of defending naval vessels and shore stations, thereby ensuring a "victory" during this first round of the exercise.[288]

The second phase of the exercise, which began on February 2, was similar in scope to the first phase except that OPFOR minesweepers engaged in sweeping operations, and a major amphibious attack was launched on the Panama Canal entrance. Realism was placed at a premium as "attacking" naval vessels deployed large smokescreens to obscure their approach. From behind the smokescreens, blank naval fire replicated an hour-long bombardment. This was followed by running auxiliary ships as close to shore as possible and marking areas where OPFOR troops could subsequently disembark.[289]

[287] Ibid., 398.
[288] Ibid.
[289] Ibid., 399.

The assumed landings of OPFOR troops terminated the second portion of the exercise and began the third phase, which commenced at 7:00 AM on February 5. This land phase involved OPFOR commanders tasked with capturing specific defensive portions of the Panama Canal facilities. This portion of the exercise was primarily designed to provide all elements of the Panama Canal defenders a chance to enact their defense plans.[290]

As in the first phase, there were some valuable takeaways from the subsequent portions of the Panama Maneuvers. The use of smokescreens demonstrated the apparent non-effectiveness of shore batteries when enemy targets were obscured. This would echo during the early hours of D-Day in 1944 when Allied battleships experienced marked difficulty in hitting German defenses along Omaha Beach due to the thick smoke.

The value of night air operations and the need for searchlights in cooperation with night air patrols to discover enemy vessels was elevated as an improvement for future investigation. The proficiency of foot soldiers engaged in jungle fighting and beach combat was exemplary despite little evidence that postwar U.S. troops received that specialized training.[291] Overall, the Panama Maneuvers of 1926 were considered a success and constituted "a most fitting ending to one of the most complete and comprehensive years of training ever experienced in the Panama Canal Department."[292]

Throughout the remainder of the 1920s, the U.S. Army conducted annual maneuvers in various locations. However, none of those exercises were considered large-scale, nor did they encompass all aspects of military force projection, i.e., infantry, armor, aircraft, and naval vessels. At best, these maneuvers were considered command post or functional exercises and

[290] Ibid.
[291] Ibid., 400.
[292] Ibid., 403.

were likely the best that could be hoped for considering the makeup of the postwar army. Therefore, it is a fair question to ask whether or not such small-scale exercises would be sufficient enough to adequately prepare citizen soldiers to square off against the Nazi juggernaut that would soon conquer Western Europe?[293] The answer to that question was the Army's attempt at holding the largest peacetime maneuvers.

In 1934, First Army Commander Maj. Gen. Dennis E. Nolan was tasked with setting up what became known as the First Army Maneuvers. Maj. Gen. Dolan's directive called for dividing field camps into lines approximately six to ten miles apart so opposing participants could march from their camps to pre-coordinated battle positions all in a day's march. He further outlined the threefold primary purpose of the maneuvers.[294]

First, to validate the ability of active units of the First Army to concentrate simultaneously on existing strengths. Second, to train all echelons in the logistics of concentration. Third, combined field training should be provided for all active components of the First Army to function smoothly in the initial stages of an emergency. The maneuvers were set to commence in August of the following year. They comprised five exercises over 36 hours and involved 35,000 soldiers from fifteen divisions.[295]

The first exercise of the First Army Maneuvers was called Exercise No. 1 and involved the 44th Infantry Division against the 26th Infantry Division. Both divisions began in their respective encampments. The 44th and 26th Divisions were tasked with capturing the high ground near the opposing player's position. While Exercise No. 1 was occurring, Exercise No. 2 began further to the east with the 27th and 43rd Infantry Divisions essentially mimicking the

[293] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 3-4.
[294] Maj. William Hones, "The First Army Maneuver," *Infantry Journal* 43, No. 1 (January-February 1936): 27-28.
[295] Ibid., 33.

actions of those involved in Exercise No. 1. Both of these exercises lasted the entire day of August 21, 1935. The main lessons learned were that opposing commanders lacked aggressiveness, infantry columns were deficient in forming early for an attack, and advance-guard artillery was positioned too far forward.[296]

For Exercise No. 3, the 1st Infantry Division was pitted against an imaginary enemy and directed to move 25 miles to capture advance elements of a hostile (fictitious) division. This was more of a test to validate how organized an entire division could approach an enemy position traveling in two motorized echelons. Lessons learned from Exercise No. 3 revealed ineffective radio communication in trying to control large, motorized columns and a lack of protection of those columns from hostile aviation elements.[297]

For Exercises 4 and 5, the primary goal was to instruct corps commanders. In Exercise No. 4, the II Corps (1st, 27th, and 44th Divisions), with attached coast artillery, mechanized cavalry, and tanks, was ordered to move from theoretical bivouacs to secure a prearranged line. Conversely, the I Corps (43rd and 26th Divisions) were directed to advance towards the II Corps. As events played out, the II Corps contacted the I Corps and forced it to take up a defensive position. For the first time, tanks from Fort Benning, Georgia (attached to the 1st Division) attacked the 43rd Division and captured a vital hill. This marked the first time tanks had been used in an Army maneuver to such an extent.[298]

Exercise No. 5 was virtually a repetition of Exercise No. 4 except the 1st Division, 62d Coast Artillery, mechanized cavalry, and tanks were swapped from the II Corps and given to the I Corps. With a preponderance of artillery and tanks, the I Corps forced the II Corps south to the

[296] Ibid., 31.
[297] Ibid., 32.
[298] Ibid.

Black River over the day and a half the exercise lasted. After Exercise No. 5, the First Army Maneuvers ended, and unit commanders compiled and up-channeled their AARs to Maj. Gen. Dolan.[299]

No major tactical lessons were learned from the First Army Maneuvers, and in the grand scheme of things, the maneuvers were a bust. No threat analysis was conducted, and there was nothing that had not been done in previous exercises. Essentially, the U.S. Army gathered 35,000 troops together to engage in a massive demonstration of troop movements. Deficiencies that had been seen in some of the earlier maneuvers had not been addressed. This may explain why the War Department finally came around to staging massive, large-scale maneuvers in areas of the United States that best resembled the European Theatre of Operations (ETO). The first would occur in Louisiana and Texas, involving at least twice as many soldiers as the First Army Maneuvers.

[299] Ibid.

Chapter 5

Battles on the Bayou: The Third Army Maneuvers

With the passing of the National Defense Act of 1920, Congress committed to increasing the Regular Army to a strength (on paper) of 296,000 officers and enlisted men, a National Guard of 435,000 men, and an Organized Reserve (Officers Reserve Corps and Enlisted Reserve Corps) of unrestricted size. Additionally, the new law aimed to enhance mobilization by organizing the Army into brigades, divisions, and army corps as far as practical. This replaced the old territorial departments with corps areas responsible for administering and training the Army. Each corps area was required to have at least one National Guard or Organized Reserve division.

General Pershing was ebullient over the change, remarking in his 1922 article "Our National Military Policy" that the new law "provides for the systematic organization of our traditional citizen army in time of peace."[300] Unfortunately, Pershing and several other veteran officers of the Great War would be disappointed as Congress reduced the Regular Army to 150,000 men in 1921, 137,000 in 1922, and in 1927, a further cut to 118,750. The National Guard was also reduced, which saw the condition of the Army go from bad to worse.[301]

Astonishingly, when news reached the world that Hitler had rolled into Poland on September 1, 1939, President Roosevelt ordered a paltry increase of 17,000 enlisted men. On November 1, 1940, Army planners restructured the immense square combat division model to the triangular structure, which required less manpower (15,245 men as opposed to 22,000) but

[300] General John J. Pershing, "Our National Military Policy," *Scientific American* 127 (August 1922): 142.
[301] Weigley, *History of the United States Army*, 400-402.

afforded greater flexibility and mobility.[302] Moreover, the U.S. Army had done little in the way of research and development concerning the new weapons that had been introduced during the Great War, which portended that any future readiness exercises leading up to American involvement in World War II would likely involve the arms and equipment used during the AEFs participation during the final six months of the war.[303] Arguably, one of those new weapons that magnified the transformative nature between the two world wars was the advent of mobile armor, i.e., tanks.

Historian Russell F. Weigley blamed indifference as the underlying factor that caused the U.S. military to shun the study of maxim during the postwar years, something the British and Germans took quite seriously.[304] In fact, there were 23,405 tanks on order at the end of the Great War, with a Congressional appropriation of $175,000,000 to pay for them. However, only 1,115 survived with the U.S. Army into the postwar era. This was primarily due to the National Defense Act of 1920, which effectively gutted the Tank Corps.[305]

Despite the cutbacks in personnel and a reluctance to explore the effectiveness of armored warfare, the ideology of how U.S. military readiness exercises would be planned and executed during the interwar years underwent a marked change. With the technological advancements in modern warfare during the Great War and interwar years, U.S. military leaders rightly concluded that it was impossible to effectively test the new organizational structure with command posts or functional exercises. It quickly became apparent that only large-scale

---

[302] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 3.; Wilson, *Maneuver and Firepower*, 133, 146.; *Tables of Organization and Reference Data for the Infantry Division, Triangular* (Fort Leavenworth, KS.: Command and General Staff School, 1939), 7-37.; Bruce Jacobs, *Soldiers: The Fighting Divisions of the Regular Army* (New York: W.W. Norton and Co., 1958), 26.; Gabel, *The US Army GHQ Maneuvers of 1941*, 10.
[303] Weigley, *History of the United States Army*, 409.
[304] Ibid.
[305] Mildred Hanson Gillie, *Forging the Thunderbolt: A History of the Development of the Armored Force* (Harrisburg, PA.: Military Service Publishing, 1947), Kindle, Locations 180, 289.

maneuvers could adequately validate the combat effectiveness of division, corps, and army-sized forces.[306]

As a point of explanation, by 1940, the entire U.S. Army was organized from the largest to the smallest number of personnel, primarily to facilitate rapid mobilization and organization. Most of the terms used then and today, such as regiment, battalion, company, etc., are familiar to describe numbers of troops and have been used throughout American military history since the Revolutionary War. While the approximate size of those formations has differed slightly over time, the relative troop strengths represented by such terms are still relevant.

Under the provisions of the National Defense Act of 1920, the War Department appointed a special committee to define the general plan of organization to be adopted for the U.S. Army. This initially resulted in the formation of six field armies consisting of about two million men in total.[307]

By 1931, these six field armies comprised six corps each and were assigned to one of three geographic army areas for mobilization. For example, the first army area included the northeastern region of the United States and comprised the First and Fourth field armies. The second army area comprised the Second and Fifth field armies and was located in the country's southeastern region. The third army area contained the Third and Sixth field armies in the American southwest.[308]

On August 9, 1932, U.S. Army Chief of Staff General Douglas MacArthur outlined his initial concept and organizational plan for what became known as the "Four Army" plan, which abolished the scheme as mentioned above and directed that for future mobilization planning

---

[306] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 5.
[307] Lt. Col. Steven E. Clay, *U.S. Army Order of Battle, 1919-1941*, Vol. 1 *The Arms: Major Commands and Infantry Organizations, 1919–41* (Fort Leavenworth, KS.: Combat Studies Institute Press, 2010), 95.
[308] Ibid., 98.

purposes, the U.S. Army would be spread out across the United States with the First Army (comprised of six corps) assigned to the northeastern region. The Second Army (comprised of four corps) was transferred to the Midwest, the Third Army (comprised of four corps) was located in the southeast, and the Fourth Army (comprised of four corps) was located in the northwest.[309]

Thus, by 1941, one fully equipped field army constituted anywhere from 130,000 to 270,000 men and comprised four to upwards of six corps, as previously mentioned. One corps comprised two or more divisions or around 25-50,000 men. One division comprised about 10-15,000 men subdivided into three or more regiments. One regiment comprised three or more battalions or about 3,500 men. One battalion comprised three or more companies, and a company consisted of about 250 men, subdivided into two or more platoons containing anywhere from 25 to 50 men. A squad, the lowest numerical designator for U.S. Army personnel at that time, consisted of about 8 to 12 soldiers.[310]

Following Gen. MacArthur's tenure as U.S. Army Chief of Staff, Brig. Gen. Malin Craig assumed the office in 1935. Three years later, Gen. Marshall became Gen. Craig's deputy and immediately focused on preparing the Army for national defense and posturing forces to possibly deploy overseas should the situation continue to deteriorate under Germany's new chancellor. On December 9, 1938, Gen. Marshall wrote a memorandum to Gen. Craig that underscored the need for adequate field training for the burgeoning Army.[311]

---

[309] Ibid., 102.
[310] Mack Dean, Armies: WW2 Army Units and Sizes," *World War II Facts* (blog), June 6, 2021, https://www.worldwar2facts.org/ww2-army-units-and-sizes.html
[311] Gen. George C. Marshall, "Memorandum for the Chief of Staff," December 9, 1938 in *The Papers of George Catlett Marshall: The Soldierly Spirit December 1880-June 1939,* vol. 1, eds. Larry I. Bland and Sharon R. Ritenour (John Hopkins University Press, 1981), 671-73.

Somewhat ironically, Gen. Craig retired from the Army the day before Hitler invaded Poland. Gen. Marshall succeeded him as U.S. Army Chief of Staff, a position he would hold until late 1945. Unlike his predecessor, who was conditioned by the cold air on Capitol Hill to fight only for the minimum needs he saw a hope of getting recognized, Gen. Marshall was unashamedly forthright in criticizing the Roosevelt administration on its disproportional defense spending, particularly when it came to pouring money into the Air Corps at the expense of Army ground forces.[312]

In early 1940, Gen. Marshall addressed the House of Representatives Committee on Appropriations, reaffirming his concern over America's lack of preparedness, stating, "If Europe blazes in the late spring or summer, we must put our house in order before the sparks reach the Western Hemisphere."[313] The General had good cause to express his worry since he had witnessed firsthand the inadequacy of the AEF's performance during the final days of the Great War, remarking, "Young officers did not know how to regroup their men after the initial advance. . . and when the time came to push on, they were unable to carry out their mission."[314]

Gen. Marshall further informed Congress of his plans to validate the efficacy of the new triangular divisional construct in a series of three large-scale maneuvers to be held that same year.[315] To Gen. Marshall, the corps area maneuvers of the 1930s were simply too small and failed to validate the new Four Army Plan instituted by Gen. MacArthur.[316]

Gen. Marshall's address to the Committee on Appropriations proved prescient as the German Wehrmacht did indeed set Europe ablaze when they steamrollered their way into

---

[312] Pogue, *George C. Marshall: Education of a General*, 332-35.
[313] U.S. Congress. House of Representatives. House Subcommittee, Committee on Appropriations. *Hearings on H.R. 9209, Military Establishment Appropriations Bill for 1941*, Senate, 76th Cong., 3d sess., 30 April 1940.
[314] Pogue, *George C. Marshall: Education of a General*, 181.
[315] Dickson, *The Rise of the G.I. Army, 1940–1941*, 49.
[316] General (Ret.) Paul F. Gorman, *The Secret of Future Victories* (Fort Leavenworth, KS.: U.S. Army Command and General Staff College Press, 1994), II-7.

Western Europe on May 10, 1940, in an operation code-named Fall Gelb (Case Yellow).[317] As new Chief of Staff, Gen. Marshall directed a set of maneuvers to validate the nascent triangular division and test the ability of corps-level leadership to direct and deploy division-sized forces across long distances against a mobile opponent. Additionally, he wanted to include newly expanded mechanized cavalry and tank brigades (to be umpired by Gen. Patton) as part of the maneuvers.[318]

Other than the First Army Maneuver of 1935, a series of five exercises designed to provide field training for the I and II Corps at the Pine Camp training site, no large-scale maneuvers were conducted before the 1940s.[319] Consequently, no guidance from the War Department existed regarding selecting and acquiring an area capable of sustaining extensive exercises on such a scale as those envisioned by Gen. Marshall. To help the War Department along, Gen. Marshall knew precisely what was needed, and scouts were dispatched all over the United States to find suitable areas that could accommodate what would eventually lead to army-versus-army-sized maneuvers shortly before Japan attacked the United States at Pearl Harbor.[320]

But first, the U.S. Army would conduct a corps-versus-corps-sized exercise broken down into four separate exercises over three weeks in May 1940. Most historical sources refer to these exercises as the Louisiana Maneuvers of 1940. However, that term needs to be clarified as several iterations of peacetime maneuvers were conducted both in and around Louisiana from the spring of 1940 to the fall of 1941. It is more accurate to refer to this initial set of large-scale maneuvers as the Third Army Maneuvers since the area selected fell within the geographic

[317] Field Marshal Erich Von Manstein, *Lost Victories: The War Memoirs of Hitler's Most Brilliant General*, ed. and trans. Anthony G. Powell (Minnesota: Zenith Press, 2004), 71, 127.
[318] Gorman, *The Secret of Future Victories*, II-9.
[319] Major William Hones, "The First Army Maneuver," *Infantry Journal* 43, No. 1 (January-February 1936): 27-31.
[320] Dickson, *The Rise of the G.I. Army*, 50.

boundaries of the Third Army. One could consider the Third Army the "host" organization for these maneuvers.[321]

Thanks to Gen. Marshall's foresight in finding an area suitable to stage the Third Army Maneuvers, the Sabine River area of Louisiana and parts of eastern Texas afforded an ideal region to conduct extensive tactical maneuvers. As early as February 1940, a Federal Rents and Claims Board secured land rights for 1,776,000 acres in Louisiana, including 259,400 acres of the Kisatchie National Forest and 402,800 acres of privately owned land in eastern Texas.[322]

Out of what could only be explained as patriotism, private landowners willingly cooperated with the U.S. Government, resulting in approximately 3,400 square miles of real estate available to the Third Army for their 1940 maneuvers and future maneuvers in coming years. From 1941 to 1944, this area was labeled the GHQ Maneuver Area and stretched from about 30 miles west of Beaumont, Texas, to Lafayette, Louisiana, and 35 miles north of Shreveport, Louisiana, to Lake Charles, Louisiana.[323]

According to the IV Corps Headquarters' *Final Report on the Third Army Maneuvers* (1940), the primary purpose of the exercises was to evaluate the corps organization of the new triangular divisions, their transportation via rail and trucks across long distances against a mobile enemy under combat conditions (including combat aviation and mechanized forces), and the employment of horse cavalry against mechanized cavalry.[324] Essentially, this large-scale exercise would afford the U.S. Army its first opportunity to mobilize, transport, coordinate, lead, and observe all the workings of two complete U.S. Army Corps, something that had never been

[321] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 8-27.
[322] Ibid., 8.
[323] Ibid., 11.
[324] Headquarters IV Corps. *Final Report, Third Army Maneuvers, May 1940* (Combined Arms Research Library, 1940), 5.

attempted up to that time in history. Moreover, the Third Army Maneuvers provided the U.S. Army with its first opportunity to validate the combined use of combat aviation and tanks.

Billed as the "biggest peacetime maneuver in the history of the United States," the 1940 Third Army Maneuvers would involve some 70,000 men, 340 armored vehicles, 10,000 artillery pieces, 3,000 trucks, 128 aircraft, 400 tanks, numerous umpires and were slated to take place from May 5 to May 25, 1940.[325] In addition to the military component, U.S. Army Quartermasters requisitioned approximately 177 railcars of food, 190 tankers of gasoline, 3,500 horses, 1,600 observer stations, and 9,000 civilian volunteers…all at a monumental cost of 28,000,000 dollars.[326]

Before the commencement of force-on-force "combat," the 70,000 troops tasked to participate in the maneuvers were divided into two opposing corps, each labeled "Red" and "Blue" as in previous maneuvers. The IV Corps (Blue Army), consisting of the 1st, 5th, and 6th Infantry Divisions (plus a provisional brigade of medium and light tanks), proceeded to Fort Benning, Georgia, to prepare by engaging in a series of preparatory exercises in standard infantry, anti-tank, movement, anti-air and weapons familiarization tactics lasting from April 12 to April 25, 1940.[327]

Located approximately 600 miles away, the IX Corps (Red Army) comprised the 2nd Infantry and 1st Cavalry Divisions, augmented by provisional corps and army support teams. The Red Army concentrated in the Sabine area of east Texas for its preparatory corps exercises,

[325] Doris Kearns Goodwin, *No Ordinary Time: Franklin and Eleanor Roosevelt: The Home Front in World War II* (New York: Simon & Shuster, 1994), 49.; Dickson, *The Rise of the G.I. Army*, 52.
[326] Mary Kathryn Barbier, "George C. Marshall and the 1940 Louisiana Maneuvers," *Louisiana History: The Journal of the Louisiana Historical Association* 44, No. 4 (2003): 401.
[327] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 28.

which lasted from April 27 to May 8, 1940. Both sides also contained traditional and mechanized cavalry, observation units, pursuit aircraft, and field hospitals.[328]

Upon completion of their field exercises, the Blue Army, under Maj. Gen. Walter C. Short marched 550 miles from Fort Benning, Georgia, to western Louisiana in six days. This herculean feat, the longest motor march ever accomplished then, was designed to validate whether armored units could mobilize and travel long distances.[329]

Of course, this 550-mile trek was through Georgia, Alabama, Mississippi, and Louisiana…all friendly territory, and therefore not a proper validation of how fast such a force could move through enemy country when real bullets and artillery shells were a threat. Moreover, the Red Army, commanded by Lt. Gen. Walter Krueger, was already in place along the Texas side of the Sabine River and directed a preemptive air strike on key bridges to hinder the Blue Army's convergence in Louisiana.[330]

Both Corps commanders awaited Gen. Marshall's WARNORD, which set the first of four phases of the Third Army Maneuvers to kick off at 4:30 AM on May 9, 1940. 331 Each phase was scheduled to last three days.

Gen. Marshall's WARNORD depicted the Blue Army as a small "nation" sharing its border with another small "nation" (Red Army). He enhanced the scenario by notifying opposing commanders that boundary arguments, local border incidents, and increasing tensions had caused the Blue Army to reinforce its presence at Alexandria, Louisiana. The Red Army was to serve as the invasion force, a clear representation of Nazi Germany at that time. Moreover, according to

[328] Ibid.
[329] Mark Perry, "Louisiana Maneuvers (1940-41)," HistoryNet, accessed November 1, 2023. https://historynet.com/louisiana-maneuvers-1940-41/
[330] "RED INVADERS GAIN SUCCESS," *The Decatur Daily*, May 7, 1940, 8.

the scenario, Lt. Gen. Krueger's force was supposedly trained in blitzkrieg tactics and was waiting on the order to cross the Sabine River and invade the Blue Army's territory.[331]

Gen. Marshall informed those officers involved in the Third Army Maneuvers that, unlike most of what had been passed off as readiness maneuvers during previous exercises, these maneuvers would be unscripted and, similar to actual combat, based on free decision-making by battlefield commanders. That meant errors in judgment and stellar performances would be played out for all to observe, a formative motivator for commanders to lead their respective forces well. Another motivator was that numerous newspaper reporters from around the United States, most of the Army's generals, and members of Congress were invited to watch.

Phase One of the Third Army Maneuvers began with the Blue Army conducting reconnaissance and providing security for its defensive staging area. The Red Army drew "first blood" as mechanized forces crossed into Louisiana. Umpires ruled these actions as effective in isolating Maj. Gen. Short's Blue Army because of the simulated damage previously attributed to the bridges and the McComb, Mississippi airfield, which served as the Blue Army's air base.[332]

For the umpires and onlookers, the Red Army's initial advance on May 9 was considered a rousing success, primarily based upon reaching a position 20 miles east of the Sabine River within a few hours. After a 2-day respite, Phase Two began on May 14 with the Blue Army taking the offensive and driving the Red Army back to the Sabine River and into Texas. The relative strength of opposing forces numbered 35,570 (Blue) against 20,773 (Red), a ratio of about 3 to 2.[333]

---

[331] Ibid., 53.
[332] Ibid., 55,; Barbier, "George C. Marshall and the 1940 Louisiana Maneuvers," 403.; Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 31.; "AIR THRUSTS AT BRIDGES WIN SUCCESS: Umpires Rule Invading Reds Gain Initial Success in Army's Big Peace-time War Games," *Wilkes-Barre Times Leader, The Evening News*, May 7, 1940.
[333] Headquarters IV Corps. *Final Report*, 7.

At the outset of phase two, Maj. Gen. Short's Blue Army consisted of a provisional tank brigade made up of M2A4 light and M2A1 medium tanks (See Fig. 2), a company-sized unit from the 2nd Chemical Regiment (the threat of chemical warfare was still a very tangible threat as the United States entered World War II) and the 29th Infantry. Opposing the Blue Army, Lt. Gen. Walter Krueger's Red Army consisted only of the newly expanded 7th Mechanized Cavalry Brigade, the brainchild of Brig. Gen. Adna R. Chaffee and this unit would be his "ace-in-the-hole" for convincing the War Department to authorize the first-ever U.S. armored divisions.[334]

Figure 2
M2A1 Medium Tank, Third Army Maneuvers, 1940[335]

The third phase of the Third Army Maneuvers again saw the Blue Army take the offensive with a jump-off attack at 4:00 AM on May 21, following a 20-minute preparatory artillery barrage along the front. Elements of the Blue Army's 1st, 5th, and 6th Infantry Divisions

[334] Gillie, *Forging the Thunderbolt*, Loc. 1942.
[335] Christian M. DeJohn, *For Want of a Gun: The Sherman Tank Scandal of WWII* (Atglen, PA.: Schiffer Publishing, 2017), 81.

and 6th Cavalry Division successfully resisted the Red Army's 7th Mechanized Cavalry Brigade, penetrating their lines at Slagle and Hornbeck Counties in western Louisiana. Umpires ended the third phase at 3:00 PM on May 21.[336]

The fourth and final phase of the Third Army Maneuvers began on May 24, with the Blue Army holding the ground it had secured at the end of the previous phase on May 21. Once again, Blue Army forces outnumbered Red Army forces. However, this time, Red Army forces gained the 7th Mechanized Cavalry Brigade, combined with a provisional tank brigade, thus constituting a provisional division analogous to the first armored division in U.S. Army history. The result was approximately 382 tanks, which spearheaded the Red Army's final attack through the Kisatchie-Hutton line following an aerial attack. At 9:00 AM, the Red Army attacked in earnest.[337]

To blunt this mechanized attack, the Blue Army coordinated a counterattack of four infantry regiments, artillery, and 120 anti-tank weapons ranging from the 37mm anti-tank gun to the M2 .50 caliber Browning Machine Gun. By 11:00 AM on May 24, phase four ended due to minimal penetration of Red Army forces (only 11 tanks made it through Blue lines). Before the Blue Army could launch its counterattack, the Third Army Maneuvers ended, and troops returned to their base camps.[338]

Maj. Gen. Walter C. Short, Commander of the IV Corps (Blue Army), authored a final report on the Third Army Maneuvers in May 1940. That report appears to be the only official report submitted relative to the Third Army Maneuvers. At 57 pages, Maj. Gen. Short annotated numerous comments and recommendations regarding what he observed during the three-week

[336] Headquarters IV Corps. *Final Report*, 10-11.
[337] Ibid., 13.; Perry, "Louisiana Maneuvers (1940-41)," 4.
[338] Headquarters IV Corps. *Final Report*, 13.

maneuvers. Interestingly, one sees the foreshadowing of Maj. Gen. Short's report structure in current readiness exercise reporting processes.

Maj. Gen. Short organized his observations and recommendations into sections, addressing everything from trailers to anti-tank mines. While it is not within the scope of this work to examine every observation he noted, those areas in which Maj. Gen. Short qualified as "deficient" are worth further analysis as they had a direct bearing on the state of combat readiness at that time.

Regarding motorized vehicles (cars, half-tracks, tanks, and trucks), Maj. Gen. Short stated that lacking camouflage posed a severe problem and suggested lightweight netting as a solution.[339] Echoing this observation, Chief Umpire Maj. Gen. Herbert J. Brees also noted that too little attention had been paid to concealment from combat aviation.[340] Since this was not a practice reinforced during these maneuvers, the troops involved would be less inclined to implement this during actual combat.

While it may be argued that applying camouflage to vehicles involved in the Third Army Maneuvers made little difference since "opposing" sides used the same types of vehicles, i.e., light tanks, medium tanks, armored cars, half-tracks, trucks, and motorcycles, neglecting this process essentially deprived soldiers of opportunities to validate the effectiveness of camouflage, mainly when it came to concealment from "enemy" aircraft. In other words, there was no "train the way you fight" concept regarding the application and effectiveness of vehicle camouflage during these maneuvers.

[339] Ibid., 14.
[340] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 32.

Moreover, the fact that U.S. Army trucks, tanks, and halftracks were not systematically camouflaged demonstrates one of many areas where the U.S. military fell behind the German Wehrmacht in combat readiness. Indeed, this author has reviewed hundreds of period photographs of WWII U.S. Army and Marine Corps armored vehicles and, aside from occasional foliage, netting, ad-hoc desert camouflage applied to a tank in Tunisia or the standard olive-drab green paint scheme, nothing comparable to how the Germans painted their vehicles has been discovered. What explains this?

Before America entered World War II, the U.S. Army officially chose matte olive drab (technically specified as Olive Drab No. 9) as the most satisfactory overall color for blending with all the various terrains in which their vehicles could be expected to operate. There were minor alterations to this color scheme, i.e., snow-covered areas. Still, the overarching color scheme for all U.S. Army combat vehicles remained the standardized Olive Drab No. 9 formula throughout the war.[341] Even today, one can occasionally see U.S. Army National Guard vehicles traveling over interstate highways painted in the familiar Olive Drab color.

Concerning the German Army, things were different. Since 1939, the German Army had systematically applied a dark grey color (*dunkel grau*) paint scheme to its armored vehicles and transport trucks. In 1941, a new camouflage color scheme was added due to the fighting in North Africa. Field Marshal Erwin Rommel's Afrika Korps' vehicles received a brownish-yellow (*gelb braun*) color in that theatre in the spring of 1941, while the wide open expanse of the Russian steppe eventually led to the abandonment of *dunkel grau* in early 1943.[342]

[341] Terence Wise, *D-Day to Berlin: Armor Camouflage and Markings of the United States, British and German Armies, June 1944 to May 1945* (Carrolton, TX.: Squadron/Signal Publications, Inc., 1979), 6-8.
[342] Ibid., 66.

On February 18, 1943, German Army Memorandum No. 181 standardized the overall basic color scheme for all fronts as a deep sand-yellow (*dunkel gelb*). It introduced a new camouflage pattern system using two additional colors (olive green and chestnut or reddish-brown) applied over a base color of *dunkel gelb.* This proved highly successful.

Furthermore, local field commanders were given the widest latitude in coloring their equipment with the new tri-color paint scheme, which created a nearly infinite range of colors and patterns.[343] This remained the most sophisticated and effective camouflage painting system thus far and revolutionized vehicle camouflage art.[344]

In the area of communications, Maj. Gen. Short noted that the maneuvers conclusively demonstrated that present methods related to signal systems required "radical change." This was due to the increased mobility, which is now a reality in warfare. Motorized cavalry, tanks, and aircraft necessitated a communication system of far greater size and speed than previously contemplated.[345]

Blank ammunition was also a point of concern for Maj. Gen. Short, as it had been during previous readiness maneuvers. He recommended sufficient blank rounds for large-scale exercises to furnish a one-to-one ratio between blanks fired and the service ammunition represented. To do otherwise, he noted, "often leads to faulty and erroneous conclusions" regarding actual stockpiles of serviceable ammunition.[346]

Regarding tactics, Maj. Gen. Short stressed the need to maintain closer radio contact between infantry divisions, armored vehicles, and supporting aviation elements. The fact that this

[343] Bruce Culver and Bill Murphy, *Panzer Colors: Camouflage of the German Panzer Forces 1939-45* (Carrolton, TX.: Squadron/Signal Publications, 1976), 5, 52.
[344] Ibid., 67, 75.
[345] Headquarters IV Corps. *Final Report*, 18.
[346] Ibid., 27.

was lacking during the Third Army Maneuvers was fairly obvious as he averred that "great harm can be done to ground troops by not having combat aviation operating with them."[347] Essentially, the general was alluding to the foundational principle of coordinated combined-arms warfare, yet another area in which the United States was behind the Wehrmacht at that time.

Indeed, by the fall of 1939, the Germans had already mastered this concept, as was thoroughly demonstrated during Case White (invasion of Poland). During that campaign, German General Heinz Guderian, "Father of the German Armored Force," stated, "I was the first corps commander ever to use armoured command vehicles to accompany tanks onto the battlefield. They were equipped with radio so that I was able to keep in constant touch with my corps headquarters and with the divisions under my command."[348]

Gen. Guderian noted that from its inception as an armored force, the German principle for their new panzer divisions was a radio in each command station and each unit vehicle, from the smallest motorcycle to the heaviest tank. Combined-arms warfare was unthinkable without the radio.[349]

While Maj. Gen. Short's report may have been the only official assessment of the Third Army Maneuvers, others offered criticisms and recommendations that were not so complimentary. After the maneuvers, Third Army Commander, Lt. Gen. Stanley D. Embick noted that the new mechanized corps construct was not comparable to the German panzer division…it was still an infantry corps and its troops were expected to fight dismounted (on foot).[350]

---

[347] Ibid., 33.
[348] Heinz Guderian, *Panzer Leader*, trans. Constantine Fitzgibbon (Pickle Partners, 2014), Loc. 1373, Kindle.
[349] Heinz Guderian, "The Armoured Troops and their Interaction with the Other Weapons," *Military Science Review* 1, No. 5 (1936): 621.
[350] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 32.

Chief Umpire Maj. Gen. Brees asserted that officers at all levels displayed a disinclination to move across the country to engage the enemy, employed attacks without supporting weapons, and poor or absent communications resulted in friendly troops firing into one another. His assessment, while honest, was not very flattering of the corps-versus-corps maneuvers. The most valuable recommendation from the entire exercise was his call for a substantial increase in light, medium, and heavy tanks. Unfortunately, the War Department neglected this recommendation and did not sanction the production of a viable heavy tank until the war's final year.[351]

Many civilian observers observed the Third Army Maneuvers and newspaper reporters who were granted access to report on the event. This led to various opinions and recommendations that should have been captured in official After-Action Reports (AAR). For instance, Red Army Commander Lt. Gen. Krueger was quoted in the May 13, 1940 edition of the Lawton Constitution as saying, "Motorization gives us quick movements of troops to the front... but battles are won by men."[352] This indicates that Lt. Gen. Krueger still believed in the traditional old-school view that infantry was "queen of the battlefield."

Many newspapers criticized the officers in charge of the maneuvers for their lack of realism and leadership. They highlighted the lack of discipline among the participating troops and their poor attempts at realism. For example, the May 6, 1940 edition of the Huntsville Times reported that an infantry officer lost his troops while driving into Louisiana. Embarrassingly, he had to be directed to a local high school where his men were encamped. Another report

[351] Dickson, *The Rise of the G.I. Army,* 58-59.
[352] "Battles Won By Men, Army Experts Find: Machines Useful For Moving Troops, Maneuvers Point Out; Army Is Praised," *The Lawton Constitution*, May 13, 1940, 1.

mentioned that when blank ammunition ran out, opposing troops settled their differences with fistfights on the streets of Leesville, Louisiana![353]

Perhaps the harshest public criticism of the Third Army Maneuvers came from the Dallas Morning News. The widely read newspaper emphasized the lack of realism during the maneuvers by likening the use of imaginary vehicles and equipment to nothing more than a cheap firecracker.

The lack of tanks was also handled by slapping a canvas cover over numerous trucks with the word "TANK" written on them. Mortars were substituted by stovepipes, broomsticks affixed to wooden blocks stood in for machine guns and a supply officer noted after the war that it was "galling to see what should have been the most powerful army in the world playing soldiers."[354]

Two columnists for the *San Mateo Times* wrote an editorial two months after the Third Army Maneuvers concluded. They lamented the situation Secretary of War Stimson was up against and gave four examples of how, since the end of the Great War, the U.S. Army was still as "moribund and antiquated as the Indian forts which it still maintains on the western prairies."[355]

In addition to media analysis, historians and high-ranking U.S. Army officers offered their take on the maneuvers. Paul Dickson's *The Rise of the G.I. Army* (2020) noted these maneuvers revealed how ill-prepared the Army was for waging the kind of mobile war being fought by the German Wehrmacht in Europe and that the biggest problem was the failure of combat commanders to lead out in front with their men.[356]

---

[353] "Umpires Face Puzzler In Settling Problems of Louisiana Maneuvers," *The Lawton Constitution*, May 22, 1940, 8.
[354] Lt. Gen. Leroy C. Lutes in *Marietta Journal*, January 8, 1946, 4.
[355] Drew Pearson and Roberts S. Allen, "Daily Washington Merry-Go-Round," *San Mateo Times*, July 27, 1940, 4.
[356] Dickson, *The Rise of the G.I. Army,* 58.

General Dwight D. Eisenhower, who would go on to mastermind the D-Day landings, served as Chief of Staff for the IX Corps during the Third Army Maneuvers. In his *Crusade in Europe* (1948), his appraisal of the maneuvers was that "training could not be conducted in realistic imitation of the battlefield…we had to carry it out in soothing-syrup style calculated to rouse the least resentment from the soldiers themselves and from their families at home."[357]

In his assessment of those leading the Third Army Maneuvers, Gen. Eisenhower bemoaned the fact that the fall of France in 1940 "failed to awaken us - and by "us" I mean many professional soldiers as well as others - to a full realization of danger… many senior officers…did not prescribe the only type of training that would pay dividends once the bullets began to fly."[358]

For all the time, effort, and treasure that was poured into the Third Army Maneuvers, perhaps the one person to whom it mattered most was the man who initially pushed Congress and the War Department to finance and stage the maneuvers…Gen. George C. Marshall. The new Army Chief of Staff had much to say regarding the Third Army Maneuvers, little of which was positive.

In Forrest C. Pogue's biography of Gen. Marshall, the author noted that "despite his initial efforts, General Marshall was disappointed by the ragged performances of officers and troops and the lack of realism in the 1940 exercises." To remedy this deficiency, Pogue mentioned that Gen. Marshall's staff was "carefully studying recent errors and making sweeping changes in organization and tactics" for future exercises"[359] If there was one, singular "silver lining" to be realized in the "cloud" of the Third Army Maneuvers, it was the glaring fact that

[357] Dwight D. Eisenhower, *Crusade in Europe* (London: William Heinemann Limited, 1948), 10.
[358] Ibid.
[359] Forrest C. Pogue, *George C. Marshall: Ordeal and Hope 1939-1942* (New York: Viking Press, 1966), 90-91.

something akin to what Germany was currently battering western Europe with was in dire need. Before the Third Army Maneuvers, much argument and debate had been brewing between hard-nosed cavalrymen and those who pined for an armored force similar to Germany's.[360]

On the last day of the Third Army Maneuvers, a handful of pro-armor generals and the leading expert on tank warfare at the time (Col. George S. Patton Jr.) met to discuss the creation of an autonomous force that could rival Germany's panzer divisions. Twelve days later, Gen. Marshall directed the various Army branch chiefs to create the recommended force and on July 10, 1940, the First and Second Armored Divisions were born.[361] Brig. Gen. Chaffee's vision finally became sight, and a strike force could now stand against the vaunted German panzer divisions. But would they be ready? Gen. Marshall's next series of readiness exercises would attempt to validate such concern.

By 1941, Gen. Marshall envisioned something on an even larger scale than had previously been conducted. And, with the creation of two new armored divisions, exercising these against infantry in a simulated combat environment was extremely important. After all, when Germany attacked Poland on September 1, 1939, the German Army (Heer) possessed ten full-fledged armored divisions, with more in the making.[362]

While such statistics may seem astounding, it must be remembered that, unlike the interwar bickering over the efficacy of U.S. armored formations, no such argument existed regarding mechanization in Germany.[363] Indeed, during the interwar period, Germany had already figured out the age-old debate of whether tanks should support infantry or operate as stand-alone forces.

---

[360] Gillie, *Forging the Thunderbolt*, Loc. 514.
[361] Gabel, *The US Army GHQ Maneuvers of 1941*, 23-24.; Gillie, *Forging the Thunderbolt*, Loc. 2301.
[362] Gillie, *Forging the Thunderbolt*, Loc. 1841.
[363] Citino, *The German Way of War*, 241.

In his *Achtung-Panzer!: The Development of Tank Warfare* (1937), Gen. Heinz Guderian asserted that from the viewpoint of the tank forces, the most important mission is not infantry support, but rather to destroy the enemy anti-tank defenses and suppress enemy artillery.[364] Gen. Marshall may have known this, so his primary purpose for the next series of stateside maneuvers was to expose the strengths and shortfalls of infantry training and validate how infantry fought against tanks. In addition to these exercise objectives, the maneuvers would also expose weak links in the chain of command, allowing more qualified officers to advance while those deemed deficient were sidelined.[365]

In the months before the Japanese attack on the United States, Gen. Marshall was deeply concerned about the direction the War Department had taken. Since 1940, there had been clear evidence that the U.S. Army was preparing to fight the last war and was ill-equipped for the new conflict that had been shaping up in Europe.

Indeed, if the U.S. Army had been forced to square off against the German Army in the Spring of 1940, there is little doubt the results would have been disastrous for the U.S. AGF. The Third Army Maneuvers more than proved this and revealed the AGF's ineffectiveness in a few ways.

First, the U.S. Army had no heavy tanks at the time, therefore the Third Army Maneuvers could not validate the effectiveness of a nonexistent weapons system during those scheduled maneuvers. Second, no cogent armored doctrine existed, which prevented maneuver umpires from performing validation of such tactics against enemy armor, infantry, or anti-tank elements. Third, using broomsticks in place of actual machine guns, stovepipes for mortar tubes, and

[364] Heinz Guderian, *Achtung-Panzer!: The Development of Tank Warfare*, trans. Christopher Duffy (London: Cox & Wyman Ltd., 1937), 189.
[365] Joshua G. Savage, "Thank God It's Only Maneuvers!:" Tennessee and the Road to War," (master's thesis, East Tennessee State University, 2014), 14.

affixing signs that read "TANK" to vehicles that were *not* tanks may have saved time and money but it did little in validating the training of those expected to use such weapons in live combat.

Gen. Marshall held nothing back as he notified his staff and demanded that a drastically complete change, wiping out Civil War institutions, needed to occur within the War Department. He went on to state that the War Department had "lost track of its purpose of existence. It had become a huge, bureaucratic, red-tape-ridden operating agency. It slowed down everything."[366]

In an attempt to steer the War Department back on track, he directed the planning and execution of three large-scale maneuvers to be conducted stateside. The first, known as the Tennessee Maneuvers, was held in June 1941 in the central portion of Tennessee. The next series of exercises ended up being the largest-ever peacetime U.S. maneuvers and took place back in the same area as the Third Army Maneuvers the previous spring. The final set occurred in November in the Carolinas.[367]

[366] Pogue, *Ordeal and Hope*, 289.
[367] Dickson, *The Rise of the G.I. Army,* 151.

Chapter 6

Tanks in Appalachia: The Tennessee Maneuvers

Information about the Tennessee Maneuvers has yet to be fully covered in the historiography related to this field. Jean R. Moenk briefly touched on these exercises in his survey work on the history of large-scale Army maneuvers. Woody McMillin authored a monograph specifically detailing the history of the 1941 Tennessee Maneuvers. However, in both of these works, neither author comments on the overall effectiveness these maneuvers had on the subsequent performance of the AGF in combat.

McMillin spends considerable time discussing how the maneuvers affected the surrounding civilian population. The only data he offers regarding the overall impact the maneuvers had on the participants concerns that when most soldiers arrived, they did so having never received any ground warfare training. Thus, the Tennessee Maneuvers served as a crash course in how to hopefully function in combat.[368]

Similar in scale to the Third Army Maneuvers held the previous spring, the Tennessee Maneuvers would involve the Second Army, under the command of Lt. Gen. Ben Lear, and pit two opposing corps-sized forces against each other. However, what made this particular series of exercises noteworthy is that they represented the first time that the newly formed armored division would square off against a full infantry division, hopefully reassuring War Department decision-makers and Gen. Marshall that their investment in establishing a separate armored force had not been in vain.[369]

---

[368] McMillin, *In the Presence of Soldiers,* 99.
[369] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 45.; Hilliard Wood, "83,000 Men Head for Forrest Area To Stage War Maneuvers," *The Nashville Banner*, May 24, 1941.

Indeed, the concern over how U.S. armored divisions might fare in actual combat was certainly not lost on one of the Army's most ardent students of anti-tank defense…General Headquarters (GHQ) Chief of Staff, Lt. Gen. Lesley J. McNair. One of four children, Lesley James McNair grew up in Verndale, Minnesota and after finishing high school he applied to the U.S. Naval Academy. Not wanting to wait out the academy's lengthy applicant list, McNair completed a course in mechanical engineering at the Minnesota School of Business. In 1900, he gave up on his aspirations to be a naval officer and instead entered the U.S. Military Academy at West Point. Graduating 11th out of a class of 124, McNair was commissioned a Second Lieutenant in the Artillery. In 1906, he accepted an appointment at the Watertown Arsenal in Boston, where he was immersed in the study of metallurgical analysis, foundry skills, and steel manufacturing techniques. Three years later, he returned to the field artillery branch and put his experience at Watertown to good use. From 1914 to 1917, McNair twice saw combat, including serving as a battery commander during Gen. Pershing's Punitive Expedition of 1916. It was during these experiences that McNair became thoroughly convinced of the primacy of the infantry in winning battles.[370]

In 1939, Lt. Gen. McNair published a tentative field manual known as *Antimechanized Defense.* In this groundbreaking manual, he suggested that each infantry division should possess a battalion of anti-tank guns to function as highly mobile anti-mechanized units able to hunt down and destroy enemy armor. This would in turn free up the infantry to proceed with offensive operations in areas swarming with enemy tanks, a predicament the Czech, Polish, and French

[370] Mark T. Calhoun, *General Lesley J. McNair: Unsung Architect of the U. S. Army* (Lawrence, KS.: University Press of Kansas, 2015), 29-44.

armies found themselves in as Hitler's Wehrmacht blazed a trail of conquest across western Europe.[371]

Despite Germany's impressive track record evinced by the time of the Tennessee Maneuvers, Lt. Gen. McNair reassuringly set the tone for the Tennessee Maneuvers in a memorandum to those commanding generals involved in the exercises. Issued on May 15, 1941, the GHQ Chief of Staff stated, "The Armored Force is looking forward to the approaching corps and army maneuvers with confidence and enthusiasm. Comparable (enemy) armored units in the current European war have achieved an unbroken succession of successes. Our Armored Force is not concealing its expectation of repeating such successes during the maneuvers."[372] Of course, little could Lt. Gen. McNair anticipate that the U.S. Army's first real opportunity to repeat "such successes" would come in North Africa and would squelch any ambition to fight the Germans other than based on massive numerical superiority in men and materiel.[373]

In March of 1941, the GHQ approved the Second Army's maneuver plan and notified those units scheduled to participate. Combat engineers were dispatched to locate a suitable area for the exercises and settled upon a 350-square mile region between the Duck River and the Tennessee-Cumberland divide in the vicinity of Tullahoma and Camp Forrest in Tennessee. The lateral boundary of the area was situated at Highway 41, which ran northwest of Manchester, and Highway 241, which ran northeast of Shelbyville.[374]

A few weeks before the commencement of the Tennessee Maneuvers, Lt. Gen. Lear issued a five-page training directive, which clarified the maneuvers' purpose and highlighted

---

[371] U.S. Army Command and General Staff School, *Antimechanized Defense (Tentative)* (Fort Leavenworth, KS, 1939), 14-15.
[372] GHQ Chief of Staff to CGs, 15 May 41, Binder 2, 353 Training Directives, GHQ. RG 337 57, NA.
[373] Jaap Jan Brouwer, *The German Way of War: A Lesson in Tactical Management* (Philadelphia: Pen & Sword Military, 2017), 83.
[374] Maj. Bell I. Wiley and Capt. William P. Govan, *The Army Ground Forces History of the Second Army* (Army Ground Forces: Historical Section, 1946), 15.

umpire responsibilities when it came to validating the forthcoming simulated combat. And speaking of simulated combat, the Tennessee Maneuvers were intended to be swift and bold, and battlefield commanders were granted leeway to act just as if they were fighting in Europe. Moreover, to facilitate Gen. Marshall's desire that inept maneuver commanders be spotlighted, umpires were directed to apply significant "casualty" counts to those officers who led their troops into mock slaughter.[375]

Upwards of 75,000 soldiers and approximately 10,000 vehicles took part in the Tennessee Maneuvers. Unlike the Third Army Maneuvers of 1940 which pitted two Army Corps against one another, the Tennessee Maneuvers involved elements from the VII Corps, commanded by Maj. Gen. Frederick H. Smith and associated Second Army headquarters units. While the unit rosters resembled previous maneuvers, the one noticeable addition was the 2nd Armored "Hell on Wheels" Division, commanded by the flamboyant and arrogant Maj. Gen. George S. Patton Jr.[376]

As previously demonstrated during the 1926 Panama Maneuvers, U.S. Second Army Headquarters elements crafted a fabricated background scenario to provide realism. According to the *Chattanooga Daily Times*, a fictitious enemy (identified as the Red Army) began an advance on June 1, 1941, from Kentucky towards the Cumberland River in central Tennessee. Unbeknownst to Red Army forces, approximately 55,000 soldiers and 12,000 vehicles of the Blue Army were concealed in the woods at a position about sixty miles south of where Red Army troops eventually arrived.[377]

---

[375] Dickson, *The Rise of the G.I. Army*, 152.
[376] McMillin, *In the Presence of Soldiers,* 428-429.
[377] "ARMY IS READY FOR LONG TEST IN MANEUVERS," *Chattanooga Daily Times*, June 2, 1941, 1.

With this scenario provided to umpires and commanders, six exercise "problems" were staged during the first two-week period, which ran from June 2-13, 1941. These consisted primarily of defensive organization, armored reconnaissance by mechanized units, night movement, and command/staff functions. During the second period, which ran from June 16-28, four stand-alone problems were presented to validate the effectiveness of Maj. Gen. Patton's 2nd Armored Division.[378]

According to the *Army Ground Forces History of the Second Army* (1946), these four focused exercise scenarios featured swift marches, the use of counterattacks, the construction of pontoon bridges, the destruction of enemy strongholds, employing lightning attacks by armored units, and executing defenses against mechanized onslaughts. Arguably, the high point of the Tennessee Maneuvers involved stopping Maj. Gen. Patton's armored elements by the opposing infantry and the subsequent smashing thrusts of the former threatened to destroy the opposing troops.[379]

The first exercise problem began on Monday, June 2 with Red Army forces in control of Nashville. As they moved eastward, their objective was to divide Blue Army forces near the city of Murfreesboro. Under the command of Gen. Smith, the 30th, 27th, and 5th Infantry Divisions were tasked with conducting a night movement to prepare for an enemy advance and to defend a line stretching from Bedford to Rutherford counties. The following morning, problem number two commenced as 55,000 Blue Army troops attacked Red Army forces.[380]

Problem number three began on June 5 with Blue Army forces executing a retreat to validate whether troops could rapidly move and evacuate previously held positions. As part of

[378] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 44.
[379] Wiley and Govan, *History of the Second Army*, 19.
[380] McMillin, *In the Presence of Soldiers*, 46-47.

problem number four, concealment methods were also evaluated as the 30th Infantry Division camouflaged anti-tank guns along a local highway. Beginning on Monday, June 9, approximately 19,000 Blue Army soldiers marched 16 miles to the south bank of the Duck River in total blackout conditions. The march ended on Tuesday, thus ending problem number five.[381]

Several umpires assessed the Blue Army's defensive positions before problem number six began on Wednesday, which involved the movement of opposing infantry divisions and observation squadrons during blackout conditions. This iteration of the exercise ended on June 13 as Red and Blue forces enjoyed some much-needed downtime before preparing to execute the second period of the Tennessee Maneuvers.[382]

As already mentioned, the second phase of the maneuvers included a series of four field problems, which began on June 16. Two days earlier, opposing commanders were provided preliminary instructions for problem number seven, which, for Maj. Gen. Smith's Blue force amounted to driving to the east of the Tennessee River any Red forces they encountered.[383]

For Red forces, the mission involved a delaying action until Maj. Gen. Patton's 2nd Armored arrived to drive Blue forces west of a small Tennessee town called Bell Buckle. Weeks before kicking off the second half of the maneuvers, Maj. Gen. Patton addressed the men of his 2nd Armored Division. In characteristic Patton bravado, the eccentric general was no doubt attempting to secure a lasting place for the armored division in the U.S. Army.

> I want to bring to the attention of every officer here the professional significance which will attach to the success or failure of the 2nd Armored Division in the Tennessee maneuvers. There are a large number of officers, some of them in high places in our country, who through lack of knowledge as to the capability of an armored division are opposed to them and who would prefer to see us organize a large number of old-fashioned divisions about whose ability the officers in question have more information…Therefore it behooves every one of us to do his uttermost to see that in

[381] Ibid., 47.
[382] Ibid.
[383] Ibid., 54.

> these forthcoming maneuvers we are not only a success but such an outstanding success that there could be no possible doubt in the minds of anyone as to the effectiveness of the armored divisions. Bear this in mind every moment.[384]

At 5:00 AM on June 16, Maj. Gen. Patton quickly moved his men and tanks into position before sunrise so he could get a jump-start on problem number seven. Maj. Gen. Patton's objective was to employ the 5th Infantry Division and 153rd Infantry Regiment as holding elements while his 2nd Armored tanks executed flanking attacks around Maj. Gen. Smith's 27th and 30th Infantry Divisions.[385]

Despite the valiant defensive efforts of the Blue force, the 2nd Armored Division not only managed to drive some of Maj. Gen. Smith's infantry back, but also surrounded them. Maj. Gen. Patton had executed what most infantry commanders only dream about…the perfect double-envelopment. While Maj. Gen. Patton was no doubt puffing with pride, maneuver umpires prevented him from carrying out a final knock-out punch as they halted the exercise six hours after it began noting that infantry had denied tankers freedom of movement and blunted their drive.[386] As problem number seven concluded, umpires declared neither side victorious, which incensed an already frustrated Maj. Gen. Patton.[387]

While he had surrounded the Blue force and even captured its commander, umpires ruled the hard-charging "Hell on Wheels" commander killed in action (KIA) since he had "sped through an area that would have been under artillery fire had the battle been real."[388] *Newsweek* magazine reported that Maj. Gen. Patton and his tankers vehemently protested the umpires, who

---

[384] George S. Patton, Jr., "Address on Orientation in Maneuvers, May 1941" in Martin Blumenson, *Patton Papers: 1940-1945* (New York: De Capo Press, 1974), 33-34.
[385] McMillin, *In the Presence of Soldiers*, 54-55; Dickson, *The Rise of the G.I. Army*, 154-155.
[386] Martin Blumenson, *Patton Papers: 1940*-1945 (New York: De Capo Press, 1974), 34.
[387] Dickson, *The Rise of the G.I. Army*, 157.
[388] "Mechanized Warfare Is Bringing Generals Back to Front Lines," *The Tennessean*, June 23, 1941, 3.

insisted that the anemic 37mm gun was fully capable of disabling a tank.[389] Nevertheless, the decision stood and preparations were made for the beginning of problem number eight.

For this iteration of the exercise, Maj. Gen. Patton's 2nd Armored Division swapped sides, switching from red to blue armbands. Now designated as the Blue force, Maj. Gen. Patton's 600 officers, 11,000 men, 2,300 vehicles, and 19,000 guns launched a four-pronged attack from Lynchburg to Manchester at 7:00 AM on June 18.[390] Much to Maj. Gen. Patton's delight, his Blue force captured the Red force command post at 9:00 AM, taking the 5th Infantry Division Commander Brig. Gen. Cortland Parker and his staff prisoner. By 11:00 AM, umpires ruled problem number eight complete, long before the scheduled maneuver problem was supposed to end.[391]

The umpires were a little more sympathetic to Maj. Gen. Patton on problem number eight. They elected to declare his actions a victory over the Red force, despite their continued disparagement regarding what they considered unconventional tactics. Such "unconventional tactics" included leading his tanks from the front rather than from a well-secured command post and the "speeding of individual vehicles" towards their objective.[392]

The general took this in stride for a couple of reasons. In the first place, for every umpire who condemned what was considered "unorthodox" methods, there were dozens of newspaper reporters on hand who lauded the performance of Patton's 2nd Armored and likened it to the German panzer units that had blitzed their way across Western Europe.[393] Secondly, Lt. Gen.

[389] "Forces of 70,000 Play at War in First U.S. Test of Tanks," *Newsweek*, June 30, 1941, 28, 31.
[390] Dickson, *The Rise of the G.I. Army*, 157.; Blumenson, *Patton Papers*, 35.
[391] McMillin, *In the Presence of Soldiers*, 60.
[392] Ibid., 61.
[393] "Armored Outfit Annihilates Fifth Division, Proving Blitz Power, Giving Natives a Grim Show," *The Tennessean*, June 21, 1941, 1.

McNair witnessed firsthand the rapid movements of the armored division, which encouraged Maj. Gen. Patton to even greater daring for the start of problem number nine.[394]

On June 23, problem number nine began, marking the first time American tanks moved in large groups off the beaten path of established roadways. Perhaps in no other portion of the entire exercise scenario did the 2nd Armored Division attempt to imitate Germany's vaunted panzer tactics more than in the massed formation of tanks rapidly moving through the fields and forests of central Tennessee. However, unlike German panzer divisions in France who overran pretty much anything in their path, enemy infantry were able to "capture" many of the 2nd Armored Division's tanks because, according to pre-established ROEs, tankers had to stop their tanks to politely open and close farm gates to avoid frustrating the locals.[395] This represented one of the many artificialities that stymied the overall value of the Tennessee Maneuvers and contributed to their overall ineffectiveness.

Nevertheless, Maj. Gen. Patton's blitzkrieg methods sliced through the Red force's defenses, compelling an early surrender. What should have taken two complete days to execute was over in seven hours thanks to the speed of the 2nd Armored Division. Once again, both Maj. Gen. Patton and local newspapers extolled the virtues of the fast-moving light tanks of the "Hell on Wheels" Division.[396]

A staff correspondent for the *Chattanooga Daily Times* noted that "the tanks were snarling through rough country at about thirty miles an hour...a high speed for operation over such terrain."[397] Another reporter from the *Nashville Banner* described Patton's tank attacks as

[394] Blumenson, *Patton Papers*, 35.
[395] McMillin, *In the Presence of Soldiers*, 62.
[396] Blumenson, *Patton Papers*, 35.
[397] Alex Radin, "2d Armored Division Knocks Out 'Red' Forces, Stopping Maneuvers," *Chattanooga Daily Times*, June 24, 1941, 1.

"lightning-like" using both mobility and surprise.[398] Umpires were less congratulatory and again, Maj. Gen. Patton was ruled a "casualty" when his scout car ran over a simulated land mine near Manchester.[399]

The final phase of the Tennessee Maneuvers began on June 26, and Secretary of War Stimson flew in to observe, which he did while seated in the newly developed jeep.[400] Problem number ten involved Blue forces defending a position between two rivers against an attack by Red forces, whose objective was to drive through Blue lines and capture the town of Tullahoma.

Both sides switched back to the color designations that they had started with. In characteristic fashion, Maj. Gen. Patton's division swept around the opposing defenders, severed their lines of communication, disrupted their rear area, and captured the town of Tullahoma garnering another swift victory ahead of the maneuver schedule.[401] Four days later, multitudes of men and vehicles began their long exodus from the maneuver area back to their respective bases, ending the Tennessee Maneuvers.[402]

The overall assessment of the Tennessee Maneuvers was mixed. The Chief Umpire, Colonel Marion O. French, praised the 2nd Armored Division's performance noting their movements were rapid, coordinated, and decisively effective. Conversely, Lt. Col. Robert W. Grow, Deputy Chief of Staff of the 2nd Armored Division, was less flattering in his assessment. He noted that the tanks were too slow when it came to crossing waterways and coordination was lacking.[403]

---

[398] Hilliard Wood, "Maneuver Tactics Are Similar To Those Once Used By Indians," *Nashville Banner*, June 24, 1941, 3.
[399] McMillin, *In the Presence of Soldiers*, 62.
[400] "Stimson Sees Army 'At War,'" *The Ogden Standard-Examiner*, June 26, 1941, 2.
[401] Blumenson, *Patton Papers*, 35.
[402] McMillin, *In the Presence of Soldiers*, 65.
[403] Ibid., 64.

As one might imagine, this did not set well with Maj. Gen. Patton who, in frustration, wrote to one of the officers on Lt. Gen. McNair's staff. Regarding the remark that his tank attacks lacked coordination, Maj. Gen. Patton explained that he was "not making excuses but rather pointing out what I consider to be misconceptions…as to the principal functions of an armored division." Maj. Gen. Patton went on to elaborate to Maj. Gen. Floyd Parks how coordination was a "fine old military word" and could be applied to describe the operations of Alexander the Great, Napoleon, or Allenby…but it was not quite the same for armored divisions.[404]

To Maj. Gen. Patton, much of the critiques from the umpires was nonsense and only vindicated his stance on how armored units should be employed in combat. In fact, in their repeated assertions that the 2nd Armored failed to launch mass attacks during the maneuver, the umpires gave Maj. Gen. Patton the "greatest compliment possible."[405] Moreover, their viewpoint only confirmed his assumption that their slanted view of his performance was due to a lack of understanding of the combat capabilities of an armored division. In all probability, they were not the experts on armored operations. This represented a conundrum regarding an overall effective evaluation of the Tennessee Maneuvers by not ensuring the umpires observing armor operations were themselves subject matter experts in those areas.

This same challenge is present in today's readiness exercises as those planning and executing such exercises must ensure that those chosen to validate the actions of exercise participants (players) are *themselves* skilled subject matter experts. It does a disservice to military organizations when exercise planners mismatch exercise evaluators to assigned mission functionalities. Imagine a jet engine mechanic evaluating a combat medic during a readiness

[404] Blumenson, *Patton Papers*, 37.
[405] Ibid.

exercise. While not necessarily the exact scenario Maj. Gen. Patton experienced, the umpires who criticized what were in reality textbook armored tactics for World War II, likely had limited subject matter expertise in such areas.

Other top brass officers chimed in with their assessments. Second Army Commander, Lt. Gen. Ben Lear was particularly critical of the officers that had been tasked to lead the maneuvers. Specifically, he targeted the chain of command and castigated superior officers for not informing their enlisted men of the nature and details of the maneuvers or of carrying out the methods and principles that had been outlined in various Army field manuals.[406]

Lt. Gen. Walter Kruger, Third Army Commander, mentioned some troops' reckless disregard for air attacks during the maneuvers. Additionally, the VII Army Corps Commander, Lt. Gen. Robert Richardson, pointed out that the Army Air Corps' potential could have been utilized to its fullest except for air-ground leadership problems.[407] These represented additional limiting factors that hampered the effectiveness of the maneuvers, reduced the overall training benefit, and robbed AGF of obtaining a realistic feel for what actual combat would entail.

Similar to previous readiness maneuvers, a formal critique was prepared and funneled down the ranks. In this case, Lt. Gen. Ben Lear drafted a two-page summary critique highlighting what went right and areas needing improvement. Some of the more important areas he mentioned were field artillery and the fact that battery commanders failed to provide close supervision to NCOs. He also pointed out the need for better march discipline and camouflage for the next major exercise.[408]

---

[406] Maj. Bell I. Wiley and Capt. William P. Govan. *The Army Ground Forces History of the Second Army* (Army Ground Forces: Historical Section, 1946), 19.
[407] McMillin, *In the Presence of Soldiers*, 64-65.
[408] Ibid., 67.

Because the Tennessee Maneuvers marked the first time an armored division was pitted against a full-strength infantry division, participants were able to glean valuable lessons that would shortly be tested in the sands of North Africa. In addition to solidifying Maj. Gen. Patton's legacy into the collective memory of the American public, undoubtedly one of the more impactful results to come out of the maneuvers, and one that sparked a fierce debate within Army circles, was whether separate Army corps needed organic anti-tank units. For some U.S. Army officers, time and again, the Tennessee Maneuvers revealed the potential disaster that could ensue if combat corps elements were allocated insufficient anti-tank weapons.[409] Maj. Gen. Patton's blitzkrieg-styled armor strikes certainly highlighted this to the maneuver umpire staff.[410]

Indeed, if results from the Third Army Maneuvers vindicated the Army's decision to establish distinct armored divisions, the Tennessee Maneuvers went a step further by demonstrating the necessity of creating a new type of anti-tank unit capable of knocking out light and medium-sized tanks. In a memorandum for the Assistant Chief of Staff, Maj. Gen. Henry L. Twaddle, Gen. Marshall relayed that "one of our urgent needs is for development, organization and immediate action on the subject of defense against armored forces, to include an offensive weapon and organization to combat these forces."[411]

Moreover, one could argue that the impetus for the eventual development of American anti-tank units and mobile tank destroyers was birthed as a result of the Tennessee Maneuvers due in large part to the attendance of Secretary of War Stimson and Lt. Gen. McNair. Secretary Stimson's observance of the final problem during the Tennessee Maneuvers convinced him of

[409] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 45.
[410] Blumenson, *Patton Papers*, 35.
[411] Memorandum for ACoS, Maj. Gen. Twaddle, May 14, 1941 in Larry I. Bland, Sharon R. Ritenour, and Clarence E. Wunderlin Jr. *The Papers of George Catlett Marshall*, vol. 2, "*We Cannot Delay,*" *July 1, 1939-December 6, 1941* (Baltimore: Johns Hopkins University Press, 1986), 500.

the urgent need for an anti-tank element within the Army's TO&E. This was likely due to a letter Maj. Gen. Patton had written to Secretary Stimson reminding him that, although the 2nd Armored Division had covered long distances, "in some cases over 110 miles, every fighting vehicle in the division, except two tanks and a scout car, got to the place it was supposed to be in time to deliver the attack."[412]

No doubt this reinforced in Stimson's mind the need to implement a means of arresting such rapid gains by armored forces. In a July 4, 1941 edition of *The Philadelphia Inquirer,* Secretary Stimson announced the organization of 22 new anti-tank units, which he believed to be "the first used by any army in the world."[413] Lt. Gen. McNair would concur with the Secretary's assessment.

By observing first-hand the 2nd Armored Division during the latter portion of the Tennessee Maneuvers, Lt. Gen. McNair concluded that the anti-tank action he had witnessed, although still too passive, was better handled than he had anticipated. This confirmed his views on the necessity of standardized anti-tank organization and tactics as part of emerging U.S. Army combat doctrine.[414]

Lt. Gen. McNair's support of the anti-tank gun as the ultimate answer to the tank started when he served as Commandant of the Command and General Staff School at Fort Leavenworth, Kansas. Nearly a year before the Tennessee Maneuvers, he had commented on a report compiled by Chief of Infantry Major General George A. Lynch on the best method to defend against enemy tanks.[415]

---

[412] Letter, George S. Patton, Jr. to Secretary Stimson, July 8, 1941" in Martin Blumenson, *Patton Papers*, 36.
[413] "Tank 'Destroyer' Units Developed by Army, Stimson Announces," *The Philadelphia Inquirer*, July 4, 1941, 5.
[414] Kent Roberts Greenfield, Robert R. Palmer and Bell I. Wiley, *United States Army in World War II: The Army Ground Forces: The Organization of Ground Combat Troops* (Center of Military History, United States Army: Washington, DC., 1947), 80.
[415] David E. Johnson, *Fast Tanks and Heavy Bombers: Innovation in the U.S. Army, 1917-1945* (Ithaca, N.Y.: Cornell University Press, 2013), 149.

In that report, Maj. Gen. Lynch voiced his concern to the War Department following the Tennessee Maneuvers that the Army could potentially draw the wrong lessons from the inability of the French to stop the German blitzkrieg. He believed that the rapid conquest of France had overwhelmingly revealed that the French, heavily reliant on their anti-tank guns, had met with disaster when those same anti-tank guns proved unable to stop the panzer breakthroughs.[416]

Moreover, Maj. Gen. Lynch was worried that the U.S. Army was too enamored with the French antimechanization trend and was misplacing its faith in anti-tank guns, a course of action that would "fail wholly to apply the proper remedy and waste our resources in the development of ineffective means." Maj. Gen. Lynch argued that the most efficient course of action was to oppose "mechanization by mechanization" and that "the best anti-tank defense lies in the defeat of hostile armored forces by our own armored units."[417] In other words, the U.S. Army needed to develop a tank capable of destroying any tank the Germans brought to the fight.

Lt. Gen. McNair did not see eye to eye with Maj. Gen. Lynch. As a counter, Lt. Gen. McNair argued that the original purpose of the tank had always been and still was to shield soldiers from small arms fire and that the tank's natural and proper victim is unprotected personnel and materiel.[418] Before his promotion to Lieutenant General, McNair wrote the Adjutant-General. He simultaneously lobbied for his anti-tank doctrine while vehemently opposing the idea of tank-on-tank combat.

> If the gun outmatches the tank, then not only is the gun superior to the tank in antitank defense, but employing armored units against other armored units positively should be avoided whenever possible. The gun, supported properly by foot troops, should defeat

[416] Ibid.
[417] Letter from Major General George A. Lynch to Assistant Chief of Staff, G-3, AG 320.2 (7–3–40) M-C, July 3, 1940, McNair Files, Box 8, RG 337, NA.
[418] Johnson, *Fast Tanks and Heavy Bombers*, 149.

> hostile armored units by fire and free the friendly armored units for action against objectives which are vulnerable to them.[419]

Further support for Lt. Gen. McNair's anti-tank crusade was articulated in a *Field Artillery* piece written by a French Lieutenant who had served as a forward artillery observer during the invasion of France in 1940.

> When we summarized all that we had seen in this fateful month of June—and we discussed this over and over—we all came to the conclusion that the main cause of our failure to hold the Germans was the lack of efficient and sufficiently numerous antitank weapons. You can't have too many antitank guns, and they must be powerful enough to smash the tank… I am convinced that the whole panzer success was founded upon a *trick*. That trick was the invincibility of the tanks. Could the tanks have been stopped, the whole blitz would have crumbled.[420]

After Maj. Gen. Patton's 2nd Armored Division had so thoroughly demonstrated in Tennessee that the U.S. Army's ability to stop determined tank attacks was no better than that of the Poles or the French, Lt. Gen. McNair's views prevailed over those of Maj. Gen. Lynch.[421]
It also helped McNair's case that the star performer of the Tennessee Maneuvers, Maj. Gen. Patton understood that the tank's vulnerability needed to be recognized and even quipped, "It was folly to think of charging antitank guns with the intention of crushing them beneath their tracks."[422]

For all his exuberance over Gen. Marshall's earlier decision to direct the Assistant Chief of Staff to take the lead in anti-tank development, Lt. Gen. McNair should have paid more attention to the developments in Western Europe and the fact that the current U.S. anti-tank gun

[419] Letter, 2d Ind., Brigadier General L. J. McNair to Adjutant General, AG 320.2 (7–3–40) M-C, July 29, 1940, McNair Files, Box 8, RG 337, NA.
[420] Lieutenant Jean Dupont, "Fighting the Panzers," *Field Artillery Journal* 31, No. 8 (August 1941): 543.
[421] Johnson, *Fast Tanks and Heavy Bombers*, 150.
[422] Savage, "Thank God It's Only Maneuvers!" 9.

might not prove as effective as he had hoped.[423] Firing blank rounds at light and medium tanks during maneuvers was one thing, but employing anti-tank guns against German Panzer III and IVs was quite another, especially considering that from late 1941, many Panzer IIIs boasted extra face-hardened armor, which defeated all Allied anti-tank guns except at very short ranges.[424]

By early 1940, the first anti-tank battalion had been stood up at Fort Benning, Georgia and the primary anti-tank weapon at that time was the M3 37mm anti-tank gun (See Fig. 3), which was developed in 1938 and based upon the obsolescent German Pak 36 anti-tank gun.[425] Before America entered the war, the Pak 36 was deemed obsolete because it could not adequately penetrate the armor of French and British tanks in 1940.[426]

The M3 boasted a high muzzle velocity coupled with an extremely flat trajectory and could penetrate at least 2 1⁄2 inches of armor plate or over 2 feet of concrete at 800 yards.[427] Additionally, the M3 was equipped to fire three primary types of 37mm projectiles during World War II: armored piercing, canister, and high explosive.[428] Obviously, armored piercing rounds were the preferred load to knock out enemy tanks.

[423] Memorandum, Chief of Staff to Assistant Chief of Staff, G-3, 14 May 1941, Subject: Defense Against Armored Forces, George C. Marshall Papers, George C. Marshall Research Library, Lexington, VA.
[424] Lida Mayo, *The Ordnance Department: On Beachhead and Battlefront* (Center of Military History United States Army: Washington, DC., 1968), 27.
[425] Robert S. Cameron, *Mobility, Shock, and Firepower: The Emergence of the U.S. Army's Armor Branch, 1917-1945* (Washington, D.C.: Center of Military History United States Army, 2008), 299.
[426] DeJohn, *For Want of a Gun*, 49.
[427] Major A.C. Wedemeyer, "Antitank Defense." *Field Artillery Journal* 31, No. 5 (May 1941): 261.
[428] Charles C. Roberts Jr., *The U.S. 37-MM Gun in World War II* (Havertown, PA.: Casemate, 2023), 59.

Figure 3
M3 37mm anti-tank gun with crew[429]

A series of maneuvers held near Plattsburg, New York in 1939 provided a means to initially test the new M3 37mm gun in simulated combat, however, the results were less than satisfactory as the number of anti-tank weapons proved too few, and the infantry who were assigned to crew the M3s panicked when confronted by combat cars intent on overrunning them.[430] This prompted the War Department, following an anti-tank conference, to activate on

[429] Wilson, *Maneuver and Firepower*, 145.
[430] Memorandum from Brig. Gen. Adna R. Chaffee to The Adjutant-General, sub: Some Observations and Recommendations Pertinent to Any Future Expansion and Development of Mechanized Cavalry Which May Be Contemplated by the War Department, 15 Sep 39, p. 2, Ofc of the Chief of Cavalry, Gen Correspondence, RG 177, National Archives Records Administration (NARA).

June 24, 1941, provisional anti-tank battalions within each infantry division to be led by appointed anti-tank officers.[431]

Less than a month later, the War Department's Assistant Chief of Staff called for another anti-tank conference to inform anti-tank officers of anti-tank issues, the way ahead for testing them during future maneuvers, the latest developments in mechanized anti-tank doctrine and all associated duties expected of anti-tank officers. Among the many officers in attendance, Lt. Gen. McNair offered closing remarks, whereby he asserted,

> Decisive action against a tank calls for a counterattack in the same general manner as against the older forms of attack. A counterattack, of course, may be delivered by other tanks, but the procedure is costly. There is no reason why anti-tank guns, supported by infantry, cannot attack tanks just as infantry, supported by artillery, has attacked infantry in the past. Certainly it is poor economy to use a $35,000 medium tank to destroy another tank when the job can be done by a gun costing a fraction as much.[432]

Additionally, he directed that those in attendance thoughtfully and resolutely set out to find solutions, first by study and analysis, and then by practical application during field exercises.[433]

While the Tennessee Maneuvers may have shown some improvement over the Third Army Maneuvers regarding the scope and scale, the level of bureaucratic infighting regarding the most effective means of defeating enemy armor (anti-tank gun versus tank) cast a shadow on the overall effectiveness of the maneuvers and therefore hampered any appreciable training efforts for armored units. As a result, those participating never received an adequate and unbiased assessment of their performance. Moreover, the fact that Lt. Gen. McNair was in charge of the Tennessee Maneuvers nearly guaranteed his final report would hold more weight with Gen.

---

[431] War Department letter to CG's all armies., AG 320.2 (19 Jun 1941) MR-M-C, 24 Jun 1941, subj: Organization of Provisional Division and GHQ AT Battalions for use in current maneuvers. U.S. Army War College, Washington D.C.
[432] Lt. Col. Emory A. Dunham, "Tank Destroyer History." Army Ground Forces Study No. 29. Historical Section, Army Ground Forces, 1946, 2-3.
[433] Ibid.

Marshall than any counter observations made by Maj. Gen. Patton or Maj. Gen. Lynch. Essentially, the Tennessee Maneuvers were little more than a propaganda vehicle for Lt. Gen. McNair to push for the establishment of dedicated anti-tank units to be added to the Army's TO&E.[434]

In all fairness to Lt. Gen. Lesley McNair, the man truly was a visionary when it came to the development of anti-tank weapons. According to his wartime biographer, McNair graduated 11th out of a class of 124 in the 1904 West Point graduating class.[435] Soon after, he was commissioned as a 2nd Lieutenant of Artillery, thus beginning his long-term relationship with that branch of the infantry. In 1934, Lt. Col. McNair had the opportunity to reply to a survey on the subject of anti-tank defense. At that time, Lt. Gen. McNair was assigned to the 16th Field Artillery of the 8th Division at Fort Bragg North Carolina. The responses he provided to the survey revealed his core beliefs on the current and future capabilities of tank and anti-tank developments and his convictions on the vulnerability of tanks to anti-tank fire.[436]

Lt. Gen. McNair was directly responsible for the addition of the M-10 tank destroyer, the first dedicated self-propelled anti-tank weapon of its kind. The M-10 combined an M4 Sherman tank chassis with a thinly armored hull to ensure maximum maneuverability and speed. Armed with a 76mm main gun, the M-10 racked up an impressive number of destroyed German tanks during the waning years of the war. However, due to its thinly armored turret and open top, many tank destroyer crews died from sniper fire, grenades, and German tanks. Sadly, they may not have perished if only the U.S. Army had focused more on designing a better heavy tank to match

[434] DeJohn, *For Want of a Gun*, 103.
[435] Eli J. Kahn, *McNair: Educator of an Army* (Washington, DC: The Infantry Journal Press, 1945), 52.
[436] Richard C. Anderson Jr., *American Thunder: U.S. Army Tank Design, Development, and Doctrine in World War II* (Lanham, MD: Stackpole Books, 2024), 25-27.

what U.S. tankers faced in Europe.[437] Instead of adapting to the changing battlefield with better tanks and tactics and ensuring these elements were included as part of readiness maneuvers, Army leaders fell back on what had been tried and true up to that time. The importance of assessing exercise results to improve combat effectiveness cannot be overstated as this work demonstrates.

On August 8, 1941, Lt. Gen. McNair ordered the Third Army to establish three GHQ anti-tank groups for the next series of readiness maneuvers, which would take place in roughly the same area as had the Third Army Maneuvers the previous year.[438] These maneuvers were the largest wargames ever conducted and were intended to validate the army's large unit training methods before sending troops to North Africa in November 1942.

[437] DeJohn, *For Want of a Gun*, 108.
[438] Adjutant-General, GHQ, to Commanding General, Third Army, 8 August 1941, Subject: GHQ Antitank Units in GHQ Directed Maneuvers, 353 Training Directives, GHQ, entry 5, RG 337, NA.

Chapter 7

The GHQ Maneuvers: Louisiana

The GHQ Louisiana Maneuvers that occurred in the fall of 1941 was a massive army-versus-army level exercise born of necessity as the situation that had been developing in Europe motivated Gen. Marshall to prepare the U.S. Army for all eventualities.[439] To that end, he ordered Lt. Gen. McNair and his staff to plan and oversee these epochal maneuvers, which provided a broader platform for the War Department to validate new doctrine and equipment, as well as a means to identify Army issues still requiring resolution.[440]

As an unfortunate by-product, the GHQ Louisiana Maneuvers would also reveal that the bureaucratic malaise that Gen. Marshall had lamented was still ongoing and resulted in weapon development stagnation, particularly in the production of a tank comparable to what Germany had successfully utilized both in Western and Eastern Europe. Kasserine, Anzio, the Hürtgen Forest, and the Bulge would expose these grim shortfalls in U.S. Army decision-making.

Lt. Gen. McNair had a personal stake in the outcome of the GHQ Louisiana Maneuvers. His passion for the development of a mobile anti-tank force that would be attached to the nascent armored division was born, in part, from the observations found during the previous year's maneuvers, in which a "too passive employment of anti-tank guns" made the top ten list of identified deficiencies.[441] Incidentally, this same process of verifying deficiencies during an exercise and then ensuring they are incorporated into subsequent exercises is still practiced today by military exercise planners.

---

[439] Pogue, *Ordeal and Hope*, 91, 162.
[440] Calhoun, *General Lesley J. McNair*, 243.
[441] Ibid., 223.

Along with rectifying this deficiency, Lt. Gen. McNair also wanted to ensure that these maneuvers came as close to actual war as possible considering the press proved relentless in criticizing the lack of realism during the Tennessee Maneuvers. One embarrassing anecdote was a *Time* magazine article that wryly stated Lt. Gen. McNair "wanted no more of the old style of maneuver, in which the U.S.'s undermanned, underarmed Army had to pretend that one man with a flag was a tank."[442] Arguably, the primary catalyst for making this a reality was his supervision of a new umpire manual dated February 10, 1941.

During the Tennessee Maneuvers, biased umpiring had been one of the major complaints by the participants, particularly Maj. Gen. Patton.[443] Christopher R. Gabel, in his masterful history of the GHQ Maneuvers, noted that Lt. Gen. McNair counted on the GHQ *Umpire Manual* to assure the realistic battle play during the maneuvers.[444] Having personally superintended the content of the GHQ *Umpire Manual*, it is not surprising to discover that he ensured that the "deck was stacked" in favor of his pet project…the use of anti-tank guns against tanks.

Along the lines of improving the realism factor for the GHQ Louisiana Maneuvers, Lt. Gen. McNair directed that the maneuvers should be free play, meaning each force was free to act as their leadership saw fit. Also, the battle rhythm (deliberate daily cycle of operations) for the maneuvers was to be continuous…without rest periods but brief. McNair also mandated that the umpire staff was to avoid interfering with the troops, nor were they to inadvertently reveal the position of exercise players by exposing themselves needlessly.[445]

---

[442] "ARMY: No More Phony Maneuvers," *Time*, June 16, 1941.
[443] Blumenson, *Patton Papers*, 36.
[444] Gabel, *The US Army GHQ Maneuvers of 1941*, 45.
[445] General Headquarters, U.S. Army, *Umpire Manual* (Reproduced by CGSS, 17 Feb 41), 7-8. [hereinafter referred to as GHQ *Umpire Manual*]

An elaborate set of scoring rules, colored flags, and colored hat bands also contributed to the GHQ Louisiana Maneuvers being the most robust exercises to date. When deciding the outcome of simulated combat, the umpires had to follow a specific method to ensure tactical realism. For example, when opposing forces made contact, umpires assigned to opposing units promptly displayed a white flag, halting their units pending a decision as to which side was permitted to advance. If it was decided that one force got to advance, the other had to withdraw correspondingly. White flags were replaced with red ones along the front of the advancing force, denoting them as the stronger side and blue ones along the front of the weaker force. These procedures formed the basis of umpiring throughout the maneuvers.[446]

The GHQ *Umpire Manual* also contained guidance regarding the assessment of losses as it related to the aggregate firepower of infantry, mortars, anti-tank guns, armor, artillery, machine guns, and aircraft. For example, an infantry unit's effective firepower was derived numerically as follows: each rifle counted for 1 point, each .30-caliber machine gun 6 points, each .50-caliber machine gun 10 points, and each 81mm mortar 15 points. Blank ammunition was supplied to infantry units, maintaining realism and making it easier for umpires to assess casualty losses. The inclusion of air and armored units made things a bit more complicated for the umpire staff.

In the case of air-to-ground engagements, there would be no way for opposing umpires to meet face-to-face, and there was little chance that radio equipment could be spared for air-to-ground umpire communications. Moreover, the umpire manual only suggested that 1 to 10 percent casualty rates be assessed among ground units attacked by an appropriate number (one airplane against a company or less) of low-flying airplanes.[447]

---

[446] Ibid., 10.
[447] Gabel, *The US Army GHQ Maneuvers of 1941*, 48.

The section of the GHQ *Umpire Manual* dealing with tank vs. anti-tank only served to exacerbate an already sensitive issue between the two rival factions. The fact that Lt. Gen. McNair firmly believed that an infantry division should have a reserve of anti-tank weapons on hand to defeat massed tank assaults using concentrated anti-tank firepower was evident in the changes he made to the GHQ *Umpire Manual* four months after its publication.[448]

Issued to all commanding generals as well as to the Chief of the Armored Force, Lt. Gen. McNair approved "the following changes made as a result of further study and experience in connection with armored forces."[449] Among these changes, he elevated the M3 37mm anti-tank gun and .50 caliber heavy machine gun to almost mythical status by stating, "The 37mm anti-tank gun is effective from ground mounts and stationary vehicles against light tanks at ranges up to 1,000 yards and against medium tanks at ranges up to 500 yards…and the .50 caliber machine gun is effective against light tanks out to a thousand yards."[450]

And if that were not bad enough to further irritate those in the armored division, he directed that an anti-tank gun could only be assessed as a loss if overrun by an armored vehicle (tank), which meant the tank only had to reach the anti-tank gun before being ruled *hors de combat* (out of action) by a tank umpire.[451] To tankers, this was ridiculous as tanks should be capable of knocking out anti-tank guns with gunfire versus charging and overrunning them.[452]

Moreover, the stipulation that an anemic 37mm shell or .50 caliber bullet could take out a light or medium tank was preposterous to those in the Ordnance Department who desired to

---

[448] Cameron, *Mobility, Shock, and Firepower*, 298.
[449] Memorandum, Lt. Col. Clyde L. Hyssong, Adjutant-General GHQ, U.S. Army to CG's all armies, GHQ Air Force; and Chief of Armored Force (June 10, 1941) 353/178-F, subj: Changes, GHQ Umpire Manual. U.S. Army War College, Washington D.C.
[450] Ibid.
[451] GHQ *Umpire Manual*, 17.
[452] [This was realistically depicted in a scene in the 2014 film *Fury* when Brad Pitt's character orders his tanks to fire on a concealed German PaK 40 anti-tank gun.]

develop an effective anti-tank weapon of their design. However, those in the field needed a more expedient solution and could not wait years for the research and development process to turn out a more effective design. Therefore, the War Department placed immediate orders for the M3.[453]

The viability of the M3 37mm anti-tank gun was questionable even when it was developed in 1936, yet the U.S. Army elected to mass produce it because it was highly preferable to the machine guns then used as anti-tank weapons. By 1939, the Germans had begun using anti-tank weapons ranging from 50 to 80mm, rendering the M3 obsolete before it was standardized.[454] This misstep need not have occurred and illustrated one of the many inter-branch ditherings between men who should have prioritized the common foot soldiers' welfare.

Indeed, citing observer's reports on the anti-tank guns being used in Europe, the Chief of Field Artillery proposed in 1938 that a more powerful weapon be produced for field artillery. However, the Chief of Ordnance complained that the introduction of an additional weapon with new types of ammunition would only complicate production and supply. His opinion was that the 75mm howitzer and 75mm field gun successfully augmented the 37mm as anti-tank weapons and that the gun requested by the Chief of Field Artillery could not weigh less than 2,700 pounds. Upon learning of this, the Chief of Field Artillery rescinded his request.[455]

On June 3, 1940, Gen. Marshall fired off a memo to his Assistant Chief of Staff stating, "It occurs to me that we should initiate the development of a heavier caliber antitank gun than the 37mm. Reports from abroad indicate that the 37mm has been found comparatively ineffective against the heavier type of tank armor…"[456]

---

[453] Mark Skinner Watson, *The War Department: Chief of Staff: Prewar Plans and Preparations* (Center of Military History United States Army: Washington, D.C., 1950), 43.
[454] Johnson, *Fast Tanks and Heavy Bombers*, 115.
[455] Constance M. Green, Harry C. Thomson, and Peter C. Roots, *The Ordnance Department: Planning Munitions for War* (Washington, D.C.: Center of Military History United States Army: Washington, D.C., 1955), 185.
[456] Memorandum, Chief of Staff for Assistant Chief of Staff, 3 Jun 40, atch to memo, Assistant Chief of Staff for Chief of Staff Ordnance, 6 Jun 40, subj: Development of Heavier Antitank Gun, OO 472.1/2821, DRB AGO.

Given this information, as well as a *Time* magazine article that reported an experiment in which 37mm anti-tank gun shells were fired from a point-blank range of 100 yards into 1-inch tank armor only to bounce off without making a dent, one wonders why Lt. Gen. McNair was so insistent on flaunting the benefits of the 37mm to the point of frustrating armor participants during the GHQ Louisiana Maneuvers.[457]

All frustrations aside, the GHQ Louisiana Maneuvers presented new opportunities related to U.S. Army readiness maneuvers. These peacetime maneuvers would mark the first field test of provisional anti-tank groups, joint Navy, Marine, and Army Air Force support of ground forces, air-raid warning systems, and even paratroopers.[458] Additionally, brand new M3 Lee medium tanks that had rolled off assembly line floors in July 1941, 105mm howitzers (artillery), half-tracks, jeeps, and fighter and bomber aircraft were made available for the exercises. Different than basic training, readiness exercises offer a unique opportunity to test out new items of military hardware in simulated combat conditions.

The new M3 Lee medium-weight tank owed its birth to Maj. Gen. Lynch. Based upon reports he submitted to the Ordnance Department regarding the German's use of a turreted 75mm gun in France, he recommended the development of a similar tank for the U.S. Army. The result would feature a medium tank with a 75mm main gun mounted in a limited traverse mount versus a fully rotatable turret. Due to limitations of the armaments industry, the offset 75mm gun housed in a turret that barely traversed was the best that could be hoped for at that time. In addition to the 75mm gun, a 37mm gun in a rotating turret mounted atop the tank completed the

[457] "National Defense: Is It Good Enough?" *Time*, June 16, 1941.
[458] Murray, "The Louisiana Maneuvers: Practice for War," 118.

tank's primary armament capacity.[459] Between June 1941 and the time of the GHQ Louisiana Maneuvers, five manufacturers would produce a total of 116 M3 Lee tanks.[460]

The M3 Lee would factor heavily during these maneuvers as it represented the U.S. Army's only main medium tank at the time. The M4 Sherman medium tank, which proved to be a better medium tank and the most produced during the war, was in development during the GHQ Louisiana Maneuvers. Initial production of the M4 Sherman would not begin until February 1942 with the first one manufactured by the Pressed Steel Car Company in July 1942.[461] Since the M4 Sherman was not yet mass-produced during the maneuvers, it was unavailable to validate the tactical operations of such a tank during the GHQ Louisiana Maneuvers.

An enormous amount of ground would be needed for maneuvers of this magnitude. While the U.S. Army already possessed land rights to 3,400 square miles used during the previous spring's Third Army Maneuvers, by September 1941, the massive maneuver area consisted of some 30,000 square miles stretching from Shreveport, Louisiana south to Lake Charles, Louisiana, and from Jasper, Texas to the Mississippi River.[462]

At a price tag of more than $28,000,000 and the area secured, all that was left before the execution was for Army engineers to build runways, establish train and truck facilities, repair roadways, shore up bridges, and arrange telephone and telegraph communication lines. They did this excellently while the Second and Third Armies worked logistics networks to sustain nearly a half million men in the field.[463]

---

[459] Anderson Jr., *American Thunder*, 114.
[460] Ibid., 139.
[461] Ibid., 181.
[462] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 53.
[463] Gabel, *The US Army GHQ Maneuvers of 1941*, 58.

As with the previous large-scale maneuvers, the GHQ Louisiana Maneuvers were divided into phases and a fictitious exercise scenario was created and disseminated to opposing forces. Commanding the Third Army (Blue force) was Lt. Gen. Walter Krueger and his opponent, Lt. Gen. Ben Lear, commanded the Second Army (Red force).[464] Lt. Col. Mark W. Clark, Deputy Director for GHQ Maneuvers, was told by his boss, Lt. Gen. McNair, to flesh out a scenario and to "keep the directive as simple as possible."[465] Lt. Col. Clark took out a car map of Louisiana and crafted a WARNORD that would bring the two armies into conflict between the Red and Sabine Rivers.[466]

In what amounted to an imaginative departure from previous maneuvers, a U.S. Army press officer crafted an elaborate fictional backstory which was published in *Life* magazine two weeks before the start of the GHQ Louisiana Maneuvers. Major R. A. Griffin's article, entitled "Political Fiction Peps Up War Games in South," was intended to hype up the forthcoming maneuvers and add a modicum of realism for the participants.

According to Maj. In Griffin's story, two imaginary nations were on the brink of war. The country of KOTMK (an acronym for Kansas, Oklahoma, Texas, Missouri, and Kentucky) stood for Lt. Gen. Lear's Red force. The country of ALMAT (Arkansas, Louisiana, Mississippi, Alabama, and Tennessee) was represented by Lt. Gen. Walter Krueger's Blue force. The *Life* article even depicted a map of the two opposing nations.[467] (See Fig. 4)

[464] Eisenhower, *Crusade in Europe*, 13.
[465] General Mark W. Clark, *Calculated Risk* (New York: Harper & Brothers, 1950), 15.
[466] Ibid.
[467] Major R. A. Griffin, "Political Fiction Peps Up War Games In South: "KOTMK Blitzes "ALMAT" to Get Mississippi," *Life*, September 1, 1941, 31.

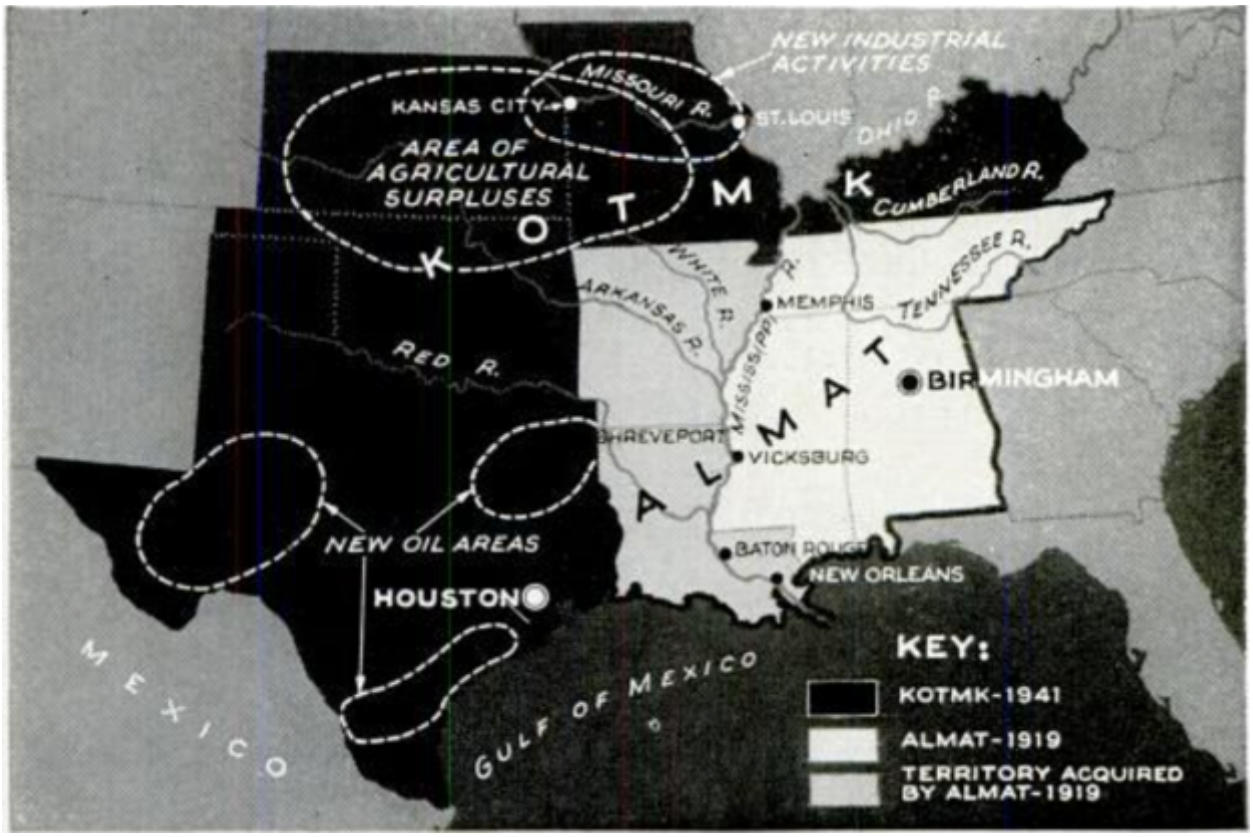

Figure 4
Map of KOTMK and ALMAT in preparation of GHQ Louisiana Maneuvers, *Life* magazine

On a more official note, a backstory scenario was issued as Field Order No. 15 on September 12, 1941, to all Red forces by VII Corps Commander Maj. Gen. Robert C. Richardson detailed that the "relationship between Red northeast, and Blue southwest of Red River has grown tense."[468] The first phase of the GHQ Louisiana Maneuvers, known as "H" hour, was set to begin at 5:01 AM on Monday, September 15, 1941, and tasked Lt. Gen. Lear's Red force with crossing the Red River and "destroying" any Blue forces positioned near Lake Charles.[469] To accomplish this feat, the 130,000-man Red force was comprised of three infantry divisions and a cavalry regiment. The 1st and 2nd Armored Divisions, four U.S. Navy fighter

[468] Lt. Col. John R. Hodge, Report of AC of S, G-3 on August-September Maneuvers Arkansas-Louisiana. World War II U.S. Army War Game Maneuvers Collection; Box 1A, Folder 3, 1941 Maneuvers - G3 Report of The VII Army Maneuvers, October 20, 1941, 2, U.S. Army Heritage and Education Center, Carlisle, PA.
[469] Ibid.

and dive bomber squadrons, and pursuit aircraft rounded out the total assets at the Second Army's disposal.[470]

Lt. Gen. Walter Krueger's 270,000-man Blue force (Third Army) was directed to move out at 5:30 AM the same day to trap the Red force against the Red River between Natchitoches and Alexandria. The Blue force enjoyed a significant numerical advantage over the Red with ten infantry divisions, three cavalry regiments, three anti-tank groups, two light tank battalions, and pursuit, fighter, and bomber aircraft.[471]

Although it was never officially stated as such, these maneuvers were primarily designed to validate whether a superior force without tanks could defeat a smaller force with two seasoned armored divisions. Of course, this scenario had already been played out in real-time, as seasoned Panzer divisions had already rolled over numerically superior defenders in Western Europe.

Historian Christopher R. Gabel calls the first phase of the GHQ Louisiana Maneuvers the Battle of the Red River, which was appropriate as Red forces discovered getting across the Red River was more difficult than expected. In his official report, Assistant Chief of Staff Lt. Col. John R. Hodge noted that the river's main crossing began at 5:00 AM on September 15 via assault boats and ferries. Red forces crossed the Red River between the towns of Coushatta and Colfax, Louisiana, a distance of approximately 50 miles.[472]

During the initial actions of the maneuvers, it was realized that there were so many Red force soldiers crossing the Red River that pontoon bridges had to be rushed to completion during that first day so all attacking forces could meet their initial objective. By nightfall on September

[470] Gabel, *The US Army GHQ Maneuvers of 1941*, 65.
[471] Ibid., 67-68.
[472] Hodge, Report of AC of S, G-3 on August-September Maneuvers Arkansas-Louisiana, 9.

16, all Red forces had closed on their initial objective, and the following day, they were reconnoitering south of their initial position in anticipation of an attack by Blue forces.[473]

Gabel notes that early on the morning of September 17, Lt. Gen. Lear's 66th Armored Regiment, comprised of the new M3 Stuart light tanks attempted a dual-pronged assault into Lt. Gen. Krueger's Blue forces to push them back a distance of some 30 miles to Mount Carmel, Louisiana. Unfortunately for Lt. Gen. Lear, this introductory armored operation of the GHQ Louisiana Maneuvers turned out to be a bust as tankers discovered the roads thoroughly saturated with Blue force anti-tank guns.[474] Interestingly, a period photograph of an M3 Stuart light tank during the GHQ Louisiana Maneuvers appears in the November-December 1941 issue of the *Cavalry Journal*. The photograph clearly shows two M3 tanks off-road and making their way through a forested region of the maneuver area.[475]

By the afternoon of September 18, the Blue force reaction to the crossings was substantial enough to blunt the armored advance across the Red River. Lt. Col. Hodge mentioned in his AAR that "hostile (Blue) forces were fully prepared for the attack of [the] armored element and stopped the initial armored advance."[476] Renewal of the Red force attack was ordered for September 19 and plans were made to attack Blue forces with a portion of the 1st Armored Division against areas in which Blue forces had successfully penetrated Red lines.[477]

During the September 19 attack, Red forces enjoyed some success along their right flank and managed to "wipe out" Blue forces. However, on their left flank, Blue forces continued their success and by mid-day, the Red 6th Infantry Division began to falter, requiring reinforcement

---

[473] Ibid., 10.
[474] Gabel, *The US Army GHQ Maneuvers of 1941*, 75.
[475] Lieutenant Martin Philipsborn Jr., "Use of the Armored Force," *The Cavalry Journal* 50, No. 6 (November-December 1941): 63.
[476] Hodge, Report of AC of S, G-3 on August-September Maneuvers Arkansas-Louisiana, 10.
[477] Ibid.

from two additional divisions. This action, which ended around 3:30 PM on September 19, closed out the first phase of the GHQ Louisiana Maneuvers and revealed the vulnerabilities of tanks operating without infantry reconnaissance.[478]

Just like the Tennessee Maneuvers, the press offered a plethora of coverage regarding the first phase of the GHQ Louisiana Maneuvers. While an editorial written in the 1941 November-December edition of the *Cavalry Journal* lauded the GHQ Louisiana Maneuvers as "an unequivocal success," the press devoted considerable space to criticize Army leadership during the exercises.[479]

United Press (UP) reporter Richard C. Hottelet, who had recently returned from Berlin where he reported on the German blitzkrieg, noted the absence of an official "victor" during phase one. However, Lt. Gen. Krueger's Blue force believed they were the clear winners over Lt. Gen. Lear's tank-heavy Red force. Hottelet went on to mention that the "swampy portion of Louisiana, where the water table is only two feet below the surface" forced the attacking Red tanks to keep to the roads, thus exposing them to destructive aerial attack.[480]

Contributing to the embarrassment of Lt. Gen. Lear's armored divisions, another UP article praised Lt. Gen. Krueger's anti-tank guns, stating "the highly mechanized Red forces found the opposition Blue anti-tank corps…to be insurmountable."[481] No doubt this media coverage greatly encouraged Lt. Gen. McNair in his crusade to implement a mobile anti-tank element into the U.S. Army. By the time phase one had concluded, the 2nd Armored Division had "lost" 98 light tanks, 17 medium tanks, and 98 other armored vehicles.[482]

---

[478] Ibid.
[479] Editorial, *The Cavalry Journal* 50, No. 6 (November-December 1941): 26.
[480] Richard C. Hottelet, "Swamps Stop Heavy Machines and Snipers Do the Rest," *Evansville Press*, September 20, 1941, 1.
[481] "Blue Army's Mechanized Troops Are Forced To Seek An Armistice in Maneuvers," *Evansville Press*, September 20, 1941, 1.
[482] Tank Losses. 18 Sep 41, GHQ, LA., 1st and 2d Maneuvers Armed Forces, RG 337 57D, NA.

Several lessons were learned following the first phase of the GHQ Louisiana Maneuvers. Lt. Col. Hodge observed that during phase one, the entire VII Corps gained excellent training and experience in the methods and logistical challenges associated with executing a major water crossing into enemy territory. He also stated that Maj. Gen. Richardson's VII Corps was able to learn from operating with large, armored elements.[483]

First Armored Division Commander Maj. Gen. Charles L. Scott deduced that air superiority and motorized infantry were vital to a successful tank attack. Red forces lost phase one because the tanks became hamstrung waiting for foot soldiers to catch up.[484] Perhaps Maj. Gen. Scott had been paying attention to the happenings in Western Europe because the German Wehrmacht had soundly proven that the combination of air superiority coupled with infantry and armor support certainly assisted in their rapid conquest of France.

Maj. Gen. F.W Von Mellenthin, Chief of Staff for the 48th Panzer Corps, noted in his memoirs, "There is little doubt that the German armor, brilliantly supported by the Luftwaffe (German Air Force), decided the campaign."[485] He also stressed "that although we attached the greatest importance to armor, we realized that tanks cannot operate without the close support of motorized infantry and artillery."[486]

In an Associated Press (AP) article published in the *Evening Sun*, Maj. Gen. Scott echoed Maj. Gen. Von Mellenthin's sentiments concerning the importance of attaching motorized infantry to tank divisions. He stated, "Putting foot troops with tanks is like sending a racehorse and a plow mule out together and expecting them to go at the same speed."[487]

---

[483] Hodge, Report of AC of S, G-3 on August-September Maneuvers Arkansas-Louisiana, 10.
[484] Dickson, *The Rise of the G.I. Army*, 223.
[485] Maj. Gen. F.W. Von Mellenthin, *Panzer Battles: A Study of the Employment of Armor in the Second World War*, ed. L. C. F. Turner, trans. H. Betzler (University of Oklahoma Press, 1956), 27.
[486] Ibid.
[487] AP, "Tanks Need Land-Air Support, Says Chief," *The Evening Sun*, September 20, 1941, 3.

Even the illustrious Maj. Gen. Patton concurred. In a private letter written to the newly selected Chief of the Armored Force, Maj. Gen. Jacob L. Devers, Maj. Gen. Patton complained that during the GHQ Louisiana Maneuvers, the "Armored Force should have controlled the infantry rather than the reverse. As it was, we were reduced to the physical and mental speed of the infantry."[488]

In a speech given at an American Legion Convention in Milwaukee, Wisconsin, Army Chief of Staff Gen. Marshall summarized the first phase of the GHQ Louisiana Maneuvers, comparing them to "a field laboratory to test new methods of applying fundamental tactical principles and…experimentation in the employment of tanks and in finding a defense against them."[489] It would seem that the aggressive actions of organized German panzer divisions had caused U.S. Army leadership to take the developments within their armored force seriously.

The second phase of the GHQ Louisiana Maneuvers was completely unrelated to the first phase and was set to commence at noon on September 24, 1941. The organization of forces entailed swapping several elements to have them "fight" on the opposing side. For example, Maj. Gen. Patton's 2nd Armored Division joined Lt. Gen. Krueger's Blue force and in return, the Blue force transferred two-thirds of their anti-tank groups and a company from the 502nd Parachute Infantry Regiment to Lt. Gen. Lear's Red force.[490]

This reshuffling of forces was purposeful and gave Lt. Gen. Kruger an even more substantial numerical advantage over his Second Army opponent. For phase two, the Blue force would consist of some 219,346 men to Lt. Gen. Lear's Red force of 123,451. According to

[488] Blumenson, *Patton Papers*, 44.
[489] Pogue, *Ordeal and Hope*, 163.
[490] Gabel, *The US Army GHQ Maneuvers of 1941*, 96.

Gabel, the reasons for this were so that leaders could validate whether a smaller force could conduct defensive tactics against a superior attacker in nearly every respect.[491]

The second problem (scenario) of phase two of the exercise involved Lt. Gen. Lear's Red forces defending the city of Shreveport and its environs.[492] Lt. Col. Hodge noted that their overarching mission was to "delay in successive positions any hostile advance to the north along the Natchez-Vowells Mill-Fisher line west to the Sabine River."[493] Gabel goes into considerable detail regarding the "play-by-play" of events that ensued throughout the nine-day phase.

Despite hurricane-like conditions, Lt. Gen. Krueger's Blue force raced north towards their objective, Shreveport. He directed the 1st Cavalry Division (which included the 1st Armored Division) northwest across the Sabine River and into Texas to cover his left flank. However, things did not go as well as the Blue force may have anticipated. The inclement weather had caused the rivers to rise and Red engineer teams managed to affix simulated TNT charges to several bridges, upon which umpires ruled those bridges "destroyed." This slowed the Blue attack considerably due to numerous traffic bottlenecks and would earn the engineer teams much praise in AARs.[494] Unfortunately, the limited historiography available on this portion of the GHQ Louisiana Maneuvers gives scant detail on the actions of combat engineers who participated in the exercise. Gabel briefly mentions their activities in his The US Army GHQ Maneuvers of 1941 and G. Patrick Murray's 1972 article entitled "The Louisiana Maneuvers: Practice for War" does not mention engineers. Moenk also gives little to no coverage regarding the engineer's contribution to the exercise. Lt. Col. Hodge's AAR provides the most accurate

[491] Ibid., 96-97.
[492] Wiley and Govan, *History of the Second Army*, 26.
[493] Hodge, Report of AC of S, G-3 on August-September Maneuvers Arkansas-Louisiana, 10.
[494] Gabel, *The US Army GHQ Maneuvers of 1941*, 100-101.

assessment of the GHQ Louisiana Maneuvers, which neither Gabel, Murray nor Moenk even reference.

On September 26, Blue aviation forces, which included the cub spotter plane, "bombed and strafed" withdrawing Red forces while Blue combat engineers labored to "repair" those bridges deemed out of play by the umpires the previous day.[495] Additionally, 127 paratroopers who had switched sides for phase two jumped behind Blue lines the following day, thus demonstrating to Secretary Stimson and Gen. Marshall that large groups of parachute infantry could indeed be dropped into targeted zones to effect sabotage and light infantry operations. Of course, this would be fleshed out in the hours preceding the D-Day landings.[496]

In one of the more sensationalized events that took place during phase two, Maj. Gen. Patton elected to fool Red defensive forces and led his 2nd Armored Division into east Texas to execute a hooking movement to attack Red forces in the rear. This jaunt amounted to a 380-mile slog that culminated in a successful envelopment as he intended. Interestingly, Maj. Gen. Patton had previously ensured his vehicles would have enough gasoline for the diversionary overnight trek through Texas by a previously made arrangement with gas stations along his route. Using his own money to purchase fuel, the General guaranteed his 2nd Armored would not run out of gas![497]

Although 2nd Armored had indeed managed to reach a position behind Lt. Gen. Lear's Red force, umpires refused to credit Maj. Gen. Patton's nighttime excursion forced him to withdraw, leaving the remainder of Lt. Gen. Krueger's forces to execute a frontal assault

[495] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 61.
[496] Capt. M. M. Corpening, "'Red' Parachute Troops Harass 'Blue' Invaders," *Chicago Daily Tribune*, September 27, 1941, 6.
[497] Kenneth S. Davis, *Soldier of Democracy: A Biography of Dwight Eisenhower* (Garden City, N.Y.: Doubleday, Doran and Company, 1945), 273.

between the Sabine and Red Rivers. The only viable hindrances to their progress were Red demolition squads and aircraft.[498]

By September 28, the heavily numbered Blue force had swept aside Lt. Gen. Lear's delaying forces. As Red forces prepared to vacate their second delaying position, Blue forces harassed Red frontline divisions as Red forces moved to their third and final delaying position.[499] Far from the decisive outcome hoped for by Lt. Gen. Krueger, Lt. Gen. McNair ruled that, although Blue forces had not been able to capture Shreveport yet, they had achieved a tenable position, which would have enabled them to launch a coordinated attack within the next 24 hours. Lt. Gen. Krueger would never find out as the exercise was terminated at 5:55 PM on September 28.[500]

Up to that time, the GHQ Louisiana Maneuvers attempted a level of background realism that had yet to be displayed during all previous such exercises. For example, bags of flour were dropped by "attacking" aircraft to signify a "hit," loudspeakers blared realistic combat sounds, flares lit up night skies, and even dummy planes were used to fool "enemy" observation aircraft. *Life* magazine even termed it the "greatest sham battle in history."[501]

These types of details fortify readiness exercises and help to suspend disbelief for the participants by creating a theatrical environment that closely replicates the sights and sounds of battle. Such efforts are necessary for those involved in such maneuvers to retain the motivation to perform at their best level. Incidentally, these same measures are utilized in present-day

[498] Gabel, *The US Army GHQ Maneuvers of 1941*, 108.
[499] Ibid., 109.
[500] Hodge, Report of AC of S, G-3 on August-September Maneuvers Arkansas-Louisiana, 11.
[501] "Big Maneuvers Test U.S. Army in Swamps and Forests of Louisiana, 350,000 Soldiers Stage Greatest Sham Battle in History," *Life*, October 6, 1941, 33.

readiness exercises as elaborate smoke machines, ground burst simulators, high-tech sound devices and OPFOR elements enhance the experience for today's U.S. military members.[502]

Aside from improving the overall level of realism, the GHQ Louisiana Maneuvers also revealed a great many firsts that occurred. The newly formed U.S. Army parachute infantry enjoyed an opportunity to validate their grueling airborne training, the Piper Cub observation plane was used with great success, CBS and NBC radio broadcasted reports of daily happenings to eager listeners and more umpires were utilized (2,000) than during any previous exercises.[503]

Additionally, these exercises marked the first time one entire field army was pitted against another of nearly equal parity, the first time such a vast amount of airpower had been used and, sadly, the first time a significant loss of life occurred during a peacetime readiness maneuver. An article in the *Huntsville Times* reported a death toll of 94 as a result of the GHQ Louisiana Maneuvers.[504]

While not all 94 deaths were a direct result of simulated combat during the exercises, the majority were. Of course, this tally would be far eclipsed during the 1944 amphibious landing D-Day rehearsal exercise known as Exercise Tiger, in which some 1,405 soldiers and sailors perished.[505] This is quite remarkable considering a total of 197 men died at Utah Beach on the actual D-Day invasion and serves as a stark reminder of the importance of ensuring safety measures are in place during readiness exercises. Thankfully, the U.S. military has dramatically

---

[502] United States General Accounting Office letter to Senator Kay Bailey Hutchison., August 29, 2001, GAO-01-1113R, subj: U.S. Army's Procurements of Battle Effects Simulators. Washington, D.C.
[503] Dickson, *The Rise of the G.I. Army*, 214-16; Charles M. Davis, "War Game Umpires Say It With Flags," *The Baltimore Sun*, October 12, 1941, 1.
[504] UP, "Maneuvers Bring Six More Deaths," *The Huntsville Times*, October 2, 1941, 17.
[505] Richard T. Bass, *Exercise Tiger: The D-Day practice landing tragedies uncovered* (East Sussex: Tommies Guides, 2008), 161,

improved in this area to the point that a negative training effect can sometimes result from over-simulation in an attempt to avert injury.

As with the first phase, the second phase of the GHQ Louisiana Maneuvers brought to the fore several observations recorded by various elements of Army staff and the news media. Additionally, while Moenk, Gabel, and Murray all drew similar conclusions regarding the overall impact of the GHQ Louisiana Maneuvers, their overall assessment of the effectiveness of those maneuvers could be more comprehensive. As this work demonstrates, there is no substitute for a report submitted by someone who was there and who understood the inner workings of the U.S. Army.

U.S. Army Assistant Chief of Staff Lt. Col. John R. Hodge had served in France during the Great War as an infantry Second Lieutenant. After the war, he taught military science at Mississippi State University and graduated from the Infantry School in 1926. Before the outbreak of World War II, he graduated from the Command and General Staff School, the Army War College, and the Air Corps Tactical School.[506] Lt. Col. Hodge was arguably one of the most qualified soldiers to report on the GHQ Louisiana Maneuvers. In section six of his report, he noted thirteen areas and offered substantial comments.

Regarding the infantry, Lt. Col. Hodge criticized the GHQ Louisiana Maneuvers for being too short and for not effectively testing unit cohesion when faced with enemy opposition. He mentioned that the majority of infantry regiments had only two days in contact with the "enemy" in infantry operations because most of their time was consumed with movement or in bivouac (temporary camp) awaiting to be moved.[507]

---

[506] Stephen R. Taaffe, *Marshall and His Generals: U.S. Army Commanders in World War II* (Lawrence, KS.: University Press of Kansas, 2013), 153.
[507] Hodge, Report of AC of S, G-3 on August-September Maneuvers Arkansas-Louisiana, 13.

He also lamented the missed training opportunities for anti-tank units. Throughout the maneuvers, considerable attention was placed on anti-tank defense, however, the majority of what was observed by umpires involved simply moving the anti-tank guns from place to place. One glaring example of this misstep concerned an entire anti-tank group that did nothing for 36 hours.[508]

Deficiencies in communications represented another area Lt. Col. Hodge underscored. In his words, "the operation of communications during the maneuvers with present organization, equipment and state of training of units left much to be desired."[509] In particular, the effective ranges of radio sets proved far too limited to maintain effective radio communications between infantry, armor, and aircraft units. To state that this represented a critical deficiency that deserved the utmost attention is an understatement as the United States was a little more than 14 months out from facing an adversary that had already solved this dilemma.[510]

Biased umpiring was another area in which Lt. Col. Hodge found fault. Although this had been an issue during the Tennessee Maneuvers, more was needed to ensure a completely unbiased system of observation. Lt. Col. Hodge averred that using umpires assigned to the unit for which they were umpiring naturally developed a partisan spirit, which "cannot help but affect one's ability as an umpire."[511]

Unfortunately, biased umpiring did not present U.S. Army leadership with an accurate snapshot of combat effectiveness. From the function of the staff to the lack of infantry, anti-aircraft, and anti-tank training, the only area the Assistant Chief of Staff praised was "of all the

[508] Ibid., 14.
[509] Ibid.
[510] Guderian, *Achtung-Panzer!*, 181.
[511] Hodge, Report of AC of S, G-3 on August-September Maneuvers Arkansas-Louisiana, 15.

combat troops engaged in the maneuvers, it is believed that engineering units gained the most…"[512]

Indeed, the engineers had their hands full affixing simulated demolition charges to the numerous bridges involved in the exercises which umpires were quick to rule as "destroyed" much to the consternation of the armored forces who intended to cross over those bridges. Lt. Gen. McNair even characterized the GHQ Louisiana Maneuvers as the "Battle of the Bridges" because demolished bridges at times "paralyzed our highly mechanized and motorized road-sensitive armies."[513]

And speaking of armored forces, tankers were quick to highlight to leadership that Lt. Gen. McNair's *Umpire Manual* was slanted in favor of anti-tank elements, as it permitted 37mm guns and even .50-caliber machine guns an unjustified level of effectiveness against armor.[514] That did not seem to matter. In Lt. Gen. McNair's mind, his beloved anti-tank units had won the day during the maneuvers, thus proving the validity of his crusade to push further for the development of anti-tank tactics and vehicles dedicated to anti-armor operations.

Indeed, in his after-action critique of phase one, he remarked, "An outstanding feature of the maneuver was the success attained in antitank defense, due primarily to guns. While terrain hampered armored operations, it seems clear that the mobile antitank gun defense now being developed gives promise of marked success."[515]

---

[512] Ibid., 13.
[513] Editorial Comment, "Maneuvers 1941 – In General," *The Cavalry Journal* 50, No. 6 (November-December 1941): 28.
[514] Christopher R. Gabel, *Seek, Strike*, *and Destroy: U.S. Army Tank Destroyer Doctrine in World War II*, Leavenworth Paper No. 12. (Ft. Leavenworth, KS.: Combat Studies Institute, U.S. Army Command and General Staff College, 1985), 15.
[515] Comments by Lt. Gen. L. J. McNair, 1st Phase, GHQ-Directed Maneuvers, Camp Polk, Louisiana, 14-19 September 1941, Bruce Papers, U.S. Army Military History Institute, Carlisle Barracks, PA.

The problem with this statement was that most armored units ruled by umpires as "destroyed" were taken out by static anti-tank units attached to divisions and *not* by mobile anti-tank groups. Despite Lt. Gen. General McNair's fervor, mobile anti-tank groups did not prove themselves in Louisiana because they hardly moved![516] It is ridiculous to assume that during a war characterized by movement, anti-tank units would stay in place while waiting for enemy tanks to stumble blindly upon their positions.

Nevertheless, in his biography of Lt. Gen. McNair, author Mark T. Calhoun noted that commanders used anti-tank weapons more aggressively during the second phase of the GHQ Louisiana Maneuvers when compared with the first phase, which led to greater success against armored forces. Of course, the measure of that "greater success" was due to biased umpire reports more than the tactical movement of anti-tank elements searching for enemy tanks. Naturally, this vindicated Gen. Marshall, Lt. Gen. McNair, and members of the War Department on the continued use and development of anti-tank weapons, of which the eventual culmination would be a tank destroyer.[517]

Adding further support to this ongoing argument, an anti-tank officer assigned to the VII Corps during the GHQ Louisiana Maneuvers suggested that "an anti-tank unit of a large force, i.e., corps level be designated as tank destroyer units, composed of arms and services so it has the same maneuverability over great distances as an armored corps or division and can effectively engage any wide envelopment attempted by armored forces."[518] All good in theory,

[516] Gabel, *Seek, Strike*, *and Destroy*, 15.
[517] Calhoun, *General Lesley J. McNair*, 244.
[518] Major Clark L. Ruffner, Report of Antitank Officer VII Corps, August-September Maneuvers in Arkansas and Louisiana [Part 1 of 13]. Maneuvers and Exercises (1902-1970s). Reports; Box 4A, Folder 1, Report of VII Army Corps Field Exercises and Maneuvers 10 August-28 September 1941. U.S. Army Heritage and Education Center, Carlisle, PA.

but these suggestions were too little too late and therefore not part of the maneuver plan and were not objectively validated.

Naturally, those within Army circles vehemently opposed creating and employing mobile anti-tank elements to counter enemy tanks. Major A.C. Wedemeyer, the first U.S. Army officer to complete Germany's version of a staff college (*Kriegsakademie*) in the late 1930s, wrote an article for the *Field Artillery Journal* shortly before the GHQ Louisiana Maneuvers and offered his expert opinion on the best manner in which to deal with enemy tanks, advising that "tanks are the most effective means by which a hostile armored attack may be stopped. When operating on antitank missions, they should be equipped with weapons that are definitely capable of stopping the enemy tanks."[519]

Having been in Germany during their clandestine weapons buildup period and no doubt witnessing their tank program firsthand, Maj. Wedemeyer was arguably a subject matter expert when it came to figuring out the best strategy in which to defeat Germany's vaunted *panzerwaffe* (tank force) and his ideas recommended building American tanks with a main gun (cannon) that were either as powerful or more powerful and faster than those of the German army.[520]

Those outside U.S. Army circles also weighed in on what was becoming a burgeoning tank versus anti-tank versus tank destroyer debate. Massachusetts Senator Henry Cabot Lodge Jr., who was on two-month active duty, took part in the GHQ Louisiana Maneuvers and offered his thoughts to Congress shortly after the maneuvers concluded.

> The maneuvers which I attended were the greatest ever held in the history of this country…I have been reading a great deal about the so-called tank destroyers, and how the army is going to develop an entirely new element of the service that is to go out and chase down tanks and destroy them. Let us stop and think about that for a minute. If you want to have a weapon that will chase a tank, first of all, it has to be able to go at least as fast as the tank. If you want to have a vehicle that can destroy a tank, it has to have a gun

[519] Wedemeyer, "Antitank Defense." *Field Artillery Journal* 31, No. 5 (May 1941): 262.
[520] J.Y. Smith, "Gen. Albert Wedemeyer, WWII Strategist, Dies," *Washington Post*, December 29, 1989.

> that is fairly powerful. If it is to get there and not have the man picked off by snipers on the way, it has to have armor around it so as to protect the personnel. If you have a vehicle that can move fast across country, and that carries a big gun, and has armor on it, you have something that is very much like a tank.[521]

Unfortunately for the soldiers consigned to fight and die in the equipment provided to them, the debate over the best means to counter Germany's better-armed tanks would not be resolved until the final year of the war.[522] By that time, the period for validating the performance and abilities of those who would operate those tanks in large-scale stateside maneuvers was gone.

While Gen. Marshall was no doubt pleased with the overall performance of the GHQ Louisiana Maneuvers, he and other top-level officers who observed the maneuvers made some observations regarding the totality of the experience irrespective of the ongoing debate over the most effective means of dealing with enemy armor. In a letter written to Maj. Gen. Walter K. Wilson, the previous commander of the Third Army Corps, Gen. Marshall relayed that the greatest lesson to come out of the GHQ Louisiana Maneuvers was the "problem of corps command." The Chief of Staff chalked this deficiency up to the U.S. Army's inexperience in the field.[523] Interestingly, Gen. Marshall did not address, at least publicly, any perceived lack of training revealed during the exercises as had Lt. Col. Hodge. The only mention he made of training deficiencies that surfaced during the maneuvers was attributed to the basic training of National Guard units.[524]

[Then] Col. Eisenhower also seemed to overlook any training issues revealed during the maneuvers. In his *Crusade in Europe* (1948), he noted that the results of "that great manoeuvre" [sic] were incalculable as practical experience was gained in large-scale field supply of troops"

---

[521] *Cong. Rec*., 77th Cong., 1st sess., October 9, 1941, vol. 87, no. 179: 7960-61.
[522] DeJohn, *For Want of a Gun*, 48.
[523] Marshall, Letter to Major General Wilson, October 7, 1941 in *The Papers of George Catlett Marshall*, 632.
[524] Marshall, Letter to Harry H. Woodring, October 8, 1941 in *The Papers of George Catlett Marshall*, 634.

and that the "effectiveness of American trucks (not tanks) in the movement of troops and supply, demonstrated so magnificently three years later in France, was forecast on the roads of Louisiana in September 1941."[525]

As far as Lt. Gen. McNair was concerned, he unsurprisingly noted the failure to fully and effectively use the armored forces and a lack of aggressiveness in certain phases of attack and defense. Again, no mention was made regarding any hiccups or deficiencies in training.[526] Lt. Gen. McNair did, however, acknowledge that the U.S. Army was behind the Germans when it came to training.[527] Moreover, the official history of the Second Army noted that the GHQ Louisiana Maneuvers "developed no fundamental weaknesses in the tactical or training doctrines of the United States Army."[528] How could this be so considering what Lt. Col. Hodge had seen?

The public did not necessarily see it that way. Like the Tennessee Maneuvers, many newspaper and magazine reporters were on the scene to observe the GHQ Louisiana Maneuvers. While the average civilian journalist would probably not have been able to discern whether or not what they witnessed those few days in the fall of 1941 validated proper Army training, a comparison with America's impending adversary painted a different picture.

Former European correspondents Richard C. Hottelet and Leon Kay, both of whom had witnessed first-hand the Germans in action, noted in *Newsweek* that "German equipment, leadership, and battle technique (tactics) still are superior to that displayed in the Louisiana Maneuvers." They went on to conclude that many U.S. soldiers were using dummy weapons and

[525] Eisenhower, *Crusade in Europe*, 14.
[526] Wiley and Govan, *History of the Second Army*, 28.
[527] "First Lap." *San Francisco Chronicle*, October 5, 1941, 5.
[528] Wiley and Govan, *History of the Second Army*, 29.

the anti-tank guns they saw used during the maneuvers were "fewer and appeared to be inferior" to what the Germans were using.[529]

New York Times analyst Hanson W. Baldwin was also on-hand to watch the GHQ Louisiana Maneuvers and wrote a scathing criticism of overall U.S. Army readiness. In an article entitled "War Expert Comments on Maneuvers – Army Not Ready to Fight," the tagline read "Better trained than 1918 AEF, But Not Yet Big or Hard Enough for Blitzkrieg." Baldwin noted that an analysis of the exercises revealed "serious faults in training." Also, he mentioned that commanders evinced "too much tactical caution," there was an ammunition shortage, poor radio communication, and inefficient leadership.[530]

To Baldwin and other civilians who observed the GHQ Louisiana Maneuvers, it was fairly clear that the U.S. Army was ill-prepared to meet the Germans on the battlefield. Staff correspondent Dinky Williams stated that "the glaring weaknesses of the army were brought out in vivid detail" during the maneuvers. He noted a lack of discipline, a lack of coordinated movement of troops on roadways, and an unhealthy disregard for airpower.[531]

Paul Mallon of the *Shreveport Times* pronounced that "the fighting forces involved were found to be in fair condition if you will kindly consider their lack of equipment and training. They are far from being a match for anything in Europe yet." Mallon continued by mentioning the shortages "of every conceivable thing an army uses" and the dearth of effective officer leadership during the exercises.[532]

---

[529] "Brickbats Outnumber Bouquets in Postmortems of War Games," *Newsweek*, October 13, 1941: 50.
[530] Hanson W. Baldwin, "War Expert Comments on Maneuvers – Army Not Ready to Fight," *Des Moines Sunday Register*, October 5, 1941, 2.
[531] Dinky Williams, "Corps Units Shifted to Reduce Size," *The Columbia Record*, October 20, 1941, 2.
[532] Paul Mallon, "News Behind the News: Official Account of Recent Maneuvers in Louisiana," *The Shreveport Times*, October 15, 1941, 6.

Although Gen. Marshall lauded the performance of the common infantry soldiers who had been tasked to participate in the GHQ Louisiana Maneuvers, he agreed with his senior officers, particularly Lt. Gen. McNair, that the exercises revealed that the weaknesses evident in the maneuvers stemmed primarily from ineffective leadership.[533] The day following the official conclusion of the GHQ Louisiana Maneuvers, Lt. Gen. McNair provided Gen. Marshall with a list of those commanders he deemed unsatisfactory to retain command. That same day, Gen. Marshall fired off twenty-six letters to the commanding generals of various departments within Army headquarters, enclosing reclassification charts, which he noted revealed an appalling lack of attention to the important matter of handling such proceedings expeditiously.[534] It was highly rumored that the U.S. Army planned to cashier 30 percent of its commanding officers as a result of the GHQ Louisiana Maneuvers.[535]

Thus, the maneuvers ended up being a proving ground to weed out those who likely would have caused the deaths of hundreds, if not thousands of soldiers through poor leadership. Conversely, those same maneuvers highlighted others whose names would shine as some of history's most effective battle commanders.[536]

The GHQ Louisiana Maneuvers also brought to the fore an organizational disconnect related to armored operations. One of the more common critical observations made during the maneuvers was the armor's failure to combine tank operations with supporting artillery, air, and infantry elements. Time and again during the maneuvers, armored columns ran head-on into prepared enemy defenses without knowing beforehand the concentration, strength, or even the positions of those defenses. This meant tankers could not effectively maneuver around enemy

[533] Gorman, *The Secret of Future Victories*, II-20.
[534] Watson, *Chief of Staff*, 243.
[535] Gabel, *The US Army GHQ Maneuvers of 1941*, 115.
[536] Gorman, *The Secret of Future Victories*, II-21.

forces to attack from the rear because they lacked a clear command link between tank and infantry elements.[537] As discussed previously, the Germans had already mastered the organizational link between their tanks, infantry, and supporting air and artillery elements, which, when combined effectively, resulted in their tactical successes in both Western and Eastern Europe.

Maj. Gen. Patton was quick to weigh in on the organizational problems inherent within the armored divisions. In a lecture delivered to the 2nd Armored Division on October 25, 1941, Maj. Gen. Patton stated, "Before I tell you how good you are, I want to again emphasize certain tactical errors of which we were guilty. We still fail to use every weapon every time…Each time we fight with only one weapon when we could use several weapons, we are not winning a battle; we are making fools of ourselves."[538]

Fortunately, Maj. Gen. Charles L. Scott, who was promoted to Commanding General of the 1st Armored Corps in the spring of 1941, agreed with Maj. Gen. Patton and sent his subordinate commanders a memorandum highlighting the tactical mistakes the GHQ Louisiana Maneuvers revealed and his plan to overcome the anti-tank threat that had frustrated armor operations. Instead of having tanks blindly lead armored columns down roads, mechanized infantry and reconnaissance elements would screen their advance to eliminate anti-tank and demolition threats. Once the combined arms elements had provided adequate support, tanks would proceed to the attack.[539] An opportunity to validate the effectiveness of Maj. Gen. Scott's plan would arise during the final iteration of prewar large-scale maneuvers known as the Carolina Maneuvers.

---

[537] Gabel, *The US Army GHQ Maneuvers of 1941*, 126.
[538] Blumenson, *Patton Papers*, 43.
[539] Maj. Gen. Charles L. Scott to Commanding Generals, 1st Armored Division, 8 November 1941 in Training Memoranda, Performance of AT, RG 337, 57D, NA.

Chapter 8

GHQ Maneuvers: The Carolinas

The Carolina Maneuvers, which occurred from November 16 to November 30, 1941, were held in a 10,000-square mile area between Columbia, South Carolina in the southwest and Salisbury-Sanford, North Carolina in the northeast. As in previous stateside maneuvers, rivers posed the most significant geographical hindrance to opposing sides. These maneuvers included the Broad, Waterlee, Catawba, Pee Dee, and Black Rivers.[540] Ironically, this same area was the scene for some of the Revolutionary War's most brutal combat when Great Britain launched their failed southern campaign in 1780.

Scaled-down somewhat from the GHQ Louisiana Maneuvers, the Carolina Maneuvers involved the First Army, nearly 300,000 troops.[541] Opposing forces were designated the Red and Blue Army as was standard practice beginning with the 1912 Connecticut Maneuver Campaign.

As a point of historical context, the naming convention of opposing "red" and "blue" military forces likely dates back to a British tabletop wargame, The Game of War, manufactured by V. & J. Figgins in 1885. A knockoff of the Prussian *Kriegsspiel*, The Game of War was used to train British officers in battlefield tactics, and the game contained red and blue playing pieces fashioned after standard military unit symbols.[542] Not only has the red and blue naming convention continued to the present day in military readiness exercises, but one can see its influence in everything from battlefield maps to Milton Bradley's popular *Stratego* game.

---

[540] Donald E. Houston, *Hell on Wheels: The 2D Armored Division* (Novato, CA.: Presidio Press, 1977), 91.
[541] UP, "Carolina Army Maneuvers Are Now Underway," *Stateside Daily Record*, October 3, 1941, 8.
[542] B. W. Kostwinner, "Images of the British Army equipment for the conduct of wargames on a map 1896," *Kriegsspiel* (blog), https://kriegsspielorg.wordpress.com/articles-2/images-of-the-british-army-equipment-for-the conduct-of-war-games-on-a-map-1896/

The primary reason for the Carolina Maneuvers was to remedy deficiencies observed during the previous two stateside exercises (Tennessee and GHQ Louisiana) and determine the most effective means to utilize the new armored force, particularly in destroying enemy tanks.[543] With that intent in mind, the Carolina Maneuvers were divided into three phases. From October 6 to October 18, 1941, corps commanders conducted internal corps-type training. First Army conducted three small-scale maneuvers from October 20 to November 14, 1941. Known as Field Maneuvers Numbers 1, 2, and 3, these smaller-scale exercises allowed each corps to operate as a unit with its organic and attached troops.[544] The final period of November 16 to November 30, 1941, was reserved for the GHQ portion, which is what will be discussed.[545]

Following the GHQ Louisiana Maneuvers, U.S. Army leadership was still intrigued with the concept of validating how a superior numbered infantry force stacked up against a smaller but highly mechanized opponent. For this final set of peacetime exercises, the Blue Army, commanded by First Army Commander Lt. Gen. Hugh A. Drum, comprised eight infantry divisions (including over 4,000 anti-tank guns) totaling approximately 195,000 soldiers against IV Corps Commander, Maj. Gen. Oscar W. Griswold. Maj. Gen. Griswold's Red Army was made up of three infantry and two armored divisions for a total of around 100,000 men.[546]

For this final set of peacetime maneuvers, Lt. Gen. Drum's anti-tank elements employed three GHQ anti-tank groups and organized an additional three of its own making. Known as Tank Attacker-1 (TA-1), Tank Attacker-2 (TA-2), and Tank Attacker-3 (TA-3), Lt. Gen. Drum approved the use of an experimental self-propelled (SP) gun, which consisted of a 75mm gun

[543] Houston, *Hell on Wheels*, 89.
[544] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 64.
[545] Ibid.
[546] Ibid., 67

mounted on a half-track to be employed only with TA-1's 93rd Anti-tank Battalion.[547] (See Fig. 5)

Known as the M-3 Gun Motor Carriage, this prototypical anti-tank vehicle was an obvious answer to Gen. Marshall's April 14, 1941 directive that "prompt consideration be given to the creation of additional highly mobile antitank-antiaircraft units…in addition to organic antitank weapons."[548] In many respects, the M-3 Gun Motor Carriage served as the impetus for the Ordnance Board's decision on July 22, 1942, to make a self-propelled gun the standard platform for future tank destroyer units. The only difference was the eventual M-18 Tank Destroyer, which entered production in 1943, and would boast a 76mm versus a 75mm main gun.[549]

The combat effectiveness of the M-18 is a topic for further debate and is outside the scope of this study. Suffice it to say, however, the M-18's battlefield performance at the end stages of the war was fairly effective as they knocked out a significant number of German heavy tanks. However, the thin frontal armor (less than 2 inches) of the M-18 made it extremely vulnerable to Panther and Tiger attacks. Consequently, the M-18 was pretty much relegated to outmaneuvering heavy German tanks to try and get a shot off at their flanks. And, because the M-18 did not yet exist during the Carolina Maneuvers, any validation of their combat effectiveness could only occur during actual combat.[550] Therefore, the U.S. AGF again entered combat without adequate prewar maneuver training involving a significant element of the armored force.

---

[547] Gabel, *Seek, Strike*, *and Destroy*, 15-16.
[548] Quoted in Dunham, "Tank Destroyer History," 1.
[549] Ibid., 26-27.
[550] Harry Yeide, *The Tank Killers: A History of America's World War II Tank Destroyer Force* (Havertown, PA.: Casemate, 2004), 231-250.

As in the previous GHQ-level maneuvers, the final period of the Carolina Maneuvers was divided into two phases.[551] Phase One was designed to validate the ability of anti-tank units to check hostile armor. Lt. Gen. McNair, who had been so heavily involved during the previous maneuvers, was once again bound and determined to showcase the ability of anti-tank units as the most effective means of countering enemy armor as opposed to tanks themselves, therefore, in what could only be perceived as bias, Lt. Gen. McNair issued a memorandum before the beginning of the maneuvers, which allowed Blue Army troops the capability of "destroying" Red Army tanks with simulated hand grenades in the form of small bags of flour![552]

Figure 5
M-3 Gun Motor Carriage, 21 November 1941, U.S. Signal Corps Photo

[551] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 64.
[552] Gabel, *The US Army GHQ Maneuvers of 1941*, 125.

Regarding the Carolina Maneuver scenario, the Pee Dee River formed the boundary line between the Red and Blue armies. Lt. Gen. Drum's Blue Army was directed to cross the Pee Dee and proceed west towards the Red Army to prevent their crossing of the Catawba River. Conversely, Maj. Gen. Griswold's Red Army was ordered to cross the Catawba River and proceed east towards the Pee Dee to thwart an invasion of his territory using several hundred tanks from the 1st Armored Corps.[553] Essentially, the two-phased exercise turned out to be a slugfest between armored divisions, anti-tank, and aircraft elements with infantry thrown in for support.[554]

The exercise scenario, while relatively unimaginative, was principally designed to validate how well a large number of tanks stood up to anti-tank attacks. Given the artificiality induced by the scenario as well as Lt. Gen. McNair's predisposed aversion regarding using tanks to kill enemy tanks, the Carolina Maneuvers did little to ready the armored divisions that would face off against German anti-tank tactics in the Tunisian desert. For example, the Germans made prolific use of their 75mm and 88mm anti-tank guns during the Battle of Sidi bou Zid. According to George F. Howe, a staff member of the War Department's Historical Branch, American tanks were decimated by well-placed German 88s during the battle due in large part because they approached German positions just like they did during the Carolina Maneuvers, i.e., without combined arms supporting elements and arranged in parade ground formation.[555]

At 6:30 AM on November 16, 1941, the first phase began with Red Army units crossing the Catawba River. These units consisted of the 4th Motorized Division taking the northern

[553] Letter of Instructions, GHQ, 14 October 1941, "First Army Maneuvers 1941, Final Report," RG 337 57D, NA.
[554] Dickson, *The Rise of the G.I. Army*, 256.
[555] George F. Howe, *Northwest Africa: Seizing the Initiative in the West* (The Center of Military History United States Army, 1957), 412-416.

flank, and the 1st and 2nd Armored Divisions covering the center and southern flanks respectively. Both armored divisions took advantage of the one-hour head start to cross the Waterlee River before speeding towards the Blue Army's position west of the Pee Dee River.[556]

Unfortunately for the Red Army, Lt. Gen. Drum's Blue Army secured a bridgehead across the Pee Dee River before Red Army units arrived. Although the 1st Armored Corps attempted to challenge these crossings, operations degenerated into a series of small, disjointed attacks on only two Blue Army crossing positions. Uncoordinated frontal attacks on emplaced anti-tank positions resulted in substantial losses for the 2nd Armored Division.[557]

The following day, Red Army armored units were forced to retreat in the face of substantial Blue Army forces, which exposed Red Army's left flank. On November 18, the 1st Armored Division tried in vain to attack Lt. Gen. Drum's northern flank, however, poor tactics and a lack of infantry support resulted in the 1st Armored being surrounded. The misgivings voiced by Maj. Gen. Patton's discussion of the role of infantry and tanks during the first phase of the GHQ Louisiana Maneuvers earlier that year had still not been adequately addressed.[558]

On day four of the first phase, 1st Armored was thwarted by attacking anti-tank units that were still comprised of .50 caliber machine guns and the M3 (See Fig. 6) and was defeated on November 21 by the umpires after Maj. Gen. Patton's 2nd Armored Division vainly attempted a relief attack into the Blue Army's center. Unable to guard their flanks, 2nd Armored withdrew leaving 1st Armored to the mercy of Blue forces.[559]

[556] Cameron, *Mobility, Shock, and Firepower*, 337-38.
[557] Ibid.
[558] Ibid.
[559] Ibid., 340.

Figure 6
Blue anti-tank unit attacks M-3 tank south of Pee Dee River, U.S. Signal Corps Photo

The Blue Army took advantage of the situation and, according to the *Greensboro Daily News*, Lt. Gen. Drum's tank-attacker units "inflicted severe losses on Red armored columns."[560] Thus, on November 21, 1941, the first phase concluded.

In the aftermath of phase one of the Carolina Maneuvers, Lt. Gen. Drum was no doubt pleased with the results. His First Army had essentially eliminated the 1st Armored Division. In all, umpires ruled Red Army tank losses numbered 983 much to the consternation of armored personnel who felt the determination of what constituted a "kill" was grossly unfair.[561] One

[560] A.F. Littlejohn, "First Army Deals 'Severe Blows' To Armored Units," *Greensboro Daily News*, November 21, 1941, 15.
[561] Rice Yahner, "War Games Finale Starts In Carolinas," *The New London Evening Day*, November 25, 1941, 11.

glaring example attributed 160 tanks "destroyed" due to .50 caliber machine guns and flour bag grenades![562] Since Rommel's Afrika Korps would not be tossing flour bags or shooting American tanks with .50 caliber machine guns in the Tunisian desert it is astounding that maneuver planners and umpires allowed such unrealistic rules to govern stateside exercises.

As critiques of the first phase became known, the overarching theme seemed to be that "the tank fighting methods, which included the use of 4,000 guns of all types, had proved themselves against the tanks."[563] Indeed, an article written for a Connecticut newspaper reported that Lt. Gen. McNair considered the six-day phase the "most complete and informing armored action seen in the United States thus far," and showed that anti-tank units can "stop armored forces cheaply and efficiently."[564] But could they? It would seem that AGF leadership was still firmly convinced of the veracity of the .50 caliber heavy machine gun and anemic M3 as effective supplemental anti-tank weapons to the experimental M-3 Gun Motor Carriage.

Even Gen. Marshall seemed convinced of the effectiveness of the Blue Army's makeshift mobile anti-tank platform. In a letter written to Blue Army Commander, Lt. Gen. Drum, Gen. Marshall noted that he "only got one good look at your improvised anti-tank units, but it appeared to me that splendid progress had been made along these lines."[565]

As much as the hype and publicity lauded the performance of the Blue Army's anti-tank efforts during the first phase, 1st Armored Corps Commander Maj. Gen. Scott was quick to note that Lt. Gen. Drum's initial attack resulted in substantial losses to his forces as Red mechanized units captured ten times as many prisoners and equipment as the Blue Army. Moreover, a Red

[562] Gabel, *The US Army GHQ Maneuvers of 1941*, 148.
[563] Dickson, *The Rise of the G.I. Army*, 258.
[564] Yahner, "War Games Finale Starts In Carolinas," 11.
[565] Marshall, Letter to Lieutenant General Hugh A. Drum, December 4, 1941 in *The Papers of George Catlett Marshall*, 693.

armored reconnaissance unit captured 20 field guns, 36 anti-tank guns, and several hundred vehicles before they were captured.[566] Hardly a slam-dunk win for Lt. Gen. Drum.

Still, however, Maj. Gen. Scott's two armored divisions had much to learn regarding armored tactics, particularly when it came to how armored units were employed. One observer noted, "It is believed the success of anti-tank units is due to piecemeal attacks…rather than to anti-tank unit effectiveness."[567] Regarding the experimental 93rd Anti-tank Battalion, another observer of the first phase attributed the 93rd's success to the "improper employment of armored units."[568]

In other words, how armored units attacked was what resulted in their being ruled out during the maneuvers…primarily because of a lack of sufficient infantry among the tanks. This is what was implied in the phrase "improper employment." Even Maj. Gen. Griswold observed a tendency within the 1st Armored Corps to operate autonomously with little regard to other elements comprising a combined-arms approach, i.e., infantry, artillery, and air support.[569]

The first phase of the Carolina Maneuvers exhibited little improvement regarding the issues that had arisen during the previous GHQ series of maneuvers. The repeated issue of not employing infantry with tanks and the tendency to take on light and medium tanks with inferior anti-tank weapons either did not register with those observing the exercise or they acquiesced to the pressing desire of Lt. Gen. McNair to focus everything on anti-tank development. In all fairness to the umpires, they observed the tactics they saw demonstrated, assuming they were validating training that had previously been accomplished.

---

[566] Rice Yahner, "Mechanized Forces Capture Ten Times as Many Troops," The State, November 21, 1941, 15.
[567] Maj. B. P. Purdue, Performance of Antitank, 57D, Record Group 337, NA.
[568] Quoted in Gabel, *Seek, Strike*, *and Destroy*, 17.
[569] Lt. Col. Kent Roberts Greenfield and Dr. Robert R. Palmer, *The Army Ground Forces: Origins of the Army Ground Forces, General Headquarters, United States Army, 1940-1942 Study No. 1* (Historical Section: AGF, 1946), 33.

For the second phase of the maneuvers, Lt. Gen. Drum deployed his I, II, and VI Corps across the Pee Dee and Rocky Rivers in a broad-front formation reminiscent of how Hannibal Barca arrayed his Carthaginians against the Romans at Cannae in 216 B.C.[570] With the 30th and 26th Infantry Divisions protecting its flanks, the Blue Army's 28th Infantry Division spearheaded the attack across the Pee Dee River on 25 November. The Red Army was tasked with defending the city of Camden, South Carolina from Blue forces.[571]

The following day, Maj. Gen. Scott threw both his armored divisions at the Blue Army's broad front with about 800 tanks employing an offensive-defensive strategy. His goal was to hit them in the center and then withdraw back to Camden before the Blue Army could bring its anti-tank units to bear.[572]

Things initially went well for the Red Army as they were able to contain the Blue threat about 30 miles northwest of Camden. This delaying action cost the Red Army 219 tanks ruled out of action, and by November 28, Red Army forces ended up behind a line of defenses just north of Camden between the Waterlee and Lynches Rivers.[573]

Maj. Gen. Griswold intended to launch a counterattack against Blue Army units the following day, however, he committed an egregious error by detaching vital infantry, artillery, and reconnaissance elements from his armored divisions to support his perimeter defenses protecting Camden. Despite a reminder from Maj. Gen. Scott that previous maneuvers revealed the impotence of armored units without supporting elements like infantry and artillery, Maj. Gen. Griswold remained adamant, thus committing a tactical error that, had this been actual combat,

---

[570] Gabel, *The US Army GHQ Maneuvers of 1941*, 156.
[571] Cameron, *Mobility, Shock, and Firepower*, 341.
[572] Rice Yahner, "Hundreds of Tanks Used in Drive to Halt Attack in Carolina Games," *Philadelphia Inquirer*, November 27, 1941, 10.
[573] Cameron, *Mobility, Shock, and Firepower*, 341.

would likely have resulted in the piecemeal destruction of his armored units. Fortunately for his Red Army forces, a face-saving gesture was made when Lt. Gen. McNair terminated the Carolina Maneuvers at 4:20 PM.[574]

Ironically, the eventual clash of U.S. armor with German armor during the three-day battle of Sidi Bou Zid in 1943 resulted in an eerily similar outcome experienced by Maj. Gen. Griswold during the Carolina Maneuvers, except in this case…U.S. soldiers died. Again, one can only surmise that a primary factor that contributed to the annihilation of more than 40 American tanks in early 1943 was due to insufficient efforts invested into ensuring adequate armor training was accomplished with combined arms elements followed by validation of that training using stateside maneuvers.[575]

The end of the Carolina Maneuvers marked the end of U.S. Army peacetime maneuvers and revealed significant flaws in training and leadership. It would seem that the U.S. Army had either not learned from previous maneuvers or chose not to effect needed change. The reality was a little bit of both.

For example, historian Jean R. Moenk mentioned that the large-scale peacetime maneuvers' success consisted primarily of how they illuminated training flaws. Unless these flaws were remedied, major units could not be considered combat-ready.[576] Official critiques, AARs, and newspaper reports following the official end of the maneuvers revealed mixed results.

---

[574] Brig. Gen. Mark W. Clark, [Report] Critique of the Second Phase, GHQ Directed Maneuvers Carolina Area, November 25-38, 1941. Box 1A, Folder 13, 1941 Maneuvers-Critique of Second Phase, Circa 1941, U.S. Army Heritage and Education Center, Carlisle, PA. [hereinafter referred to as Critique of the Second Phase]
[575] Howe, *Northwest Africa*, 415.
[576] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 69.

While Lt. Gen. McNair appeared satisfied and even communicated this to both commanding generals, he nevertheless judged that the maneuvers proved inconclusive as to the effects of massed tank attacks at decisive moments. On the other hand, the Carolina Maneuvers had proven the efficacy of anti-tank units and, once again, revealed that tanks required the strong support of leg (regular) infantry to hold ground and neutralize anti-tank guns…a responsibility already delineated in what the German army developed as the *panzer grenadier*.[577]

This struggle over the proper role of tanks versus infantry was a repeat observation noted during the GQH Louisiana Maneuvers, yet still needed to be rectified. The 1939 *Field Service Regulations* stipulated that "tanks are employed to assist the advance of infantry troops" despite Maj. Gen. Patton's objections that the reverse should be the case.[578]

Three days following the official end of the Carolina Maneuvers, Secretary Stimson held a meeting in Washington to discuss the results and implications of what had been discovered during the maneuvers. The meeting included Gen. Marshall, Lt. Gen. McNair, Maj. Gen. Henry "Hap" Arnold (Commander of U.S. Army Air Forces) and Brig. Gen. Mark W. Clark.[579]

Opening the discussion, Lt. Gen. McNair echoed his previous thoughts to Lt. Gen. Drum and Maj. Gen. Griswold touted the anti-tank units' supremacy over tanks and stressed the continued development of anti-tank weapons and tactics. Not surprisingly, he said little about the performance of Maj. Gen. Scott's two armored divisions except to highlight that they had been deployed incorrectly on several occasions and lacked adequate reconnaissance and security, again, a responsibility that mechanized infantry should have handled and exercised accordingly.[580]

---

[577] Greenfield and Palmer, *The Army Ground Forces*, 33.
[578] *FM 100-5 Tentative Field Service Regulations, Operations* (Washington, D.C.: GPO, 1939), 25-28.
[579] Gabel, *The US Army GHQ Maneuvers of 1941*, 170.
[580] Greenfield and Palmer, *The Army Ground Forces*, 25.

He also stressed the disregard for the air threat and when asked whether the troops were ready for war, he replied just ten days before Germany declared war on the United States, "It is my judgment that, given complete equipment, they certainly could fight effectively. But it is to be added with emphasis that the losses would be unduly heavy, and the results of action against an adversary such as the Germans might not be all that could be desired."[581]

Despite his gloomy yet prescient opinion of U.S. Army readiness, the Carolina Maneuvers finally answered, at least in Lt. Gen. McNair's mind, the question of whether anti-tank units were the answer to enemy armor. And so, despite a dearth of cogent doctrine or even adequate equipment, the Carolina Maneuvers set in motion the events that would culminate in a bona fide tank destroyer. By December 1, 1941, eighty-six of the experimental M-3 Gun Motor Carriages had been produced and Lt. Col. Andrew D. Bruce established the new Tank Destroyer Tactical and Firing Center at Fort Meade, Maryland.[582]

Other U.S. Army leaders were eager to offer their assessments regarding the Carolina Maneuvers. In a seven-page report submitted to Maj. Gen. Devers, Chief of the Armored Force, Maj. Gen. Scott criticized both the umpiring of the Carolina Maneuvers and underscored glaring shortfalls in command, training, and equipment.[583]

In only one of the four GHQ exercises in which his 1st Armored Corps participated was any long-range plan given or any latitude allowed to corps commanders for more than one day of operation. In nearly every instance, daily operational orders were not conveyed to subordinate

[581] "U.S. Soldiers Would Be Dealt Big War Losses, General Says," *The Atlanta Constitution*, December 1, 1941, 3.
[582] Dunham, "Tank Destroyer History," 6.
[583] Maj. Gen. C. L. Scott to Chief of the Armored Force, Fort Knox, Kentucky 10 December 1941, Subject: Report on GHQ Exercises in which Armored Force Participated, Box 1A, Folder 13, U.S. Army Heritage and Education Center, Carlisle, PA.

commanders in time to be properly executed by lower units.[584] This of course highlighted the U.S. Army's stringent adherence to a centralized command structure.

Maj. Gen. Scott also pointed out the need for suitable voice radio sets within tanks. The present Morse Code system was too slow and clumsy and essentially rendered tankers "blind" to what supporting infantry and aircraft could see unless the tank commander exposed himself to enemy fire by operating with the turret hatch open. Additionally, he underscored the unacceptable organizational structure evident in too few Corps Headquarters officers. In his opinion, 30 officers for the Corps Headquarters was insufficient for wartime operations.[585]

Furthermore, he suggested a special military police company be established. This would help control traffic on the march and at railheads, and it could mark routes and assembly areas in withdrawal operations. It would also allow a reconnaissance battalion to extend the scope of reconnaissance to the flanks and rear of his Armored Corps.[586]

Regarding equipment, Maj. Gen. Scott had much to opine on the development of tanks. While he felt the overall TO&E of both armored divisions was satisfactory, improvements were imperative for half-tracked vehicles and the M-3 Lee medium tank. The M-3 Lee, also known as the Grant by the British, was heavy, slow, underpowered, and could only traverse heavy-duty bridges on main highways. While the M-3 Lee met the Ordnance Department's formula for a model medium tank, it proved less than ideal for fast maneuver exploitation of the enemy's front. Until a suitable medium tank could be mass-produced, Maj. Gen. Scott advocated for a light-to-medium tank ratio of no less than 2 to 1.[587] What this meant was that armored units would enter combat against the Germans armed with twice as many light tanks as compared to medium-

[584] Ibid., 1.
[585] Ibid., 3.
[586] Ibid.
[587] Ibid., 4.

weight tanks. Fortunately for the 1st Armored Division, the actual number of light-to-medium tanks at Sidi bou Zid was 202 medium to 92 light tanks.[588] But that did not make much of a difference.

On the other hand, the Germans exceeded 200 Panzer III and Panzer IV tanks, in addition to a dozen Panzer VI Tiger tanks at Sidi bou Zid. Aside from boasting superior firepower, German tank doctrine was also superior to what the soldiers of the 1st and 2nd Armored Divisions brought to the fight.[589] Moreover, Germany's overall "how to fight" doctrine was superior. Gen. Guderian mentioned that as early as 1923, the Germans were holding organized maneuvers to test the possibilities of employing motorized troops in cooperation with airplanes. Years before the match-up at Sidi bou Zid, the Germans had been conceptualizing combined-arms warfare. When they encountered green American forces in Tunisia, Erwin Rommel's 10th and 21st Panzer Divisions excelled in executing combined-arms tactics to destroy enemy armor.[590]

Regarding the Carolina Maneuvers, the most provocative recommendation Maj. Gen. Scott reported concerned the umpiring related to anti-tank guns and units. Maj. Gen. Scott observed that only the losses in tanks and armored vehicles were considered when determining the effectiveness of anti-tank guns and anti-tank units. Rightly so, he saw this as a one-sided procedure, which of course it was. He went on to surmise that during the second phase of the maneuvers, total loss figures reported by Armored Force umpires revealed that both anti-tank units as well as adjunct infantry could expect great losses from armored units, however, these

[588] Howe, *Northwest Africa*, 406.
[589] Ibid.
[590] Guderian, *Panzer Leader*, Loc. 332.

figures were never factored into decisions made by Lt. Gen. McNair when he abruptly terminated the Carolina Maneuvers.[591]

Thus, as in the GHQ Louisiana Maneuvers, Lt. Gen. McNair once again ensured the sustainability of his anti-tank program, which he was convinced should defeat hostile armored units by fire and free friendly armored units for action against objectives vulnerable to them.[592] He had, in his mind, shown the world that mechanized infantry anti-tank forces could prevail over unsupported tanks. Unfortunately, none of the GHQ maneuvers in 1941 validated what the U.S. Army would actually confront in the soon-coming war—tank units fighting *other* tank units.[593]

While the Carolina Maneuvers evinced several deficiencies that would require attention, the overarching question on many of the minds of the U.S. Army's top echelons of leadership as well as the American public concerned the state of readiness of the U.S. Army. Did the United States possess enough tanks? Were there enough soldiers? Did the soldiers who were available to fight benefit from ample opportunities through prewar maneuvers to hone their fighting abilities to project superior fighting power? Had the large-scale peacetime maneuvers effectively prepared the troops to fight the Nazis in Europe? This research's evidence points to a resounding no for several reasons.

First, the mismanaged doctrinal priorities of the AGF regarding how best to defeat enemy armor were revealed in biased umpiring and the squashing of fresh ideas from those who instinctively knew what was best for the armored force, i.e., Maj. Gen. Patton, Maj. Gen. Scott, and Maj Wedemeyer to name a few. Second, there was a need for more emphasis on combined-

[591] Maj. Gen. C. L. Scott to Chief of the Armored Force, 6.
[592] 2d Ind., Brig. Gen. L. J. McNair to Adjutant General, AG 320.2 (7–3–40) M-C, July 29, 1940, McNair Files, Box 8, RG 337, Entry 57D, NA.
[593] Johnson, *Fast Tanks and Heavy Bombers*, 150.

arms training. Third, the less-than-stellar AGF leadership during maneuvers. Fourth, the glacial pace with which the Ordnance Department eventually settled on a quality medium tank design. Finally, more quality radio equipment was needed to communicate with other AGF branches. When all these factors are combined, the resultant fighting power of the AGF cannot help but have been greatly diminished.

Unfortunately, there would be no more peacetime maneuvers to attempt to remedy these issues within the relatively safe confines of the United States. Ready or not, the attack on Pearl Harbor and Hitler's subsequent declaration of war on the United States forced the U.S. AGF into its first opportunity to prove its mettle against the veteran Wehrmacht and expectantly validate the years of inter-war training.

Chapter 9

Conclusion

While World War II differed from the Great War in many respects, perhaps the most singular difference was that it was a war of maneuver. Historians have written ad nauseum about the futility of trench warfare where neither side gained any appreciable advantage at the expense of horrendous human loss. This of course was primarily due to the lethality of the machine gun and lengthy artillery bombardments. Without a doubt, the introduction of the internal combustion engine transformed twentieth-century combat in as nearly remarkable a fashion as the microcomputer has changed how warfare is waged today.

The Spanish Civil War (1936) left little doubt to those who were watching that the victor in the next major conflict involving opposing nations would depend largely upon which side could bring more power to bear faster and with more maneuverability than the other. For the Wehrmacht of World War II, the enhancement and execution of its combat doctrine was woven into the very fabric of its martial DNA from the time of Frederick the Great, and it was this doctrine that permeated the two most critical tenets of its combat ethos… *Auftragstaktik* and *Bewegungskrieg* (maneuver warfare) and also greatly contributed to the individual soldier's ability to inflict casualties upon his adversary. This characteristic may be better termed his *fighting power*.[594]

Interestingly, the aforementioned elements were something the German Army had already developed before World War II, as outlined in their 1933 manual for unit command, which was known as German Army Regulation 300 or *On the German Art of War:*

[594] Weichong Ong, "Blitzkrieg: Revolution of Evolution?" *RUSI Journal* 152, No. 6 (2007): 82.

Truppenführung.[595] They had also conducted their first readiness exercise with their equivalent of a U.S. armored division as early as 1935 near Münster, Germany and the results revealed the necessity of tanks and infantry working closely together, a doctrinal underpinning to their success throughout the war.[596]

For the U.S. Army, doctrine determined how training would be conducted and how readiness maneuvers would validate that training. As stated previously, the primary purpose of readiness exercises or maneuvers is to validate, confirm, and authenticate the efficacy of the preliminary training that occurred *or was supposed to have occurred* before the exercise, thereby bringing it all together and giving leadership as accurate a snapshot as possible of unit readiness. In modern military parlance, an exercise is a focused event that replicates (as much as possible) actual events to evaluate military doctrine, organization, and training.[597]

During the 1920s and 1930s, U.S. Army maneuvers still reflected the doctrinal primacy of the infantryman as the main force multiplier in combat. The AGF Fall Maneuvers, the Panama Maneuvers, and the First Army Maneuvers of 1935 each provided a somewhat valuable assessment of training for the peacetime military, however, that training did not necessarily correspond to emerging threats in Europe. While this was completely acceptable since the U.S. Army had yet to develop armored warfare, the U.S. War Department nevertheless was still locked into the paradigm of fighting the last war, as were her French and British allies.

German Maj. Gen. Von Mellenthin saw this firsthand during the invasion of Western Europe and concluded that "the whole campaign hinged on the employment of armor, and was

---

[595] Bruce Condell and David T. Zabecki, eds. and trans., *Heeresdienstvorschrift 300* [*On the German Art of War Truppenführung: German Army Combat Manual for Unit Command in World War II*] (Pennsylvania: Stackpole Books, 2001), 1:192, 2:273.
[596] After Action Report on Experimental Exercises of a Panzer Division at the Drill Ground at Munster in Aug. 1935, 24 Dec. 1935, NARS T-79.
[597] Wells, Wing Inspection Team (WIT) Training, 3.

essentially a clash of principles between two rival schools. The Allied military leaders thought in terms of World War I and split their armor in fairly even proportions along the entire front."[598]

It could be argued that lessons from the American Civil War were largely responsible for this dispersal of effort. Weigley asserted that the "Civil War molded the American army's conceptions of the nature of full-scale war in ways that would profoundly affect its conduct of the Second World War."[599]

As to be expected, future U.S. Army leaders trained at the United States Military Academy at West Point were fed a steady diet of historical analysis. Past battles and campaigns were analyzed and emerging battle commanders were expected to emulate what was perceived to be a winning strategy. Of course, General Ulysses S. Grant and his masterful Overland and Vicksburg campaigns were the chief examples of a total war-winning tactician.[600]

The Union's victory over the Confederacy *was* and still is viewed as one of sheer power. At the root of that power strategy was the Clausewitzian concept of annihilation, which Gen. Grant espoused but was widely criticized.[601] General Robert E. Lee, on the other hand, faced an adversary with nearly unlimited resources and superior manpower and was forced to employ a different strategy, one which Weigley proclaimed was derived from Napoleon Bonaparte.[602]

To be more precise, one of Gen. Lee's "go-to" tactics was to employ a classic Napoleonic turning maneuver designed to descend upon the enemy's flank and rear, thereby causing substantial psychological and physical damage. This was capably executed at both Second

---

[598] Von Mellenthin, Panzer Battles, 28.
[599] Russel F. Weigley, *Eisenhower's Lieutenants: The Campaign of France and Germany 1944-45 – Book One* (Indiana University Press, 1981), 21.
[600] Timothy H. Donovan, Roy K. Flint, Arthur V. Grant Jr., and Gerald P. Stadler. *The American Civil War* (West Point New York: United States Military Academy, Department of History, 1979).
[601] Samuel C. Schoyer, *The Road to Cold Harbor Field Diary, January 1–June 12, 1864, of Samuel C. Schoyer*, ed. William T. Schoyer (Apollo, Pennsylvania: Closson Press, 1986), 92.
[602] Weigley, *Eisenhower's Lieutenants*, 21.

Manassas and Chancellorsville and is comparable to Germany's indirect approach doctrine which will be examined later.[603]

During the period just before America entered into World War II, U.S. Army doctrine was quite dissimilar to what German leaders were taught regarding principles of combat. The school of thought for emerging U.S. Army battlefield commanders was that the means to victory in a major war was the same as that which Gen. Grant had practiced, i.e., applying overwhelmingly superior power to destroy the enemy's armed forces.[604] This became known as the principle of mass, and, like the Union Army of 1864, the United States possessed the advantage in manufacturing resources and overwhelming firepower throughout the war and codified this doctrine into its basic army field manual.[605] One can see this fleshed out during the series of large-scale maneuvers conducted in 1941 whereby the direct approach doctrine was reinforced and inculcated into the individual soldier.

During the Tennessee, GHQ Louisiana, and GHQ Carolina maneuvers, the U.S. Army's confidence in its unmatched materiel prowess resulted in tactics and strategies that sought to annihilate the enemy not by envelopment or similar maneuvering but rather by the frontal (direct) application of overwhelming firepower at multiple places simultaneously. American military theorists of the early twentieth century counseled against maneuvering around an enemy's flanks to achieve a decisive victory.[606] This doctrine was in part crafted as a response to the massive increase in the size of twentieth-century armies and the assumption that such a large

[603] Ibid.
[604] Ulysses S. Grant, *Personal Memoirs of U.S. Grant Volume 2*. (New York: Charles L. Webster & Co., 1886), 556.
[605] *FM 100-5*, 7, 27.
[606] See Col. William K. Naylor, "The Principles of War." Command Course No. 12, Army War College, 1922, Part I, Jan. 5, 1922 and Captain George J. Meyers, *Strategy* (Washington: Byron S. Adams, 1928).

enemy presence on the battlefield would obviate the need for flank attacks because there would be no flanks to attack!

For example, during the Tennessee Maneuvers, Maj. Gen. Patton was chided by leadership for not attempting massive, direct frontal attacks on opposing positions. Given his military brilliance, perhaps no one present during those maneuvers instinctively surmised that "the use of tanks in mass is futile and suicidal."[607] But Patton did, and he instinctively possessed the foresight to know what needed to be done to ensure victory, especially when it came to armored warfare.

During the GHQ Louisiana Maneuvers, the eccentric armored commander again tried the indirect approach when he employed a hooking movement to attack enemy forces in the rear. Although successful, biased umpires refused to credit him with an obvious victory and instead forced his withdrawal. This left his supporting infantry to execute what to those umpires was no doubt a "textbook" frontal assault against opposing infantry unsupported by armor![608] This ludicrous decision echoed tactics leftover from the Great War and reinforced a negative training outcome for the participants.

By comparison, the German Army eschewed the direct approach, opting rather for what constituted a "main emphasis" strategy when it came to basic attack doctrine. Known as *schwerpunkt*, which means center of gravity, German armored doctrine was born from the lessons learned during the Great War and used quite effectively during World War II. Just as a football team analyzes post-game footage to learn valuable lessons, the German military took their missteps during the Great War to heart and adjusted accordingly. German operational and

[607] Blumenson, *Patton Papers*, 37.
[608] Davis, *Soldier of Democracy*, 273.

tactical tank doctrine infused elements of their shock troop tactics of 1918, with a penchant for infiltration and encirclement as opposed to costly frontal attacks.[609]

During World War II, the "go to play" for the German panzer force when attempting a blitzkrieg advance on the enemy involved a series of well-calculated steps. First, a shattering of the enemy's front at the main point of effort (*schwerpunkt*) was preceded by a joint artillery and air bombardment, followed by infantry advancing rapidly through the destruction. This tactic served to fix the enemy's attention on the imminent threat to their front. It is a well-known fact that when faced with an imminent, life-threatening situation to one's front, humans develop "tunnel vision," often ignoring what may be going on in their periphery or behind. Second, lead light panzer tanks quickly moved through to strike deep into the heart of the enemy rear, simultaneously being supported by tactical air sorties flown by JU-87 Stuka dive bombers and mechanized artillery (self-propelled guns) to overrun command and control centers. Third, while this action was underway, heavier tanks would maneuver and bypass areas of stubborn resistance while protecting the flanks of their initial attack. Once they reached an area behind the enemy's position, these tanks would wheel left or right to completely encircle the enemy, thus trapping them in what the Germans termed *der Kessel* (cauldron). The Germans had effectively mastered these tactics on the Eastern Front when fighting the Soviets in the summer of 1941, achieving stunning results with the annihilation of Soviet resistance in Smolensk and Kiev.[610]

Interestingly, this battlefield doctrine drew its genesis from Frederick the Great's indirect approach, which he created to face an enemy superior in numbers and materiel. He wrote an entire chapter on this subject, which no doubt served to inspire those German commanders who

[609] Robert A. Forczyk, *Tank Warfare on the Eastern Front, 1941-1942: Schwerpunkt* (South Yorkshire: Pen & Sword Books, 2013), 58.
[610] Robert Kershaw, *War Without Garlands: Operation Barbarossa 1941-1942* (Surrey: Ian Allan, 2000), 176-228.

conceptualized and fleshed out the fighting doctrines of World War II.[611] For the twentieth-century version of this, the tank…*not the infantry*, became the primary means of executing an attack into the enemy's center of gravity…*schwerpunkt.* This was clearly outlined in *Truppenführung* and, when later copied by the U.S. Army, became theorized as the combat principle of concentration.[612]

During Operation Fall Gelb in May 1940, the Germans considered this the key to their entire offensive. Maj. Gen. Von Mellenthin highlighted this very principle in his memoirs.

> I must emphasize that the German victories of May, 1940, were due primarily to skillful application of the two great principles of war—surprise and concentration. The German Army was actually inferior to the Allied armies, not only in numbers of divisions but particularly in numbers of tanks...From Sedan onwards, armor and infantry were used in mixed battle groups. These *Kampfgruppen* embodied a principle as old as war itself—the concentration of all arms at the same time in the same area.[613]

The fundamental difference in the manner in which the Germans executed *schwerpunkt* or concentration from the way the U.S. Army employed it was that the Germans typically focused not so much on annihilating the enemy's front with simultaneous attacks along various points, but rather penetrating far beyond that front to attack the enemy's rear areas. Like their ancient barbarian forebears, who focused their attack on a single point of a Roman battalion, German armor offensives were subdivided into infiltration, breakthrough, and pursuit phases.[614]

A second doctrinal misstep employed by the U.S. Army during the 1941 maneuvers was the role of infantry as it related to tanks. As was previously mentioned, Maj. Gen. Patton did not pull punches when it came to what he thought of the concept that tanks existed solely to support

---

[611] Frederick the Great, *Instructions for His Generals*, trans. General Thomas R. Phillips (Mineola: Dover Publications, 2005), 82-83, Kindle.
[612] Condell and Zabecki, *Truppenführung*, 130; *FM 100-5*, 27.
[613] Von Mellenthin, *Panzer Battles*, 16, 20.
[614] Julius Caesar, *The Gallic Wars*, trans. W.A. McDevitte and W.S. Bohn (New York. Harper & Brothers, 1869), Book VI.; *The German Armored Division*, Military Intelligence Service Information Bulletin No. 18, June 15, 1942, 2-4.

the infantry. In his letters, he remarked to a colleague, "You would be surprised at the profound ignorance in higher places as to the use of tanks. People are still obsessed with the belief that tanks are invulnerable and try to send them head-on into prepared positions."[615]

Again, this correspondence revealed his reluctance to accept the "party line" that tanks were destined to remain an auxiliary of the infantry. Perhaps this explains why during the Tennessee Maneuvers, Lt. Col. Grow accused armored units of being too slow as they had to wait on infantry to catch up.[616]

By the time the final series of peacetime maneuvers rolled around, it appeared that some in the highest echelons of U.S. Army leadership had begun to comprehend the wisdom of Gen. Robert E. Lee and his strategy against Grant. At least, that seemed to be the case regarding Lt. Gen. McNair's assessment of the GHQ Louisiana Maneuvers, as he may have finally come around to Maj. Gen. Patton's line of thinking regarding attack strategies. In an editorial for the *Army and Navy Journal,* McNair commented on the Carolina Maneuvers that "excessive frontages were almost the rule" with one division operating on a "front of 27 miles" and "corresponding extended frontages in the smaller units."[617]

Echoing these sentiments in a report dated November 22, 1941, Lt. Gen. McNair noted several comments on the first phase of the Carolina Maneuvers. Regarding the infantry, he observed there were many cases in which "little to no effort was made to outmaneuver hostile forces and instead, only frontal attacks were attempted and frontages were too great both in the attack and defense."[618] Of course, this contradicted established doctrine during that time. His

[615] Blumenson, *Patton Papers*, 38.
[616] McMillin, *In the Presence of Soldiers*, 64.
[617] "General McNair's Comments," *Army and Navy Journal* 79, No. 5 (October 4, 1941): 136.
[618] Lt. Gen. Lesley J. McNair, [Report] First Army versus IV Army Corps Maneuvers, 1941, 5-6.

assessments never materialized into anything resembling an alteration of U.S. Army doctrine before America entered World War II.

As might be expected, he was especially critical of armored forces and tanks. He stated that too frequently, tank attacks on anti-tank guns were made almost frontally with attempts at envelopments (like the one Patton masterfully executed) being narrow and shallow.[619] One could only imagine Maj. Gen. Patton's response when he read this report and likely thought of the hypocrisy to which he had been repeatedly subjected. When it came to the Wehrmacht and their corollary doctrine related to the role of infantry and tanks, there were palpable differences that warrant further examination to appreciate the evident disconnect in U.S. Army doctrine.

John Ellis, in his *Brute Force: Allied Strategy and Tactics in the Second World War* (1970) noted that the most important reason for the abysmal Allied failure at the outset of World War II was due to their antiquated preconceptions about the fluidity and tempo of military operations. Simply put, the Allies were ideologically stuck in the static trench lines of the Great War. Therefore, they were utterly incapable of responding to a tactical doctrine that emphasized speedy offensives with no let-up, something the Germans had been working at since the ink used to pen the Treaty of Versailles was barely dry.[620]

Armor historian Mildred Hanson Gillie observed that the irony of the defeat of Germany was that her weakness became her strength. According to one of several stipulations contained in the Treaty of Versailles, the German Army was forbidden to build tanks. Therefore, while the Allies were hampered during the interwar years with thousands of obsolete tanks, the Germans were free to develop tank tactics that suited their purposes and later to build the tanks to fit those

[619] Ibid., 9.
[620] John Ellis, *Brute Force: Allied Strategy and Tactics in the Second World War* (New York: Viking, 1990), 6.

purposes.[621] Moreover, they dusted themselves off from four years of futile trench warfare, not to mention defeat, and returned to their classical pattern of operational-level war-making.[622]

Noted British military historian Capt. B.H. Liddell-Hart offered further clarification on this development stating that one of the reasons for French capitulation was "that French generals still adhered to the 1918 idea that tanks were to serve the infantry, while Hitler had listened to Guderian, the leader of the new school, who had argued that [the] armored division should be the spearhead of the army…it was the pace of panzer warfare that paralyzed the French staff, whose minds were still moving at 1918 tempo."[623] To that end, Germany developed weapons that were uniquely suited to its doctrinal ethos, particularly tanks and anti-tank guns.

Conversely, the U.S. Army lagged in this process of capability-focused weapons development. As a result, the readiness maneuvers conducted during the interwar years guaranteed the participants would suffer from inadequate equipment and a sound training doctrine to drive exercise objectives. Consequently, this negatively eroded the resultant fighting power of the forces that engaged the Wehrmacht during the remainder of the war.

An anonymous British Air Intelligence Liaison Officer started writing daily journal entries when the Wehrmacht invaded Western Europe. Eight days after the invasion began, his diary entry revealed the impact of combined arms warfare, particularly the prowess of Germany's panzer divisions.

> If the French can destroy the German armoured divisions, the whole ten of them, then the striking force of the enemy will be broken. As it is, the French tanks are outmatched. They have been fought magnificently. The mechanized cavalry has certainly shown great dash and daring, but the heavier armoured German tanks have been too much for them and they have been shot to pieces. It is the cooperation between the dive bombers and the armoured divisions that is winning this war for Germany.[624]

---

[621] Gillie, *Forging the Thunderbolt*, Loc. 314.
[622] Citino, *The German Way of War*, 240.
[623] Capt. Basil Henry Liddell-Hart, *Defense of the West* (Westport, CT.: Greenwood Press, 1950), 6, 10.
[624] *The Diary of a Staff Officer (Air Intelligence Liaison Officer) at Advanced Headquarters North B.A.F.F. 1940*

While German tanks were wreaking havoc in France in 1940 and Russia in 1941, U.S. Army maneuvers still espoused the doctrine that the primary mission of the tank was to facilitate the uninterrupted advance of the riflemen in the attack. Although armored leaders like Maj. Gen. Scott were certainly aware of the need for more armor and better caliber tank guns, he stressed to Maj. Gen. Devers the need to "balance power with mobility."[625]

Consequently, the United States never developed a tank that was on par with Germany's medium and heavy tanks until 1945 because doctrine mandated that a tank needed to go everywhere the infantry went. Therefore, it had to be light, fast, highly maneuverable, and able to project combat power along a broad frontage in keeping with the American direct approach strategy.[626]

Another area in which U.S. Army doctrine fell behind that of the Germans was their anti-tank tactics. As discussed, Lt. Gen. McNair was the primary proponent of adopting the 37mm anti-tank gun to defeat enemy armor despite ample evidence that this weapon had proven grossly inadequate. His "never send a tank to do the job that a gun can do" attitude affected the entire doctrinal ethos concerning how the U.S. Army would battle enemy tanks.[627]

During the Tennessee Maneuvers, Maj. Gen. Henry Dozier Russell, Commander of the 30th Infantry Division, underscored that the purpose of the maneuvers was to test the operation of tank units and to provide the infantry with experience in defense against mechanized forces. As an infantry commander, Maj. Gen. Russell was less than pleased with how his division was expected to counter "enemy" armor. He stated in his memoirs, "The types of tanks available to

(London: Methuen & Co., Ltd. 1941), 23-24.
[625] Scott to Chief of the Armored Force, Fort Knox, Kentucky 10 December 1941, 4.
[626] Green, Thomson, and Roots, *The Ordnance Department*, 190.
[627] Dunham, "Tank Destroyer History," 2-3.

the U.S. Army during the Tennessee Maneuvers and the weapons for defense against them was inadequate."[628] After operating against tanks several times during the maneuvers, he discussed with Lt. Gen. McNair the deficiencies in anti-tank doctrine.

> In this talk, I told McNair that the weapons given to us for fighting tanks were wholly impractical from many standpoints. We would pull 37mm guns around in the field behind large trucks. Before going into action, these guns would be detached from the trucks and moved by hand into firing positions…this operation was clumsy and crude…all the advantages were with the tanks.[629]

When Maj. Gen. Russell offered a better method, Lt. Gen. McNair, "in his usual upstage tone and with a that is none of your business manner," replied that such methods would "cost a lot of money."[630] Even after the 37mm proved wholly inadequate against Erwin Rommel's Afrika Korps in the Tunisian desert, Lt. Gen. McNair still maintained a spirit of obstinance in his initial views that the 37mm was an effective weapon against tanks.[631] Again, this type of inflexible thinking only served to reinforce a negative training result for the participating troops and rob them of instilling the proper "muscle-movement" reps to compete against a better-trained adversary effectively. Without those "reps," U.S. AGF struggled to instinctively project superior fighting power when it mattered most.

The only observation Lt. Gen. McNair made in his report on the Carolina Maneuvers regarding anti-tank defense was that "gun positions were noted from which effective fire could not have been delivered" and that "little attention was paid to concealment" in many units.[632] The German Army's doctrine concerning the employment of anti-tank defense differed from that of

[628] Maj. Gen. Henry Dozier Russell, *The Purge of the Thirtieth Division*, ed. Lawrence M. Kaplan. (Annapolis, MD.: Naval Institute Press, 2014), 48.
[629] Ibid., 49.
[630] Ibid.
[631] Ibid.
[632] McNair, [Report] First Army versus IV Army Corps Maneuvers, 1941, 10.

the U.S. Army, mainly in the use of higher velocity guns and how they employed them against enemy armor. Additionally, the Germans utilized their *Sonderkraftfahrzeuge* (Sd. Kfz.) armored combat vehicles to silence enemy anti-tank guns, whereas the U.S. Army primarily employed halftracks as a means to transport mechanized infantry.[633] By way of explanation, the term *Sonderkraftfahrzeuge* (Sd. Kfz.) was a German ordnance designation for various special-purpose vehicles. These vehicles were given a numerical designation which denoted functionality. For example, any Sd.Kfz. numbered 1 through 99 denoted an unarmored half-track vehicle. The more recognizable Sd.Kfz. 251 was an armored personnel carrier, sometimes armed with machine guns or cannons.[634]

Regarding the stunning victory over American forces in Tunisia, Maj. Gen. Von Mellenthin pointed out that their victory stemmed from "the superior quality of our antitank guns, our systematic practice of the principle of cooperation of arms, and last but not least…our tactical methods."[635] He went on to boast, "We employed our 88mm gun to shoot at tanks as well as airplanes."[636]

The fact that the German Army routinely utilized the dreaded 88mm anti-aircraft FLAK cannon to take out Allied tanks is fairly well established in historiography related to World War II. However, one eyewitness account provides a bit of context related to the intransigence of the AGF to develop weapons that at least stood a chance against German tanks and 88mm anti-tank guns. In his memoir, 3rd Armored Division Lt. Belton Y. Cooper related the following.

> Seeing our mounting tank losses made me realize that our armored forces had been victims of a great deceit, and we in ordnance had been part of that deceit. During my

[633] Colonel I. G. Von Witzleben, *Kurzer Abriß der Taktik* [*Brief Outline of Tactics*], trans. John Baum (Berlin: Verlag Offene Worte, 1940/41), 33.
[634] Peter Chamberlain and Hilary Doyle, *Encyclopedia of German Tanks of World War Two: A Complete Illustrated Directory of German Battle Tanks, Armoured Cars, Self-Propelled Guns and Semi-Tracked Vehicles, 1933-1945* (Arms and Armour, 2000), 162-80.
[635] Von Mellenthin, *Panzer Battles*, 64.
[636] Ibid.

> summer at Aberdeen Proving Ground in 1939, we were told that our total annual research and development budget for tanks was only $85,000…The myth that our armor was in any way comparable to German armor was completely shattered. From our experience in North Africa, it had been belatedly recognized that both the M4 and the M4A1 [tanks] were inadequately protected.[637]

Considering these facts, one is left to ponder why, if U.S. Army doctrine dictated the application of power all along an enemy's lines, commensurate weapons and tactics were not developed to facilitate such a doctrine. More importantly, why were these tactics not included as part of readiness maneuver scenarios to better prepare the troops for war?

Martin Van Creveld offered a plausible explanation in his *Fighting Power: German and U.S. Army Performance, 1939-1945* (1982), in which he argued that compared to the German model, the U.S. Army's organizational approach was significantly more managerial than that of the German model. According to Creveld, because the U.S. Army could rely upon her vast materiel superiority, less reliance was placed upon the fighting power of the individual soldier and, therefore, more emphasis was placed on the logistics needed to facilitate the most efficient deployment of materiel resources.[638]

This led to an almost scientific method of top-down organizational leadership, which was fleshed out in the way American combat leaders led their troops in battle during readiness maneuvers and in actual combat. In short, American regulations such as *FM 100-5*, *FM 18-5,* and other field manuals evinced a frequent tendency to anticipate situations and outline modes of behavior in great detail. The importance of surprise, maneuver, improvisation, and lower-level

[637] Lt. Belton Y. Cooper, *Death Traps: The Survival of an American Armored Division in World War II* (Navato, CA.: Presidio Press, 1998), 37-41.
[638] Martin Van Creveld, *Fighting Power: German and U.S. Army Performance, 1939-1945* (Westport, CT.: Greenwood Press, 1982), 33-34.

decision-making was seldom included as tenets an AGF battlefield commander was expected to develop and employ.[639]

This can be seen in U.S. Army Field Manual (*FM*) *18-5, Tactical Employment Tank Destroyer Unit*. Under the section on combat orders, it states that orders "should…prescribe action only for conditions that can be foreseen."[640] This principle was outlined in *FM 100-5,* which dictates that "orders should prescribe only so far as conditions can be foreseen. When an attempt is made to arrange details too far in advance, orders usually have to be countermanded."[641] This rigid model of organizational leadership left little room for out-of-the-box thinking that a subordinate might be expected to implement, particularly in the realm of combined-arms operations.

As a case in point, during the Tennessee Maneuvers, a division commander was unfairly chastised in a report submitted by Brig. Gen. Clark because he needed to coordinate his attack plan alteration with higher headquarters before executing what ended up being a highly successful combined-arms attack.[642] Evidently, some of the GHQ leadership looked down on division commanders who desired to issue orders grounded upon the basis of mission and situation.

During the Third Army Maneuvers, the Chief Umpire stressed that commanders were hesitant to utilize combined-arms tactics.[643] One has to surmise that the primary reason for this was an inflexible command environment within the U.S. Army officer corps, even though the U.S. Army had begun to emphasize combined-arms actions during prewar maneuvers.

---

[639] Ibid., 35.
[640] *FM 18-5 Tactical Employment Tank Destroyer Unit* (Washington, D.C.: GPO, 1944), 9.
[641] *FM 100-5*, 60.
[642] Russell, *The Purge of the Thirtieth Division*, 55-56.
[643] Dickson, *The Rise of the G.I. Army*, 59-59.

Robert S. Cameron, in *Mobility, Shock, and Firepower: The Emergence of the U.S. Army's Armor Branch, 1917-1945* (2008) asserted that the maneuvers conducted by the U.S. Army before America entered into World War II revealed a common inability of subordinate commanders to comprehend the purpose and value of combined-arms task forces and thus, they failed to make snap decisions based upon the mission and situation at hand.[644]

During the final series of maneuvers, Lt. Gen. McNair observed that infantry commanders who had tank units at their disposal failed to utilize infantry to assist in the attack of anti-tank guns. As a result of this, tank units experienced unnecessarily heavy losses simply because commanders could not foresee the benefit of using combined-arms forces to eliminate the opposition. Additionally, he noted that the infantry generally did not request artillery fire missions, nor did artillery units bother to get coordinates for fire missions from the infantry, thus revealing a failure to appreciate the necessity for coordination and cooperation of the combined arms element.[645]

Maj. Gen. Patton was the only 1941 maneuver commander who attempted to execute decisions considering the mission and situation. Following the Tennessee Maneuvers, Maj. Gen. Patton addressed his men and admitted that U.S. Army leaders had a proclivity to await instructions versus proceeding on their initiative. As a counterargument, he advised that "people must try to use their imagination and when orders fail to come, must act on their own best judgment."[646] This was not always done during prewar maneuvers and was a frequent deficiency noted in post-exercise reports.

---

[644] Cameron, *Mobility, Shock, and Firepower*, 343.
[645] McNair, [Report] First Army versus IV Army Corps Maneuvers, 1941, 6-7.
[646] Blumenson, *Patton Papers*, 39.

Lt. Gen. McNair observed after the Carolina Maneuvers that the responsibility to coordinate the action of subordinate elements was occasionally neglected and that to function effectively, all elements of the command must know what they are to do when they are to do it and how they fit into the general scheme.[647] The problem with this was that freedom of action and willingness to plan for the unforeseen was not codified in the U.S. Army organizational command structure, so it was not the rule but the exception.

A historical precedent for this organizational rigidity may be traced to the Great War aviation pioneer Brig. Gen. William "Billy" Mitchell, who is the father of the modern U.S. Air Force. In 1928, six soldiers parachuted from a bomber over Kelly Field near San Antonio, Texas and, upon landing, immediately set up a machine gun. This exercise, conceived of by Brig. Gen. Mitchell was his attempt to display to the U.S. Army an imaginative new tactic of warfare…the airborne assault![648]

Ten years earlier, Mitchell had proposed using airborne assault as an alternative to the wasteful frontal attacks into the face of static German defenses. According to Brig. Gen. Mitchell's reasoning, if the entire U.S. 1st Division (The Big Red One) were to be dropped via parachute insertion behind German lines in the Menin-Roselare sector, such an instability might result in the entire German front dissolving. However, it was not to be, and, due to widespread contempt for his visionary views from fellow U.S. Army leaders, his innovative ideas would not gain acceptance until American paratroopers were first used during the GHQ Louisiana Maneuvers in 1941. By that time, the German Luftwaffe had already successfully landed

[647] McNair, [Report] First Army versus IV Army Corps Maneuvers, 1941, 3.
[648] Chris McNab, ed., *German Paratroopers: The Illustrated History of the Fallschirmjäger in WWII* (London: Amber Books, 2020), 7.

Fallshirmjäger (German paratroopers) elements from the 7th Flieger (Air) Division atop a Belgian fortress a year earlier during Operation Fall Gelb.[649]

The glaring variances between U.S. and German Army organizational leadership philosophies were fairly apparent leading up to and even during the war. Whereas the U.S. Army command structure tended to be inflexibly centralized, the opposing German command structure was decidedly decentralized in concept and practice. Martin Van Creveld noted that the typical American infantry division's headquarters staff contained around 79 officers, which was twice that of a corresponding German infantry division's officer makeup. U.S. Army officers formed 12.8 percent of headquarters strength as opposed to 7.8 percent in Germany. He went on to explain that U.S. Army officers were utilized to perform far more numerous tasks than their German counterparts and this was primarily due to the German Army's reliance upon their subordinate NCOs and enlisted men to carry out those same types of managerial tasks.[650] What explains this flagrant organizational structure difference as it pertains to command?

The German Army, more specifically the Prussian-German Army, proved quite adept at learning lessons from negative battlefield encounters. After their stunning defeat at the hands of Napoleon Bonaparte during the Battles of Jena and Auerstädt in 1806, Prussia's leader at that time, King Frederick Wilhelm III, directed a special commission to intently study the reasons for his army's failure. This commission discovered that poor leadership, inadequate training, an aging officer corps, and disorganization contributed to Prussia's defeat.[651] Out of this grew a new doctrinal manual in which the concept of *Auftragstaktik* was born.

---

[649] Ibid, 8, 47-50.
[650] Creveld, *Fighting Power*, 51-53.
[651] Curt Jany, *Geschichte der königlich-preußische Armee. Vol. 4 of Die Königlich-Preußische Armee und das deutsche Reichsheer 1807 bis 1914* [*History of the Royal Prussian Army: The Royal Prussian Army and the German Imperial Army 1807 to 1914: edited from the files,* Volume 4] (Berlin: K. Siegismund, 1933), 2-3.

A completely revolutionary idea for its time, *Auftragstaktik* is a difficult word to attempt to translate into English. It is an artificial word made up of two German terms: *Auftrag* meaning task or tasks, and *taktik* meaning military tactics. Thus, it has since been defined and characterized as "mission-oriented tactics," or simply "mission orders."[652]

Several historians have written about the origin of *Auftragstaktik* and how the German Wehrmacht utilized it during the war.[653] Tracing its roots, one finds its organizational genesis in the writings and direction of Helmuth Von Moltke. To Moltke, everything in war depended on the situation, thus it would be a mistake to draw firm lines either between directives or orders or between which levels of command should issue them. As far as Moltke was concerned, senior commanders could issue orders and directives to subordinates if deemed appropriate, but so could lower-level commanders, which applied even to lowly infantrymen.[654] This became the very essence of *Auftragstaktik* and it proved so beneficial that it has since been incorporated by the modern U.S. Army and NATO.[655] Two examples of *Auftragstaktik* from the twentieth century aptly illustrate the efficacy of this organizational command system as it pertained to both Imperial and Nazi Germany.

During his time in the Great War, [then] Captain Erwin Rommel commanded an infantry company. During a French attack in the Argonne Forest, Capt. Rommel received a battalion order directing him to withdraw. He carefully weighed his options and promptly elected to attack rather than withdraw. Ultimately, he was successful, undoubtedly contributing to his prowess

---

[652] Gunther, *Auftragstaktik*, Loc 176, Kindle.
[653] See Steven Mercatante's *Why Germany Nearly Won: A New History of the Second World War in Europe* (2012); Jaap Jan Brouwer's *The German Way of War: A Lesson in Tactical Management* (2021); Robert M. Citino's *The German Way of War: From the Thirty Years' War to the Third Reich* (2005); and Col. Charles S. Olivero's *Auftragstaktik: The Birth of Enlightened Leadership* (2022).
[654] Moltke, *Moltkes Militärische Werke*, 170.
[655] Col. Charles S. Olivero, *Auftragstaktik: The Birth of Enlightened Leadership* (Toronto: Double Dagger Books, 2022), Loc 512, Kindle.

and reputation as an able battlefield legend.[656] Nothing negative was ever mentioned from battalion command regarding his independent decision to attack versus withdraw as he exercised the German organizational concept of *Auftragstaktik*, based upon the situation as he perceived it at the time.

A second example concerns an incident already mentioned. During the German invasion of the Low Countries in May 1940, the capture of a Belgian fortress known as Eben Emael was assigned to the *Fallshirmjägers.* On May 10, 1940, at 4:30 AM, glider-borne elements of the 7th Flieger Division landed atop what was known at that time as the most formidable fortification in the world and, within 24 hours, had captured it. The mission objective was tasked to Rudolf Witzig, a mere leutnant (lieutenant), or the lowest junior officer rank in the Wehrmacht. Yet, such was the Luftwaffe's confidence in his ability to direct mission orders as he saw fit that only he and one other officer led 83 *Fallshirmjägers* in the attack.[657]

This is not to imply that at no time during World War II, did U.S. Army officers fail to act decisively based on the situation as they perceived it. On the contrary, scores of examples exist when they did just that. However, by and large, U.S. Army commanders never developed anything resembling the organizational leadership concept of *Auftragstaktik* and they certainly did not practice it during prewar maneuvers.[658]

As the United States' entry into World War II became imminent, American strategists were willing to fight a war of massive application of resources, overwhelming the enemy with a weight of armaments great enough to allow American strategy, doctrine and even *training* to be reduced to performing the obvious and the expected. In other words, the sheer amount of military

[656] Erwin Rommel, *Infantry Attacks* (Great Britain: Frontline Books, 2012), 40-42.
[657] McNab, *German Paratroopers*, 47.
[658] Creveld, *Fighting Power*, 37.

resources available to the U.S. Army fostered a hesitance in approaching victory with any strategy other than using tremendous force. Quite frankly, the typical American strategy of confronting the enemy's main force to destroy it by overwhelming it in direct collision was an ultimately effective one; however, this strategy was also unimaginative and inflexible.[659] As a result, the training efforts put forth by U.S. Army leaders during readiness maneuvers reflected this philosophy. They fell back on the tried-and-true concepts, tactics, and organizational milieu that they had been accustomed to since the end of the Great War, thus suppressing relevant training outcomes.

The resultant training benefit is arguably the most beneficial outcome of readiness maneuvers, or at least it should be. Units must embody the "train the way you fight" concept to be effective in combat, and this remains the primary reason military readiness exercises are planned, conducted, and evaluated.[660] However, notable deficiencies in the training of U.S. Army troops became evident as evaluations were conducted during the final stage of peacetime maneuvers.

Aside from U.S. Army basic military training, which lasted approximately thirteen weeks, soldiers were expected to perform during readiness maneuvers with a level of competency commensurate with their military occupational specialty (MOS). The U.S. Army element responsible for training was the AGF, which was headed by Lt. Gen. McNair. Unlike their German counterparts, the U.S. Army's training cadre had not been exposed to combat during the early years of the war. It thus relied heavily upon War Department training (field) manuals and film shorts to instill basic combat principles into soldiers. Thus, as revealed in post-

[659] Russell F. Weigley, "To the Crossing of the Rhine: American Strategic Thought to World War II," *Armed Forces & Society* 5, No. 2 (1979): 315.
[660] *FM 17-33 Armored Force Field Manual: The Armored Battalion, Light and Medium* (Washington, D.C.: GPO, 1942), 10.

maneuver reports, the dearth of combat veterans available to impart quality training, the excessive reliance upon simulated weapons, and the inequitable evaluation criteria all contributed to a lack of sufficient training.[661]

For example, during the 1941 Carolina Maneuvers, Lt. Gen. McNair noted that infantry units frequently failed to adopt extended order formations even when moving within the range of small arms fire. Rather than disperse, soldiers continued to bunch up in close column formations, which presented a target-rich environment for enemy small arms and artillery fire. He also observed that mechanized infantry were reluctant to exit their armored vehicles and maneuver on foot against enemy forces.[662] Instruction on these issues was covered in detail in the pertinent guidance that existed at the time, the various U.S. Army Field Manuals.

As an example, the infantry Field Manual (*FM 7-5*) specifically stated that "leading rifle units progress in extended order" and not in column formation when within enemy small arms range.[663] Regarding the armored infantry electing to remain within the confines of their half-tracks, the Armored Force Field Manual (*FM 17-33*) dictated that "infantry will attack to secure ground from which a tank attack may be launched or in conjunction with engineers, to remove or clear paths through obstacles."[664] It is difficult to execute that action if concealed within an armored halftrack. Again, this demonstrated the inefficiency of actions during the U.S. Army's maneuvers leading to World War II. As those maneuvers were designed to replicate expected combat conditions as close to reality as feasible, one would think that stellar efforts to minimize simulations and incorporate doctrine and tactics that would be effective in enhancing the AGF's

[661] Creveld, *Fighting Power*, 74.
[662] McNair, [Report] First Army versus IV Army Corps Maneuvers, 1941, 6.
[663] *FM 7-5 Infantry Field Manual: Organization and Tactics of Infantry The Rifle Battalion. Field Manual 7-5* (Washington: Government Printing Office, 1940), 39.
[664] *FM 17-33*, 66.

fighting power against Nazi Germany would have been paramount. But, as this work has repeatedly shown, that was not the case.

Lt. Gen. McNair also noted that troops employing anti-tank mines and radio operators needed additional training. Soldiers needed to be sufficiently air-conscious as they repeatedly looked skyward as planes flew over them. At the same time, they continued in mass formations even while in the presence of hostile aviation.[665] Additionally, Lt. Gen. McNair pointed out that many tanks during the maneuvers were observed in action carrying filled gasoline cans outside the tank turret and that "this dangerous and unreal practice cannot be continued in actual combat."[666] As many a Sherman tank crewman could attest, operating inside a gasoline-powered tank was harrowing enough as a well-placed shot from a German tank often incinerated the crew inside. Moving through enemy territory with gas cans affixed to the outside of the tank was sheer stupidity and should never have been part of readiness maneuvers.

Colonel Robert F. Hyatt, an artillery officer assigned to the VII Corps during the GHQ Louisiana Maneuvers, submitted a report in which he noted that the "outstanding need at present [was] for refined and exact technical training."[667] He concluded his assessment by stating that while the maneuvers allowed for only simulated use of artillery information, the maneuvers did reveal the "vital need for training" based on the presence of an observation battalion and sufficient air observation.[668]

---

[665] McNair, [Report] First Army versus IV Army Corps Maneuvers, 1941, 11-13.; Maj. N. Theo Haakensen, Report of Antiaircraft Artillery to G-3, August-September Maneuvers Arkansas-Louisiana, 8. October 1941, 2. Box 1A, Folder 3, 1941 Maneuvers - G3 Report of The VII Army Maneuvers, U.S. Army Heritage and Education Center, Carlisle, PA.

[666] McNair, [Report] First Army versus IV Army Corps Maneuvers, 1941, 14.

[667] Col. Robert F. Hyatt, Report of the Corps Artillery Officer, August-September Maneuvers Arkansas-Louisiana, 8 October 1941, 2. Box 1A, Folder 3, 1941 Maneuvers - G3 Report of The VII Army Maneuvers, U.S. Army Heritage and Education Center, Carlisle, PA.

[668] Ibid.

Before the Tennessee Maneuvers, Maj. Gen. Russell revealed a startling revelation about the attitude towards training evinced by U.S. Army leadership, notably Lt. Gen. Lear.

> At the time of our departure from Fort Jackson to the Tennessee maneuver area, I was concerned that some 600 men from the 30th Division had never even completed basic training and yet were expected to perform during the forthcoming maneuvers. When this was voiced to Lt. Gen. Lear, he blew up and intimated that the more men involved, the more glory for him…Unfortunately, the tempo of the Tennessee Maneuvers was set by Lt. Gen. Lear who did not have the slightest concept of the training of troops or *how* they should be tactically employed in battle.[669]

Compared to the prewar U.S. Army training, the German Army also published many training manuals relating to squad training, tactics, weapons training, etc. As might be expected, there were noticeable differences in both the approach and philosophy the German Army adopted toward training.

German Army training was nearly exclusively practical compared to U.S. Army training, with very little theory inculcated into their training programs.[670] One notable example can be found in their tank defense manual, which was not exclusive to panzer units but intended for *all* branches of the Wehrmacht. The Germans paid special attention to morale training as it pertained to enemy tank defense tactics and instilled self-confidence in those expected to deal with hostile armor. They placed soldiers into pre-dug holes and had tanks roll over them, thus illustrating the preference for practical versus book instruction training.[671]

The training was broken down into squad-level exercises in their combat instructions for panzer grenadier (mechanized infantry) soldiers. For most of these types of exercises, the heavy

---

[669] Russell, *The Purge of the Thirtieth Division*, 36-37, 41.
[670] Creveld, *Fighting Power*, 73.
[671] *Panzerabwehr aller Waffen* Bände 4 [*Tank Defense for All Branches* vol. 4] *Richtlinien für Panzernahbekämpfung*, vom 7.10. 1942, [*Guidelines for Tank Fighting, from July 10, 1942*], trans. John Baum (Oberkommando des Heeres [Headquarters German Army]), 36.

machine gunner typically began the attack, squads were made to take cover from aircraft flying overhead and infantry immediately dismounted their halftracks to attack enemy anti-tank guns.[672]

While some may argue that these German training concepts differed little from prewar U.S. Army training, this work shows an appreciable variance in doctrine and methodology existed. A statement from a German tactical outline, published shortly after the fall of France, perhaps best encapsulates the German Army's overarching attitude towards warfare, which focused not so much on materiel as it did the individual *Soldaten* (soldier). The manual states, "A person is stronger than a machine. The slaughter in Poland and France was decided by men and their will, not by a machine. They [machines] always remain a mighty means to an end. Success in combat is determined more by the will of the leader than by an advantage in numbers and materials."[673]

The prewar U.S. Army's inherent attitude towards training resulted in what Martin Van Creveld termed a "system based on frequently sophisticated and almost completely mechanized, very centralized mathematical models."[674] One is reminded of Secretary of Defense Robert S. McNamara's reliance on calculators, computers, and statistical analyses, which deluded him into thinking his Ford Motor Company methods could outsmart the enemy in Vietnam.[675] This type of thinking, along with America's supremacy in industrial output during the war, undoubtedly contributed to what historian Max Hastings referred to as a "spirit of military narcissism."[676]

---

[672] Major Helmut Von Wehren, *Geefectsausbildung der Panzergrenadiere: Aufgabensammlung für den Rekrutenausbilder zur Anleitung in der Geefectsausbildung im Rahmen der Gruppe mit 2 le. MG., der Gruppe gepanzert und ungepanzert.* [*Squad Training Combat Instruction For the Panzer Grenadier: A Collection of Lessons for the Recruit Instructor to Guide the Combat Instruction in the Context of the Armored and Unarmored Squad with 2 light MG*], trans. John Baum (Berlin: Verlag Offene Worte, 1944), 30-35.
[673] Colonel I. G. Von Witzleben, *Kurzer Abriß der Taktik* [*Brief Outline of Tactics*], trans. John Baum (Berlin: Verlag Offene Worte, 1940/41), 5.
[674] Creveld, *Fighting Power*, 63.
[675] Hamilton Gregory, *McNamara's Folly: The Use of Low-IQ Troops in the Vietnam War plus the Induction of Unfit Men, Criminals and Misfits* (West Conshohocken, PA: Infinity Publishing, 2015), Loc. 1187, Kindle.
[676] Max Hastings, "Their Wehrmacht Was Better Than Our Army," *Washington Post*, May 5, 1985.

Perhaps this is why Gen. Mark Clark wrote from Italy in the summer of 1944, "Without question, our training has not yet produced disciplined officers and disciplined men."[677] Indeed, interservice rivalries over who should spearhead quality weapons development coupled with an emphasis on simply getting men to the front as fast as possible regardless of whether they were adequately trained or not predictably led to humiliation and needless casualties during the U.S Army's first tangle with the Wehrmacht in Tunisia in early 1943, a large-scale dress rehearsal for the Normandy invasion in the spring of 1944 and the Battle of Hürtgen Forest in late 1944.

In early 1943, as part of the winding down of Operation Torch (the Allied invasion of North Africa), the U.S. Army's prewar training deficiencies and the lack of resolve to develop quality tanks and anti-tank weapons came home to roost. In an AAR prepared by cavalry officer Lt. Col. E.A. Russell following the Battle of the Kasserine Pass, he noted the following:

> Throughout the entire Tunisian Campaign, offensive action by American troops was marked by the dispersal of effort…and the general feeling appeared to be one of fear of an enemy counter-attack. In a great many cases, officers are even worse offenders than the men and staff officers in particular are prone to have a look at things while standing on the crest of a ridge. In connection with an enemy tank attack, there is a general feeling among the troops that the 37mm gun is not a good anti-tank weapon.[678]

Eyewitness accounts from enlisted men who were attached to armored units made the following observations regarding the lack of weapons training and the absence of combined-arms tactics during the Battle of the Kasserine Pass.

> What I've learned here in Africa is that it is important to respect, not fear, the 88-mm guns. You must keep in turret defilade. They can knock you out at 3,000 yards. I have also learned that tanks must have support. If we had air and infantry we could have done a good job. If the infantry had been ahead of us at the Pass, they could have helped quite a bit.[679]

---

[677] Max Hastings, *Overlord: D-Day and the Battle for Normandy* (New York: Vintage Books, 1984), 168.
[678] Lt. Col. E.A. Russell, Reports on Combat Experience and Battle Lessons for Training Purposes to CG 1st US Armored Division, 10 June 1943 in *Kasserine Pass Battles; Readings, Doctrines and Lessons Learned*, Vols. I and II (U.S. Army Center of Military History, 1942-1943), 2-3.
[679] "Interview at the Front," Sgt. Neal, 3rd. Batt., 1st Armored Reg. 4 April 1943 in *Kasserine Pass Battles; Readings, Doctrines and Lessons Learned*, Vols. I and II (U.S. Army Center of Military History, 1942-1943), 39.

Another soldier assigned to the 6th Armored Infantry noted "We have the most need for training in the .30 and .50 caliber machine guns. We have men who don't even know their nomenclature and functioning."[680]

There is little doubt that the U.S. Army failed miserably at the Battle of the Kasserine Pass, particularly during their performance at Sidi Bou Zid. Known as the first major defensive battle fought by U.S. armored units in World War II, Sidi Bou Zid pitted the 1st Armored Division against the German 10th and 21st Panzer Divisions and was the initial act in the drama that would become known as the Battle of the Kasserine Pass.[681] Two days before the battle, the Commander of the 168th Battalion Combat Team, Col. Thomas D. Drake, received 200 replacement troops. Amazingly, some lacked weapons and quite a few had never even fired a rifle![682]

In the end, the debacle at the Kasserine Pass destroyed six U.S. Army battalions and caused Gen. Eisenhower to later remark "The Germans did not lose the battle of North Africa so much as they were overwhelmed. Hitler's war machine was no match for America's assembly line production efforts. By contrast, at Kasserine Pass the U.S. II Corps lost more tanks (235) than the Germans had deployed at the outset of the battle (228)."[683]

To be sure, many of the tank losses incurred by the U.S. Army at Kasserine were due to inadequate armor protection against the German 88mm gun and the fact that the U.S. Army employed their tanks improperly, thus violating a cardinal principle of armored combat, i.e.,

---

[680] "Interview at the Front," Sgt. John D. Mahoney, HQ Co., 2nd Batt., 6th Armored Infantry, 14 April 1943 in *Kasserine Pass Battles; Readings, Doctrines and Lessons Learned*, Vols. I and II (U.S. Army Center of Military History, 1942-1943), 43.
[681] Capt. William R. Betson, "Sidi Bou Zid – A Case History of Failure." *Armor* 91, No. 5 (November-December 1982): 38-44.
[682] Martin Blumenson in Charles E. Heller, and William A. Stofft. Eds. *America's First Battles, 1776-1965*. Lawrence, KS.: University Press of Kansas, 1986, 247.
[683] Jean Edward Smith, *Eisenhower in War and Peace* (New York: Random House, 2012), 339, Kindle.

concentrating combat power at a decisive place and time. U.S. light and medium tanks were deployed across a large area leaving them vulnerable to piecemeal attack and defeat by German panzers and anti-tank guns.[684] This again hearkens to the very deficiency Lt. Gen. McNair noted during the Carolina Maneuvers and indicates that little reformatory training had occurred before shipping armored units off to North Africa. As a result, many U.S. soldiers died needlessly likely due to exercising the way they would fight.

It could be argued that the training defects observed during the prewar maneuver exercises were not remedied before Operation Torch because of the time crunch. The Carolina Maneuvers ended a week before Japan attacked Pearl Harbor and America's isolationist stance quickly shifted to one of "all in" for victory. Less than a year after the Carolina Maneuvers, U.S. Army troops squared off against the enemy in actual combat. And, from the conclusion of Kasserine Pass to the invasion of Sicily later that year, some progress was certainly made regarding improvements in training and there were continued iterations of readiness maneuvers, only these were considered wartime maneuvers like the 67th Armored Regiment's field exercise in Morocco in March 1943.

As previously mentioned, Jean R. Moenk did a fine job detailing some of these wartime maneuvers which took place in many of the same regions of the United States as had the prewar maneuvers, with the addition of a Desert Training Center that was established in 1942 in California under the command of Maj. Gen. Patton. In 1943, the AGF hosted maneuvers in Tennessee, Louisiana, West Virginia, California, and Oregon. Like the prewar maneuvers, these exercises involved numerous corps and divisions, however, there is little evidence that air-ground cooperation improved or was even included in these wartime maneuvers.[685]

---

[684] Carlo D'Este, *Patton: A Genius for War* (New York: HarperCollins, 1995), 457.
[685] Moenk, *A History of Large-Scale Army Maneuvers in the United States*, 89.

By 1944, the increased demand for service support units overseas drastically reduced the number of units available to support stateside maneuvers. This resulted in a suspension of large-scale maneuvers conducted within the continental United States. As a result, entire U.S. Army divisions were sent into combat having never executed tactical exercises against another division in a simulated readiness exercise scenario. The impact upon training was incalculable according to War Department studies.[686]

Although large-scale readiness maneuvers may have been off the table for the remainder of the war, that did not obviate the need to ensure troops were prepared for combat. And with the largest amphibious assault in the history of warfare looming, time was short for ensuring thousands of soldiers and sailors were adequately trained and prepared to assault, hold, and fortify the heavily defended coastline of Normandy…a herculean endeavor known as Operation Overlord.

During the Tehran Conference held in late 1943, the genesis for what would become Operation Overlord was conceived as a means for opening a second front.[687] Unfortunately, in 1943, the U.S. Army had no training regimen or exercise plan to assault, hold, and fortify a contested coastline effectively. The only guidance that *did* exist at that time was *Basic Field Manual Landing Operations on Hostile Shores* (*FM 31-5*), published in 1942, and, while this 224-page manual contained guidance on such topics as the composition of a landing force, the importance of beach reconnaissance and how many men could fit inside a Higgins Boat (landing craft), *FM 31-5* still reflected antiquated infantry concepts such as "rushing enemy positions with

[686] Ibid., 106-107.
[687] Gordon A. Harrison, *United States Army in World War II The European Theatre of Operations: Cross-Channel Attack* (Washington, D.C.: The Center of Military History United States Army, 1951), 121-127.

the bayonet."[688] Having the benefit of hindsight, it is indeed hard to imagine U.S. Army soldiers on Utah and Omaha beach affixing bayonets and rushing German artillery and machine gun emplacements with a bayonet! Large-scale maneuvers were needed to ascertain whether quality training had prepared troops for the D-Day invasion.

Although a stateside Amphibious Training Center had been activated by the AGF on May 20, 1942, U.S. Army leaders wanted an exercise location that closely resembled the Normandy beaches where the famed landings would occur.[689] An area in North Devon, located in southwestern England was chosen due to its nearly identical coastline similarities to Omaha Beach. Two regions in North Devon; Slapton and Woolacombe, were home to the U.S. Assault Training Center that had been established on April 2, 1943, however, it was determined that these beach areas were not large enough to accommodate the sheer scale required for the forthcoming series of amphibious assault exercises, therefore a final area located on the southwestern portion of England known as Slapton Sands was chosen.[690]

The initial series of exercises for D-Day were code-named Duck I and took place in early January 1944. Subsequent exercises were divided into three groups. The first of these involved getting troops from various units together to work on combined assault and logistical problems. The second group consisted of smaller maneuvers directed at individual units and their particular mission during the invasion. The third group comprised two dress rehearsals, Fabius I and Tiger,

---

[688] *FM 31-5 Basic Field Manual Landing Operations on Hostile Shores* (Washington: Government Printing Office, 1942), 23, 36, 75.
[689] Capt. Marshall O. Becker, *The Amphibious Training Center Study No. 22* (Historical Section, Army Ground Forces, 1946), 5.; Wendy Lawrence, *Exercise Tiger: The Forgotten Sacrifice of the Silent Few* (United Kingdom: Fonthill Media, 2013), 23.
[690] Richard T. Bass, *Exercise Tiger: The D-Day practice landing tragedies uncovered* (East Sussex: Tommies Guides, 2008), 17.

respectively.[691] Only Tiger will be examined further due to the egregious training deficit evinced during Exercise Tiger and the resultant impact on D-Day.

Much has been written regarding Exercise Tiger and the incredible loss of life that resulted from German E-boats (torpedo boats) attacking and sinking two Landing, Ship, Tank (LST) vessels in the early morning hours of April 28, 1944.[692] What has *not* been adequately covered until now is the gross training deficiency involving a particular item of issued equipment that became evident as soldiers and sailors went into the water during the horrific attack.

The Assault Training Center in North Devon, England, and the three stateside Amphibious Training Centers instructed amphibious assault troops in a myriad of skills they would need when they hit the beaches of Normandy. Areas included in the training of the regimental combat teams expected to take and hold Utah and Omaha Beach were rudimentary and designed primarily to enable soldiers to handle themselves and their equipment during an amphibious operation and to acquaint them with the landing craft from which they would both embark and disembark.[693]

Particular subjects that were supposed to be covered for selected officers and NCOs were a general orientation; doctrines and principles of amphibious operations; composition of boat teams, the proper wearing of equipment, scaling cargo nets; lowering of light equipment and weapons from piers into landing craft; methods of embarking into and debarking from landing

[691] Lt. Clifford L. Jones, *The Administrative and Logistical History of the ETO, Part VI Neptune: Training, Mounting, the Artificial Ports, File No. 8-3.1 AA* (Historical Division: Center of Military History United States Army: Washington, DC., 1946), 213.
[692] See Wendy Lawrance's *Exercise Tiger: The Forgotten Sacrifice of the Silent Few* (2013); Edwin P Hoyt's *The Invasion Before Normandy: The Secret Battle of Slapton Sand* (1999); Ken Small's *The Forgotten Dead: The true story of Exercise Tiger, the disastrous rehearsal for D-Day* (2018); and Richard T Bass's *Exercise Tiger: Casualty Cover Up Revealed* (2017).
[693] Becker, *The Amphibious Training Center Study No. 22*, 50.

craft; loading and unloading of trucks, artillery, and other heavy equipment; crossing barbed wire and clearing beach obstacles.[694]

More focused areas such as the use of pole charges (half-pound blocks of TNT taped to a square board at the end of a wooden pole) (See Fig. 7), the Bangalore torpedo (linked metal tubes filled with explosives used to blow gaps in barbed wire) (See Fig. 8) and flamethrowers were reserved for specialized units known as Assault Teams.[695]

Figure 7
Attaching pole charge to bunker[696]

[694] Ibid.
[695] Bass, *Spirits of the Sand*, 27-68.
[696] Ibid., 27.

Figure 8
Two soldiers employing Bangalore torpedo[697]

While these skills would certainly be required on D-Day, according to a Top-Secret memo from Gen. Eisenhower, Exercise Tiger was primarily intended to rehearse the following: concentration, marshaling and embarkation of troops in the Torbay-Plymouth area, short movement by sea under U.S. Navy control, disembarkation with naval and air support at Slapton Sands, beach assault using live ammunition and the securing of the beachhead to be followed by a rapid inland advance.[698]

The tragedy of Exercise Tiger lay primarily in the fact that enemy torpedo boats, which had been patrolling in an area northwest of Cherbourg, France were alerted to U.S. and British radio traffic and the only escort protection for Allied ships (Convoy T-4) was the British corvette

[697] Ibid., 28.
[698] Memorandum from Supreme Headquarters Allied Expeditionary Force, G-3 Division, subj. Exercise Tiger, 19 April 1944 in Ken Small, *The Forgotten Dead: The true story of Exercise Tiger, the disastrous rehearsal for D-Day* (Osprey Publishing, 2018), 19-20.

HMS *Azalea*. Nine German E-boats made their way to Slapton Sands and encountered Convoy T-4 which was made up of eight LSTs and one British corvette each carrying U.S. Army assault forces and British sailors.[699]

According to Laurence B. James, who was on board LST 502 during the attack, at approximately 2:00 AM on April 28, 1944, the first of three U.S. LSTs was torpedoed by enemy E-boats. LST 507, sailing last in the line of Convoy T-4 was struck and sunk. Twenty minutes later, LST 531, sailing fourth in line, was hit by two torpedoes and sunk. Those Allied ships sailing at the head of the convoy failed to grasp the enormity of the unfolding situation and assumed this was all part of the exercise. At 2:30 AM, LST 289 was hit, severely damaging her stern. All nine attacking E-boats made it safely back to France.[700]

Because of a huge government cover-up, the general public knew very little of the disaster and resultant casualty figures are still relatively unclear, however, a report issued by U.S. Navy Admiral Don P. Moon dated April 29, 1944, provided the basis for the "official" death toll of 749.[701] Laurence B. James cited between 639 to 749 as the number of men who perished and Wendy Lawrance puts the figure at 749 as does a 1987 *Reading Times* newspaper article.[702] Richard T. Bass, however, gives the total at 1,405, nearly twice the "official" tally based upon an inquiry of the American Battle Monuments Commission.[703]

---

[699] L.B. James, Report. The Location of LST 502 During and Following the Attack on Convoy T-4, Exercise Tiger, Exercise Tiger Collection; Box 1, Folder 9, [Part 2 of 2], Recollections of Laurence B. James, 1991. U.S. Army Heritage and Education Center, Carlisle, PA.; Bass, *Exercise Tiger: The D-Day practice landing tragedies uncovered*, 60-63.; AP, "Disastrous Warm Up for D-Day Little Known," *Las Vegas Review*, April 25, 1994, 7.
[700] James, Report. The Location of LST 502 During and Following the Attack on Convoy T-4, 2.
[701] Memorandum to COMINCH, CTF 122 and CTF 127, 29 April 1944 in Bass, *Exercise Tiger: The D-Day practice landing tragedies uncovered*, 118.
[702] James, Report, 2; Lawrance, *Exercise Tiger*, 88; AP, "U.S. Men Killed in Rehearsal Honored with Tributes, Tears," *Reading Times*, November 16, 1987.
[703] Bass, *Exercise Tiger: The D-Day practice landing tragedies uncovered*, 161.

Regardless of the total number of men who died during Exercise Tiger, one salient fact is evident. The lack of proper training and instruction in the use of a simple device manufactured by a company that would become famous for making tires most certainly contributed to the overall death toll both during Exercise Tiger as well as on D-Day. That device was officially known as the PRESERVER, LIFE, DUAL TUBE, BELT, or simply the life belt and was largely produced by the Firestone Tire and Rubber Company in Akron, Ohio. (See Fig. 9)

Figure 9
U.S. Army issue life belt, author's collection

Unlike U.S. Navy sailors who were issued and instructed in the use of the Kapok life jacket, U.S. Army personnel who were expected to take part in amphibious operations were issued the life belt.[704] However, a thorough search through U.S. Army field manuals relating to

[704] *The Bluejackets' Manual*, *United States Navy 1943 Eleventh Edition* (Annapolis, MD.: United States Naval

amphibious operations, such as *FM 31-5*, reveals nothing associated with the proper wear and use of the life belt. (See Fig. 10)

Figure 10
Off-loading at Slapton Sands during exercises, NARA
(Note the absence of life belts)

Additionally, the U.S. Navy *Bluejackets' Manual*, the catch-all guidebook for naval personnel, is also silent on the life belt and contains nothing in its 1,145 pages instructing a soldier or sailor in its use. There is no solid explanation as to why some soldiers chose to wear it correctly while others did not, but those who did not were destined to drown once their equipment-laden bodies hit the water.

Institute, 1943), 280-282.

T/5 Earnest Dale Rodman, who was one of the survivors of LST 507 during Exercise Tiger relayed the following regarding the absence of training in the use of the life belt.

> As I recall, we boarded the ships on the morning of April 26, 1944…upon boarding each soldier was given an inflatable life belt. These belts contained two capsules of compressed carbon dioxide, which inflated the belt when punctured by squeezing at the proper location. No instruction was given as to their proper use. Because each soldier was in battle dress (backpack, rifle, etc.) the belts were worn around the waist instead of under the armpits. This would prove to be a fatal mistake for many.[705]

Lieutenant Eugene Eckstam, a medical officer on board LST 507, elected not to jump from the deck of the stricken vessel, instead preferring to slowly lower himself down the cargo net and into the water. Unlike many U.S. Navy personnel who were wearing the Kapok life jacket, he recalled that he had been issued the life belt and was wearing it under his armpits. He inflated the belt and allowed it to fill before releasing the cargo net. As soon as he was in the water, he noticed that many soldiers had inflated belts around their waists, and they had toppled forward with their heads in the water and feet in the air. According to his account, those men had never received adequate training on how to use the life belt.[706]

U.S. Navy Corpsman Arthur Victor, another survivor of LST 507, noticed that "many soldiers pitched forward in the water with legs up and faces down. They were top-heavy and struggled unsuccessfully to overcome it, even though I could see they were wearing life belts. It was unbelievable."[707]

Five days after the Exercise Tiger disaster, Convoy T-4 Commander B.J. Skahill submitted his recommendations, which underscored the problems that likely caused the great

---

[705] T/5 Earnest Dale Rodman, Correspondence from Earnest Dale Rodman Regarding His Account of the Attack During Exercise Tiger, Exercise Tiger Collection; Box 1, Folder 3, Recollection of E Dale Rodman, 1988. U.S Army Heritage and Education Center, Carlisle, PA.
[706] Lawrance, *Exercise Tiger*, 74-75.
[707] Bass, *Exercise Tiger: The D-Day practice landing tragedies uncovered*, 85.

loss of life. Among the many shortcomings he noted, he stated that "it is believed that the Kapok life jacket is more effective for holding up the head of exhausted swimmers than the CO_2-inflated single belt type."[708]

Because it was called a life *belt,* it is entirely plausible that this nomenclature caused many men to affix the device as if it were a normal belt, i.e., around his waist. As relayed by T/5 Rodman, the device was designed to be instantly inflated using two carbon dioxide (CO_2) cartridges that punctured the cartridges upon twisting two valves, which then released CO_2 into the fabric of the belt creating buoyancy. If the CO_2 cartridges failed, one could manually inflate the belt by blowing into the two rubber tubes attached to the outside of the belt.

Apparently, none of this information was officially part of any training regimen at either the Amphibious Training Centers or the Assault Training Center so the fact that some men either through providence or sheer luck, elected to wear the life belt under their armpits versus around the waist explains why they survived when they hit the water. Considering Commander Skahill's recommendations, one marvels that U.S. Army soldiers who took part in D-Day had still not been adequately trained on where to position the life belt or had been issued Kapok life jackets. (See Figs. 11-15) Jonathan Gawne noted in his *Spearheading D-Day: American Special Units in Normandy* (2011) that, unlike the U.S. Army soldiers who embarked into LCVPs wearing life belts, U.S. Navy and Coast Guard boat crews were issued Kapok life vests.[709]

[708] Ibid., 150-151.
[709] Jonathan Gawne, *Spearheading D-Day: American Special Units in Normandy* (Histoire and Collections, 2011), 53.

Figure 11
Soldiers in Landing, Craft, Vehicle, Personnel (LCVP) bound for Omaha Beach, 6 June 1944[710]
(Note soldier bending over with life belt around his waist)

[710] Gawne, *Spearheading D-Day*, 101.

Figure 12
Going ashore Omaha Beach, 6 June 1944[711]
(Note position of life belt on trailing soldier)

[711] Ibid., 102.

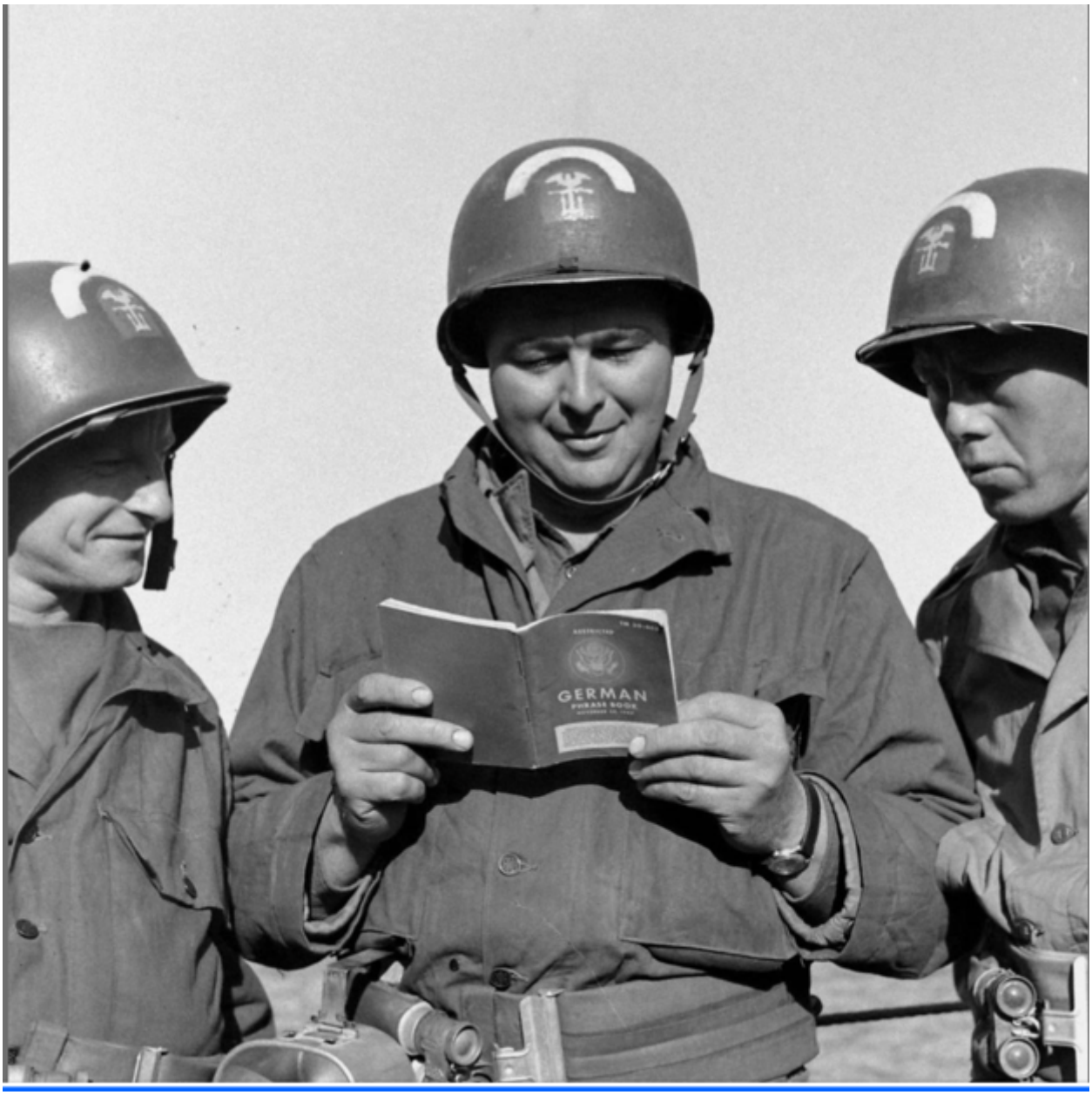

Figure 13
6th Engineer Special Brigade soldiers, 6 June 1944, *Life* magazine archives
(Note the improper position of the life belt)

Figure 14
Chaplain holds service on the deck of LCI (Landing Craft Infantry) before D-Day[712]
(Note seated soldiers and chaplain wearing life belts around the waist)

[712] Ibid., 56.

Figure 15
Soldiers approaching Utah Beach, 6 June 1944, NARA
(Note the position of life belts)

Several eyewitness accounts substantiate the ramifications for those who chose to wear the life belt around the waist versus under the armpits on D-Day. Staff Sergeant John Robert (Bob) Slaughter, an infantryman assigned to the 116th Infantry Regiment of the 29th Infantry Division, was one of thousands who stormed Omaha Beach on June 6, 1944. He also took part in Fabius I in May 1944. In his memoirs, he recounted how his unit was assigned the Dog Green sector of the beach. As soon as the ramp of his LCVP dropped, Staff Sergeant Slaughter found himself in the waters of the Channel. He noted that "in addition to our inflated life belts, we all wore on our backs gas masks in rubber carriers, which acted as auxiliary life preservers, so there

was no trouble at all keeping afloat."[713] Had his men not had the foresight to reverse the position of their gas mask carriers (they were supposed to be worn across the upper chest for rapid access), he may not have survived to write his memoirs.

U.S. Army medic Staff Sergeant Arnold "Ray" Lambert went ashore at Omaha on D-Day and recounted his experience that day as he saved more than a dozen men. He noted, "A lot of the guys had so much equipment on that they couldn't stay upright once in the water. The life preservers were belts you put around your midsection…it probably seemed like a good idea to add an extra life preserver to counterbalance it. But what that did was tip them like a seesaw when they got in the water. Their upper bodies had all the weight; their bottom halves were lighter. The belts ended up helping to hold their heads under."[714] It is apparent from SSgt Lambert's recollection that he too had not been properly trained on where to wear the life belt.

The fact that U.S. Army soldiers were never properly trained in the use of the life belt represents just one of the many inadequacies in preparation that occurred during the period of readiness maneuvers leading up to America's entry into World War II and even during the war. Moreover, the fact that this has never before been addressed in historiography further substantiates the importance of ensuring exercises validate training or, as in the case of the life belt, the lack thereof.

Perhaps Martin Blumenson summed up the U.S. Army's state of readiness best when he asserted that the "U.S. Army started far too late to prepare seriously for World War II. As a result, the training program, the procurement of weapons, and virtually all else were hasty,

---

[713] SSgt J. Robert Slaughter, *Wartime Memories of J. Robert Slaughter and Selected Men of the 116th Infantry, 29th Division, 1941-1945*, 6, 20. Robert W. Black Collection; Box 1, Folder 5, Wartime Memoirs of J. Robert Slaughter, 116th Inf. Regt., 29th Inf. Division, 1941-1945. U.S. Army Heritage and Education Center, Carlisle, PA.
[714] Ray Lambert and Jim DeFelice, *Every Man A Hero: A Memoir of D-Day, the First Wave At Omaha Beach, and a World At War* (New York: HarperCollins, 2019), 178, Kindle.

largely improvised, almost chaotic, and painfully inadequate throughout the intensely short period of mobilization and organization immediately before and after Pearl Harbor."[715]

Blumenson pulls no punches in his assessment of U.S. Army readiness leading into World War II, and this work has shown conclusively that the hasty, largely improvised, and inadequate manner in which readiness maneuvers conducted from 1902 to 1944 was emblematic of the flawed doctrine, organization and training instilled within the very fiber of the U.S. Army as a whole. As a result, the fighting power of the AGF was never what it could have been because the aforementioned factors were never adequately addressed. Consequently, this dissertation serves as a stark warning to those involved in the planning and executing military readiness exercises that neglecting such critical components that have been frequently elucidated can only result in negative outcomes when it concerns a projection of victorious fighting power.

Unfortunately, these negative trends were never sufficiently corrected throughout the war, fostering a veritable "culture of unreadiness." Moreover, there is evidence that this trend continued well into the 1950s, 60s, 70s and 80s. This goes far in explaining why AGF soldiers took such a beating during the outset of the Korean War just five years after World War II ended. Moreover, readiness maneuvers like Exercise Sledgehammer in 1953, Exercise Early Bird in 1954, and Exercise Brim Fire in 1970 never encompassed scenarios involving insurgent warfare, which AGF units faced in Vietnam.[716] And speaking of Vietnam, even the amphibious assault training deficit revealed during Exercise Tiger involving how to properly wear the life belt

[715] Martin Blumenson, "America's World War II Leaders in Europe: Some Thoughts," *Parameters* 19, No. 4 (1989): 3-4.
[716] "Exercise Sledgehammer," 14-31 August 1953, Armor, U.S. 66th Regiment (Battalion) Papers, Training Exercises 1953, Box 5, Folder 3; "Exercise Early Bird," May-June 1957, Armor, U.S. 66th Regiment (Battalion) Papers, Box 16, Folder 4; Final Report, Joint Training Exercise Brim Fire 6-70 (United States Strike Command. U.S., 1970), Army Heritage and Education Center, Carlisle, PA.

reverberated into the 1960s when, in 1964, the U.S. Marine Corps conducted the largest peacetime amphibious exercise to date known as Operation Steel Pike I off the coast of Spain.

Former USMC Sergeant Randall S. Wells Sr. stated in an interview that he was never even given prior training on how to descend a cargo net from the side of a transport ship. His first experience with such a precarious task was during the actual exercise when thousands of Marines were directed to clamber down cargo nets into waiting landing craft bobbing heavily in the sea some 20 to 30 feet below. Sgt. Wells related how several Marines expressed legitimate fear as they performed a task for which they had never been trained.[717] It is a wonder U.S. Marines did not die during this portion of the exercise.

The majority of Cold War era maneuvers were still focused on antiquated tactics and techniques left over from World War II, including the 1953 Exercise Desert Rock V, which involved approximately 300 U.S. Army soldiers hiding in Great War-styled trenches while a 51.5-kiloton atomic bomb was detonated 3,500 yards from their position. Nine seconds after detonation, those same soldiers were then directed to climb out of their trenches and rush to within 1,200 yards of the mushroom cloud armed with M-1 rifles! Rather than preparing AGF troops to fight a tactical nuclear battle that never occurred, the most significant outcome of the Desert Rock exercises was the numerous U.S. Army soldiers who developed cancer later in life as a result of having served as the U.S. Government's guinea pigs.[718]

Did the U.S. Army's entry into WWII tip the scales towards victory? Absolutely! However, one could argue that it was not due to the fighting prowess of the individual U.S. Army infantryman or the AGF, but rather due to mass production, artillery, airpower, and

[717] Sgt. Randall S. Wells Sr., interview by author, Kingman, Arizona, December 5, 2023.
[718] Subj. Final Report. EXERCISE DESERT ROCK V. DTIC ADA078559:. January-June 1953. Volume I. Operations. UNCLASSIFIED. U.S. Army Heritage and Education Center, Carlisle, PA.

America's relatively short involvement as compared to that of the Wehrmacht who had been fighting since 1939.[719]

Following an Allied victory in North Africa, the U.S. Army invaded Sicily in the summer of 1943 causing nearly 28,000 German casualties. And yet, Germany thwarted overwhelming American material superiority and ended up fighting a two-year withdrawal up the Italian peninsula, which lasted until the war's final days.[720]

Paul Fussell, an infantryman who fought the Germans during the Battle of Hürtgen Forest in late 1944 mentioned that the battle revealed the insufficiencies of American troop training, remarking that "no one had thought hard about tactics to be used in heavy woods and defensive measures to be taken in such a setting. Apparently, no officer or noncom had ever lectured on tree bursts, and there few other kinds in a forest."[721]

Sadly, the U.S. Army experienced unprecedented rates of desertion and self-inflicted wounds during this battle, further highlighting the ineffectiveness of readiness training that should have been conducted before sending men into the hellish nightmare that was the Hürtgen Forest. Conversely, there is little evidence to show the German units who fought in the Hürtgen Forest experienced similar results. One explanation for this lies in the fighting power or ability of the average German infantryman versus his U.S. Army counterpart.

---

[719] Hastings, "Their Wehrmacht Was Better Than Our Army," 3.
[720] Steven D. Mercatante, *Why Germany Nearly Won: A New History of the Second World War in Europe* (Santa Barbara, CA.: Praeger, 2012), 204.
[721] Paul Fussell, *The Boys' Crusade: The American Infantry in Northwestern Europe, 1944-1945* (New York: Random House, 2003), 83-86.

There is no doubt that the historiography of the U.S. Army is voluminous and there has been a considerable amount of research poured into this subject matter, particularly in the areas of its historical founding in 1775, weapons and uniform developments, force structure, and biographical works of key figures who have helped shaped the impressive reputation enjoyed by the U.S. Army. However, there remains more for historians to harvest, particularly in the realm of readiness exercises. While historians such as Christopher R. Gabel and Jean R. Moenk have helped fill this gap, there is evidence this continues to be an area of incomplete historical analysis.

For instance, more research is warranted to explore how readiness exercises evolved from World War II and the Cold War era to how the U.S. Army of the 21st Century plans, conducts, and evaluates exercises to prepare to engage in what today's military leaders refer to as the "Great Power Competition." Another area that could be analyzed is the social and economic impacts readiness exercises have had on surrounding environments. Examining the methods by which the U.S. Army uses maneuvers to measure readiness would be another welcome area, has much to offer historians and remains an underappreciated field of study. One example would be to analyze the input versus output factor to ascertain true military readiness. Readiness inputs are the training and experience of exercise participants while readiness outputs are the ability to perform specific mission essential tasks.

Studies on readiness exercises conducted by other branches of the U.S. military would also be beneficial. For example, the U.S. Marine Corps conducted the largest transoceanic landing exercise ever attempted in 1964 off the coast of Spain, yet not a single monograph has ever been written on this exercise known as Steel Pike I, which involved some 28,000 Marines, 80 warships and was the first-time infantry forces were ever inserted on to a "hostile" landing

zone via helicopters. The importance of this maneuver has been grossly neglected in historiography, as Steel Pike I likely paved the way for the U.S. Army to use helicopters during the Vietnam War.[722]

The U.S. Air Force has routinely executed its fighter-on-fighter Red Flag exercises in Nevada, presenting another research exploration area. During the height of the Cold War, the massive Return of Forces to Germany (REFORGER) exercises that validated the ability of Army, Navy, and Air Force elements to rapidly deploy to Europe against a Soviet-bloc threat represented thirty years' worth of annual maneuvers yet has received only limited coverage in Walter Bohm's multi-volume series of books that focused more on participating nations' armored vehicles than on a solid analysis of the effectiveness of those important exercises. A work similar in scope to Jean R. Moenk's compendium of large-scale readiness maneuvers would prove beneficial to historians seeking to synthesize the hundreds of joint-force exercises that have occurred over the past several decades.

Yet another area that might be researched regarding U.S. Army readiness maneuvers concerns the method by which they were scored, graded, or otherwise reported. While Lt. Gen. McNair oversaw the Army's official GHQ *Umpire Manual*, it would be beneficial to the field to learn the criteria for how umpires were selected, trained, and instructed on how to score the performance they observed. In current readiness exercises, at least in the U.S. Air Force, exercise evaluators must be chosen by their unit leadership, accomplish localized training, be sworn in as qualified evaluators, and receive a field observation (over-the-shoulder) before submitting exercise findings to exercise officials. Examining the logistics involved in large-scale readiness maneuvers would be another area for further research. Numerous monographs have been written

[722] Cpl. William Donohue, interview by author, Harbor Springs, Michigan, August 24, 2023.

regarding war logistics such as David D. Dworak's *War of Supply: World War II Allied Logistics in the Mediterranean* (2022), Martin Van Creveld's *Supplying War: Logistics From Wallenstein to Patton* (2004), and John Norris' *Logistics in World War II 1939-1942* (2020) but no single work has been offered that looks solely at the supply constraints and concerns regarding readiness exercises. There remains much more to examine.

This dissertation has examined the question of whether the readiness exercises (maneuvers) that the U.S. Army planned, executed, and observed during the period beginning in 1902 and ending in 1944 were effective in preparing the AEF and AGF for the combat they encountered during both world wars. This work is essentially an untapped area and therefore brings significant value to the field of readiness exercise historiography by highlighting their overall effectiveness. Moreover, current and future military readiness exercise designers can glean much from this research to ensure past mistakes are not repeated.

While it was not within this dissertation's scope to examine every readiness maneuver conducted during this period, only those that involved a sizable number of forces and/or caused significant changes to the composition of the U.S. Army were included. After conducting thorough archival research of numerous after-action reports (AARs), analyzing first-person testimony and government pamphlets, and examining period photographs, the evidence reveals that those readiness exercises were not effective in preparing troops for the combat they encountered in Europe during two world wars.

It is assumed that the criteria for determining military effectiveness, especially relating to combat effectiveness might be construed as nebulous, immeasurable, or otherwise unquantifiable. However, for this work, effectiveness refers to the ability of the AEF and AGF to project combat power individually. Effectiveness indicates fighting power, i.e., a manifestation

of discipline, organizational cohesion, morale, and toughness. While these qualities were expected to be instilled during the Army's basic military and small unit training, the various maneuvers conducted were the true litmus test to validate those qualities that made up fighting power.

As stated by Lt. Col. Jeremy T. Hamilton, the Inspector General for the 412th Test Wing at Edwards Air Force Base, California, "Exercises are not training. They are intended specifically to validate that previous training has occurred and that such training was effective overall."[723] The time to discover and remedy training deficiencies is not on the battlefield but on the maneuver field.

Leading up to the AEF involvement in the Great War, the Army's doctrinal, organizational, and training (DOT) approach to readiness maneuvers reflected the blinkered reasoning of leaders still preoccupied with the antiquated notion that the individual rifleman was the king of the battlefield, when in fact, the machine gun and artillery proved otherwise. This, of course, was evident in the series of prewar readiness maneuvers conducted stateside before shipping the AEF off to France. Additionally, the fact that French and British allies were pulled from their regular duties to provide ad hoc training on trench warfare and machine gun tactics to incoming AEF ground troops further underscores the argument that the prewar maneuvers failed to effectively prepare them for the Western Front.[724]

Chapters two and three discussed and analyzed the five major stateside readiness maneuvers that preceded America's entry into the Great War. The Fort Riley, Fall (West Point), Manassas, Pine Camp, and Connecticut Maneuvers revealed that all of these exercises stressed

[723] Lt. Col. Jeremy T. Hamilton, interview by author, Edwards Air Force Base, California, May 9, 2024.
[724] Lt. Col. George M. Chinn, *The Machine Gun: History, Evolution, and Development of Manual, Automatic, and Airborne Repeating Weapons*, vol. 1, (Washington, DC: Bureau of Ordnance Department of the Navy, 1951), 148.

the importance of riflemen attacking "enemy" counterparts using outdated tactics and did not increase the fighting power of the participants nor prepare them for the horrors of trench warfare.

The Fort Riley maneuvers involved only 5,000 soldiers and essentially saw those troops conduct simulated frontal attacks on selected outposts, build bridges, and practice marksmanship. In the AAR, observations were noted, and plans were made to execute similar-sized maneuvers the following year, which were the Fall Maneuvers.

The 1903 Fall (West Point) Maneuvers were conducted on a larger scale than the Fort Riley exercises, but the combat ethos that had come to characterize the early twentieth century Army was expectedly what was exercised and validated, i.e., maintaining the American frontier with a constabulary force. Even though U.S. War Department officials knew how European armies, particularly the Imperial German Army, were conducting readiness maneuvers as early as 1899, it is astounding that little of what they had observed was put into place during the Fort Riley and Fall Maneuvers.

In all fairness, the United States Army did not yet possess equivalent weapons systems or large numbers of troops from which to draw, as did their overseas counterparts. As one example, the U.S. Army did not employ a fully functioning machine gun until 1912 even though as early as 1888, the Maxim (machine) gun underwent testing by the Ordnance Department. In all likelihood, Ordnance Department officials insisted on an American-made version of the Maxim gun, which several European nations had already adopted. Had they acquiesced and adopted the Maxim gun like Russia, Germany, Britain, and Japan had done, the U.S. Army could have validated machine gun tactics as early as the 1904 Manassas Maneuvers.[725]

[725] Ibid., 147-150.

When exercise planners finally decided to include them during the 1912 Connecticut Maneuvers, the lethal capability of this weapon was only partially appreciated as umpires directed machine gun crews to fire blank pistol rounds into the air to simulate rapid fire. This was hardly a holistic approach to instilling a sense of realism into the exercise and quite likely introduced a negative training aspect to many participants. Moreover, maneuver planners should have included the importance of seeking cover from a weapon that could fire 450 rounds a minute in the Connecticut Maneuvers, along with flanking attack scenarios for neutralizing machine gun emplacements.

While the number of exercise participants increased for each prewar maneuver, the doctrine, organization, and training remained relatively the same. More improvement was needed to replicate actual battle conditions during those maneuver scenarios. Rather than ensuring adequate numbers of machine guns were included in those later maneuvers, excessive simulations were allowed to the point some men were not even given blank ammunition for their rifles or artillery pieces. There is even a photograph depicting grinning AEF soldiers seated behind wooden machine gun mockups during an exercise.

Moreover, an overreliance upon training pamphlets ended up being a poor substitute for ensuring the subject of those pamphlets was included in readiness maneuvers. As was previously shown, this was especially injurious concerning the dearth of chemical gas validation during exercises. The gas mask was not developed until 1915, three years before the AEF shipped to France. Nevertheless, no evidence was found to show that AEF troops participated in prewar readiness maneuvers that included realistic gas mask attacks and defense scenarios. Perhaps this explains the nearly 3% death rate of AEF soldiers who died due to poison gas exposure. Additionally, the fact that Gen. Pershing initially eschewed the defensive strategy of attritional

warfare training that his Allied counterparts embraced and instead insisted that maneuvers include frontal assaults to break enemy lines certainly did nothing to prepare AEF doughboys for the static warfare that characterized Great War combat.

While others have noted the lack of innovative training provided to the AEF before the Great War as a causal factor in a lackluster performance, most attribute this to an imbalanced focus on marksmanship, bayonet training, and an inexperienced NCO corps. The dissertation entitled "With Sand in Their Pockets: Lessons of the American Expeditionary Force's Mobilization for the First World War" by Kasey J. Comstock spends an entire chapter outlining these factors, but never mentions the results of any of the prewar readiness maneuvers or their resultant impact on the AEF performance overseas.[726]

Similarly, Mark E. Grotelueschen's *The AEF Way of War: The American Army and Combat in World War I* (2007) and James W. Rainey's "Ambivalent Warfare: The Tactical Doctrine of the AEF in World War I" (1983) and "The Questionable Training of the AEF in World War I" **(**1992) argue the inefficiency of AEF leadership but do not discuss *how* the prewar readiness exercises played into this inefficiency. Grotelueschen does not touch on the Fort Riley, Fall (West Point), Manassas, Pine Camp, or Connecticut Maneuvers at all. Thus, there is a definite need in Great War historiography for additional coverage of this subject matter which this work has addressed. It also lends support to concluding arguments that poor leadership and obsolete training contributed to a poorly prepared U.S. Army.

One might argue that since the Great War ended up being an Allied victory, surely this was due to the AEF's late involvement. A significant amount of Great War historiography

[726] Kasey J. Comstock, "With Sand in Their Pockets: Lessons of the American Expeditionary Force's Mobilization for the First World War" (PhD diss., Liberty University, 2023), 170-198, ProQuest Dissertations & Theses Global.

.

attempts to support this argument. However, this narcissistic assumption not only diminishes the sacrifice of millions of British and French troops but assumes that the 200 days the AEF fought in Europe somehow compelled a shocked and awed Imperial German Army to throw down their arms in surrender.

Rather, as has been demonstrated, fresh-faced American troops in overwhelming numbers wore down exhausted German troops who had been fighting and dying for four long years. Was it the AEF's superior skill in open warfare honed and validated during prewar readiness maneuvers that secured the final outcome in the Meuse-Argonne or was it sheer good fortune, massive artillery bombardments, and the ability of Gen. Pershing to adjust training on the fly once his men got to France? It certainly was not the former.

Moving on to World War II, a similar assumption could be made that since the United States "won" World War II, the U.S. Army's fighting power must certainly have been superior to that of her enemies, particularly the German Army. After all, this seems to be the widespread propagandized position that has been carefully developed since the end of the war through post-war memoirs, monographs, and countless Hollywood productions such as 1960s television shows like *Combat*, which regularly featured German soldiers leaping from effective cover so they could be expertly cut down by actor Vic Morrow's Thompson submachine gun or *Rat Patrol* that featured three men in a jeep routinely blowing up German tanks and half-tracks.

Another example is the recent release of director Guy Ritchie's *Ministry of Ungentlemanly Warfare* (2024) which portrayed German soldiers and sailors as bungling imbeciles seemingly unable to confront the mayhem caused by a handful of allied operatives. Or consider the popular *Indiana Jones* franchise of films that consistently portrayed German soldiers as incompetent buffoons.

Similarly, historiography such as Michael D. Doubler's *Closing with the Enemy: How GIs Fought the War in Europe, 1944-45* (1994) and Peter R. Mansoor's *The GI Offensive in Europe: The Triumph of American Infantry Division, 1941-1945* (1999) argue that training, adaptability and sheer ingenuity overcame any perceived tactical shortcomings of the AGF and victory was not at all due to materiel or numerical superiority.[727] Richard Overy's *Why the Allies Won* (1996) chalks up American victory during World War II to the "moral superiority of the Allied cause" as opposed to advantages in industrial output, firepower, mobility, or manpower.[728]

If that were the case, what explains military historian S.L.A. Marshall's discovery after the war that less than 25 percent of U.S. Army riflemen ever fired their weapons in combat?[729] This seems to directly contradict Mansoor's thesis that training, adaptability, and ingenuity accounted for the Allied victory over the Wehrmacht. As has been shown in this research, the pre-World War II readiness exercises were deficient in preparing troops to battle the Germans since those handfuls of maneuvers evinced a misplaced focus on what was truly required at the time to face a battle-hardened adversary who managed to subdue the majority of western Europe in a few short weeks.

Of course, the fault in that deficiency lies not with the individual soldier but rather on those responsible for planning, executing, and validating substandard performance that might have been corrected before sending citizen soldiers off to war and ensuring that troops practiced scenarios they were most likely to encounter. As one example that could be given, the proper fix for a deficiency related to enforcing fire discipline should have been a thorough analysis by the

---

[727] Michael D. Doubler, *Closing with the Enemy: How GIs Fought the War in Europe, 1944-45* (Lawrence, KS.: University Press of Kansas, 1994), 5-7.; Peter R. Mansoor, *The GI Offensive in Europe: The Triumph of American Infantry Division, 1941-1945* (Lawrence, KS.: University Press of Kansas, 1999), 267.
[728] Richard Overy, *Why the Allies Won* (New York: W.W. Norton & Co., Inc., 1996), 325.
[729] S.L.A. Marshall, *Men Against Fire: The Problem of Battle Command in Future War* (Gloucester, Mass.: Peter Smith, 1978), 10.

umpire staff followed by a repeat exercise that focused on the importance of firing one's weapon during combat to instill the proper "muscle memory" into participants.

Perhaps these factors help elucidate why statistical data supports the fact that the Germans consistently outfought the more numerous Allied armies that eventually defeated them. In 1943-1944, German combat effectiveness superiority over the U.S. Army and British Expeditionary Force was between 20-30 percent, meaning that on a man-for-man basis, German infantry consistently inflicted casualties at about a 50 percent higher rate than they incurred from opposing American and British infantry under all circumstances.[730] Moreover, considering their failure to defeat the Red Army in 1941, America's entry into the war, the annihilation of an entire German Army group in 1942, the failure of the Kursk offensive in 1943, and an Allied invasion of Italy that same year…it is amazing that through all these major setbacks, the German Army remained intact and retained relatively high morale levels.[731]

What explains this? Was it due to insufficient quantities of war material in the hands of U.S. soldiers? That cannot possibly be the case as the United States was the "Arsenal of Democracy," outproducing every other nation during the war. No more than a quarter of all German Army units were even motorized during the war. Was it due to a lack of American patriotism or unwillingness to fight? Certainly not. Citizen soldiers rushed to enlist when Japan attacked Pearl Harbor and wartime memoirs like Jake McNiece's *The Filthy Thirteen: From the Dustbowl to Hitler's Eagle's Nest: The 101st Airborne's Most Legendary Squad of Combat Paratroopers* (2003) and *Beyond Band of Brothers: The War Memoirs of Major Dick Winters*

[730] Trevor N. Dupuy, *A Genius for War: The German Army and General Staff, 1807-1945* (United Kingdom: Hero Books, Ltd., 1984), 371.
[731] W. Victor Madej, "Effectiveness and Cohesion of the German Ground Forces in World War II," *Journal of Political and Military Sociology* 6 (1978): 236.

(2006) underscore the fact that courage, tenacity and an aggressive spirit were hallmarks of the American fighting man.

As shown in chapters four through eight, the U.S. Army's interwar maneuvers proved less than effective in readying America's soldiers for actual combat. The Fall Maneuvers conducted in 1921 were a marked improvement over those executed before the Great War, but that exercise still resonated with the tactics that came to dominate trench warfare and was not effective overall in readying the AGF for the hurried pace of mechanized warfare that evolved following the Armistice of the Great War. Moreover, over the next fifteen years, the U.S. Army underwent annual readiness maneuvers but those remained small-scale and failed to include all the elements of the AGF, most notably the armored forces.

Regarding the First Army Maneuvers of 1935, an attempt was made to develop and validate the first-ever corps-versus-corps exercise, however, the AGF did not benefit from this exercise which lasted less than two days. Participants needed to learn tactical lessons they could apply in North Africa, and the maneuver involved marching large numbers of infantry troops around the playing field. Moreover, an obvious lack of quality exercise design ensured maneuver umpires could not adequately validate the ability of the participants to adapt or improvise against potential failure modes. There is no evidence that such components of the exercise were ever pre-scripted, which highlighted the lack of realism inherent during those maneuvers. It is important to reemphasize here that the more realistic an exercise's scenario is, the more likely it will reflect the full scope of possible failure modes that might reasonably affect the response performance of the participants.

Observations following the Third Army Maneuvers of 1940 revealed that mechanized infantry, armor, and aircraft badly needed a robust radio system capable of facilitating inter-

agency communications. During those maneuvers, there was virtually zero communication between AGF and the Air Corps elements. Additionally, the exercise revealed that leadership consistently demonstrated an unwillingness to engage the enemy with supporting weapons, which needed to be more, particularly in tank numbers.

During the Tennessee Maneuvers conducted in the spring of 1941, a complete lack of understanding of how armored units should be employed in combat was evident. This led to the hasty employment of untested anti-tank units pitted against armored divisions, the results of which needed to be more conclusive regarding the true capabilities of anti-tank units against medium and heavy enemy tanks. Again, this was largely due to the over-simulations regarding actual anti-tank attacks and the unrealistic assessment given by biased umpires. These two factors should have been recognized and remedied.

The massive GHQ Louisiana maneuvers executed in mid-September of 1941 further reinforced the findings that armored units and infantry still had yet to be effectively coordinated. This of course would prove to be a severe problem in Europe at the outset of the AGF involvement in the war. As noted by Weigley, the inadequacy of the fighting power generated by the standard infantry division accounted for the practice of attaching a separate tank battalion to nearly every infantry division. The problem with this, as shown during the GHQ Louisiana maneuvers, was that on many occasions armored divisions had to reluctantly parcel off battalions of tanks to the detriment of their unit composition, only to become stymied because of the deficiencies in infantry-tank teamwork.[732] This was an issue of mis-prioritizing the scope of the exercise to benefit Lt. Gen. McNair's anti-tank crusade. Politics has no place in executing effective readiness exercises.

[732] Weigley, *Eisenhower's Lieutenants*, 46.

Considering the U.S. Army would soon be deployed to North Africa, the fact that the radio communications issues, ineffective leadership problems and the continued arguments regarding which weapon system (tank vs. anti-tank gun) was better suited to engage enemy tanks had still not been resolved by the time of the GHQ Louisiana maneuvers should have caused red flags amongst the top echelons of the War Department. However, that was not the case as the final series of peacetime maneuvers revealed.

In less than two months before Japan and Germany would declare war on the United States, results from the Carolina Maneuvers woefully demonstrated a continuance of the issues exhibited in the earlier maneuvers executed that year despite Moenk's opinion that the maneuvers of 1940 and 1941 effectively prepared troops to fight in North Africa and Europe. Repeat observations regarding proper roles for tanks and infantry, biased validations by umpires, and virtually little time to implement needed reforms all but guaranteed that the AGF of 1941, ready or not, was the chosen instrument to stop Hitler. And if the prewar readiness maneuvers did not effectively prepare the AGF as this work has shown, one obvious question that must be addressed is why they (Germany) lost the war.

In short, Germany's failures in both World War I and World War II lay not in the insufficiency of its training, readiness maneuvers, or even the combat capabilities of the average German foot soldier. Rather, it boiled down to a failure in strategic conceptualization. The most glaring example of this was in Germany's assumption that both wars would be short, and their strategic misstep in creating a multi-front diversion of their forces.[733] Frankly, Hitler bit off more than he could chew in choosing to attack his former Soviet ally in June 1941.

[733] Dupuy, *A Genius for War*, 414-415.

For the U.S. Army, the same could not necessarily be stated. As has been repeatedly emphasized in this study, the U.S. Army's readiness exercises beginning with the Fort Riley maneuvers and culminating with the disaster of Exercise Tiger covered in chapter nine repeatedly evinced a common trend of inefficient leadership, inter-army squabbling over weapons development, practicing antiquated tactics (fighting the last war), a failure to adjust to emerging technologies, an unhealthy disregard for airpower and a stringent adherence to a centralized command structure.

Consequently, soldiers who participated in those exercises were given a disservice by those who planned and validated their performance (or lack thereof). Then they were hastily deployed overseas and expected to project the necessary fighting power to sweep Hitler's legions from Western Europe when what they had been consigned to rehearse back home bore little resemblance to the reality of facing an adversary highly skilled in combined arms operations, communications, maneuver warfare and steeped in nationalistic militarism.

Even Gen. Marshall recognized the ineffectiveness of the infantry before the Normandy landings when he responded to a Bureau of Public Affairs report that revealed the AGF suffered 60 percent of the casualties in Italy by comparison.[734] Additionally, over the entire course of the war, the U.S. Army infantry bore over 660,000 of the more than 930,000 reported casualties.[735] While there is no argument that it has traditionally been the job of the infantry to take and hold ground during conventional warfare, these statistics support the fact that the AGF, upon whom

[734] George Stephen Lauer, "Perspectives of Infantry: Quality and Cohesion – Comparison of American, British, and Germany Army Manpower Policies and Effects on the Infantry Small Unit During the Second World War, 1939-1945" (PhD diss., Florida State University, Tallahassee, 2010), 59, ProQuest Dissertations & These Global.
[735] War Department, U.S. Army Battle Casualties and Non-Battle Deaths in World War II, Final Report, 7 December 1941-31 December 1946, Statistical and Accounting Branch, Office of Adjutant General, War Department, 1 June 1953, 5.

those planning for the liberation of Hitler's Fortress Europe would have to rely as their principle combat capability, were not particularly aggressive.[736]

Weigley goes on to aver that the U.S. Army of World War II habitually filled its ranks with its least promising recruits, the unskilled, the uneducated, and the unenthusiastic because the more elite military units like the paratroopers, Marines, Air Corps, and Rangers got the crème of the crop of the nation's manpower.[737] No surprise that this practice fell right in line with the methods by which managerial efficiency (so-called) the U.S. Army relied upon for its manpower and personnel administration. Everything was quantifiable based on centralized mathematical models, which were supposed to have been managerially efficient. However, the reality was that this only created mountains of bureaucracy that often prevented the right personnel from critical positions. For example, U.S. Army officers were mainly chosen for their intellect or seniority and then groomed for promotion based on how efficiently they could procure and process information rather than how effective they were as frontline leaders.

In contrast, the German Army selected officers based on their moral character and willpower. They were then trained under frontline conditions and promoted for proven leadership, responsibility, independent action, and quick decision-making in actual combat. As a result, the German Army never hesitated to sacrifice managerial efficiency for combat effectiveness when this might positively contribute to its overall battlefield performance. On the other hand, the U.S. Army consistently placed managerial efficiency above everything else, which negatively affected its battlefield performance. Sadly, this trend within the U.S. Army

[736] Weigley, *Eisenhower's Lieutenants*, 45.
[737] Ibid., 28.

command echelons greatly impacted the Army's combat performance during the next two wars.[738]

Max Hastings argued that following the end of the war in 1945, in seeking to learn the lessons of that horrendous conflict, the U.S. Army made the mistake of believing they had proved that overwhelming air and firepower could not merely be a critical supplement *to* but an effective substitute *for*, dedicated infantry fighting.[739] But that can never be the case. Even though today's Army has the benefit of the finest weapons technology and routinely participates in readiness exercises, scientific management of the battlespace can never replace boots on the ground who have repeatedly exercised their combat capabilities to excellence.

The significance of this study bridges a gap in the historiography of U.S. Army readiness exercises by underscoring the cruciality of making sure military readiness exercises accomplish their chief intent, which is primarily to facilitate the necessary environment that will stress the participants to validate whether military forces are capable and prepared to project combat power when needed. Aside from contributing to the historiography of military readiness, this work could also find value as a primer for civilian emergency managers who are involved in planning and executing disaster preparedness exercises for their local communities and organizations. Local schools, the corporate world, college campuses, and even community emergency response teams would benefit from the anecdotal history in this study as it pertained to the diversely scaled exercises the U.S. Army planned, executed, and evaluated during the twentieth century.

Regardless of organizational affiliation, both emergency management and military readiness exercise planners should conclude from this work that concentrating more on readiness

[738] Max Visser, "Teaching Giants To Learn: Lessons From Army Learning in World War II," *The Learning Organization* 24, No. 3 (2017): 163-165.
[739] Hastings, "Their Wehrmacht Was Better Than Our Army," 6.

outputs versus inputs, ensuring unbiased evaluation of participants and reflecting the full gamut of potential failure modes that could realistically affect the response performance of participants is what ultimately provides the most accurate snapshot of an organization's preparedness when the unexpected occurs.

Bibliography

Archival Sources

Black, Robert W. [Excerpt] VII, Exercises. Box 28; Folder 4, D-Day Preparation Exercises. U.S. Army Heritage and Education Center, Carlisle, PA.

Bliss, Brig. Gen. Tasker H. Memorandum on Second Maneuver Problem (September 8-9, 1904) at Manassas, 5 December 1904. Doc. No. 991366, Records Group 94.

Bruce, Andrew D. Papers. U.S. Army Heritage and Education Center, Carlisle, PA.

Carter, Lt. Col. Henry P. Notes on First Army Maneuvers, 1935 Pine Camp, N.Y. U.S. Army Medical Center of Excellence, Stimson Library Digital Collections.

Clark, Brigadier-General Mark W. [Report] Critique of the Second Phase, GHQ Directed Maneuvers Carolina Area, November 25-38, 1941. Box 1A, Folder 13, 1941 Maneuvers-Critique of Second Phase, Circa 1941, U.S. Army Heritage and Education Center, Carlisle, PA.

Edward M. Flanagan Jr. Papers, Correspondence with Ex-members of the 11th Airborne Division Abernathy-Hayward. Box 2. U.S. Army Heritage and Education Center, Carlisle, PA.

"Exercise Desert Strike." March-April 1964, Armor, U.S. 66th Regiment (Battalion) Papers. Box 16, Folder 1. U.S. Army Heritage and Education Center, Carlisle, PA.

EXERCISE DESERT ROCK V. DTIC ADA078559:. January-June 1953. Volume I. Operations. UNCLASSIFIED. U.S. Army Heritage and Education Center, Carlisle, PA.

EXERCISE DESERT ROCK V. Las Vegas NV. Marine Corps Report, May 1953. AD-A078 567. UNCLASSIFIED. U.S. Army Heritage and Education Center, Carlisle, PA.

"Exercise Early Bird." May-June 1957, Armor, U.S. 66th Regiment (Battalion) Papers. Box 16, Folder 4. U.S. Army Heritage and Education Center, Carlisle, PA.

"Exercise Sledgehammer." 14-31 August 1953, Armor, U.S. 66th Regiment (Battalion) Papers. Training Exercises 1953, Box 5, Folder 3. U.S. Army Heritage and Education Center, Carlisle, PA.

Final Report. Joint Training Exercise Brim Fire 6-70. United States Strike Command. U.S. Army Heritage and Education Center, Carlisle, PA.

Headquarters IV Corps. *Final Report, Third Army Maneuvers, May 1940*. Combined Arms Research Library, 1940.

Hodge, Lt. Col. John R. Report of AC of S, G-3 on August-September Maneuvers Arkansas-Louisiana. World War II U.S. Army War Game Maneuvers Collection; Box 1A, Folder 3, 1941 Maneuvers - G3 Report Of The VII Army Maneuvers, October 20, 1941. U.S. Army Heritage and Education Center, Carlisle, PA.

Hyatt, Col. Robert F. Annex Number 3 To G-3 Report, Report Of The Corps Artillery Officer August-September Maneuvers 1941, Arkansas – Louisiana. World War II U.S. Army War Game Maneuvers Collection; Box 1a, Folder 3, 1941 Maneuvers - G3 Report Of The VII Army Maneuvers, Circa October 1941. U.S. Army Heritage and Education Center, Carlisle, PA.

MacArthur, Douglas. "General Principles To Govern in Extending Mechanization and Motorization Throughout the Army." 1 May 1931. Willis D. Crittenberger Papers. Box 4. U.S. Army Heritage and Education Center, Carlisle, PA.

Maneuver Report VII Army Corps Volume II [Part 3 of 6]. Maneuvers and Exercises (1902 - 1970s) Reports; Box 5A, Folder 7. U.S. Army Heritage And Education Center, Carlisle, Pa.

Maneuver Report VII Army Corps Volume II [Part 4 of 6]. Maneuvers and Exercises (1902 - 1970s) Reports; Box 5A, Folder 7. U.S. Army Heritage And Education Center, Carlisle, Pa.

Maneuvers of American Forces in Germany, 1921 September, Box: 2, Folder: 10. Alma A. Clarke papers, BMC-M84. Bryn Mawr College.

[Manual] Tank Tactics. Henry C. Newton Papers Manuscript Collection; Box 20, Folder 6, Manual, Undetermined, [1 of 2]. U.S. Army Heritage And Education Center, Carlisle, PA.

"Map Problem No. 2," 14 October 1949, Samuel Goodwin Papers. Command and General Staff. College Training Exercises. Box 2. U.S. Army Heritage and Education Center, Carlisle, PA.

McNair, Lt. Gen. Lesley J. First Army versus IV Army Corps Maneuvers, 1941. U.S. Army Heritage And Education Center, Carlisle, PA.

Memorandum From A. G. Kirk to the Commander of Task Force One Two Two Regarding the War Diary for the Month of April 1944. Exercise Tiger Collection; Box 1, Folder 2, Twelfth Fleet Report – Action in English Channel Area, 1944. U.S. Army Heritage And Education Center, Carlisle, PA.

Memorandum No. 65, HQ, 80th Division, Camp Lee, VA, 14 May 1918. Uncatalogued Division Gas Officer Reports, U.S. Army Military History Institute, Carlisle Barracks, PA.

National Archives, Washington, D.C. Record Group 337. Entry 57D. Headquarters, Army Ground Forces, General Headquarters General Staff G-3, Subject file 1940-March 9, 1942.

_____. Record Group 337, Entry 57D. Headquarters, Army Ground Forces, Commanding General (McNair Files).

Records Relating to United States Navy Fleet Problems I to XXII 1923-1941. Microfilm Publication 964, Roll 31, RG 64. Records of the National Archives and Records Administration.

Report of VII Army Corps Field Exercises And Maneuvers 10 August - 28 September 1941 [Part 1 of 13]. Maneuvers and Exercises (1902 - 1970s) Reports; Box 4A, Folder 1, Report of VII Army Corps Field Exercises and Maneuvers 10 August - 28 September 1941. U.S. Army Heritage and Education Center, Carlisle, PA.

Report. Congressional Record 77th Congress 1st Session Vol. 87 Senate No. 179. Lewis B. Hershey Collection; Box 326, Folder 1. U.S. Army Heritage and Education Center, Carlisle, PA.

Report. Second Army Maneuvers. World War II U.S. Army War Game Maneuvers Collection; Box 1A, Folder 11, 1941 Maneuvers Appendix No. 10, [Part 1 of 2], Circa 1941. U.S. Army Heritage and Education Center, Carlisle, PA.

Report. The Location of LST 502 During and Following the Attack on Convoy T-4, Exercise Tiger. Exercise Tiger Collection; Box 1, Folder 9, [Part 2 of 2], Recollections of Laurence B. James, 1991. U.S. Army Heritage and Education Center, Carlisle, PA.

Richardson, Maj. Gen. Robert C., Jr. [Report] of VII Army Corps Field Exercises and Maneuvers in Southwestern Arkansas-August 17-28 and Participation of VII Army Corps in Second Army and GHQ Maneuvers August 29-September 30, 1941. Box 1A, Folder 4, 1941 Maneuvers-G3 Report of the VII Army Corps Field Exercises, 29 October 1941. U.S. Army Heritage and Education Center, Carlisle, PA.

Rodman, Earnest Dale. Correspondence from Earnest Dale Rodman Regarding His Account of the Attack During Exercise Tiger. Exercise Tiger Collection; Box 1, Folder 3, Recollection of E Dale Rodman, 1988.

Ruffner, Major Clark L. [Report] of Antitank Officer VII Army Corps, August-September Maneuvers in Arkansas and Louisiana [Part 1 of 13] Maneuvers and Exercises (1902 - 1970s) Reports; Box 4A, Folder 1, Report of VII Army Corps Field Exercises and Maneuvers 10 August - 28 September 1941. U.S. Army Heritage and Education Center, Carlisle, PA.

Schofield, John M. “Franklin.” (Notes), undated, John McAllister Schofield Papers. Library of Congress, Box 93.

Slaughter, J. Robert. *Wartime Memories of J. Robert Slaughter and Selected Men of the 116th Infantry, 29th Division, 1941-1945*. Robert W. Black Collection; Box 1, Folder 5, Wartime Memoirs of J. Robert Slaughter, 116th Inf. Regt., 29th Inf. Division, 1941-1945. U.S. Army Heritage and Education Center, Carlisle, PA.

Spaulding, Lieutenant John. “Lt. John Spaulding discusses D-Day Landing, Co. E, 16th Infantry.” Interview by M/Sgt F. C. Pogue and S/Sgt J. M. Topete. February 9, 1945. Gordon R. Sullivan Papers; Box 50, Folder 1, Pre-CSA Papers, 1st ID, Fort Riley, U.S. Army Heritage and Education Center, Carlisle, PA.

United States. Army. 143rd RCT. After Action Report: 36 Inf. Div, 28 August 1944-28 August 1944. National Archives Records Group. Record Group 407.

United States Strike Command, Final Report Joint Training Exercise Brim Fire 6-70. Box 2. U.S. Army Heritage and Education Center, Carlisle, PA.

Primary Sources

“AIR THRUSTS AT BRIDGES WIN SUCCESS: Umpires Rule Invading Reds Gain Initial Success in Army’s Big Peace-time War Games.” *Wilkes-Barre Times Leader, The Evening News*, May 7, 1940.

Alger, Russell. A. *The Spanish-American War*. New York: Harper & Brothers, 1901.

Annual Reports of the War Department for the Fiscal Year Ended June 30, 1899. Report of the Secretary of War. Washington: Government Printing Office, 1899.

Annual Reports of the War Department for the Fiscal Year Ended June 30, 1905. Vol. 1., *Reports of the Secretary of War, Chief of Staff, The Military Secretary, Inspector-General, and Judge-Advocate General*. Washington: Government Printing Office, 1905.

AP. “Tanks Need Land-Air Support, Says Chief.” *The Evening Sun*, September 20, 1941.

“Armored Outfit Annihilates Fifth Division, Proving Blitz Power, Giving Natives a Grim Show.” *The Tennessean*, June 21, 1941.

“ARMY CORPS MOVES 600 MILES IN 6 DAYS: 41,000 'BLUE' TROOPS TRAVEL FROM GEORGIA TO LOUISIANA IN A 'LIGHTNING' WAR TRUCKS, TANKS, CARS USED UNPRECEDENTED MANOEUVRES ALSO TEST EFFECTIVENESS OF CIVILIAN AIR-RAID WATCH.” *New York Times (1923-)*, May 12, 1940. *Proquest*.

“ARMY IS READY FOR LONG TEST IN MANEUVERS.” *Chattanooga Daily Times*, June 2, 1941.

"Army Mobilization: Grand Encampment and Review at Fort Riley, Kansas." *The Argus*, August 21, 1902. *NYS Historic Newspapers*.

"ARMY: No More Phony Maneuvers." *Time*, June 16, 1941.

Ayres, Colonel Leonard P. *The War with Germany: A Statistical Summary*. Washington: Government Printing Press, 1919.

Baldwin, Hanson W. "War Expert Comments on Maneuvers – Army Not Ready to Fight." *Des Moines Sunday Register*, October 5, 1941.

"Battles Won By Men, Army Experts Find: Machines Useful For Moving Troops, Maneuvers Point Out; Army Is Praised." *The Lawton Constitution*, May 13, 1940.

Beck, Alfred M., Abe Bortz, Charles W. Lynch, Lida Mayo, and Ralph F. Weld. *The Corps of Engineers: The War Against Germany*. Center of Military History United States Army: Washington, D.C., 1985.

Becker, Capt. Marshall O. *The Amphibious Training Center Study No. 22*. Historical Section, Army Ground Forces, 1946.

Best, Isaac O. *History of the 121st New York State Infantry*. Chicago: J.H. Smith, 1921.

Bland, Larry I. and Sharon R. Ritenour. *The Papers of George Catlett Marshall*. Vol. 1, "*The Soldierly Spirit December 1880-June 1939*. Baltimore: Johns Hopkins University Press, 1981.

Bland, Larry I., Sharon R. Ritenour, and Clarence E. Wunderlin Jr. *The Papers of George Catlett Marshall*. Vol. 2, "*We Cannot Delay,*" *July 1, 1939-December 6, 1941*. Baltimore: Johns Hopkins University Press, 1986.

_____. *Report of Brigadier General Tasker H. Bliss, U.S. Army, Commander of Maneuvers and Chief Umpire, Connecticut Maneuver Campaign*. August 10-20, 1912.

Blumenson, Martin. *Patton Papers: 1940-1945.* New York: De Capo Press, 1974.

Bostick, Lt. Col. Orbie. "Mercy Killers." *Chemical Warfare Bulletin* 30, No. 1 (February-March, 1944).

Bräker, Ulrich. *The Poor Man Of Toggenburg being The Life And Times Of Ulrich Bräker.* Translated by Margaret Clare Britton. London, 1788.

"Brickbats Outnumber Bouquets in Postmortems of War Games." *Newsweek*, October 13, 1941: 50-53.

Caesar, Julius. *The Gallic Wars*. Translated by W.A. McDevitte and W.S. Bohn. New York. Harper & Brothers. 1869.

Camp of the 1st Brigade, N.Y.N.G. at range. 7th Reg't. Inf. N.Y. on the right. Connecticut Maneuver Campaign. Aug. 10-19, 1912. Falk Photo Co., 767 Washington St., Boston.

Camps of Instruction, 1908: Reports of Officers of the United States Army. Washington: Government Printing Office, 1909.

Carter, Brigadier-General William H. Report of Observations Made During Army Maneuvers at Fort Riley, Kansas, 1902, 23 October 1902.

Chinn, Lt. Col. George M. *The Machine Gun: History, Evolution, and Development of Manual, Automatic, and Airborne Repeating Weapons*. Vol. 1, Washington, DC: Bureau of Ordnance Department of the Navy, 1951.

Clark, Brigadier-General Mark W. *Calculated Risk*. New York: Harper & Brothers, 1950.

Clausewitz, Carl Von, *On War*, ed and trans. Michael Howard and Peter Paret. Princeton: Princeton University Press, 1989.

Cochenhausen, v. *War Games Primer: Instructions for Map Exercises and War Games in the Context of the Platoon and Company*. Translated by John Baum. Berlin: Open Words, 1935.

Condell, Bruce and David T. Zabecki, eds. and trans. *Heeresdienstvorschrift 300.* Bände 1 und 2 [*On the German Art of War Truppenführung: German Army Combat Manual for Unit Command in World War II.* Vols. 1 and 2.]. Pennsylvania: Stackpole Books, 2001.

"Congress As Seen By Karl Stefan." *The Wayne Herald*, December 11, 1941.

Cooper, Lt. Belton Y. *Death Traps: The Survival of an American Armored Division in World War II*. Navato, CA.: Presidio Press, 1998.

Corpening, Capt. M. M. "'Red' Parachute Troops Harass 'Blue' Invaders." *Chicago Daily Tribune*, September 27, 1941.

Dannhauer, Ernst Heinrich. "Das Reißwitzsche Kriegsspiel Von seinem Beginn bis zum Tode des Erfinders 1827." ["Reisswitz's War Game from its Beginning to the Death of the Inventor 1827"] *Militair-Wochenblatt* [*Military Weekly*] 59, No. 56: (1874): 527–532.

Davis, Kenneth S. *Soldier of Democracy: A Biography of Dwight Eisenhower*. Garden City, N.Y.: Doubleday, Doran and Company, 1945.

Dockweiler, J.H. *Report on Maneuver Division, Camp Root, Fort Riley, Kansas, September-1902- October*. Sacramento: W.W. Shannon, 1903.

Donovan, Timothy H., Roy K. Flint, Arthur V. Grant Jr., and Gerald P. Stadler. *The American Civil War*. West Point New York: United States Military Academy, Department of History, 1979.

Dunham, Lt. Col. Emory A. "Tank Destroyer History." Army Ground Forces Study No. 29. Historical Section, Army Ground Forces, 1946.

Dupont, Lieutenant Jean. "Fighting the Panzers." *Field Artillery Journal* 31, No. 8 (August 1941): 538-543.

Editorial Comment. "Maneuvers 1941 – In General." *The Cavalry Journal* 50, No. 6 (November-December 1941): 26-32.

Editorial Department. "Infantry Training." *Infantry Journal* 10, No. 3 (November 1913): 414-417.

Eisenhower, Dwight D. *At Ease: Stories I Tell to Friends*. Garden City, N.Y.: Doubleday, 1967.

_____. *Crusade in Europe*. London: William Heinemann Limited, 1948.

Fieldhouse, Walter. *Fall Maneuvers West Point, Kentucky 1903: Report of Colonel Walter Fieldhouse, Inspector General, Accredited Military Representative of the State of Illinois*. Springfield, IL: Phillips Bros., State Printers, 1904.

"First Lap." *San Francisco Chronicle*, October 5, 1941.

First United States Army: Report of Operations 23 February - 8 May 1945, 3 Vols. Washington: Government Printing Office, 1946.

"Forces of 70,000 Play at War in First U.S. Test of Tanks." *Newsweek*, June 30, 1941.

Forsyth, James W. *Annual Report on Field Exercises*. San Francisco: HQ, Dept of CA, 31 Dec 1895. 156

Frederick the Great. *Instructions for His Generals*. Translated by General Thomas R. Phillips. Mineola: Dover Publications, 2005. Kindle.

Fuller, Major-General J.F.C. *Memoirs of an Unconventional Soldier*. London: Ivor Nicholson and Watson Limited, 1936.

Fussell, Paul. *The Boys' Crusade: The American Infantry in Northwestern Europe, 1944-1945*. New York: Random House, 2003.

Gawne, Jonathan, ed. *Lessons Learned in Combat: WWI – The Early AEF*. Framingham, MA.: Ballacourage Books, 2014.

"GEN. CORBIN DEAD: Noted Officer Passes Away in New York Hospital." *The Washington Post (1877-1922)*, September 9, 1909.

General Headquarters, U.S. Army. *Umpire Manual.* Reproduced by the Command and General Staff School, 17 February 1941.

"General McNair's Comments." *Army and Navy Journal* 79, No. 5 (October 4, 1941): 136-137.

"General Pershing's Opinion of Infantry." *Infantry Journal* 11, No. 1 (July-August 1914):83.

Gillie, Mildred Hanson. *Forging the Thunderbolt: A History of the Development of the Armored Force*. Harrisburg, PA.: Military Service Publishing, 1947. Kindle.

Gilman, Edgar Dow. "Chemical Warfare. Lectures Delivered to the Reserve Officer Training Corps, University of Cincinnati: Gas Projector Attacks." *Chemical Warfare* 8 (15 July 1922).

Grant, Ulysses S. *Personal Memoirs of U.S. Grant Volume 2*. New York: Charles L. Webster & Co., 1886.

Green, Constance M., Harry C. Thomson, and Peter C. Roots. *The Ordnance Department: Planning Munitions for War.* Washington, D.C.: Center of Military History United States Army: Washington, D.C., 1955.

Greenfield, Lt. Col. Kent Roberts, Dr. Robert R. Palmer and Bell I. Wiley. *United States Army in World War II: The Army Ground Forces: The Organization of Ground Combat Troops*. Center of Military History, United States Army: Washington, D.C., 1947.

_____. *The Army Ground Forces: Origins of the Army Ground Forces, General Headquarters, United States Army, 1940-1942 Study No. 1.* Historical Section: AGF, 1946.

Griffin, Major R. A. "Political Fiction Peps Up War Games In South: "KOTMK Blitzes "ALMAT" to Get Mississippi." *Life*, September 1, 1941.

Guderian, Heinz. *Achtung-Panzer!: The Development of Tank Warfare*. Translated by Christopher Duffy. London: Cox & Wyman Ltd., 1937.

_____. *Panzer Leader*. Translated by Constantine Fitzgibbon. Pickle Partners, 2014. Kindle.

_____. "The Armoured Troops and their Interaction with the Other Weapons." *Military Science Review* 1, No. 5 (1936): 607-626.

Harrison, Gordon A. *United States Army in World War II The European Theatre of Operations: Cross-Channel Attack*. Washington, D.C.: The Center of Military History United States Army, 1951.

Hausrath, Alfred H., Suzanne G. Billingsley, Stanley W. Davis, Henry P. Griggs and Florence N. Trejetben. *Troop Performance On A Training Maneuver Involving the Use of Atomic Weapons*. Operations Research Office: Chevy Chase, MD.: 1952.

Hawkins, Brigadier General Hamilton S. "Cavalry and Mechanized Force." *The Cavalry Journal* 40, No. 167 (September-October 1931): 19-25.

Hearings before the United States House Committee on Merchant Marine and Fisheries, Operation Steel Pike I, 89th Cong., 1st sess., March 16-17, 1965. UNCLASSIFIED.

Heistand, H.O.S. "Requirements of a Maneuver Site and the Measures Necessary to Secure the Same." *Journal of the Military Service Institution* 132 (1904).

Herodotus. *The Histories: Complete*. Robin Waterfield, et al. New York: Oxford University Press, 1998. Kindle.

Hodges, Major C.B. "Fall Maneuvers, 1921: American Forces in Germany." *Infantry Journal* (December 1921): 620-625.

Hones, Major William. "The First Army Maneuver." *Infantry Journal* 43, No. 1 (January-February 1936): 27-31.

Hottelet, Richard C. "Swamps Stop Heavy Machines and Snipers Do the Rest." *Evansville Press*, September 20, 1941.

_____ and Leon Kay. "Vet Newsmen Analyze War Games." *The News-Messenger (Fremont, Ohio)*, September 26, 1941.

Houston, Donald E. *Hell on Wheels: The 2D Armored Division*. Novato, CA.: Presidio Press, 1977.

Howe, George F. *Northwest Africa: Seizing the Initiative in the West*. The Center of Military History United States Army, 1957.

_____. *The Battle History of the 1st Armored Division: "Old Ironsides."* Washington, Combat Forces Press, 1954.

Hughes, Daniel J. ed. and trans, *Moltke on the Art of War: Selected Writings*. New York: Ballantine Books, 2009. Kindle.

Jacobs, Bruce. *Soldiers: The Fighting Divisions of the Regular Army*. New York: W.W. Norton and Co., 1958.

Jany, Curt. *Geschichte der königlich-preußische Armee. Vol. 4 of Die Königlich-Preußische Armee und das deutsche Reichsheer 1807 bis 1914* [*History of the Royal Prussian Army: The Royal Prussian Army and the German Imperial Army 1807 to 1914: edited from the files,* Volume 4]. Berlin: K. Siegismund, 1933.

Jones, Lt. Clifford L. *The Administrative and Logistical History of the ETO, Part VI Neptune: Training, Mounting, the Artificial Ports, File No. 8-3.1 AA*. Historical Division: Center of Military History United States Army: Washington, DC., 1946.

Jones, Ralph E., George H. Rarery and Robert J. Icks. *The Fighting Tanks Since 1916*. Washington D.C.: National Service Publishing Co., 1933.

Kahn, Eli J. *McNair: Educator of an Army*. Washington, DC: The Infantry Journal Press, 1945.

Kasserine Pass Battles; Readings, Doctrines and Lessons Learned, Vols. I and II. U.S. Army Center of Military History, 1942-1943.

Killblane, Richard and Jake McNiece. *The Filthy Thirteen: From the Dustbowl to Hitler's Eagle's Nest: The 101st Airborne's Most Legendary Squad of Combat Paratroopers*. Drexel Hill, PA: Casemate, 2003.

Kreidberg, Marvin A. and Merton G. Henry. *History of Military Mobilization in the United States Army, 1775-1945*. Washington: Department of the Army, 1955.

Lambert, Ray and Jim DeFelice. *Every Man A Hero: A Memoir of D-Day, the First Wave At Omaha Beach, and a World At War*. New York: HarperCollins, 2019, Kindle.

Letter from Lt Col. E.A. Russell Jr., Cavalry to Commanding General, 1st US Armored Division 10 June 1943, *Kasserine Pass Battles: Readings, Doctrines and Lessons Learned*, Vol. II., Part 4.

Liddell-Hart, Basil Henry. *Defense of the West*. Westport, CT.: Greenwood Press, 1950.

_____, ed., trans. Paul Findlay. *The Rommel Papers*. New York: Harcourt, Brace and Co., 1953.

Lilley, First Lieutenant Leonard E. "The Panama Maneuvers." *Infantry Journal* (October 1926): 396-403.

Link, Arthur S. ed., *The Papers of Woodrow Wilson*, Vol. 36. Princeton University Press, 1981.

"Limitations Exist Overseas but Are Not Reflected in Readiness Reporting." Report to the Chairman, Subcommittee on Readiness and Management Support, Committee on Armed Services, U.S. Senate. Washington, D.C.: United States General Accounting Office, 2002.

Littlejohn, A.F. "First Army Deals 'Severe Blows' To Armored Units." *Greensboro Daily News*, November 21, 1941.

Luther, Craig W.H. and Hugh Page Taylor, eds. *For Germany: The Otto Skorzeny Memoirs*. San Jose, CA.: R. James Bender Publishing, 2015.

Mahan, F.A. "Professor Dennis Hart Mahan." *Professional Memoirs, Corps of Engineers, United States Army, and Engineer Department at Large* 9, No. 43 (1917): 72-76.

Mallon, Paul. "News Behind the News: Official Account of Recent Maneuvers in Louisiana." *The Shreveport Times*, October 15, 1941.

"Manassas Marked Army Deficiencies, Staff Chief Says." *Washington Post (1923-1954)*, Aug 29, 1939. 15. *ProQuest*.

"Manassas Settles Down To Quiet Rural Life." *The Washington Times*, September 13, 1904, *Chronicling America: Historic American Newspapers*. Lib. of Congress.

March, Peyton C. *The Nation at War*. Garden City, N.Y.: Doubleday, 1932.

Marshall, General George C. *Biennial Reports of the Chief of Staff of the United States Army to the Secretary Of War 1 July 1939-30 June 1945.* Center of Military History United States Army: Washington, DC., 1941-45.

_____. *Memoirs of My Services in the World War 1917-1918*. Boston: Houghton Mifflin, 1976.

_____. "Profiting by War Experience." *Infantry Journal* (January 1921): 34-37.

Marshall, S.L.A. *Men Against Fire: The Problem of Battle Command in Future War*. Gloucester, Mass.: Peter Smith, 1978.

Mayo, Lida. *The Ordnance Department: On Beachhead and Battlefront*. Center of Military History United States Army: Washington, DC., 1968.

McClellan, Maj. Gen. George B. *The Armies of Europe: Comprising Descriptions in Detail of the Military Systems of England, France, Russia, Prussia, Austria, and Sardinia, Adapting their Advantages to all Arms of the United States Service: and Embodying the Report of Observations in Europe During the Crimean war, as Military Commissioner from the United States Government, in 1855-56*. Philadelphia: J. B. Lippincott & Co., 1861.

"Mechanized Warfare Is Bringing Generals Back to Front Lines." *The Tennessean*, June 23, 1941.

Memorandum from Maj. Gen. Robert L. Bullard to U.S. Army Chief of Staff, May 18, 1918 in *United States Army in the World War, 1917-1919*, Vol. 4. Washington: Center of Military History, United States Army, 1948.

Michie, Peter S. *The Life and Letters of Emory Upton: Colonel of the Fourth Regiment of Artillery, and Brevet Major-General, U.S. Army*. New York: D. Appleton and Company, 1885.

National Defense Act: Historical Data Relating to Present Law, Hearings before the House Committee on Military Affairs, 69th Congress. Washington: Government Printing Office, 1927.

"National Defense: Is It Good Enough?" *Time*, June 16, 1941.

Naylor, Col. William K. "The Principles of War." Command Course No. 12, Army War College, 1922, Part I, Jan. 5, 1922.

Weigley, Russell F. Eisenhower's Lieutenants: The Campaigns of France and Germany, 1944-1945 (p. 325). Plunkett Lake Press/Indiana University Press. Kindle Edition.

Nelson, Donald M. *Arsenal of Democracy: The Story of American War Production*. New York: Harcourt Brace, 1946.

Nelson, Harold W. and Roger Cirillo, eds. *Kasserine Pass Battles: Readings, Doctrines and Lessons Learned.* 2 vols. Center of Military History, United States Army: Washington, DC., 1941-45.

Norris, John G. "1939 Maneuvers Will Contrast Strangely with those Held on Same Ground in 1904: Battle of '63 Refought to Discover Mistakes Equipment, Forces quite Different from Mechanized Army in Field Today; Cavalry most Important then Capital Society Went to See the Big show Staff Set Up Huge Circus Tent Where they Entertained Visitors from Washington, Foreign Diplomats." *Washington Post (1923-1954)*, Jul 30, 1939. *ProQuest*.

Oberkommando des Heeres [Headquarters German Army]. *Panzerabwehr aller Waffen* Bände 4 [*Tank Defense for All Branches* Vol. 4] *Richtlinien für Panzernahbekämpfung*, vom 7.10. 1942. [Guidelines for Tank Fighting, from July 10, 1942]. Translated by John Baum.

"Officers Cite Weakness of Army's Games." *San Bernardino Daily Sun*, May 27, 1940.

"Our First Annual Military Maneuvers," *Harpers Weekly*, September 20, 1902.

"Outsmarted by Rommel Again: That Is the Story in Tunisia." *Newsweek*, March 1, 1943: 17-19.

Palmer, Captain Bruce. "An Ideal Cavalry – Infantry Team." *The Cavalry Journal* 50, No. 6 (November-December 1941): 1-113.

Palmer, Frederick. *Our Greatest Battle (The Meuse Argonne)*. New York: Dodd Mead, 1919.

Palmer, Robert R., Bell I. Wiley and William R. Keast. *United States Army in World War II: The Army Ground Forces: The Procurement and Training of Ground Combat Troops*. Center of Military History, United States Army: Washington, DC., 1948.

Patton, George S. *George S. Patton Papers: Diaries, 1910-1945; Annotated transcripts; 1916*, War Diaries of George S. Patton, Library of Congress.

_____. *George S. Patton Papers: Diaries, 1910-1945*; *Annotated transcripts; 1943, Jan. 26-Apr. 8*. April 8, 1943. Manuscript/Mixed Material. Box 2. Folder 14. Library of Congress.

Pearson, Drew and Roberts S. Allen. "Daily Washington Merry-Go-Round." *San Mateo Times*, July 27, 1940.

Pershing, John J. *Final Report of General John J. Pershing, Commander-in-Chief American Expeditionary Forces.* Washington, DC: U.S. Government Printing Office, 1920.

_____. *My Experiences in the World War*. 2 vols. New York: Frederick A. Stokes. 1931.

_____. "Our National Military Policy." *Scientific American* 127 (August 1922): 83, 142.

Philipsborn Jr., Lieutenant Martin. "Use of the Armored Force." *The Cavalry Journal* 50, No. 6 (November-December 1941): 62-64.

Polyaenus. *Strategems of War*. Translated by R. Shepherd. London: Printed for George Nicol, Bookseller to His Majesty, 1793.

Ponton, Jean, Carl Maag, Jeannie Massie, Stephen Rohrer and Robert Shepanek. *Operation Buster-Jangle 1951*. Defense Nuclear Agency, Washington, D.C., 1982.

Ponton, Jean, Carl Maag, Martha Wilkinson and Robert F. Shepanek. *Operation Teapot 1955*. Defense Nuclear Agency, Washington, D.C., 1981.

Ponton, Jean, Carl Maag, Jeannie Massie, Stephen Rohrer and Robert Shepanek. *Operation Upshot-Knothole 1953*. Defense Nuclear Agency, Washington, D.C., 1981.

Ponton, Jean and Carl Maag. *SHOTS ABLE, BAKER, CHARLIE, And DOG: The First Tests of the TUMBLER-SNAPPER Series 1 April-1 May 1952*. Defense Nuclear Agency, Washington, D.C., 1981.

Price, T.A. "War Maneuvers' Bombing Day Shows Alarming Inadequacy of Army's Strengths in Planes." *Dallas Morning News*, May 24, 1940.

Pride Woodbury F. *The History of Fort Riley*. Cavalry School, Book Department, 1926.

Radin, Alex. “2d Armored Division Knocks Out ‘Red’ Forces, Stopping Maneuvers.” *Chattanooga Daily Times*, June 24, 1941.

“RED INVADERS GAIN SUCCESS.” *The Decatur Daily*, May 7, 1940.

“REDS AND BLUES TO WAGE WAR.” *The Yonkers Statesman*, August 7, 1912. *Newspapers.com*

“Reforger “75” Order of Battle Handbook.” Edwin S. Leland Papers, Box 11A. U.S. Army Heritage and Education Center, Carlisle, PA.

“Reminiscences of Army Maneuvers, Manassas, VA, Sept. 1904.” (1904). *0525: Doris C. Miller Papers, 1915-1989*. 10.

Report of the Air-to-Air Missile System Capability Review, July - November 1968. Naval Air Systems Command (NAVAIR) Collection (AR/562), Archives Branch, Naval History and Heritage Command. UNCLASSIFIED.

Rommel, Erwin. *Infantry Attacks*. Great Britain: Frontline Books, 2012.

Roosevelt, Theodore. *The Rough Riders*. New York: P.F. Collier & Son, 1899.

Root, Elihu. *Five Years of the War Department Following the War with Spain, 1899-1903*. U.S. Government Printing Office, 1904.

Russell, Maj. Gen. Henry Dozier. *The Purge of the Thirtieth Division*. Edited by Lawrence M. Kaplan. Annapolis, MD.: Naval Institute Press, 2014.

Schofield, John M. *Forty-Six Years in the Army*. New York: The Century Co., 1897.

Schoyer, Samuel C. *The Road to Cold Harbor Field Diary, January 1–June 12, 1864, of Samuel C. Schoyer.* Edited by William T. Schoyer. Apollo, Pennsylvania: Closson Press, 1986.

Smith, J.Y. “Gen. Albert Wedemeyer, WWII Strategist, Dies.” *Washington Post*, December 29, 1989.

“STAGE IS NOW SET: WAR GAME IS BEGUN.” *Buffalo News*, August 10, 1912. *Newspapers.com.*

“Steel Pike Is Biggest Operation of Its Kind.” *Marine Corps Gazette (pre-1994)* 48, No. 11 (1964): 2.

“Stimson Sees Army ‘At War.’” *The Ogden Standard-Examiner*, June 26, 1941.

Tables of Organization and Reference Data for the Infantry Division, Triangular. Fort Leavenworth, KS.: Command and General Staff School, 1939.

"Tank 'Destroyer' Units Developed by Army, Stimson Announces." *The Philadelphia Inquirer*, July 4, 1941.

The Bluejackets' Manual. *United States Navy 1943 Eleventh Edition*. Annapolis, MD.: United States Naval Institute, 1943.

The Diary of a Staff Officer (Air Intelligence Liaison Officer) at Advanced Headquarters North B.A.F.F. 1940. London: Methuen & Co., Ltd. 1941.

The German Armored Division. Military Intelligence Service Information Bulletin No. 18, June 15, 1942.

"The Fort Riley Manoeuvres and the New Armament." *Harpers Weekly*, October 4, 1902.

"The Manassas Maneuvers." *Alexandria Gazette.* (Alexandria, VA), August 9, 1904. *Chronicling America: Historic American Newspapers*. Lib. of Congress.

"The Problem of the Movement of the "Two Armies." *Mansassas Journal*, September 5, 1904. *Prince William County Historical Newspapers.*

"Things You Will Want to Know About Big Army Maneuvers." *Washington Times*. (Washington, DC), Sep. 4, 1904. *Chronicling America: Historic American Newspapers*. Lib. of Congress.

Thomson, Harry C. and Lida Mayo. *The Ordnance Department: Procurement and Supply*. Washington D.C.: Center of Military History, United States Army, 1960.

"Troops Moving Through State: About 9,000 Pass Montgomery On Way To Big Scale Maneuvers." *The Huntsville Times*, May 6, 1940.

"Umpires Face Puzzler In Settling Problems Of Louisiana Maneuvers." *The Lawton Constitution*, May 22, 1940.

UP. "Carolina Army Maneuvers Are Now Underway." *Stateside Daily Record*, October 3, 1941.

___. "Maneuvers Bring Six More Deaths." *The Huntsville Times*, October 2, 1941.

"Up-To-Date Warfare to be Expounded in "Connecticut Maneuver Campaign." *The Post-Star*, August 8, 1912. *Newspapers.com*

Upton, Bvt. Maj.-Gen. Emory. *Infantry Tactics Double and Single Rank. Adapted to American Topography and Improved Fire-Arms*. New York: D. Appleton and Company, 1875.

U.S. Army. A. E. F., 1917-1919. 1st Gas Regiment. "History of the Chemical Warfare Service, American Expeditionary Forces, 1st Gas Regiment." 14 pts. in 1 vol. Bound typescript. Fort Leavenworth, KS: General Service School, n.d.

U.S. Army. A. E. F., 1917-1919. *Defensive Measures Against Gas Attack.* No. 253, revised. France, November 1917.

U.S. Army Command and General Staff School (CGSC). *Antimechanized Defense (Tentative)*. Fort Leavenworth, KS, 1939.

U.S. Army War College, *A Modern Organization for the Regular Army and Its Use as a Model in Organizing Other Forces*. Washington, D.C.: GPO, 1916.

U.S. Congress. House of Representatives. House Subcommittee, Committee on Appropriations. *Hearings on the Military Establishment Bill for 1941, H.R. 9209*, 76th Cong., 3rd sess., 1940.

_____. Senate. *Hearings Before the Committee on Military Affairs of the Senate on the Bill Making Appropriation for the Support of the Army for the Fiscal Year Ending June 30, 1906*, 23 January 1905.

_____. Senate. *Congressional Record.* 77th Cong., 1st sess., Vol. 87, No. 179, October 9, 1941.

"U.S. Soldiers Would Be Dealt Big War Losses, General Says." *The Atlanta Constitution*, December 1, 1941.

United States Army in the World War, 1917-1919, 17 Vols. Washington: Center of Military History, United States Army, 1948.

U.S. War Department. *Annual Reports, 1913 (In Four Volumes)*. Washington: Government Printing Office, 1914.

_____. *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1899. Report of the Secretary of War*. Washington: Government Printing Office, 1899.

_____. *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1905.* Vol. 1., *Reports of the Secretary of War, Chief of Staff, The Military Secretary, Inspector-General, and Judge-Advocate General*. Washington: Government Printing Office, 1905.

_____. *Armored Force Field Manual: The Armored Battalion, Light and Medium. Field Manual 17-33.* Washington, D.C.: Government Printing Office, 1942.

_____. *Camps of Instruction, 1908. Reports of Officers of the United States Army.* Washington, D.C.: Government Printing Office, 1909.

_____. *Basic Field Manual: Landing Operations on Hostile Shores*. *Field Manual 31-5.* Washington, D.C.: Government Printing Office, 1942.

_____. *Infantry Field Manual: Organization and Tactics of Infantry The Rifle Battalion. Field Manual 7-5*. Washington: Government Printing Office, 1940.

_____. *Field Service Regulations: United States Army, 1905, With Amendments to 1908*. Washington, D.C.: Government Printing Office, 1908.

_____. *Field Service Regulations: United States Army, 1914, Corrected to July 1, 1914*. Washington, D.C.: Government Printing Office, 1914.

_____. *Field Service Regulations: United States Army, 1914, Corrected to April 15, 1917*. Washington, D.C.: Government Printing Office, 1914.

_____. *Infantry Drill Regulations, United States Army, 1911*. Washington, D.C.: Government Printing Office, 1911.

_____. *Infantry Training: Prepared at the Army War College August 1917*. Washington, D.C.: Government Printing Office, 1917.

_____. *Report of the Chief of Staff to the Secretary of War 1920*. Washington, D.C.: Government Printing Office, 1920.

_____. *Report of the Secretary of War to the President 1933*. Washington, D.C.: Government Printing Office, 1933.

_____. *Report on the Organization of the Land Forces of the United States*. Washington, D.C.: Government Printing Office, 1912.

_____. *Reports on Camps of Instruction*. 1910, III-1.

_____. *Field Service Regulations: Operations*. *Field Manual 100-5*. Washington: Government Printing Office, 1941.

_____. *Tactical Employment Tank Destroyer Unit*. *Field Manual 18-5.* Washington, D.C.: Government Printing Office, 1944.

_____. *Tentative Field Service Regulations. Operations. Field Manual 100-5*. Washington, D.C.: Government Printing Office, 1939.

_____. *The Autumn Maneuvers of 1899: Austria-Hungary, Germany, Great Britain, Italy and Norway*. Washington: Government Printing Office, 1900.

_____. *U.S. Army Battle Casualties and Non-Battle Deaths in World War II, Final Report, 7 December 1941-31 December 1946*, Statistical and Accounting Branch, Office of Adjutant General, War Department, 1 June 1953.

Van Wyck, Major Ralph. "Antitank Battery Training." *Field Artillery Journal* 31, No. 1 (January 1941): 6-10.

Von Giehrl, Lt. Col. Hermann. *Das Amerikanische Expeditionskorps in Europa* [*The American Expeditionary Force in Europe*] *1917-18*. E.S. Mittler & Sohn, 1922. Kindle.

Von Manstein, Field Marshal Erich. *Lost Victories: The War Memoirs of Hitler's Most Brilliant General*. Edited and translated by Anthony G. Powell. Minnesota: Zenith Press, 2004.

Von Mellenthin, Maj. Gen. F.W. *Panzer Battles: A Study of the Employment of Armor in the Second World War.* Edited by L. C. F. Turner. Translated by H. Betzler. University of Oklahoma Press, 1956.

Von Moltke, Helmuth. *Moltkes Militärische Werke* [*Moltke's Military Works*], Vol. 4, teil 3: *Moltkes Kriegslehren: Die Schlacht* [*Moltke's Teachings on War: The Battle*] (1912).

_____. *Moltke on the Art of War*. Random House Publishing Group. Kindle Edition.

Von Wehren, Major Helmut. *Geefectsausbildung der Panzergrenadiere: Aufgabensammlung für den Rekrutenausbilder zur Anleitung in der Geefectsausbildung im Rahmen der Gruppe mit 2 le. MG., der Gruppe gepanzert und ungepanzert.* [Squad Training Combat Instruction For the Panzer Grenadier: A Collection of Lessons for the Recruit Instructor to Guide the Combat Instruction in the Context of the Armored and Unarmored Squad with 2 light MG]. Berlin: Verlag Offene Worte, 1944.

Von Witzleben, Colonel I. G. *Kurzer Abriß der Taktik* [*Brief Outline of Tactics*]. Translated by John Baum. Berlin: Verlag Offene Worte, 1940/41.

Wagner, Arthur L. *Organization and Tactics*. Kansas City, MO.: Franklin Hudson Publishing, 1906.

"War's Dress Rehearsal. The Mimic Campaign on the Historic Fields of Manassas." *National Tribune*. (Washington, DC) September 15, 1904. *Chronicling America: Historic American Newspapers*. Lib. of Congress.

Watson, Mark Skinner. *The War Department: Chief of Staff: Prewar Plans and Preparations*. Center of Military History United States Army: Washington, D.C., 1950.

Wells, H.G. *Little Wars*. United Kingdom: Frank Palmer, 1913.

Wedemeyer, Major A.C. "Antitank Defense." *Field Artillery Journal* 31, No. 5 (May 1941): 258-272.

Wiley, Maj. Bell I. and Capt. William P. Govan. *The Army Ground Forces History of the Second Army*. Army Ground Forces: Historical Section, 1946.

Williams, Dinky. “Corps Units Shifted to Reduce Size.” *The Columbia Record*, October 20, 1941.

Williams, Lieutenant R.H. “Bayonet Combat Instruction.” *Infantry Journal* 11 (July 1914 – June 1915):

Wilmington Morning Star. (Wilmington, NC), Feb. 22, 1943. *Chronicling America: Historic American Newspapers*. Lib. of Congress.

Wilson, Major Vennard. “Combined Cavalry Maneuvers.” *Cavalry Journal* (1939): 41-51.

Wood, Hilliard. “Maneuver Tactics Are Similar To Those Once Used By Indians.” *Nashville Banner*, June 24, 1941.

Wood, John S. “Maneuvers and the Umpire System.” *Cavalry Journal* (May/Jun 1939): 208-09.

Yahner, Rice. “Mechanized Forces Capture Ten Times as Many Troops.” *The State*, November 21, 1941.

_____. “War Games Finale Starts In Carolinas.” *The New London Evening Day*, November 25, 1941.

Young, John P. *History and Bibliography of War Gaming*. Department of the Army, 1957.

Secondary Sources

Journal Articles

Barbier, Mary Kathryn. “George C. Marshall and the 1940 Louisiana Maneuvers.” *Louisiana History: The Journal of the Louisiana Historical Association* 44, No. 4 (2003): 389-410.

Berger, Andrea. “A Downward Spiral: Joint Military Exercises on the Korean Peninsula.” *The RUSI Journal* 159, No. 1 (2014): 68-76.

Betson, Capt. William R. “Sidi Bou Zid – A Case History of Failure.” *Armor* 91, No. 5 (November-December 1982): 38-44.

Bonura, Michael A. “French Lessons at West Point: How Napoleonic strategy and tactics influenced generations of American officers.” *MHQ: The Quarterly Journal of Military History* 27, No. 1 (2014): 98-105.

Blumenson, Martin. “America’s World War II Leaders in Europe: Some Thoughts.” *Parameters* 19, No. 4 (1989): 2-13.

Caffrey, Lt. Col. Matthew. “Toward a History-Based Doctrine for Wargaming.” *Aerospace Power Journal* (2000): 1-25.

Carr, Vincent M. “The Battle Of Kasserine Pass: An Examination Of Allied Operational Failings.” *Air University Press*, Maxwell AFB, Al, 2003.

Cavagnaro, D. A. “Steel Pike I: “Christopher Columbus Slept Here.” *Leatherneck (pre-1998)* 75, No. 11 (1992): 86-88.

Como, Tish. “Effects of the 1904 Army Maneuvers on the Greater Manassas Community.” *Prince William Reliquary* 9, No. 1 (2010): 1-26.

Cooling, Benjamin Franklin. “The Tennessee Maneuvers, June, 1941.” *Tennessee Historical Quarterly* 24, No. 3 (1965): 265–80.

Cuffe, Honae. “50 Years of Exercise RIMPAC.” *Royal Australian Navy Sea Power Semaphore*, 8 (2011): 1-4.

DiNardo, R. L. “German Armour Doctrine: Correcting the Myths.” *War in History* 3, No. 4 (1996): 384-397.

Evans, Michael. “From Kadesh to Kandahar: Military Theory and the Future of War.” *Naval War College Review* 56, No. 3 (2003): 132-150.

Hershkovitz, Shay. “Wargame Business: Wargames in Military and Corporate Settings.” *Naval War College Review* 72, No. 2 (2019): 1-17.

Hewes, James. “The United States Army General Staff, 1900-1917.” *Military Affairs* 38, No. 2 (1974): 74-71.

Hoffman, George F. “The Demise of the U.S. Tank Corps and Medium Tank Development Program.” *Military Affairs* 37, No. 1 (1973): 20-25.

Lofgren, Stephen J. “Unready for War: The Army and World War I.” *Army History* 22 (1992): 11-19.

Lupfer, Timothy T. “The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War.” *Leavenworth Papers* No. 4 (1981): 1-76.

Madej, W. Victor. “Effectiveness and Cohesion of the German Ground Forces in World War II.” *Journal of Political and Military Sociology* 6 (1978): 233-248.

McKenna, Charles D. “The Forgotten Reform: The Institution of a System of Field Maneuvers in the U.S. Army, 1902-1912.” *Army History* 21 (1991/1992): 17-23.

Morgan, Thomas D. “Wargames: Training for War.” *Army History* No. 19 (1991): 32-35.

Morrison Jr., James L. “Educating the Civil War Generals: West Point, 1833-1861.” *Military Affairs* 38, No. 3 (1974): 108-111.

Murray, G. Patrick. “The Louisiana Maneuvers: Practice for War.” *Louisiana History: The Journal of the Louisiana Historical Association* 13, No. 2 (1972): 117-138.

Ong, Weichong. “Blitzkrieg: Revolution of Evolution?” *RUSI Journal* 152, No. 6 (2007): 82-87.

Perla, Peter P. “War Games, Analyses, and Exercises.” *Naval War College Review* 40, No. 2 (1987): 44-52.

Rainey, James W. “Ambivalent Warfare: The Tactical Doctrine of the AEF in World War I.” *Parameters* 13, No. 1 (1983): 34-46.

_____. “The Questionable Training of the AEF in World War I.” *Parameters* 22, No. 1 (1992): 89-103.

Smith, Roger. “The Long History of Gaming in Military Training.” *Simulation & Gaming* 41, No. 1 (2010): 6-19.

Smythe, Donald. “Pershing in the Spanish-American War.” *Military Affairs* 30, No. 1 (1966): 25-33.

Stolfi, R. H. S. “Equipment for Victory in France in 1940.” *History* 55, No. 1 (1970): 1-20.

Strohn, Matthias. “Hans Von Seeckt and His Vision of a ‘Modern Army.’” *War in History* 12, No. 3 (2005): 318-337.

Visser, Max. “Teaching Giants To Learn: Lessons From Army Learning in World War II.” *The Learning Organization* 24, No. 3 (2017): 159-168.

Weigley, Russell F. “To the Crossing of the Rhine: American Strategic Thought to World War II.” *Armed Forces & Society* 5, No. 2 (1979): 302-320.

Williamson, Corbin. Review of *Playing War: Wargaming and U.S. Navy Preparations for World War II,* by John M. Lillard. *Journal of Military History* 81, No. 4 (2017): 1192-93.

Wintjes, Jorit. “Not an Ordinary Game, But a School of War.” *Vulcan: the international journal of the social history of military technology* 4, No. 1 (2016): 52-75.

Monographs

Anderson Jr., Richard C. *American Thunder: U.S. Army Tank Design, Development, and Doctrine in World War II.* Lanham, MD: Stackpole Books, 2024.

Bass, Richard T. *Exercise Tiger: Casualty Cover-Up Revealed.* East Sussex: Tommies Guides, 2017.

_____. *Exercise Tiger: The D-Day practice landing tragedies uncovered*. East Sussex: Tommies Guides, 2008.

_____. *Spirits of the Sand: The Story of the United States Army Assault Training Center in North Devon*. Menin House, 2014.

Black, Jeremy. *War and Technology*. Bloomington: Indiana University Press, 2013.

Brodie, Bernard and Fawn M. *From Crossbow to H-Bomb: The Evolution of the Weapons and Tactics of Warfare*. Bloomington: Indiana University Press, 1973.

Brouwer, Jaap Jan. *The German Way of War: A Lesson in Tactical Management*. Philadelphia: Pen & Sword Military, 2017.

Bull, Stephen and Gordon L. Rottman. *Infantry Tactics of the Second World War*. New York: Osprey Publishing, 2008.

Calhoun, Mark T. *General Lesley J. McNair: Unsung Architect of the U. S. Army*. Lawrence, KS.: University Press of Kansas, 2015.

Cameron, Robert S. *Mobility, Shock, and Firepower: The Emergence of the U.S. Army's Armor Branch, 1917-1945*. Washington, D.C.: Center of Military History United States Army, 2008.

Canfield, Bruce N. *U.S. Infantry Weapons of the First World War*. Lincoln, RI.: Andrew Mowbray Publishers, 2000.

Carey, Brian Todd, Joshua B. Allfree and John Cairns. *Warfare in the Ancient World*. Barnsley, South Yorkshire: Pen and Sword Books, 2005.

Chamberlain, Peter and Hilary Doyle. *Encyclopedia of German Tanks of World War Two: A Complete Illustrated Directory of German Battle Tanks, Armoured Cars, Self-Propelled Guns, and Semi-Tracked Vehicles, 1933-1945*. Arms and Armour, 2000.

Chinn, George M. *The Machine Gun: History, Evolution, and Development of Manual, Automatic, and Airborne Repeating Weapons*. Bureau of Ordnance, Department of the Navy: U.S. Government Printing Press, 1952.

Citino, Robert M. *The German Way of War: From the Thirty Years' War to the Third Reich*. Lawrence, KS.: University Press of Kansas, 2005.

Clay, Lt. Col. Steven E. *U.S. Army Order of Battle, 1919-1941*, Vol. 1 *The Arms: Major Commands and Infantry Organizations, 1919–41*. Fort Leavenworth, KS.: Combat Studies Institute Press, 2010.

Cooper, Matthew. *The German Army 1933-1945: Its Political and Military Failure*. Lanham, MD.: Scarborough House, 1990.

Culver, Bruce and Bill Murphy. *Panzer Colors: Camouflage of the German Panzer Forces 1939-45*. Carrolton, TX.: Squadron/Signal Publications, 1976.

D'Este, Carlo. *Patton: A Genius for War*. New York: HarperCollins, 1995.

DeJohn, Christian M. *For Want of a Gun: The Sherman Tank Scandal of WWII*. Atglen, PA.: Schiffer Publishing, 2017.

Dickson, Paul. *The Rise of the G.I. Army, 1940–1941: The Forgotten Story of How America Forged a Powerful Army Before Pearl Harbor*. New York: Atlantic Monthly Press, 2020.

Doubler, Michael D. *Closing with the Enemy: How GIs Fought the War in Europe, 1944-45* Lawrence, KS.: University Press of Kansas, 1994.

Dupuy, Trevor N. *A Genius for War: The German Army and General Staff, 1807-1945*. United Kingdom: Hero Books, Ltd., 1984.

Ellis, John. *Brute Force: Allied Strategy and Tactics in the Second World War*. New York: Viking, 1990.

_____. *Eye-Deep In Hell: Trench Warfare in World War I*. New York: Pantheon Books, 1976.

_____. *The World War II Databook: The Essential Facts and Figures for All the Combatants*. London: Aurum Press, 1993.

Fabey, Michael. *Crashback: The Power Clash Between the U.S. and China in the Pacific.* New York: Scribner, 2017.

Farrell, John F. *Team Spirit: A Case Study on the Value of Military Exercises as a Show of Force in the Aftermath of Combat Operations*. Alabama: Air Force Research Institute, 2009.

Ferrill, Arther. *Origins of War from the Stone Age to Alexander the Great*. 2nd Revised Edition, Boulder, CO: Westview Press, 1997.

Fitzhenry, Robert. ed. *The Harper's Book of Quotations*. New York: Quill, 1993.

Forczyk, Robert A. *Tank Warfare on the Eastern Front, 1941-1942: Schwerpunkt.* South Yorkshire: Pen & Sword Books, 2013.

Forty, George. *German Tanks of World War II*. New York: Blandford Press, 1999.

Gabel, Christopher R. *Seek, Strike*, *and Destroy: U.S. Army Tank Destroyer Doctrine in World*

War II, Leavenworth Paper No. 12. Ft. Leavenworth, KS.: Combat Studies Institute, U.S. Army Command and General Staff College, 1985.

_____. *The US Army GHQ Maneuvers of 1941*. Center of Military History United States Army Washington, D.C., 1992.

Gander, Terry. *The German 88: The Most Famous Gun of the Second World War*. South Yorkshire: Pen & Sword Books, 2009. Kindle.

Gawne, Jonathan. *Spearheading D-Day: American Special Units in Normandy*. Histoire and Collections, 2011.

Goodwin, Doris Kearns. *No Ordinary Time: Franklin and Eleanor Roosevelt: The Home Front in World War II*. New York: Simon & Shuster, 1994.

Gorman, General (Ret.) Paul F. *The Secret of Future Victories*. Fort Leavenworth, KS.: U.S. Army Command and General Staff College Press, 1994.

Grant, Michael. *The Army of the Caesars*. New York: M. Evans and Company, Inc., 1974.

Green, Peter. *Alexander of Macedon, 356-323 B.C.: A Historical Biography*. Berkely: University of California Press, 1991.

Gregory, Hamilton. *McNamara's Folly: The Use of Low-IQ Troops in the Vietnam War plus the Induction of Unfit Men, Criminals and Misfits.* West Conshohocken, PA: Infinity Publishing, 2015. Kindle.

Grotelueschen, Mark E. *The AEF Way of War: The American Army and Combat in World War I*. New York: Cambridge University Press, 2007.

Gunther, Maj. Michael J. *Auftragstaktik: The Basis for Modern Military Command?* Pickle Partners Publishing, 2012. Kindle.

Hastings, Max. *Overlord: D-Day and the Battle for Normandy*. New York: Vintage Books, 1984.

Heller, Maj. Charles A. *Chemical Warfare in World War I: The American Experience, 1917-1918*, Leavenworth Paper No. 10. Ft. Leavenworth, KS.: Combat Studies Institute, U.S. Army Command and General Staff College, 1984.

Heller, Charles E. and William A. Stofft. Eds. *America's First Battles, 1776-1965*. Lawrence, KS.: University Press of Kansas, 1986.

Hess, Earl J.. Civil War Field Artillery (p. 535). LSU Press. Kindle Edition.

Herzog, Chaim and Mordechai Gichon. *Battles of the Bible: A Military History of Ancient Israel*. New York: Barnes & Noble Publishing, 1997.

Hope, Major Gregory C. *"Army Training, Sir": The Impact of the World War I Experience on the Evolution of Training Doctrine in the US Army.* Fort Leavenworth, KS.: Army University Press, 2021.

Hopkins, John C. and Barbara Germain Killian. *Nuclear Weapons Testing at the Nevada Test Site the First Decade*. Barbara Germain Killian, 2013.

Hoyt, Edwin P. *The Invasion Before Normandy: The Secret Battle of Slapton Sands*. Cooper Square Press, 1999.

Jentz, Thomas L. ed. *Panzertruppen: The Complete Guide to the Creation & Combat Employment of Germany's Tank Force 1933-1942*. Atglen, PA: Schiffer Military History, 1996.

Johnson, David E. *Fast Tanks and Heavy Bombers: Innovation in the U.S. Army, 1917-1945*. Ithaca, N.Y.: Cornell University Press, 2013.

Jones, Nate, Ed. *Able Archer 83: The Secret History of the NATO Exercise That Almost Triggered Nuclear War*. New York: The New Press, 2016.

Kane, Sharyn and Richard Keeton. *A Soldier's Place in History: Fort Polk, Louisiana*. Tallahassee, Fl.: Southwest Archeological Center, 2004.

Kennedy, David M. *Over Here: The First World War and American Society.* New York: Oxford University Press, 2004.

Kedzior, Richard W. *Evolution and Endurance: The U.S. Army Division in the Twentieth Century*. Santa Monica, CA.: Rand, 2000.

Kershaw, Robert. *War Without Garlands: Operation Barbarossa 1941-1942*. Surrey: Ian Allan, 2000.

Lacey, Jim. *Pershing*. New York: Palgrave Macmillan, 2008.

Lawrence, Wendy. *Exercise Tiger: The Forgotten Sacrifice of the Silent Few*. United Kingdom: Fonthill Media, 2013.

Lendon, J. E. *Soldiers and Ghosts: A History of Battle in Classical Antiquity*. Yale University Press, 2005. Kindle Electronic Edition.

Lewis, Nigel. *Exercise Tiger: The Dramatic True Story of a Hidden Tragedy of World War II.* Prentice Hall Direct, 1990.

Lillard, John M. *Playing War: Wargaming and U.S. Navy Preparations for World War II.* Potomac Books, 2016.

Locke, Lt Col. Joseph W. *Air Superiority at Red Flag: Mass, Technology, and Winning the Next War*. Alabama: Air Force Research Institute, 2009.

Mansoor, Peter R. *The GI Offensive in Europe: The Triumph of American Infantry Division, 1941-1945*. Lawrence, KS.: University Press of Kansas, 1999.

Matthews, Matt M. *The US Army on the Mexican Border: A Historical Perspective*. Fort Leavenworth, KS.: Combat Studies Institute Press, 1959.

McMillin, Woody. *In the Presence of Soldiers, The 2nd Army Maneuvers & Other World War II Activity in Tennessee.* Nashville, TN.: Horton Heights Press, 2010.

McNab, Chris, ed. *German Paratroopers: The Illustrated History of the Fallschirmjäger in WWII*. London: Amber Books, 2020.

Mercatante, Steven D. *Why Germany Nearly Won: A New History of the Second World War in Europe*. Santa Barbara, CA.: Praeger, 2012.

Millett, Allan R., Peter Maslowski, and William B. Feis. *For the Common Defense: A Military History of the United States from 1607-2012*. New York: Free Press, 2012.

Moenk, Jean R. *A History of Large-Scale Army Maneuvers in the United States, 1935-1964*. Fort Monroe, VA: U.S. Continental Army Command, 1969.

Nossov, Konstantin. *Gladiator: Rome's Bloody Spectacle*. Great Britain: Osprey Publishing, 2009.

Nowowiejski, Dean A. *The American Army in Germany, 1918-1923: Success Against the Odds*. Lawrence, KS.: University Press of Kansas, 2021.

Ney, Virgil. *Evolution of the U.S. Army Division 1939-1968*. Fort Belvoir, VA.: Technical Operations, Inc., 1969.

Nofi, Albert A. *To Train the Fleet for War: The U.S. Navy Fleet Problems, 1923-1940.* Annapolis, MD.: Naval War College Press, 2010.

O'Donnell, Mike. *At Manassas: Reunions, Maneuvers, Reenactments*. Rapidan Press, 1986.

Olivero, Col. Charles S. *Auftragstaktik: The Birth of Enlightened Leadership.* Toronto: Double Dagger Books, 2022. Kindle.

Overy, Richard. *Why the Allies Won*. New York: W.W. Norton & Co., Inc., 1996.

Paret, Peter, Ed. *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*. Princeton, New Jersey: Princeton University Press, 1986.

Pedersen, Dan. *Topgun: An American Story*. New York: Hachette Books, 2019.

Perla, Peter P. *The Art of Wargaming*. Annapolis, Maryland: Naval Institute Press, 1990.

Piekalkiewicz, Janus. *Krieg der Panzer [Tank War], 1939-1945*. Translated by Jan van Heurck. Südwest Verlag GmbH & Co. KG, München, 1981.

Pogue, Forrest C. *George C. Marshall: Education of a General 1880-1939*. New York: Viking Press, 1963.

_____. *George C. Marshall: Ordeal and Hope 1939-1942.* New York: Viking Press, 1966.

Roberts Jr., Charles C. *The U.S. 37-MM Gun in World War II*. Havertown, PA.: Casemate, 2023.

Shirer, William L. *The Rise and Fall of the Third Reich: A History of Nazi Germany*. New York: Simon and Shuster, 1960.

Small, Ken. *The Forgotten Dead: The true story of Exercise Tiger, the disastrous rehearsal for D-Day*. Osprey Publishing, 2018.

Smith, Jean Edward. *Eisenhower in War and Peace*. New York: Random House, 2012. Kindle.

Stokesbury, James L. *A Short History of World War I*. HarperCollins, 1981. Kindle.

Taaffe, Stephen R. *Marshall and His Generals: U.S. Army Commanders in World War II* Lawrence, KS.: University Press of Kansas, 2013.

Thompson, Jenny. *Wargames: Inside the World of 20th Century War Reenactors*. Washington: Smithsonian Books, 2004.

Thompson, Roger. *Lesson Not Learned: The U.S. Navy's Status Quo Culture*. Annapolis, MD.: Naval Institute Press, 2007.

Tran, Scott Cuong and Nick Tran. *Aircraft of Red Flag: The Ultimate Air-to-Air Combat Exercise*. Key Publishing, 2022.

Trauschweizer, Ingo. *The Cold War U.S. Army: Building Deterrence for Limited War*. Modern War Studies. Lawrence, KS: University Press of Kansas, 2008.

Van Creveld, Martin. *Fighting Power: German and U.S. Army Performance, 1939-1945*. Westport, CT.: Greenwood Press, 1982.

_____. *The Culture of War*. New York: Ballantine Books, 2008.

Wawro, Geoffrey. *Sons of Freedom: The Forgotten American Soldiers Who Defeated Germany in World War I*. New York: Basic Books, 2018.

Weigley, Russell F. *Eisenhower's Lieutenants: The Campaign of France and Germany 1944-45 – Book One*. Indiana University Press, 1981.

_____. *History of the United States Army*. 1st ed. New York: Macmillan Publishing, 1967.

_____. *The American Way of War: A History of United States Military Strategy and Policy.* Bloomington: Indiana University Press, 1973.

Wilson, John B. *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades.* Army Lineage Series. Washington, DC: Government Printing Office, 1998.

Wise, Terence. *D-Day to Berlin: Armor Camouflage and Markings of the United States, British and German Armies, June 1944 to May 1945*. Carrolton, TX.: Squadron/Signal Publications, Inc., 1979.

Yeide, Harry. *The Tank Killers: A History of America's World War II Tank Destroyer Force*. Havertown, PA.: Casemate, 2004.

Other Materials

AP. "Disastrous Warm-Up for D-Day Little Known." *Las Vegas Review*, April 25, 1994.

Ault, Frank W. Report of the Air-to-Air Missile System Capability Review. July-November 1968, Vol. 1. Naval Air Systems Command Washington DC.

Carey, Bill. "Tennessee in Training: Tennessee was a big staging area for World War II Army maneuvers." The Tennessee Magazine, May 2022. https://www.tnmagazine.org/tennessee-in-training/

Comstock, Kasey J. "With Sand in Their Pockets: Lessons of the American Expeditionary Force's Mobilization for the First World War." PhD diss., Liberty University, 2023. ProQuest Dissertations & Theses Global.

Dean, Mack. "Armies: WW2 Army Units and Sizes." *World War II Facts* (blog). June 6, 2021. https://www.worldwar2facts.org/ww2-army-units-and-sizes.html

Defender Europe 20 Military Exercise, Historical (REFORGER) Exercises, and U.S. Force Posture in Europe. Congressional Research Service, January 14, 2020.

Department of Homeland Security. Homeland Security Exercise and Evaluation Program (HSEEP), 2020.

Edwards, Susan. "Atomic Age Training Camp: The Historical Archaeology Of Camp Desert Rock." Master's thesis, University of Nevada, Los Vegas, 1997.

Elgin, Katherine K. and Peter Gilbert. “How the Army is (Not) Preparing for the Next War.” The War Room, September 25, 2019.

Federal Emergency Management Agency (FEMA), Department of Homeland Security Exercise and Evaluation Program (HSEEP) Course.

Hastings, Max. “Their Wehrmacht Was Better Than Our Army.” *Washington Post*, May 5, 1985.

Kunert, Jessica Marie. “Command And Initiative In North Africa: Patton Vs. Fredendall, And The Battle Of Kasserine Pass.” Master’s thesis, East Carolina University, 2016.

Lauer, George Stephen. “Perspectives of Infantry: Quality and Cohesion – Comparison of American, British, and German Army Manpower Policies and Effects on the Infantry Small Unit During the Second World War, 1939-1945.” PhD diss., Florida State University, Tallahassee, 2010. ProQuest Dissertations & These Global.

Lent, Steve. “Crook County part of the Oregon Maneuver.” Central Oregonian, August 16, 2019. https://pamplinmedia.com/ceo/164-features/436054-346680-crook-county-part-of-the-oregon-maneuver

Perry, Mark. “Louisiana Maneuvers (1940-41).” HistoryNet. Accessed November 1, 2023. https://historynet.com/louisiana-maneuvers-1940-41/.

Raadschelders, John Jozef Raadschelders. “REdeployment of FORces to GERmany (REFORGER): Military Exercises with a Diplomatic Purpose.” Master’s thesis, The Ohio State University, 2021.

Savage, Joshua G. “Thank God It’s Only Maneuvers!:” Tennessee and the Road to War.” Master’s thesis, East Tennessee State University, 2014.

Wells, Randall. Wing Inspection Team (WIT) Training, 412th Test Wing, Edwards Air Force Base, Ca., 2023.