

Learning Under Fire: Military Units in the Crucible of Combat

**A Monograph
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Abstract

LEARNING UNDER FIRE: MILITARY UNITS IN THE CRUCIBLE OF COMBAT by MAJ James S. Powell, U.S. Army, 62 pages.

This monograph explores the subject of organizational learning with a particular emphasis on how military units learn in combat. The challenges of today's joint operating environment require groups of soldiers to adapt responsively to a wide array of difficult and sometimes unfamiliar tasks. These efforts to improve unit performance often occur in the middle of an operation and thus involve a quick adjustment of behavior under taxing circumstances. Some scholars promote the concept of "learning organizations" and suggest that, because of the special qualities they possess, such entities have the ability to learn and succeed in situations where others fall short. This is an attractive notion for leaders seeking transformation for their organizations, but it is not free from ambiguity. What accounts for episodes of failure in organizations that seem to learn regularly on other occasions? This study argues that the process of learning demands a deeper explanation, especially when it takes place in the complex environment of combat.

Focused on a topic of chief importance to military leaders, this monograph examines organizational learning through a case study that considers one unit over the course of a six-month operation. In combat with the Japanese on the Philippine island of Luzon from February to July 1945, the soldiers of the 112th Cavalry Regiment faced a resourceful enemy whose resistance challenged them across a broad spectrum of conditions. How did the unit learn in these circumstances, and what factors facilitated the process? When elements of the regiment failed to learn, what accounted for that failure? Throughout the 112th's performance on Luzon, evidence of adaptation is not difficult to find. Harder to discern are the details behind how its officers and men arrived at those improvements. By mining a rich collection of primary sources – including daily unit journals, after action reports, diaries, memoirs, and interviews – this study sheds light on the process of learning under fire.

While learning in a complex environment does not happen by chance, neither do military units in combat learn according to a prescribed or uniform pattern. Learning occurs differently at the multiple levels of an organization and even varies among separate parts of the same level. Moreover, certain conditions enhance or inhibit the process as it transpires. Prior experience plays an ambivalent role. Soldiers innovate by using familiar tools in new ways or by moving a short step beyond what they have done in the past to develop helpful tactics or techniques. On the other hand, experience may lead to the formation of biases that stifle adaptation or automatically discount the utility of new ideas. The complexity of the knowledge involved also influences the learning process, affecting both the mode of lesson distribution throughout the organization and how much time other members may need to absorb the new knowledge prior to applying it themselves. Finally, it is not simply the internal qualities of an organization that determine its ability to learn. External factors in the form of higher level guidance, outside assistance, or an adversary's behavior can shape the process by steering organizations to where they would not have gone otherwise, particularly when the unit lacks experience in the area concerned.

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THE U.S. ARMY AND ORGANIZATIONAL LEARNING

Learning plays a key role in U.S. Army Transformation. As part of its effort to prepare the current and future force for the challenges of the post-9/11 security environment, the Army places enormous emphasis on training soldiers and growing adaptive leaders capable of succeeding despite the complexity and ambiguity of the situations they will undoubtedly face. Of at least equal importance is the focus on providing relevant and ready landpower for the nation, principally in the form of “powerful, versatile, deployable” units that can adapt to emerging threats. An essential prerequisite for making progress in these two overarching, interrelated strategies of “The Army Plan” is the ability to learn. Committed to continuous improvement, the Army envisions its units sharing lessons, building on recent combat experience, and expanding their scope of expertise to include a wide range of military operations. Learning takes on even more significance when one considers that the institution’s senior leaders expect the level of complexity in land warfare only to increase. The likelihood of executing the diverse and often unfamiliar tasks associated with full spectrum operations further substantiates the imperative to learn quickly and well. As it strives to keep pace with the demands of the contemporary operating environment, the Army recognizes the importance of the learning process.¹

This monograph sheds light on that process as it occurs in military units. The 112th Cavalry Regiment met with a fair degree of success in combat with the Japanese on Luzon from February to July 1945. It generally adapted to the diverse challenges of this campaign by acquiring new knowledge from internal and external sources, interpreting that knowledge to make it suitable for tactical application, and distributing it through formal and informal methods for others within the organization to apply. The 112th’s experience on Luzon illuminates an issue of

¹ The U.S. Army’s view of learning as it pertains to meeting the challenges of the post-9/11 security environment can be found in Headquarters [hereafter HQ], Department of the Army, FM 1, *The Army* (Washington, D.C.: Government Printing Office, 14 June 2005), 1-20, 3-6-8, 4-3, 4-10-11; and Francis J. Harvey and Peter J. Schoomaker, *A Statement on the Posture of the U.S. Army, 2006* (Washington, D.C.: Office of the Chief of Staff, U.S. Army, 10 February 2006), ii, iv, 1, 3, 13-15.

great concern to the U.S. Army today, namely how military units adapt responsively to meet an array of difficult and sometimes uncommon tasks over the course of an operation. Like the challenges the regiment confronted, the process by which it learned was anything but simple. Learning occurred differently at multiple levels of the organization. How subordinate elements learned depended on the specific knowledge involved. Throughout the campaign, the soldiers' previous experience and the input of higher headquarters had an impact in a variety of ways as well. Briefly stated, this study explores organizational learning at the regimental level. In that context, it examines factors that facilitate or disrupt the process while illustrating how the ability or inability to learn affects performance.

Social scientists generally agree that organizations must change in order to be successful and, to change effectively, they must learn.² Put another way, learning generates change that results in improved performance. At the organizational level, learning differs somewhat from the process that single members of a group follow as they develop new skills and knowledge. A key distinction is the cultivation of "organizational memory," allowing a unit to exploit new or expanded capabilities without having to rely on a limited number of individuals. In his bestseller *The Fifth Discipline*, Peter M. Senge elaborates on this notion of the organizational whole being greater than the sum of its parts, highlighting the advantages of collective thought over individual when it comes to approaching complex problems.³

Senge's in-depth discussion of the "learning organization" suggests that various levels of effectiveness characterize the manner in which organizations learn. He describes a learning organization as one "where people continually expand their capacity to create the results they

² For an overview of the major theories of organizational change and learning, see Mary Jo Hatch, *Organization Theory: Modern, Symbolic, and Postmodern Perspectives* (New York: Oxford University Press, 1997), 350-76.

³ Peter M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York: Currency Doubleday, 1990), 240-42; Brian A. Jackson, *Aptitude for Destruction*, vol. 1, *Organizational Learning in Terrorist Groups and Its Implications for Combating Terrorism* (Santa Monica, Calif.: RAND Corporation, 2005), 9.

truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.”⁴ Hinting at the tremendous potential of the learning organization, Senge quotes Archimedes, who said, “Give me a lever long enough ... and single-handed I can move the world.” He distinguishes between the kind of “generative” learning these organizations undergo and less sophisticated “survival” or “adaptive” learning that, while important, is largely reactive in nature.⁵ Chris Argyris and Donald A. Schon make a similar point with their distinction between single- and double-loop learning. In the latter case, organizations not only monitor and adjust behavior but also demonstrate self-awareness, enabling them to make a value judgment and determine what appropriate behavior is – in a sense, learning how to learn.⁶

Other scholars set the bar a bit lower, viewing learning organizations as self-correcting systems but placing less emphasis on expanding creative capacity. For example, Brian A. Jackson defines organizational learning as “a process through which a group acquires new knowledge or technology that it then uses to make better strategic decisions, improve its ability to develop and apply specific tactics, and increase its chances of success in its operations.”⁷ Though less rigorous, this definition is more suitable for the analysis of military units. Moreover, Jackson provides a useful framework to explore the learning process. His model for organizational learning consists of four component subprocesses: acquisition, interpretation, distribution, and storage. Since storage refers to the preservation of knowledge with a view toward its future application beyond the near-term, only the first three components are relevant to the examination of a single military campaign (which is the purview of this monograph).⁸

⁴ Ibid., 3.

⁵ Ibid., 13-14.

⁶ Argyris’ and Schon’s theory is explained in Hatch, *Organization Theory*, 371-72.

⁷ Jackson, *Aptitude for Destruction*, vol. 1, 9.

⁸ Ibid., 9-10.

In order to learn, organizations must acquire the knowledge they need to assess the utility of their activities and determine what changes might be implemented to improve performance. Such knowledge can come from external or internal sources. Military units benefit from vicarious or indirect experience by observing another group and incorporate knowledge officially passed along by outside agencies, particularly in the form of reports, directives, mobile training teams, or special military schools run by higher headquarters. Cooperation with other organizations also results in the acquisition of knowledge, especially when it occurs between military outfits of the same army (since compatible goals and cultures facilitate information sharing). Direct experience, or “learning by doing,” seems to be the most dominant internal source, but some organizations have the capacity among individual members to acquire knowledge through their own creativity and experimentation. Institutional culture plays a role in this process.⁹ In World War II, the U.S. Army’s approach to adaptation led to the acceptance of many improvisations that originated at the lower echelons of command. Equally important was the interest higher headquarters took in the collection and dissemination of those lessons so that multiple subordinate units could benefit (indirectly) from the direct experience of others.¹⁰

To harness the knowledge gained for future use, organizations must correctly interpret it. This subprocess involves assessing the meaning and value of information within the context of the group’s current and upcoming activities. Necessary conditions for effective interpretation include situational awareness and flexibility, particularly when it comes to applying fresh

⁹ Ibid., 11-12. Barbara Levitt and James G. March found that direct and indirect experience played a key role in organizational learning. Their study also confirmed that processes (including cultural processes) had much to do with the way organizations learned (Hatch, *Organization Theory*, 369-70). For a matter as complex as the development of new military doctrine, direct experience also plays a central role. See Keith B. Bickel, *Mars Learning: The Marine Corps’ Development of Small Wars Doctrine, 1915-1940* (Boulder, Colo.: Westview Press, 2001), 19-20, 236. For two case studies on the predominant role of institutional culture in the learning processes, see John A. Nagl, *Counterinsurgency Lessons from Malaya and Vietnam: Learning To Eat Soup With a Knife* (Westport, Conn.: Praeger Press, 2002). Nagl focuses on military institutions as a whole rather than specific subordinate organizations.

¹⁰ Michael D. Doubler, *Closing With the Enemy: How GIs Fought the War in Europe, 1944-1945* (Lawrence: University Press of Kansas, 1994), 269-72.

knowledge to improve or replace old, perhaps invalidated, methods.¹¹ Military organizations that develop new tactics and techniques in a decentralized manner – as the U.S. Army generally did in World War II – place the burden of interpretation on front line units rather than senior staffs. Yet it is burden that many tactical commanders gladly bear.¹² While units may accept knowledge derived from vicarious experience or the reports of higher headquarters, the judicious application of that knowledge demands fair-minded consideration to ensure its relevance to the changing conditions of the environment, as well as its compatibility with the unit’s own capabilities.

Distribution ensures that the right people in the organization obtain access to newly acquired knowledge. Wide dissemination makes it more likely that the group will effectively interpret the information it obtains and decreases the risk that the lessons will fade from the organization’s memory over time. Jackson identifies a practical distinction between two types of knowledge, labeling each based on the medium most appropriate for group members to use as they transfer lessons learned. Explicit knowledge can be easily disseminated throughout the organization once it is preserved in physical form, like written documents or photographs. Tacit knowledge poses more of a problem since it is harder to codify and often intuitive in nature. Established members accumulate this type of knowledge over a long period of time, making its distribution largely reliant on face-to-face exchanges.¹³ Jackson goes on to say that incorporating new techniques or technology usually requires the acquisition of explicit *and* tacit knowledge. Training increases the likelihood of obtaining and distributing both.¹⁴

Although this typology sheds light on the forms of knowledge and their transferability, it does so without addressing the degree of complexity or relative familiarity that characterizes the knowledge involved. More complicated lessons may be more difficult to grasp. The distribution

¹¹ Jackson, *Aptitude for Destruction*, vol. 1, 12-13.

¹² Doubler, *Closing With the Enemy*, 280-81. In his study of the U.S. Army in the European Theater of Operations, Doubler provides another way of explaining the interpretation subprocess. “Military institutions must have the means of evaluating the results of adaptation,” he argues.

¹³ Jackson, *Aptitude for Destruction*, vol. 1, 13-15.

¹⁴ *Ibid.*, 40, 47.

of abstract or unfamiliar knowledge requires not only extra time for others to internalize it but also a more concerted effort on the part of a centralized authority to ensure that subordinates attain a common understanding with respect to its application.¹⁵ Conversely, knowledge that can be modeled or explained within the context of shared experience does not call for this level of intervention. It can be transferred informally among group members as they strive to improve collective performance.¹⁶ While not specifically mentioned in Jackson's framework, these considerations and their effect on knowledge distribution have implications for military organizations as senior commanders contemplate their role in the learning process.

Today's U.S. Army generally follows Jackson's model of the process, but the incorporation of certain elements of "learning organization" lexicon has muddled its stance on the matter of how units learn. Two decades ago, the Army institutionalized lesson-learning with the formation of a center at Fort Leavenworth, Kansas, that collects, evaluates, and disseminates insights and observations gleaned from soldiers' experiences in the operating environment.¹⁷

¹⁵ In the First World War, the German army's offensive and defensive tactical doctrine changed significantly. While the ideas behind these changes sprung from an organizational culture that encouraged debate, their implementation required substantial direction and supervision on the part of the high command (Timothy T. Lupfer, *The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War*, Leavenworth Papers, No. 4 (Fort Leavenworth, Kans.: Combat Studies Institute, U.S. Army Command and General Staff College, 1985), viii, 21-29, 55-58). However, for a military force not embroiled in a major war, this may not be the case. For example, junior and mid-level officers were the principal drivers in the development of Marine Corps small wars doctrine (Bickel, *Mars Learning*, 18-19, 247).

¹⁶ In a comprehensive study of American soldiers in World War II, Samuel A. Stouffer's team of social scientists found that GIs reporting to combat units respected the experience of veterans and sought to model their behavior. For their part, veterans saw the quick integration of replacements to be in their best interest and thus passed on battlefield advice to recent arrivals. Samuel A. Stouffer, et al., *Studies in Social Psychology in World War II*, vol. 2, *The American Soldier: Combat and Its Aftermath* (Princeton, N.J.: Princeton University Press, 1949), 253-54, 278. One scholar and longtime commentator on military affairs goes so far as to say, "Military organizations still learn lessons in much the same way that they always have, through the informal sharing of experience and observations among warriors." Eliot Cohen, "The Historical Mind and Military Strategy," *Orbis* 49, 4 (Autumn 2005): 585.

¹⁷ David H. Petraeus, "Learning Counterinsurgency: Observations from Soldiering in Iraq," *Military Review* (January-February 2006): 2. Currently, Lieutenant General Petraeus is the commanding general of the U.S. Army's Combined Arms Center, the parent organization of the Center for Army Lessons Learned (CALL). For an explanation of how CALL emerged as one of the solutions to the problem of capturing lessons learned, see Anne W. Chapman, *The Origins and Development of the National Training Center, 1976-1984*, TRADOC Historical Monograph Series (Fort Monroe, Va.: Office of the Command Historian, U.S. Army Training and Doctrine Command, 1997), 118-26.

These steps closely parallel the acquisition-interpretation-distribution framework described in previous paragraphs. The Army has followed this basic process for quite some time.¹⁸ A more recent development is the adoption, in its publications, of language commonly used by proponents of learning organizations. The *2006 Posture Statement* refers to a “commitment to continuous improvement” and to an organization comprised of “strong believers in life-long learning.”¹⁹ Likewise, one of the Army’s capstone field manuals envisions “a culture of innovation” that “fosters initiative and creative thinking.”²⁰ Seeming to take a page out of Senge’s *The Fifth Discipline*, the Army’s senior leaders see the potential in radical innovation and bold, transformational change. They desire “to move beyond incremental improvements” and imply that adaptive learning is archaic and insufficient.²¹ The confusion comes with this repudiation.

Despite claims and language that intimate otherwise, evidence suggests that the Army intends to take an incremental approach to learning as it faces up to the challenges of the post-9/11 security environment. The same documents touting transformational change emphasize the Army’s efforts to build on recent combat experience and leverage lessons learned by assigning veterans to instructor or doctrine development billets and by updating training conditions to better reflect the complexity of the modern battlefield.²² Such steps may be sensible, but they are not

¹⁸ Accounts of the U.S. Army’s lesson-learning process in the First and Second World Wars suffice to substantiate this claim. See Kenneth E. Hamburger, *Learning Lessons in the American Expeditionary Forces* (Washington, D.C.: U.S. Army Center of Military History, 1997), 5, 11, 19; and Doubler, *Closing With the Enemy*, 269-72.

¹⁹ *2006 Army Posture Statement*, quotes on p. 7 and p. 15, respectively.

²⁰ FM 1, *The Army*, 4-10.

²¹ Ibid. Though outdated, the *2005 Army Posture Statement* is even more explicit: “During times of peace, change is generally slow and deliberate ... In wartime, however, change must occur faster; a measured approach to change will not work.” Francis J. Harvey and Peter J. Schoomaker, *A Statement on the Posture of the U.S. Army, 2005* (Washington, D.C.: Office of the Chief of Staff, U.S. Army, 6 February 2005), 2.

²² FM 1, *The Army*, 1-20; *2006 Army Posture Statement*, 7, 15. For a brief description of how the Army has modified the scenarios units face at the combat training centers, see Petraeus, “Learning Counterinsurgency,” 12n. Of course, providing a venue for U.S. Army units to train in situations that closely replicate actual combat conditions has always been a focus of the training centers. Chapman, *National Training Center*, 1, 24.

radical. They essentially involve making incremental gains based on what has been learned in previous operations. Indeed, how the process plays out in combat appears to be incremental as well – for both sides. As one American commander in Iraq explained, “The enemy adjusts to us and they are about a week behind, so each week I change and modify our tactics, because the learning and the complexity of how they’re trying to kill us increases with every week.”²³

The point here is not to condemn the Army’s approach to learning but to suggest that the process and the factors affecting it require further exploration. The inconsistency identified above certainly indicates that this is so. Moreover, writings that describe the concept of the learning organization contain some ambiguity that Army publications do little to clarify. Though attractive to senior leaders, the notion that the proper attitude toward change and the environment is sufficient to unlock an organization’s potential leaves much about the learning process unexplained.²⁴ Most troubling is the insinuation that learning organizations possess the ability to adapt to any circumstance they face. What then accounts for episodes of failure in organizations that seem to learn regularly on other occasions? Jackson’s framework provides a useful lens for examining how military units learn, prompting several questions. What factors specific to the subprocesses of acquisition, interpretation, and distribution enhance or disrupt the learning process? How does experience affect learning? What impact does the complexity of the knowledge itself have on the process? For that matter, with all of this learning supposedly taking place among subordinate organizations, what role does higher headquarters play in teaching?

In a recent assessment of American strategic thinking, Eliot A. Cohen alludes to what he sees as the U.S. military’s current fixation with lessons learned. He argues that the ongoing effort

²³ Lieutenant Colonel Ross Brown, a squadron commander in the 3d Armored Cavalry Regiment, quoted in Greg Grant, “Insurgency Chess Match,” *Defense News*, 27 February 2006, 6. See also Kevin Cullen, “Improvised Bombs Packing More Power,” *Boston Globe*, 5 March 2006, for another example of U.S. Army incremental adaptation (and insurgent counter-adaptation): “U.S. troops and insurgents have engaged in a lethal game of cat-and-mouse: As U.S. forces have become more adept at spotting or disarming devices, the insurgents have refined their tactics.”

²⁴ In Senge’s *The Fifth Discipline*, the author aims to present tools and ideas “for destroying the illusion that the world is created of separate, unrelated forces. When we give up this illusion,” he asserts, “we can then build ‘learning organizations.’” Quoted on p. 3.

to harness the lessons of the immediate past risks subjecting them to oversimplification.

“‘Lessons learned’ ... by their nature ... treat military individuals as interchangeable parts in a large, complicated system,” Cohen writes. “They preclude discussion or debate and do not seek to yield multiple interpretations or to stimulate further research.”²⁵ In the spirit of Cohen’s critique, this monograph looks more closely at the conditions that influence learning and the context in which it occurs.

It does so through a case study of one unit’s experience during a six-month campaign in World War II’s Southwest Pacific Area (SWPA), adopting as a model historian Michael D. Doubler’s *Closing With the Enemy*. That study considered U.S. Army combat performance in the advance across Northwest Europe in 1944 and 1945.²⁶ Examining a cross-section of divisions, Doubler described how those organizations developed new tactics and techniques as they fought their way through France and Belgium and into Germany. He emphasized the capability of American units to adapt quickly to the diverse conditions they encountered and viewed this aptitude for innovation as a key factor contributing to the success of the U.S. Army in the European Theater of Operations.²⁷ As in Europe, GIs fighting in New Guinea and the Philippines faced a resourceful, determined enemy whose resistance tested their abilities across a broad spectrum of conditions. Taking a less comprehensive but more focused approach than Doubler’s work, this monograph analyzes the 112th Cavalry’s actions on Luzon.

Concentrating on one organization illustrates the extent to which ground forces operating in SWPA were challenged to learn and adapt. This held true especially on Luzon, where expansive unit sectors, mountainous terrain, a large civilian population, rival guerrilla groups, and

²⁵ Cohen, “Historical Mind,” 586.

²⁶ Doubler, *Closing With the Enemy*. For works that take a similar approach to analyzing American combat performance in the European Theater of Operations, see Peter R. Mansoor, *The GI Offensive in Europe: The Triumph of American Infantry Divisions, 1941-1945* (Lawrence: University Press of Kansas, 1999); and John S. Brown, *Draftee Division: The 88th Infantry Division in World War II* (Lexington: University Press of Kentucky, 1986).

²⁷ Doubler addressed the difficulties of fighting in hedgerow country, fortifications, urban areas, and dense forests. He also covered the specific challenges of river-crossings and operating in cold weather.

the Japanese themselves – at times fragmented and weak, on other occasions formidable and well-supported – combined to make the environment quite complex. In the case of the 112th Cavalry, leaders at squadron and regimental level had to control and oversee the execution of a wide array of tasks, to include guarding lines of communication, defending key positions against enemy attacks, conducting offensive operations, and coordinating with civil affairs personnel in their sector. Later, the same formations trained for the invasion of Japan, only to shift abruptly to preparing for occupation duty. The 112th had mixed success when it came to improving and carrying out its assigned missions effectively. In this uncertain environment, how did it learn? What conditions enhanced its ability to do so? In instances where the unit failed to learn, why did it fail? Evidence of adaptation is not hard to find. More difficult to discern are the details behind how its officers and men arrived at those improvements. This study's approach allows it to explore with some specificity the process of learning in military units.

The obvious fruits of effective lesson-learning are the tactical and technical innovations that fighting organizations develop and employ over the course of a campaign. Yet examples of adaptation by themselves explain little about how units learn. Organizational learning is a process consisting of three key steps: the acquisition of knowledge, the interpretation of that knowledge, and its distribution throughout the group. Using a methodology similar to Doubler's, this work examines the performance of a combat unit as it met a variety of challenges over time. It focuses on patterns of development that demonstrate the outfit's ability or inability to adapt, employing Jackson's three-step framework to consider the effectiveness of the learning process. The purpose is not to determine whether the 112th was a learning organization. Instead, the study aims to shed light on the nuances related to how the unit learned, particularly the specifics concerning prior experience, the complexity of the knowledge and the associated mode of its distribution, and the role of forces outside of the organization – such as higher headquarters and the ever-changing enemy.

THE ROAD TO LUZON: THE CHALLENGE OF DISCONTINUOUS CHANGE

By the time the 112th Cavalry landed on Luzon at the end of January 1945, Americans had been fighting on the island for over two weeks. Sixth U.S. Army, under the command of General Walter Krueger, was engaged in what turned out to be the last of its several campaigns in SWPA.²⁸ As a subordinate unit of Sixth Army, the regiment took part in various stages of that organization's advance to the Philippines, seeing action on New Britain, New Guinea, and Leyte. Along the way, the outfit had mustered a substantial – but by no means flawless – combat record that included a diverse array of tasks. As it learned over the course of these campaigns, the 112th drew heavily on its own experience and, to a lesser extent, on recommendations and directives coming from Krueger's headquarters. Both of these sources helped, but they each had their limitations, which contributed in part to an inconsistency in the effectiveness of the learning process. This, in turn, had an impact on the regiment's ability to perform certain tasks – usually due to their difficulty or unfamiliarity.

Built around a core of Texas National Guardsmen, the 112th had a background similar to many of the units that fought in SWPA.²⁹ Federalized in November 1940, the outfit deployed as a separate regiment of horse cavalry to the Pacific Theater in July 1942. It served in a mounted status on New Caledonia until May 1943 when it turned in its horses and joined General Douglas MacArthur's command in SWPA. From June to November, the 112th secured an airdrome on Woodlark Island but encountered no Japanese forces there. Its first exposure to combat in a jungle environment came in December at Arawe, New Britain. Troopers parried several minor attacks but met with repeated failure in their own attempts to eliminate a carefully concealed

²⁸ For a single-volume treatment of Sixth Army's campaigns, see Kevin C. Holzimmer, "A Soldier's Soldier: A Military Biography of General Walter Krueger" (Ph.D. diss., Temple University, 1999).

²⁹ Of the eighteen divisions that saw combat in SWPA, ten had their origins in the National Guard and two more contained at least one regiment of Guardsmen in their ranks. James F. Dunnigan and Albert A. Nofi, *The Pacific War Encyclopedia* (New York: Checkmark Books, 1998), 436, 625-29.

enemy strongpoint until reinforcements arrived.³⁰ The next campaign proved to be a defining action for the regiment. Transported to New Guinea in June 1944, the cavalymen buttressed the Driniumor River defenses and blunted a ferocious offensive that threatened them with encirclement. Over many weeks, the outfit withstood numerous assaults, conducted extensive patrolling operations, and even enjoyed a measure of success when it responded quickly to enemy thrusts with aggressive counterattacks.³¹ In this extraordinary battle, the 112th showed that it had grasped at least some of the complexities of infantry combat. Operations on Leyte, however, demonstrated that the regiment still had much to learn. Fighting over the island's rugged central mountain range as part of Sixth Army's multi-pronged advance, the unit continued to struggle with the problem of destroying Japanese prepared positions.³²

Thus, the 112th headed toward Luzon and its final campaign with a set of important skills that would serve it well. Among these were perimeter defense, patrolling, and the coordination of artillery support. Benefiting from its gradual exposure to the operating environment, the outfit learned incrementally as it acquired new knowledge about how best to contend with the harsh climate and terrain, as well as the enemy.³³ The regiment's assignment on Woodlark, for

³⁰ HQ, Woodlark Task Force, "Historical Report of Task Force," 20 August 1943, author's collection; HQ, 112th Cavalry, "Transmittal of Historical Report," 10 February 1944, Historical Report, CAVR-112-0.3, Box 18082, Entry 427 [hereafter, "Historical Report (Arawe)"], Record Group [hereafter, RG] 407, National Archives and Records Administration, College Park, Md. [hereafter, NA].

³¹ HQ, 112th Cavalry, "Historical Report, 21 June 1944 to 25 August 1944," Historical Report, CAVR-112-0.3, Box 18082, Entry 427 [hereafter, "Historical Report (Aitape)"], RG 407, NA. Edward J. Drea analyzes American combat performance in this campaign in *Defending the Driniumor: Covering Force Operations in New Guinea, 1944*, Leavenworth Papers, No. 9 (Fort Leavenworth, Kans.: Combat Studies Institute, U.S. Army Command and General Staff College, 1985).

³² The assessment of the 112th's performance on Leyte is derived primarily from HQ, 112th RCT, "Historical Report," 30 December 1944, Historical Report, 16 November-30 December 1944, CAVR-112-0.3, Box 18083, Entry 427 [hereafter, "Historical Report (Leyte)"], RG 407, NA; and in 16 November-30 December 1944 entries of HQ, 112th Cavalry, "Regimental Diary," 1 July 1942-5 January 1946," CAVR-112-0.3.0, Box 18088, Entry 427, *ibid.* Leyte was a brutal experience for all of Sixth Army's combat units. For the GIs who endured the ordeal, the campaign meant rugged terrain, ankle-deep mud, frequent rains, perpetual wetness, and the disagreeable chore of eating, sleeping, marching, and attacking amid those conditions. For detailed accounts, see M. Hamlin Cannon, *United States Army in World War II: The War in the Pacific: Leyte: The Return to the Philippines* (Washington, D.C.: GPO, 1954); and Stanley L. Falk, *Decision at Leyte* (New York: W. W. Norton and Company, 1966).

³³ In his study of American draftee divisions during World War II, John S. Brown makes a similar point, highlighting "the importance of a gradual initiation to combat – of a 'warm-up.'" Brown found that

example, presented the cavalrymen with a grand opportunity to gain valuable experience at very little cost. They familiarized themselves with the new tropical surroundings and sorted out the challenges associated with the shift from a mounted to a dismounted unit. The 112th worked through the implications of these new conditions apart from the dangers of the combat zone and generally profited from the chance (and the time) to do so.³⁴ However, the outfit could only interpret the knowledge it acquired and, in this respect, operating in a garrison-type atmosphere had its shortcomings. The experience of fighting a determined enemy for the first time at Arawe taught the troopers lessons they could not have possibly learned on Woodlark. The Japanese threat spurred adaptation to previously unconsidered problems and led to the development of innovative techniques for perimeter defense and the rapid concentration of firepower.³⁵

The crucible of the Driniumor further emphasized the advantages of incremental learning as the 112th applied the expertise it had gained in past campaigns to a more challenging situation. On New Guinea, the regiment did not have the luxury of waiting for reinforcements. Instead, it fought off the Japanese from hasty positions by refining defensive techniques learned earlier and by leaning heavily on well-coordinated artillery and mortar support. Dire circumstances yielded a dose of courage to the troopers as they clung to jungled terrain that guarded a vital drop zone. The same probably coaxed leaders into carrying out limited but successful combined-arms assaults on an enemy that lacked the protection of dug-in emplacements. One officer who served with the regiment for the entire war reflected on how fortunate the unit was to have entered combat the way it did: “One of the biggest things that worked for us was that ... we weren’t just dumped off ... We went into it gradually. We understood the territory, the jungle area; we

“divisions with both a retraining period overseas and a tour in a quiet sector seem to have done the best of any during their first major battles.” Brown, *Draftee Division*, 154.

³⁴ In a related point, Jackson suggests that military units able to experiment in a “safe haven” away from direct pressure learn more effectively. Jackson, *Aptitude for Destruction*, vol. 1, 43.

³⁵ For example, see “Historical Report (Arawe),” 16-19, RG 407, NA. Among the innovations were: erecting a twenty-foot-tall chicken-wire fence in front of certain positions to stop enemy grenades; massing a troop’s grenade launchers on key enemy targets; and developing techniques to facilitate responsive and accurate 60-mm mortar fire.

understood how to operate in there ... We had a lot of experience with it, and I think we were lucky in being able to do that.”³⁶ Implicit in this retrospective observation is the assertion that, had the troopers been thrust into the situation in New Guinea without first passing the critical milestones of Woodlark and Arawe, they might have courted disaster on the Driniumor.

The 112th’s gradual introduction to the ordeal of combat did not generate success in all of its battlefield trials, however. In his discussion on forms of learning, Jackson emphasizes that the manner in which organizations learn depends very much on their environment. “Different groups need to learn in different ways at different times,” he argues. “When conditions are relatively stable, a group may need only to make small changes to the activities it already carries out.”³⁷ No doubt, the Driniumor campaign tested the regiment more than any of its prior experiences had. Yet the months spent manning prepared positions on Woodlark and later fighting from similar defenses at Arawe enabled the troopers to make the transition to the extraordinarily intense operations on New Guinea more easily. Jackson refers to this form of learning as “continuous improvement.” It stands in stark contrast to “discontinuous change,” which “aims at a radical departure from what the group is already doing.”³⁸ Such change requires a more deliberate approach to the learning process. This notion helps explain the 112th’s marginal performance when it came to assaulting Japanese strongpoints.

Nothing in its past experience adequately prepared the unit for the task of attacking the kind of defenses it found at Arawe. Hardly any time had been devoted to troop and squadron-level maneuvers, particularly under live-fire conditions and with artillery support. In their recurring efforts to eliminate the enemy position to their front, senior leaders experimented with deception, surprise, and varying applications of firepower but chose to limit the size of the assault

³⁶ Harmon Lamar Boland, interview by James Harvey Young, Decatur, Ga., 18 April 1985, 27-28, Harmon Lamar Boland Papers, United States Army Military History Institute, Carlisle, Pa. [hereafter USAMHI].

³⁷ Jackson, *Aptitude for Destruction*, vol. 1, 15.

³⁸ *Ibid.*, 15-16.

force in every case to a reinforced troop or below. The commander was anxious about the possibility of wasting lives in a large-scale attack against a strongpoint of unknown strength and wanted to avoid placing the beachhead itself in jeopardy should such an operation meet with disaster.³⁹ Wisdom may have been the better part of valor in this instance. However, one cannot help but conclude that the lack of realistic training at platoon, troop, and squadron level had much to do with the 112th's repeated failures.

While the effects of this shortcoming were obviously revealed in combat on Arawe, they unfortunately carried over into the learning process as well and hampered the regiment's ability to improve in the area where it needed it most. In taking on a well-prepared Japanese position, the 112th admittedly faced a steep learning curve. This served as an obstacle to the unit's interpretation of the knowledge it had acquired and kept the sophistication of the lessons learned at a low level. For example, many observations addressed weapons employment and individual fieldcraft while relatively few centered on squad or platoon tactics. The after-action report described the tough enemy defenses encountered, but it did not explore the confounding problem of how to successfully attack them. Consequently, much of the training following major combat on Arawe took place at the rifle and machine-gun range.⁴⁰ For a unit just learning to appreciate the value of weapons proficiency, this emphasis may have been appropriate. It did little to improve the regiment's ability to overrun fortified positions.

Learning in the aftermath of the Leyte operation struck a similar chord. The most intelligible lessons addressed issues at squad level and below, with many reflecting concerns about personal comfort and equipment that the unforgiving weather and topography had brought to light. Compared with this catalogue of practical advice for the soldier on patrol or in the

³⁹ "Regimental Diary," 1-16 January 1944, RG 407, NA; "Historical Report (Arawe)," 17, *ibid.*; Philip L. Hooper, telephone conversation with author, 28 January 2002, author's collection. The size of the enemy force facing the regiment at any one time did not exceed two to three hundred men. The 112th finally overran the Japanese position with the help of a reinforcing infantry battalion and a company of light tanks.

⁴⁰ "Regimental Diary," 13 March-30 April 1944, RG 407, NA.

foxhole, observations dealing with complicated collective skills were fewer in number and less illuminating. In the report summarizing lessons learned, the regiment's multiple assaults on two strongpoints went conspicuously unmentioned. It was as if the rich fiber of lessons woven into the fabric of those experiences remained knotted and indecipherable. The document included a sample diagram of one enemy position that hinted at its near impregnability, but no comments reflected on the important question of how best to employ a squadron or troop in the attack.⁴¹

The actual conduct of the 112th's major attacks on Leyte suggested that the regiment had learned little about the task since Arawe. Indeed, senior leaders fought the engagements in much the same manner as on New Britain. After running into resistance, squadrons put pressure on the enemy through frontal assaults and artillery bombardments while attempting – with much difficulty – to locate the position's flank or rear. The efforts failed in several instances but not for a lack of trying. In the end, commanders adhered to a cautious approach that committed one or two troops to the fight, relied perhaps too much on indirect fire support, and still did not solve the central problem of attacking Japanese prepared defenses: closing with the enemy in order to pinpoint individual bunkers so that they could be destroyed by accurately delivered fires.⁴² To be sure, progress in less complicated tasks – like patrolling – had come incrementally at squad and platoon level. At higher echelons though, neither training nor combat had worked to appreciably improve the 112th's *modus operandi* in the attack.

Jackson's concept of discontinuous change suggests that the regiment may have needed something more than experience to better its performance in assaulting prepared positions.

Edward J. Drea, a noted scholar of the Pacific War, argues that institutional reasons help account for why American units had trouble with strongpoints once firepower proved unable to dislodge

⁴¹ HQ, 112th RCT, "Lessons Learned in Combat, Leyte," 5 January 1945, 1-4, G-2 Memoranda and Papers, 1943-1945, CAVR-112-2.18, Box 18092, Entry 427, RG 407, NA. See also Annex 2 ("Diagrams of Enemy Fortifications") and Annex 3 ("Individual Viewpoints") of this report.

⁴² "Regimental Diary," 24-26 November 1944, 29 November-9 December 1944, RG 407, NA; "Historical Report (Leyte)," 4-7, *ibid.*

the enemy. In the interwar years, the U.S. Army focused its collective training on honing the infantry-artillery team. Additionally, changes in force structure reduced the number of riflemen in a regiment while increasing the amount of crew-served weapons (and thus bolstering unit firepower). Drea concludes that the Army had a “doctrine problem” in SWPA. “It trained men for open, mobile warfare emphasizing machines and then had to consign them to primeval jungle swamps to root out stubborn defenders in a manner more reminiscent of tenth- rather than twentieth-century warfare.”⁴³ Outfits fighting in the European Theater ran into similar problems. In his study of a U.S. infantry division that fought in Italy, John S. Brown suggests that all units had difficulty at first with “putting line-breaking routines together” and places most of the blame on a formal pre-combat training program that emphasized mobile warfare.⁴⁴

Attacking prepared positions impervious to concentrated firepower called for the 112th to make something more than a small shift in its normal activity. Although it did not demand the creation of new tactical doctrine, successful completion of the task involved a deviation from prior doctrinal conditioning. As Jackson asserts, such discontinuous change is “usually pursued intentionally and requires a more complex learning process than continuous efforts do.”⁴⁵ Learning occurred in the 112th, but it took place incrementally and not on the scale or at the level necessary to improve substantially in the area of assaulting Japanese strongpoints.

One of the factors explaining why the outfit failed to make a deliberate attempt to fix this problem entailed the 112th’s status as a separate regiment. As such, it fell under the immediate control of Sixth Army. Sometimes the unit was attached to corps or divisions for portions of campaigns, but even then it never trained under the supervision of these elements or directly

⁴³ Edward J. Drea, *In the Service of the Emperor: Essays on the Imperial Japanese Army* (Lincoln: University of Nebraska Press, 1998), 62-63. Quote on p. 67.

⁴⁴ Brown, *Draftee Division*, 156. Brown labels rupturing defensive lines as “the most challenging of military operations.”

⁴⁵ Jackson, *Aptitude for Destruction*, vol. 1, 16. The idea of discontinuous change also suggests that attempts to break away from established biases demand a similar level of purposeful energy in the learning process.

tapped into their lesson-learning processes. Historian Peter R. Mansoor would find this significant, as well as unfortunate. In *The GI Offensive in Europe*, he argues that the U.S. Army in World War II instituted new tactics, techniques, and procedures principally at the division level. Corps and army commanders were too far removed from combat to play a meaningful role in this process. Likewise, since they had to devote much of their attention to the current fight, regimental commanders were hard pressed to develop and implement consequential, widespread changes. With the appropriate focus, staff manning, and organizational clout to husband training time and resources, the division was the key echelon for codifying, refining, and disseminating innovative procedures to overcome unforeseen obstacles.⁴⁶ With respect to SWPA, one can make a similar argument. The 1st Cavalry, for example, enjoyed widely recognized success, having fought and trained as a division in theater.⁴⁷ Lacking division-level oversight to shepherd it through the learning process, the 112th seems to have suffered by comparison.⁴⁸

⁴⁶ Mansoor, *GI Offensive in Europe*, 129, 159, 256.

⁴⁷ See HQ, 1st Cavalry Division, "Historical Report of the 1st Cavalry Division, K-2 Operation, 20 October to 25 December 1944," 4 March 1945, 5-8, R-11214, Combined Arms Research Library, Fort Leavenworth, Kans. The 1st Cavalry trained as a division in Australia prior to fighting on the Admiralty Islands. There, it trained for several months before moving on to campaigns at Leyte and then Luzon. Given Mansoor's argument, it would be revealing perhaps to examine the lesson-learning processes, training programs, and future combat performance of the units that fought in the 1944 New Guinea campaign. Sixth Army's basic unit of employment in that fast-paced campaign was generally the regimental combat team (RCT), which meant that many divisions were split up and may have missed the opportunity to train and fight together. For an insightful analysis of that series of operations, see Stephen R. Taaffe, *MacArthur's Jungle War: The 1944 New Guinea Campaign* (Lawrence: University Press of Kansas, 1998).

⁴⁸ As a case in point, when it returned from the Driniumor River to a base area on the New Guinea coast, the 112th drafted an ambitious six-week training plan. What actually transpired was not nearly as productive as leaders envisioned. Shortly after it began the program, the unit received an order to conduct security patrols and guard duty in the jungle for eighteen days. The regiment finished this tasking in time for a week of amphibious warfare training at the behest of Sixth Army and later complied with the requirements of a TO&E change that entailed the creation of a weapons troop in each squadron. It departed for Leyte on the heels of this dizzying reorganization having followed the path of least resistance when it came to training. Individual basic skills, weapons familiarization, and subjects suitable for classroom instruction were addressed. Complex tasks, like attacking strongpoints, were not. The two weeks between the end of the Leyte campaign and arranging for the move to Luzon, of course, left little time to correct any training shortfalls. See entries in "Regimental Diary," 1 September-27 October 1944, 31 December 1944-13 January 1945, RG 407, NA; HQ, 112th Cavalry, Training Memorandum No. 1, 17 August 1944, S-3 Annex, Historical Report, CAVR-112-0.3, Box 18082, Entry 427, *ibid.*; and Alexander M. Miller, III, "Journal of Colonel A. M. Miller," n.d., 2-8 October 1944, author's collection.

Mansoor's assertion notwithstanding, the Sixth Army commander tried to institute new procedures to address a theater-wide issue, but the impact of his efforts seems to have been minimal. Krueger's proposed answer to the problem of attacking enemy fortifications involved the creation of a permanent platoon-sized organization, the assault party, within each battalion and squadron. A June 1944 training directive outlined the structure and equipment of the new formation, as well as a basic conception of how units would employ it to close with and destroy stubborn Japanese positions.⁴⁹ After pulling off of the Driniumor line, the 112th faithfully complied with the instructions by establishing assault parties and then practicing their principal task a few times in the interlude before the next campaign. This focused collective training was inadequate in both frequency and rigor, and Sixth Army performed no external check to ensure otherwise.⁵⁰ Not surprisingly, the 112th rarely – if ever – used its squadron assault parties for the purpose that Krueger intended. According to the general's own ruthless critique of his army's actions halfway through the Leyte operation, the same held true for other units.⁵¹ Indeed, combat on Leyte suggested something about the futility of instituting organizational change through memorandum alone.

Once acquired from higher headquarters, knowledge pertaining to the reduction of Japanese strongpoints was difficult to interpret and distribute given the limited time available, the assortment of other demands imposed upon the 112th's leaders, and the complexity of the task itself. The proposed change that Krueger introduced entailed a considerable shift for units used to

⁴⁹ HQ, Sixth Army, Training Memorandum No. 18, 22 June 1944, 106-3.01, Box 2450, Entry 427, RG 407, NA. The Sixth Army staff also found time to publish "Combat Notes," a compilation of lessons learned drawn from the experience of several units across SWPA. Sixth Army issued a total of ten volumes throughout the war. The second, appearing in July 1944, addressed the problem of attacking Japanese fortifications. HQ, Sixth Army, "Combat Notes," vol. 2, 15 July 1944, 106-3.01, Box 2450, Entry 427, RG 407, NA.

⁵⁰ "Regimental Diary," 11-19 September, 19-27 October 1944, RG 407, NA; HQ, 112th Cavalry, Training Memorandum No. 15, "Squadron Assault Parties," 15 August 1944, S-3 Annex, Historical Report, CAVR-112-0.3, Box 18082, Entry 427, *ibid*.

⁵¹ HQ, Sixth Army, "Mistakes Made and Lessons Learned in the K-2 Operation," 4, 6, Krueger Papers, United States Military Academy, West Point, N.Y.; Nat Campos, interview by author, Dallas, Tex., 13 October 2001, author's collection.

relying largely on firepower to destroy the enemy. The idea of discontinuous learning suggests that adopting such a change would have required a serious investment in training on the part of Sixth Army and its subordinate commands. Making such an investment – even if it was considered – would have been wishful thinking. What essentially happened then is that Krueger provided explicit knowledge in the form of a written directive on how best to eliminate enemy fortifications but offered no opportunity to share tacit knowledge related to the task (if it even existed in Sixth Army). Without both types, prospects of implementing a new tactic were dim.⁵²

The GIs of the 112th began the Luzon operation with a good deal of combat experience. Yet the variety of circumstances in which they fought meant that there were limits on how well the cavalrymen could leverage that experience. Knowledge acquired in prior campaigns led to many lessons as soldiers interpreted new information and developed methods and approaches better suited to the situations they faced. In many cases, past experience facilitated interpretation and even encouraged adaptation. The outfit attempted to capitalize on lessons learned in battle and no doubt benefited from this practice, but seldom did it face the same scenario in the next operation. Each one presented new challenges. Though the 112th's gradual introduction to the difficulty and severity of combat in SWPA had worked to its advantage, progress was not simply a matter of building on experience and continuously honing a small set of relevant collective skills. It was also a matter of discovering formerly unidentified shortcomings and taking action to improve them. Different situations demanded that learning occur in different ways. Experience tended to help, but only in areas suitable for incremental improvement. Complicated tasks demanding a substantial shift in the regiment's behavior called for a more deliberate effort.

⁵² Jackson, *Aptitude for Destruction*, vol. 1, 47.

THE DEFENSE OF HOT CORNER: EXPERIENCE AND LEARNING

For the troopers of the 112th, the learning curve for defensive operations on Luzon was not particularly steep. The experiences of Arawe and the Driniumor had taught them much, and the regiment could rely on the lessons of those campaigns as it confronted Japanese threats it had faced before, namely frequent attempts at infiltration and the occasional platoon or company-sized assault. Still, there were new tests to meet. Its missions on Luzon required the unit to operate over a much broader area than ever before. More notably, enemy artillery presented the cavalymen with a problem that until February 1945 had never been a terrible concern. Despite this unfamiliar menace, some leaders found that experience served as a springboard for adaptation. Yet, biases and expectations formed earlier could also hinder the acceptance of innovative techniques. Elements of the organization encountered obstacles to the interpretation of new knowledge, but the regiment generally adapted well, validating previous lessons learned on perimeter defense while developing new techniques to deal with new challenges.

Landing at Lingayen Gulf on 9 January, elements of Krueger's Sixth Army advanced through the wide corridor of the Central Plains toward Manila, some 120 miles to the south (see Figure 1). After two weeks of successful offensive action on Luzon, American forces had secured their base area as well as key terrain that controlled access to the Central Plain. These gains, plus the arrival of reinforcements, set the conditions for an all-out drive on the capital city, a move that would bring Sixth Army into contact with the eighty thousand men of Shimbu Group. One of three sizeable enemy concentrations on the island, its units defended the southern half of Luzon, including the area east of Manila.⁵³ Throughout the campaign, GIs of the 112th would find themselves engaged with soldiers belonging to this group.

⁵³ HQ, Sixth Army, "Report of the Luzon Campaign, 9 January 1945-30 June 1945," vol. 1, 1, 17-26, 106-0.3, Box 2401, Entry 427, RG 407, NA; Robert Ross Smith, *United States Army in World War II: The War in the Pacific: Triumph in the Philippines* (Washington, D.C.: GPO, 1963), 94-97. Of the two other concentrations, Shobu Group was the largest, consisting of over 150,000 men and occupying the

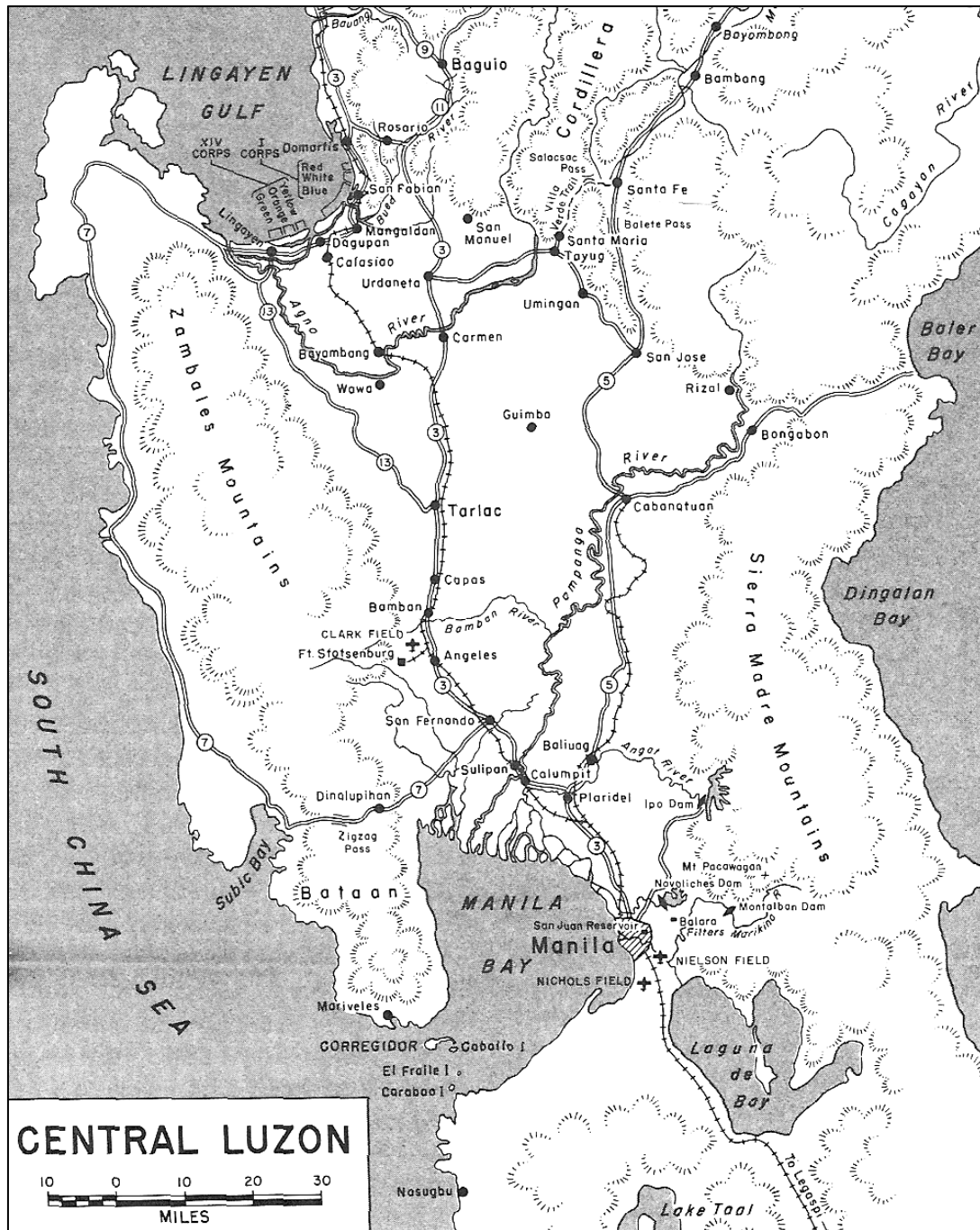


Figure 1 – Central Luzon.⁵⁴

portion of Luzon east and north of Lingayen Gulf. The thirty-thousand-strong Kembu Group took up positions in the mountains west of the Central Plains.

⁵⁴ Karl C. Dod, *United States Army in World War II: The Technical Services: The Corps of Engineers: The War Against Japan* (Washington, D.C.: GPO, 1966), 589.

By the time it arrived at Luzon on 27 January, the 112th possessed a stable and seasoned core of senior leaders. Its squadron commanders had served with the organization long before Pearl Harbor and had been in position from the time of the Driniumor operation. Colonel Alexander M. Miller joined the regiment while it was still stateside and assumed command from Julian W. Cunningham when the latter received a promotion to brigadier general just prior to the Arawe campaign. At that point, Cunningham took charge of a newly formed task force (essentially a regimental combat team or RCT) that had as its sole maneuver element the 112th Cavalry.⁵⁵ While the unit's table of organization and equipment was modified on occasion, this command arrangement remained in place until the occupation of Japan.⁵⁶

As the fight in Manila intensified, Krueger attached the 112th to the 1st Cavalry Division and thus committed the RCT to its first combat mission on Luzon. Traveling south to within fifteen miles of the Philippine capital, the cavalrymen assumed responsibility for securing a sixty-mile stretch of Sixth Army's main supply route running from the town of Cabanatuan to Manila. With its troops distributed throughout this expansive area of operations, the 112th conducted aggressive patrolling in conjunction with local guerrillas and slowly pushed its line of observation posts (OPs) toward the high ground east and northeast of Manila. These efforts brought the

⁵⁵ "Historical Report (Arawe)," 1, RG 407, NA; Miller Journal, 10 October, 15 November 1943, author's collection.

⁵⁶ The unit TO&E in effect on Luzon had undergone several changes, most recently in October 1944 ("Historical Report (Leyte)," 1, RG 407, NA). The 112th was organized differently than the infantry regiments that comprised the bulk of Sixth Army. Instead of three battalions, Miller's cavalry regiment had only two squadrons, each with three line troops, a headquarters detachment, and a weapons troop consisting of light and heavy machine guns and 81-mm mortars. There were also separate headquarters and service troops. The former contained a reconnaissance platoon and an antitank platoon whose towed 37-mm guns the cavalrymen had found ill-suited for offensive operations over rough terrain. Conspicuously absent from Miller's organization was a cannon company equipped with self-propelled 105-mm guns, which infantry units employed effectively in the direct-fire mode (see Cannon, *Leyte*, 249, for assessments of the 37-mm antitank gun and the regimental cannon company's weapons). The 112th came out on the short end in terms of authorized strength as well, possessing only 2,000 slots compared to an infantry regiment's 3,120. For the 112th's authorized strength under this TO&E, see "Strength of Command by Unit or Detachment, 22 November 1944" in the S-1 Annex of "Historical Report (Leyte)." For the authorized strength of an infantry regiment, see Drea, *Defending the Driniumor*, 55. Throughout most of their campaigns, the troopers could rely on the indirect fire support provided by the 105-mm howitzers of the 148th Field Artillery Battalion, the other major unit assigned to Cunningham's RCT. However, the habitual relationship with this direct support battalion did not constitute a special advantage. All told, the 112th went into battle with fewer riflemen and far less firepower than its infantry counterparts.

regiment into contact with Japanese forces manning the northern flank of the Shimbu Line, a series of defensive positions arrayed in depth and nestled in mountainous terrain for a length of approximately thirty-five miles. The RCT's later attachment to 6th Infantry Division and XIV Corps evolved out of Sixth Army's growing concern for the threat posed by the enemy east of the capital but resulted in no significant change in the troopers' activities until April. For the 112th, combat at its highest intensity during this period consisted of a succession of isolated troop-sized engagements in which the cavalymen exchanged blows with the enemy in sector.⁵⁷

When the RCT shifted south in early February to protect the 1st Cavalry Division's flank and rear, Cunningham oriented his forces chiefly on the mountains surrounding Ipo Dam, almost twenty miles northeast of Manila. At Ipo, an estimated six to ten thousand enemy soldiers formed the right flank of the Shimbu Line. Establishing a thin screen of platoon and troop-sized outposts, Lieutenant Colonel D. M. McMains distributed his 2d Squadron along a lengthy stretch of Highway 5. Clyde E. Grant's 1st Squadron assumed a more concentrated posture much nearer to the Ipo area. Assigned an area of roughly twenty-five square-miles, Grant arranged his outfit in the shape of a diamond. Its eastern point lay eight miles away from the dam at an intersection where the 1st Cavalry Division's main supply route ran closest to the Shimbu Line defenses before turning southwest to the capital (see Figure 2). It had not taken long for 1st Cavalry troopers to learn that the spot marked a popular target for the enemy's artillery, and, consequently, they had dubbed the location "Hot Corner." Here, Grant posted Captain Frank Fyke's C Troop.⁵⁸

⁵⁷ HQ, 112th RCT, "Historical Report, 27 January 1945 to 30 June 1945," 15 July 1945, CAVR-112-0.3, Box 18085, Entry 427 [hereafter, "Historical Report (Luzon)"], 9 February-2 April 1945, RG 407, NA; HQ, Sixth Army, "Luzon Campaign," vol. 1, 37-41, 72-73, *ibid.*; Smith, *Triumph in the Philippines*, 367-68. As the fight in Manila reached its climax, Krueger ordered an attack on the Shimbu Line in order to secure the Ipo and Wawa Dams. The general considered these facilities important because they were thought to control substantial quantities of Manila's water supply. He directed XIV Corps to launch its initial thrust directly east of the Philippine capital toward Wawa Dam. In the meantime, the 112th maintained its patrolling operations as it screened the corps' left flank and along the main supply route.

⁵⁸ "Historical Report (Luzon)," 9-10 February 1945, RG 407, NA; "Regimental Diary," 10 February 1945, *ibid.*; Frank C. Fyke, "Cavalry Troop (Dismounted) in the Defense," 27 May 1946, 2-4,

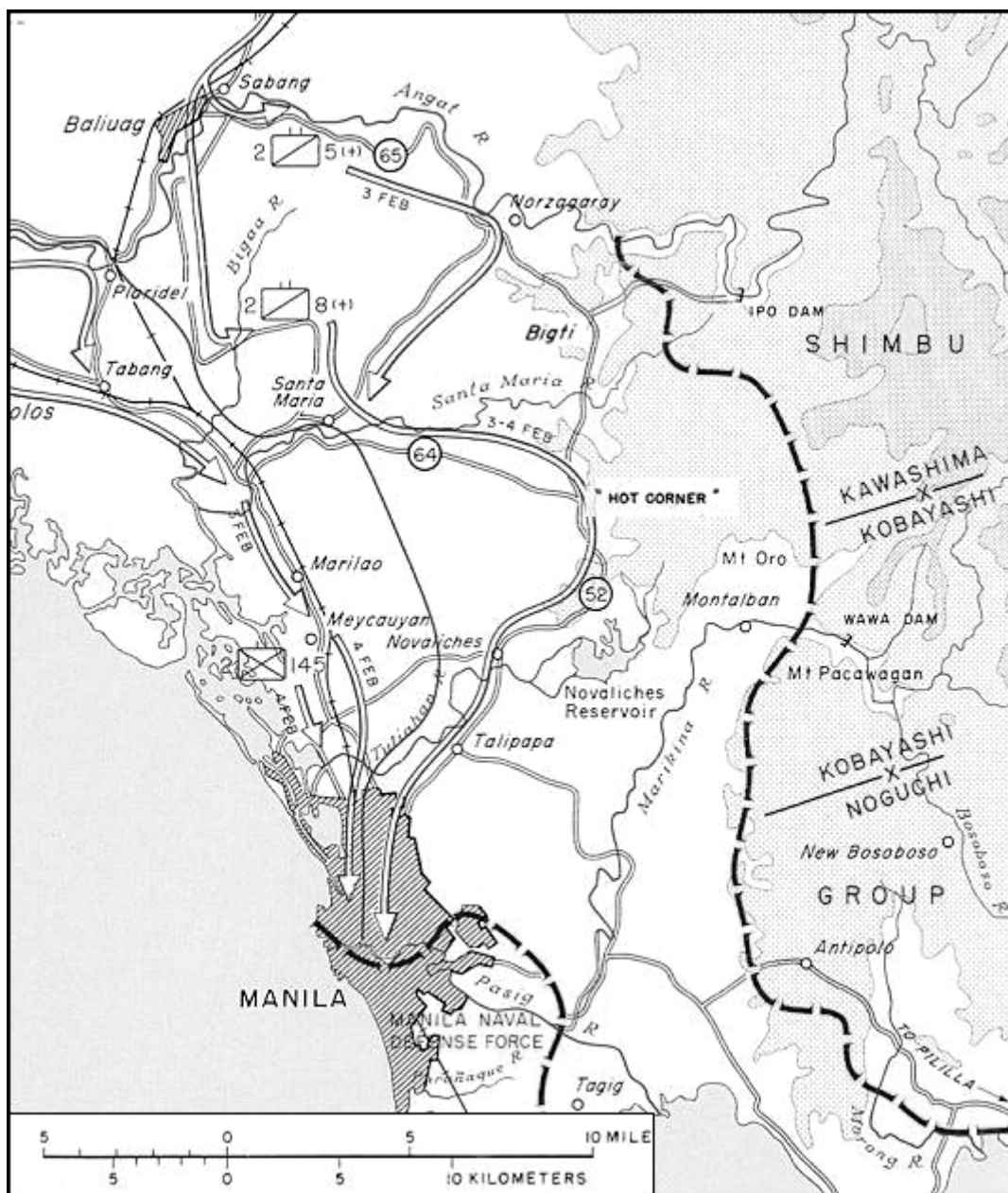


Figure 2 – Manila and Environs.⁵⁹

The 112th's successful stand at Hot Corner came about largely due to the application of previous lessons learned. More importantly, it demonstrates the extent to which the RCT had mastered the art of perimeter defense through a process of organizational learning. Arriving by

Personal Experience Monograph, The Cavalry School, Fort Riley, Kans., author's collection; Clyde E. Grant, interview by John B. Dunlap, Jr., Abilene, Tex., 16 November 1992, 33, *ibid*.

⁵⁹ Smith, *Triumph in the Philippines*, map V.

truck on the morning of 10 February, Fyke and his men relieved a unit whose commander described the recent enemy activity as unexceptional. It had consisted of intermittent salvos of artillery fire and limited probes against the position – nothing that led Fyke to expect a serious sustained assault. Still, no one could deny that the adversary was watching. Hot Corner was under observation from the mountains a mile or so to the northwest, and the small number of trees that dotted the area did little to provide cover or concealment. As he surveyed the open terrain descending gradually from the high ground of the intersection, Fyke determined that the Japanese could overrun a modest force like his, especially if it was unprepared for the onslaught. Such an attack, if it came, would most likely come from the north down the Metropolitan Road. However, Fyke, a veteran of the regiment's three earlier campaigns, knew the enemy enough to recognize that the main blow could fall anywhere. Based on his past experience, he also believed the Japanese would strike at night.⁶⁰

Accordingly, the captain organized his troop in a perimeter and took steps to guarantee the effective use of available firepower in hours of darkness. His men occupied Hot Corner accompanied by hard-hitting attachments consisting of two 37-mm antitank guns from regiment and a section of heavy machine guns from the squadron weapons troop. Anxious to avoid the possibility of squandering the effect of these primary direct-fire killing systems through a lack of coordination, Fyke carefully designated final protective lines to ensure that interlocking sectors of fire surrounded the whole perimeter. He filled in the gaps between these crew-served weapons with the troopers of his three line platoons. In each platoon sector, work began on the construction of a series of three-man foxholes to further solidify the defenses. Throughout the day on 10 February, the cavalymen entrenched, improved fields of fire, and test-fired their weapons. Besides the two 60-mm mortars organic to his troop, Fyke had at his disposal a section of 81-mm mortars detached from squadron. All four tubes registered on key approaches to the

⁶⁰ Fyke, "Cavalry Troop," 3-4, author's collection.

position, as well as on depressions in the terrain not covered by direct-fire systems. Grant also sent one of his artillery forward observer parties to Hot Corner. This team promptly established concentration areas five hundred yards north and south of the perimeter to assist with the rapid delivery of on-call fires from the 148th Field Artillery Battalion in direct support. Finally, Fyke dispatched local patrols to the surrounding area in an attempt to discover Japanese reconnaissance elements. The evening passed undisturbed. Only the billows of smoke, the faint glow of flames, and the near-constant rumblings of battle emanating from distant Manila served to enliven the dreary night watches.⁶¹

In their first engagement, the defenders of Hot Corner brushed aside the enemy in expert fashion. On the morning of 11 February, the Troop C commander was astounded to see an infantry company marching south down the Metropolitan Road seemingly unaware of his unit's presence. Fyke's mortars and .50-caliber machine guns opened fire at five hundred yards, shattering the Japanese column. The captain ordered a platoon to counterattack and observed as it moved forward on the far side of a small crest that ran along the road and thus out of the enemy's sight. He shifted fire as the platoon turned to assault the disorganized remnants who had not yet fled, keeping the stream of bullets from Hot Corner forty yards in front of the charging cavalymen. The rout soon ended, twenty-two Japanese soldiers having lost their lives. Returning to the perimeter, the attacking platoon brought several captured machine guns. Those that still functioned were incorporated into Troop C's defenses, adding firepower to a formation now brimming with confidence. According to Fyke, they would need every bit of it.⁶²

Over the next several days, the enemy operating from the northern reaches of the Shimbu Line subjected the troopers at Hot Corner to a frightful combination of artillery barrages and ground attacks. The assaults came during hours of darkness, and the Japanese often mounted them several times per night, threatening multiple sectors of the perimeter. The number of

⁶¹ Ibid., 4-5.

⁶² Ibid., 6-7.

soldiers involved varied from platoon to company, with the exception of the blow that fell in the early morning hours of 15 February. That night, a force of three hundred massed against the C Troop perimeter. Enduring preliminary bombardments, Fyke and his men held together to repulse each attack with machine-gun, mortar, and artillery fire. The unit even proved modestly successful against Japanese infiltrators, cutting down one equipped with a satchel charge and another carrying a container of gasoline before either could cause any damage. On another night, two enemy soldiers probing the position were killed – though not before one of them got close enough to lob a grenade into a platoon command post (CP).⁶³

Nevertheless, such lapses in security were rare at Hot Corner, and, on balance, previous experience served Troop C well. The outfit withstood a series of nightly ground attacks through careful preparation of its perimeter defense and the skillful application of available firepower. Both of these contributing factors were manifestations of past lessons learned. On Arawe, the regiment had acquired a practical knowledge of the basics of defense. The cavalrymen had learned how to employ their crew-served weapons effectively from fixed positions and how to react to enemy assaults in hours of darkness. The lessons of New Britain had also provided the troopers with a grudging recognition of the necessity for digging in, together with an awareness of the value of the three-man foxhole when it came to maintaining vigilance at night.

The desperate fight on the Driniumor elevated the challenge of tactical defense to a higher level as the 112th fought outnumbered from hasty positions against a 360-degree threat. There, the regiment broke up repeated Japanese charges with accurate and responsive mortar and artillery fire. Forward observers called for these devastating barrages by means of a system of concentration areas, painstakingly established and coordinated ahead of time at regimental

⁶³ “Regimental Diary,” 11-15 February 1945, RG 407, NA; HQ, 1st Squadron, 112th Cavalry, “S-2-3 Report, 27 January 1945 to 18 June 1945,” 12 February 1945, Journal/Diary, Luzon, CAVR-112-0.3.0, Box 18089, Entry 427 [hereafter, “1st Squadron S-2-3 Report (handwritten)”], *ibid.*; Fyke, “Cavalry Troop,” 8-12, author’s collection.

level.⁶⁴ For his unit's defense of Hot Corner, Fyke applied the same technique with equal success. "Our weapons registered on all key points outside the perimeter at the first possible moment after we took over the positions," he recalled. "Having done this, we knew the exact range to the [approaching] enemy column and were able to make direct hits on the target with our first rounds." This measure significantly reduced the need to adjust onto the target and thus averted the delay that would have ensued. In addition, Fyke noted that "numbered and plotted concentration areas for mortars and artillery facilitated our quick delivery of these fires in large quantities to any specified area surrounding the perimeter."⁶⁵ As a case in point, the two 105-mm howitzer batteries firing in support of C Troop essentially disrupted the 15 February attack before it even began. At dawn, patrols counted nearly fifty enemy dead in one of the pre-arranged concentration areas.⁶⁶

The skills learned at Arawe and the Driniumor were reinforced on Leyte, where troops routinely established defensive perimeters at night and fended off Japanese probes through the employment of their direct-fire weapons.⁶⁷ In this respect too, the men of Troop C drew on past experience as they prepared their position at Hot Corner. They paid careful attention to the positioning of their automatic weapons and the designation of sectors of fire because – as Fyke later maintained – they knew that, "in total darkness, machine guns are of little value to a defender unless they are employed with this type of coordination."⁶⁸ The basis of a claim like this was not instinctive. Experience derived from over a year spent fighting the Japanese helped Fyke and others realize the necessity of such steps. Likewise, the cavalymen's use of captured

⁶⁴ "Historical Report (Arawe)," 16-19, RG 407, NA; "Historical Report (Aitape)," 17, *ibid.*; Malcolm N. Moody, "Training of the 112th, February-December 1943," 3, author's collection; Philip L. Hooper, tape recording, Dickson, Tenn., 1 October 2001, *ibid.*

⁶⁵ Fyke, "Cavalry Troop," 14-15, author's collection.

⁶⁶ *Ibid.*, 12-13. Fyke was certain that many more enemy soldiers fell victim to the American artillery bombardment. Not counted were the numerous bodies almost surely evacuated by the Japanese during the night.

⁶⁷ HQ, 112th RCT, "Individual Viewpoints," 4, Annex 3 to "Lessons Learned in Combat, Leyte," RG 407, NA.

⁶⁸ Fyke, "Cavalry Troop," 14, author's collection.

machine guns illustrated their propensity to leverage the knowledge gained in previous campaigns. The majority of Fyke's troopers had been trained in the operation of Japanese infantry weapons, making it relatively easy for the captain to reinforce the most vulnerable sections of his perimeter. Using the guns in this manner provided a psychological advantage as well. Fyke and his soldiers had come to believe that the enemy tended to grow demoralized when taken under fire by his own weapons.⁶⁹

Thus as a subordinate organization of the 112th, Troop C had accumulated a body of technical and tactical knowledge that enabled the conduct of an effective perimeter defense. It had acquired this knowledge primarily through its own experience but also from the guidance of higher headquarters. For example, an October 1944 regimental training memorandum contained excerpts from a recent War Department publication entitled "Combat Lessons." This document included advice on the "organization of a defensive area for a platoon," addressing position selection, constructing fields of fire, and arranging for artillery support. At the time, Colonel Miller encouraged subordinates to read the material carefully. Implicit in his brief commentary was a warning not to accept this guidance at face value but rather to cull from it appropriate lessons that the 112th Cavalry could potentially apply in the future.⁷⁰

As the regiment arrayed its units to secure the 1st Cavalry Division's main supply route east of Manila, this same inclination to interpret new (and old) knowledge was evident, particularly in 1st Squadron's allocation of mortars to support its expansive area of responsibility. Grant's detachment of a section of his 81-mm mortars reflected a willingness to deviate from standard practice if the situation called for it. Past experience had taught the 112th the utility of pooling its organic indirect fire assets in order to deliver more potent barrages onto waves of Japanese attackers. Thus, in New Guinea, squadrons had concentrated into one "battery" the 60-

⁶⁹ Ibid., 7-8.

⁷⁰ HQ, 112th Cavalry, Training Memorandum No. 20, 9 October 1944, 1-4, Training Memorandums [sic], CAVR-112-3.13, Box 18093, Entry 427, RG 407, NA.

mm mortars usually attached to the line troops. This technique worked effectively when the regiment was arrayed in a relatively tight formation. With his unit spread out, Grant could hardly afford this degree of centralization. To better support his dispersed outposts east of Manila, he not only allowed the troops to keep their 60-mm mortars but also split up the 81-mm mortars that were normally retained under his direct control.⁷¹ Changing conditions also led to a subtle shift in the 112th's use of its anti-tank guns. Thick vegetation, rugged ravines and mountains, and impassable roads and trails had ruled out their employment at the front on Leyte and New Guinea. Consequently, the 37-mm guns remained in base areas.⁷² Luzon's much better transportation network and more open terrain meant that commanders could take advantage of their anti-tank weapons by attaching them to the line troops, and Grant did so at Hot Corner.

Taking knowledge acquired from internal and external sources and interpreting it as needed, the 112th then distributed that knowledge through a number of means. One was a deliberate process conducted at the conclusion of each operation in which troop commanders solicited their men – lieutenants and privates alike – for lessons learned. Leaders collated these, and ultimately the regimental staff compiled them into a report for Sixth Army. Though undertaken to fulfill a requirement, the practice provided a way for the 112th to reflect on its own experience and share that information within the organization. Stability among a core of unit leaders probably helped.⁷³ It is not hard to see how Fyke, having gone through two iterations of this process as a troop commander, could have benefited from the lessons learned by others in prior campaigns. As the next step in this formal process, the regiment generated a training plan

⁷¹ Fyke, "Cavalry Troop," 3, author's collection.

⁷² For the Driniumor campaign, the 37-mm guns remained in Aitape while the crews went forward to serve in other roles. The same seems to have occurred on Leyte – though initially the guns were positioned to defend against a possible enemy amphibious assault. "Historical Report (Aitape)," 1-2, RG 407, NA; "Historical Report (Leyte)," 12, *ibid.*; "Regimental Diary," 19 November 1944, *ibid.*

⁷³ Jackson, *Aptitude for Destruction*, vol. 1, 42. Jackson notes that groups with a stable membership are more likely to make incremental improvements, thus gradually building up expertise.

based in part on the knowledge gained in recent combat.⁷⁴ When time cut training opportunities short (as was usually the case), less formal methods of distribution brought new soldiers up to speed. Fyke himself counted on veterans to teach replacements the skills they would need to perform well in battle. It must have been gratifying to hear one of his corporals emphasize after the Leyte operation that this kind of training was indeed occurring in C Troop.⁷⁵

Viewing Troop C's road to success at Hot Corner through a lens of organizational learning, it seems clear that the 112th acquired, interpreted, and distributed knowledge effectively – at least with respect to the task of perimeter defense. The unit's operational environment afforded numerous opportunities for incremental learning in this area in every campaign from Woodlark to Leyte. Likewise, the communication mechanisms employed by the group allowed for the transfer of explicit and tacit knowledge. A deliberate collection of lessons learned at the conclusion of each operation captured for later use such pertinent information as Japanese tactics and the capabilities of weapon systems. More subtle lessons, like the psychological effect of firing at the enemy with his own machine guns, were disseminated among both veterans and new arrivals via informal methods. Stability in the officer ranks over months of campaigning enhanced the regiment's ability to distill and apply the appropriate lessons.⁷⁶

⁷⁴ An examination of several related documents provides evidence of this process. For examples of lessons learned attributed by name to individual soldiers and then submitted collectively at the troop level, see Troop C, 112th Cavalry, "Lessons Learned in Combat," 31 August 1944, Lessons Learned, 1943-1944, CAVR-112-3.01, Box 18093, Entry 427, RG 407, NA; and Troop E, 112th Cavalry, "Historical Report – Summary of Lessons Learned," 30 August 1944, *ibid.* Many of these lessons appeared in the compilation at regimental level (see "Historical Report (Aitape)," 15-18, RG 407, NA). The explicit connection senior leaders wished to establish between lessons learned and training can be seen in HQ, 112th Cavalry, Training Memorandum No. 1, 17 August 1944, S-3 Annex, Historical Report, CAVR-112-0.3, Box 18082, Entry 427, *ibid.* A similar process occurred after the Leyte operation. For example, see Troop C, 112th Cavalry, "Lessons Learned in Leyte Campaign," 4 January 1945, Lessons Learned, Leyte Campaign, CAVR-112-3.01, Box 18093, Entry 427, RG 407, NA; and HQ, 112th RCT, "Lessons Learned in Combat, Leyte," *ibid.*

⁷⁵ Frank C. Fyke, "Memoirs of Army Training and Combat in World War II," 1995, 22, author's collection. See also, Troop C, 112th Cavalry, "Lessons Learned in Leyte Campaign," RG 407, NA, where a comment attributed to Corporal Eckhardt read, "The older men know what to do and I have noticed that they do all in their power to help the green men get battle-wise in the shortest time possible."

⁷⁶ Jackson explains a number of characteristics and circumstances that affect learning, including the nature of group communications mechanisms, stability of membership, and the nature of the group's operational environment. Jackson, *Aptitude for Destruction*, vol. 1, 40, 42-43.

When it came to conducting perimeter defense on Luzon, the 112th relied on the knowledge it had learned over the course of three previous campaigns. In preparing fighting positions, establishing concentration areas for mortars and artillery, and incorporating captured Japanese weapons into the overall defense, Fyke and his men had drawn upon this knowledge. Undoubtedly, personal experience played a crucial role, but it went beyond that. The regiment interpreted and distributed the knowledge it had acquired and had done so in a way that enabled Troop C to fend off successive ground assaults once the time arrived for that unit to be tested at Hot Corner. There were, of course, limits to both knowledge and experience. Nevertheless, when the situation abruptly took a turn that the 112th had not expected, the regiment proved flexible enough to adapt in order to meet new challenges – or at least to mitigate their negative effects. C Troop’s defense of Hot Corner again provides an excellent example.

Throughout the period of his unit’s stand at the key intersection, Fyke worried most about the Japanese artillery and the toll it was taking on his men. From 11 to 15 February, enemy guns dug-in amid the mountains around Ipo Dam engaged in far more than harassing fire. Multiple bombardments fell on Hot Corner with an accuracy and intensity unprecedented in the 112th’s experience. Troop C actually sustained few casualties due to the protection its well-prepared fighting positions offered, but shellfire damaged several weapons and vehicles and nearly brought about a logistical catastrophe when the Japanese targeted a convoy delivering ammunition to the perimeter. Though Fyke was confident that his unit could hold its position indefinitely, he grew concerned with “the seemingly endless rain of artillery” and the nervousness it generated in a number of cavalymen. The captain’s escalating anxiety and frustration stemmed from the fact that a solution to the problem laid outside of C Troop’s reach.⁷⁷ Indeed, the enemy guns appeared to be largely beyond even the regiment’s ability to affect. To alleviate pressure on the key outpost, the 112th applied familiar technology and equipment in an untraditional way.

⁷⁷ Fyke, “Cavalry Troop,” 10-11, author’s collection. Quote on p.11.

The morning after the first heavy Japanese bombardment, Fyke radioed Grant and suggested he might need help. In response, the 1st Squadron commander alerted Troop A to the possibility of moving to reinforce Hot Corner and made arrangements to dispatch another heavy machine gun and anti-tank section to that location. Although these measures – along with Grant’s personal visit – may have comforted Fyke, they did little to ease the detrimental effects of enemy indirect fire. Rounds continued to fall on the position, sporadic shelling during the days and extended barrages at night lasting anywhere from thirty minutes to two hours.⁷⁸

Only Piper Cubs, liaison planes assigned to the 148th Field Artillery Battalion, offered the RCT a reliable means of finding the guns and then knocking them out with counter-battery fire. The 112th had a pair of these two-seater planes, but, in mid-February, one of them was grounded for mechanical repairs.⁷⁹ The demand on the functional aircraft was extraordinarily high given the RCT’s expansive sector and the Piper Cub’s tremendous versatility. Originally intended as aerial platforms for observing artillery fire, the 148th’s planes had also been used in previous campaigns to airdrop supplies, relay radio communications, fly commanders on reconnaissance missions, and even to redirect ground units that had lost their way in complex terrain.⁸⁰ Thus, it was nothing unusual for Grant to enlist the help of the Cub as a step on the way to silencing the guns pounding Hot Corner.

Yet this task proved more difficult than the 112th’s leaders imagined. As it turned out, the Japanese were adaptive as well and, quite aware of the danger Piper Cubs posed to their artillery, brought the shelling to a halt whenever the aircraft appeared. Later, Fyke learned that the opponent had taken to towing his howitzers into nearby caves to avoid detection from the

⁷⁸ Ibid., 8-12; “1st Squadron S-2-3 Report (handwritten),” 12-14 February 1945, RG 407, NA.

⁷⁹ Fyke, “Cavalry Troop,” 11-12, author’s collection.

⁸⁰ Julian W. Cunningham and Philip L. Hooper, interview by Robert Ross Smith, 8 April 1947, 1, Smith’s Interviews for *Approach to the Philippines*, USAMHI; HQ, 1st Cavalry Division, G-3 Journal, 11 December 1944, Item No. 1767 (1st Cavalry Division, Journal (G-3), 24 September 1944-26 December 1944), U.S. Army Armor School Research Library, Fort Knox, Ky.; “Historical Report (Leyte),” 6, RG 407, NA; Troop C, 112th Cavalry, “Lessons Learned in Leyte Campaign,” *ibid.*

air.⁸¹ When it was not committed elsewhere, the Cub searched for C Troop's tormentors, but it searched in vain. On 14 February, Fyke concluded, "The only way we could make the enemy guns cease firing was to keep a plane over his area constantly."⁸² Obviously, this was impossible, and Fyke knew it. Nevertheless, the captain had arrived at a technique that sought to harness as best he could the resources available. Though far from optimal, it seemed workable to a point. That night, after the enemy artillery began its bombardment of Hot Corner, Fyke requested the support of the Piper Cub. It mattered little that the RCT seldom used the plane in periods of limited visibility because the C Troop commander had given up any hope of actually finding the Japanese guns. By this time, he only wanted them to stop firing. Indeed, they did once the aircraft reached the area. The pilot remained on station for two to three hours, and, during this respite, Fyke's rattled GIs breathed a bit easier and braced themselves for the Cub's inevitable departure. This occurred around 0100. The shelling commenced again – this time in preparation for a Japanese infantry assault on the perimeter, which Troop C handily repulsed.⁸³

Although it led only to a temporary fix, the 112th's employment of the Piper Cub at Hot Corner offers some insight into the nature of organizational learning and adaptation. By deliberately using an aerial observer as a sort of switch to "turn off" the enemy's artillery, Fyke exercised a familiar asset in an innovative manner. Desperation contributed in no small way to this innovation, but so did the RCT's previous experience. In the operations preceding Luzon, the 112th often assigned missions to its Piper Cub crews that lay outside normal doctrinal bounds. The extent and frequency of these irregular missions seem to suggest that the pilots seldom minded. Indeed, in the case of developing techniques for aerial resupply in the mountains of Leyte, the pilots themselves were among the most zealous innovators.⁸⁴ What appears more

⁸¹ Fyke, "Cavalry Troop," 9, author's collection.

⁸² Ibid., 11.

⁸³ Ibid., 12.

⁸⁴ HQ, 112th RCT, "Supply of Troops by L-4 Aircraft," 1-3, Annex 1 to "Lessons Learned in Combat, Leyte," RG 407, NA.

important, however, is Fyke's logic as he sought a solution to the redoubtable problem of silencing the Japanese guns targeting his position. As he saw it, that solution required an atypical approach, and nothing in his mind kept him from asking that such an approach be taken. Moreover, his higher headquarters was willing to allow a valuable asset (in this case, its only functional liaison plane) to be employed in the unconventional manner that Fyke requested. In a sense, using the aircraft in a new way was nothing new at all. Innovation had become routine, and this in turn fostered further adaptation. Operating in such a climate, leaders in the unit seemed better postured to interpret previously acquired knowledge and apply it more readily to the different situations that confronted them.

A principal factor in the learning process as it unfolded at Hot Corner was the cavalymen's keen awareness of the Piper Cub and how it could be employed. In his discussion on organizational learning, Jackson states, "A group's ability to interpret new knowledge and put it to use is largely determined by the relationship between the new knowledge and what the group and its members already know."⁸⁵ This concept of "absorptive capacity" applies particularly well to technology. Machines or weapon systems comparable to those an organization already uses are easier to incorporate into that organization's activities. The tacit knowledge associated with both the new and old technologies is similar, so it takes less effort for members to learn how to operate them.⁸⁶ The 112th's familiarity with the versatile liaison plane probably made leaders better equipped to employ it in non-standard ways and more accepting of such ideas when GIs proposed them.

Moreover, a sufficient amount of absorptive capacity allowed soldiers to ascribe this quality of versatility to related technology and transfer it when the opportunity presented itself towards the end of the campaign. In June, Sixth Army began using helicopters to deliver supplies to units operating in mountainous areas inaccessible by truck. Mopping up remnants of the

⁸⁵ Jackson, *Aptitude for Destruction*, vol. 1, 41.

⁸⁶ Ibid.

Shimbu Group miles east of Ipo Dam, Lieutenant Colonel D. M. McMains sought to relieve his men from the tedious task of hand-carrying their wounded comrades over rough terrain to a base camp medical facility. He approached one of the pilots and suggested that basket-like frames welded on each side of the aircraft would increase the number of casualties it could evacuate. The next time pilots flew to McMains' position, their helicopters sported jury-rigged baskets, which boosted the maximum patient load from one to three. The same organizational capacity for devising new uses for the multi-functional Piper Cub enabled the regiment to develop innovative techniques for other supporting aircraft.⁸⁷

Troop C's stand at Hot Corner was not the only instance in which the outfit utilized the Piper Cub as a means to avoid the effects of enemy artillery. It appears that the 112th distributed this new knowledge and thus enabled other subordinate units to implement the associated technique successfully. As the regiment continued to carry out its screening mission on the corps' left flank through March and into April, Grant's 1st Squadron maintained a loose configuration of outposts southwest of Ipo Dam. On 11 April, the squadron's ration train had caught the attention of a Japanese OP and came under indirect fire twice during its trip to the frontline units, taking about a dozen rounds each time. To avoid the next day's expected shelling, the 112th arranged for a liaison plane to fly above the area while the ration train made its way back to base. This preventative measure ostensibly worked since the enemy's artillery did not engage what had so recently been deemed a worthwhile target. A Piper Cub provided overhead cover the following morning, and again the guns were silent as the convoy completed its mission safely.⁸⁸ In protecting the 1st Squadron's trains this way, the unit employed a technique first developed and tested by the C Troop commander in February. Yet by mid-April, a wounded

⁸⁷ "Regimental Diary," 16, 18, and 25 June 1945, RG 407, NA; Grant interview, 40, author's collection; D. M. McMains, interview by John B. Dunlap, Jr., Hilltop Lakes, Tex., 7 November 1992, 47-48, *ibid.*; Smith, *Triumph in the Philippines*, 421.

⁸⁸ "Regimental Diary," 11-13 April 1945, RG 407, NA.

Fyke was receiving medical treatment in the rear preparatory to evacuation stateside.⁸⁹ The knowledge gained at Hot Corner had been distributed broadly enough to allow the organization to apply it without the innovator's input.

To be sure, the 112th did not employ the Cub in this role every time its soldiers took incoming. Such a response would have been impractical given the high demand placed on the liaison aircraft as they performed multiple functions throughout the RCT's expansive sector. In any case, the instances in which the unit came under heavy, prolonged artillery fire were few. After C Troop's trial at Hot Corner in February, elements of the regiment suffered through intense bombardments only twice more. The outfit that relieved Fyke at the key intersection and portions of 1st Squadron conducting a reconnaissance-in-force just east of the Metropolitan Road both endured hour-long barrages, each with a cost exceeding twenty-five casualties.⁹⁰ The former sheds some light on the barriers to the interpretation and distribution of knowledge and highlights the ambivalent nature of experience as well.

When Captain Leonard Johnson's B Troop took over from Fyke on the afternoon of 15 February, information exchange occurred at various echelons. GIs pulling out of the position advised their replacements to dig in immediately, and, aware that they were under observation from the mountains to the northwest, the newcomers wasted no time arguing. At another level, Fyke briefed Johnson on the situation before he departed with his unit, but the seriousness of the threat posed by the enemy gunners must have been misunderstood or poorly conveyed. The B Troop commander found the defensive layout he had inherited unsatisfactory. Though no less experienced than Fyke, he nonetheless saw the ground differently and chose to place his soldiers in a much tighter perimeter, consolidating around a stone farmhouse near the intersection. This

⁸⁹ Frank C. Fyke, "A Reconnaissance-in-Force By 1st Squadron of the 112th Cavalry, 9 April 1945," 31 August 1997, 5, author's collection.

⁹⁰ On 16 February, an artillery barrage killed 2 and wounded 40, including 12 guerrillas. Another bombardment on 9 April killed 7 and wounded 21. "Regimental Diary," 16 February 1945, RG 407, NA; "Historical Report (Luzon)," 9 April 1945, *ibid*.

more compressed formation likely accounted for the casualties his outfit sustained the next day. On the afternoon of the 16th, the Japanese subjected the cavalrymen at Hot Corner to a lengthy bombardment that killed two and wounded forty, including a dozen guerrillas. Aside from sporadic artillery fire and probes by small groups of infiltrators, Troop B faced nothing else in the way of enemy activity during the remainder of its week securing the crucial outpost. Even so, the intensity of the shelling on their first full day in position made many soldiers thankful to leave when the time came.⁹¹

Captain Johnson's previous experience helps explain why he arranged his unit as he did. The lessons of prior campaigns taught the Troop B commander that he had more to fear from a Japanese ground assault than he did from their howitzers. Consequently, he positioned his men in a relatively compact perimeter, no doubt considering this tactical arrangement to be a more secure option in the event of a 360-degree night attack or infiltration. On New Guinea or Leyte, it probably would have been. On a piece of terrain known by the regiment to be a favorite artillery target for well-placed enemy forward observers and capable gun crews, Johnson's positioning proved unwise. Had he remained at Hot Corner to critique his peer's defensive preparations, Fyke might have said as much. Yet Fyke was gone, and whatever he had mentioned to the Troop B commander about the danger of Japanese indirect fire was not compelling enough to change Johnson's conception of what constituted the gravest threat to the outpost.

In a slightly different matter, the misleading effect of past experience was the same. Fyke's description of how he had employed the Piper Cub also seems to have made little impact on his successor. The outgoing commander had a good deal to tell about the role the aircraft played in mitigating the effect of the enemy's artillery. Just hours before Fyke handed Hot Corner over to B Troop, the RCT had given the Japanese reason to trust their fears regarding the plane. A Cub had spotted the flash of a discharging howitzer, and this discovery led to a

⁹¹ Malcolm N. Moody to David O. Hale, 9 December 1992, author's collection.

counterfire mission that resulted in the gun's destruction – thus accomplishing what the C Troop commander had hoped for all along.⁹² To Johnson though, the significance was not so clear. Fyke had weathered the storm of many barrages to arrive at his answer to the new but apparently now persistent menace of Japanese artillery. Unlike his colleague, the commander of B Troop lacked a pattern of personal experience to lead him to such a conclusion. He had to rely on the lessons Fyke had learned. At another level, the situation was similar for his men, yet they keenly dug in at the suggestion of their predecessors. The character of the threat had changed – perhaps to their surprise – but the change required them to perform a task with which they were quite familiar. The GIs thus had the absorptive capacity to adapt quickly.⁹³ Their captain did not in this instance. Johnson had to make a greater intellectual leap before he could consider adopting a technique that the organization had never attempted until the battle at Hot Corner. The informal method of knowledge distribution and the time allowed for his own interpretation of that knowledge were not enough to persuade him to employ the liaison plane in an unconventional manner. Nor were they sufficient to supplant the impressions Johnson had acquired through personal experience defending against the Japanese.

The mid-February fight at Hot Corner not only provides a case study for a successful perimeter defense but also fairly represents the 112th's performance of that task throughout the campaign.⁹⁴ Most importantly though, it illustrates the ambivalent role experience plays in the process of organizational learning. Depending on the conditions, experience can act as a barrier to learning the right lessons or serve as a springboard for further adaptation. Certain factors determine which of the two. The environment shapes an organization's opportunities to learn, providing either a sort of consistency in operations suitable to continuous improvement or a series of steadily mounting challenges that lead to new discoveries. Absorptive capacity shows how

⁹² "Regimental Diary," 15 February 1945, RG 407, NA.

⁹³ The concept of absorptive capacity, as discussed in Jackson, *Aptitude for Destruction*, vol. 1, 41, applies to more than just knowledge in the form of new technology. It can also involve new techniques.

⁹⁴ See "Regimental Diary," 17, 23 March, 17, 22 April, and 17, 20 May 1945, RG 407, NA.

units can bridge the gap from old to new tactics and techniques due to their familiarity with a related way of doing business. Lastly, the nature of group communication mechanisms affects how well different elements of the organization learn. The method used to distribute new knowledge must be appropriate to the kind of knowledge – explicit or tacit – being transferred.

AGAINST THE SHIMBU LINE: A STUDY OF INCREMENTAL LEARNING

While Lieutenant Colonel Clyde Grant managed the defense of Hot Corner, the 112th's fight on Luzon was fast becoming a war of patrols and OPs. The RCT continued to keep an eye on the Shimbu Line and began to test, with increasing frequency and intensity, the formidable enemy defenses in front of Ipo Dam. As it maintained a protective screen, the unit benefited from an environment that facilitated continuous improvement, particularly in the area of patrolling. The cavalrymen had conducted patrols since deploying overseas, and, while they had acquired some degree of expertise in the task, there was still much to learn. Absorptive capacity stemming from its past experience, coupled with the provision of adequate time, allowed the 112th to make the leap to night patrolling, a new method that enabled the troopers to probe the approaches to Ipo Dam in more depth. Gradual improvement in patrolling stood in contrast to a reconnaissance-in-force in April, when the outfit became immersed in a situation it was unprepared to handle. The hasty withdrawal that followed only reinforced the utility of incremental learning and the difficulty of discontinuous change.

To visualize the 112th's area of operations, it is helpful to picture a lazy square leaning east with the dam at its upper right-hand corner. Opposite this location was the 1st Squadron headquarters at Santa Maria, a town some fifteen miles north of Manila. Hot Corner was situated eight miles east along the square's base, and about an equal distance up its left edge laid Norzagaray. From this village, the path of the Angat River wound its way generally east into the mountainous Ipo area and eventually to the dam itself. Route 52, dubbed the Metropolitan Road, framed the right side of the square. From Hot Corner, the graveled road went roughly north to the

barrio of Bigti and at that point turned sharply east, cutting a passage through high, jagged ridges and up to the dam. Another road running from Bigti northwest to Norzagaray bisected the 1st Squadron sector across terrain that included a mixture of rice paddies, wooded hills, and jumbled rock outcroppings. The landscape became increasingly irregular and elevated as one neared Ipo Dam.⁹⁵ Second Squadron operated north of the Angat River. Initially, many of its troopers had their hands full guarding bridges and conducting local patrols along the main supply route. By mid-February however, McMains managed to free some units from these commitments, enabling him to send patrols east up the Angat River. Grant did the same along its southern banks while other elements of his squadron began to make their way cautiously toward Bigti and beyond.

The patrols dispatched at this stage of the campaign ran into advanced positions of the Ipo Dam defenses. These discoveries triggered platoon and troop-sized attacks that pushed the opponent back and allowed the 112th to gradually shift its outpost line east. On 17 February, a hard-fought action a mile or so west of Norzagaray demonstrated the capabilities of seasoned cavalymen in the assault. Days before, patrols along the Angat River had made several contacts with groups of thirty to forty Japanese soldiers and had come out on the winning end of these engagements with the help of the 148th's B Battery. Strengthened by a platoon of guerrillas and nearly another from C Troop, Captain Harmon Boland's Troop A went forward on the morning of the 17th after a powerful artillery barrage. Though bumping into resistance, Boland sustained the attack all day and coordinated effective indirect fire support for his men through his artillery observer and the Piper Cub overhead. Two more platoons from E Troop joined the fight later in the day, enabling Boland to clear the area his men had seized. By evening, he had established his next line of OPs. The captain believed afterwards that his reinforced unit had gone up against three hundred soldiers, and the 120 dead Japanese that remained around the position suggested as

⁹⁵ Fyke, "Reconnaissance-in-Force," 2, 4, author's collection; Smith, *Triumph in the Philippines*, 405.

much. U.S. and guerrilla losses amounted to only five wounded.⁹⁶ Such one-sided victories were not uncommon as the 112th drew closer to the Shimbu Line.⁹⁷

Success during this early stage of operations on Luzon confirmed what the regiment had previously learned about how well the enemy performed defensively under certain circumstances. At Arawe, green cavalymen acquired a grudging respect for the skill and tenacity of the Japanese soldiers fighting them from a network of prepared positions concealed in the jungle's thick foliage. They were less impressed with the force they faced along the Driniumor River, where the opponent lacked this elaborate defense. Carrying out a number of successful counterattacks in the aftermath of failed assaults on their perimeter, troopers regarded the enemy as "'easy' when caught out of his fox hole."⁹⁸ With a sort of smugness, some took heart at what seemed to be the start of a downward spiral of Japanese morale.⁹⁹ As its members gained more combat experience, the 112th viewed the enemy with finer nuance. On Leyte, the unit encountered its adversary in a number of different tactical situations, thus prompting mixed reviews on Japanese defensive capability. In the open, the opponent was practically a pushover and simply abandoned valleys and streambeds after taking artillery fire. When firmly entrenched though, the Japanese remained a worthy opponent, ensconced in camouflaged fortifications atop wooded ridgelines in defiance of the RCT and nearly all it could bring to bear.¹⁰⁰

Leaders of the 112th effectively applied this knowledge in their initial moves toward the Shimbu Line. Assaults like the one orchestrated by Captain Boland west of Norzagaray took place across terrain far less daunting than the rugged high ground dominating the approaches to the Ipo Dam. They also fell upon the enemy's forward defenses, positions much weaker by

⁹⁶ "Regimental Diary," 14-17 February 1945, RG 407, NA; "Historical Report (Luzon)," 17 February 1945, *ibid.*; HQ, 1st Squadron, 112th Cavalry, "S-2-3 Report, 11 February 1945 to 20 February 1945," 16-17 February 1945, Patrol Reports, Luzon, CAVR-112-SQ(1)-2.11, Box 18094, Entry 427 [hereafter, "1st Squadron S-2-3 Report (typed)"], *ibid.*

⁹⁷ For other examples, see "Historical Report (Luzon)," 13-14, 18 February 1945, RG 407, NA; Melvin J. Waite, "The Journal of Melvin J. Waite," 29, 1995, author's collection.

⁹⁸ Quoted in "Historical Report (Aitape)," 15, RG 407, NA; "Historical Report (Arawe)," 14, *ibid.*

⁹⁹ "Historical Report (Aitape)," 15, RG 407, NA.

¹⁰⁰ HQ, 112th RCT, "Lessons Learned in Combat, Leyte," 3-4, RG 407, NA.

comparison to those in the mountains a little further east. Boland seemed to sense these favorable conditions before and during the battle. Emboldened by the strong performance of his patrols, he launched an attack to extend the outpost line. The progress of the advance reassured him, as did the visible effects of his artillery support. Boland requested reinforcements but did so in a state of confidence – not panic – knowing that their commitment would finish off the enemy and enable Troop A to secure its gains.

Units facing different scenarios around the same period showed less enthusiasm but drew upon the same refined understanding of the opponent's capabilities. Following a surprise attack on an enemy formation, elements of 2d Squadron pursued large numbers of fleeing Japanese through some vegetation and found that they had retreated into a series of caves. It took little time to determine that the attackers could not approach the well-protected position without exposing themselves to heavy machine-gun fire, and the discovery was enough to suspend further offensive action against this particular group.¹⁰¹ Future operations against cave defenses were characterized by a similar reluctance to launch an assault outright. With the initial detection of such sites, the 112th saw no reason to eliminate them immediately. Instead, the unit marshaled additional support in the form of airpower or guerrilla detachments. Cavalrymen sometimes found themselves clearing caves along the outpost line, but the performance of this duty came only after aerial or artillery bombardments had prompted the occupants of those positions to vacate them.¹⁰²

No doubt, the 112th had acquired an appreciation of Japanese strengths and weaknesses, to include an awareness of the conditions that tended to accentuate or offset those abilities. Troopers encountering the enemy in the open seized the initiative and pressed the attack. Those who located a possible strongpoint exercised caution. Leaders recognized these conditions as

¹⁰¹ "Regimental Diary," 19 February 1945, RG 407, NA.

¹⁰² For two separate incidents of the 112th's approach to cave defenses, see "Regimental Diary," 15-16 March 1945, RG 407, NA.

cues to guide their actions, signifying that the organization had learned from the experience of its three campaigns and had preserved this knowledge for follow-on application.

Although the 112th's patrolling operations had improved over time, they still suffered from notable shortcomings. Combat on Arawe had revealed the great value of the small, four-man reconnaissance patrol for pinpointing concealed enemy bunkers. Routine patrolling also familiarized troopers with the importance of stealth in movement and how to employ indirect fire support in the jungle. The more fluid environment on the Driniumor placed a higher premium on the intelligence that only patrols could provide and thus pushed GIs to the breaking point. Senior commanders dispatched patrols with greater frequency and into ostensibly more dangerous situations. Plenty of resentment accompanied this change, and cavalymen complained about the RCT's perceived inability to coordinate and support these activities. For his part, Cunningham suspected that many patrol leaders simply hid out in the jungle for a few hours rather than carry out their missions. The lessons learned on Leyte faintly echoed these criticisms but generally assumed a less scathing tone, perhaps because most realized after this campaign that effective patrols ultimately saved time, energy, and lives.¹⁰³

Commanders on Luzon sought to harness this recognition of the value of patrolling as they took steps to correct the problems GIs and their leaders had observed in prior campaigns. The regiment's mission helped in this regard. The essence of screening was patrolling, and the assignment demanded that the unit establish a routine for conducting reconnaissance of the enemy sector while preventing Japanese units from doing the same. Besides detachments for local security, troops sent out at least one other patrol per day. Leaders tailored these elements

¹⁰³ "Historical Report (Arawe)," 17-18, RG 407, NA; Troop C, 112th Cavalry, "Lessons Learned in Combat," 31 August 1944, 2-3, 6, 8, Lessons Learned, 1943-1944, CAVR-112-3.01, Box 18093, Entry 427, *ibid.*; Troop E, 112th Cavalry, "Historical Report – Summary of Lessons Learned," 30 August 1944, *ibid.*; HQ, 112th RCT, "Individual Viewpoints," 1-4, Annex 3 to "Lessons Learned in Combat, Leyte," *ibid.*; Troop C, 112th Cavalry, "Lessons Learned in Combat," 31 August 1944, 2-3, 6, 8, Lessons Learned, 1943-1944, CAVR-112-3.01, Box 18093, Entry 427, *ibid.*; Robert Ross Smith, "Comments and Off-the-record Remarks to Cunningham-Hooper Interview," Smith's Interviews for *Approach to the Philippines*, USAMHI.

according to their purpose. Reconnaissance patrols consisted of four men under the direction of an officer or NCO and sometimes included a Filipino guide. Designed especially to avoid detection, their task entailed reporting on enemy activity to the rear of the OP line. Combat patrols varied in size but usually comprised a platoon of dismounted cavalry plus several guerrillas and perhaps an artillery forward observer. The 112th often dispatched these units in response to the findings of the four-man detachments.¹⁰⁴ Organizing multiple patrols and coordinating their movement was nothing new for the regiment, but the intensity of the practice escalated on Luzon.

Given the chance to focus on patrolling, the 112th improved its ability to keep its soldiers informed and to manage the activities of its wide-ranging detachments once they departed the bivouac area. First Sergeant Melvin Waite's CP near the Angat River was all about the business of running daily patrols. Situated in a Filipino house, the E Troop CP had on one wall a map depicting the tactical situation around Ipo Dam. Reports came in by radio almost constantly throughout the day as numerous patrols updated their locations by means of a system the troop commander developed. In the evening, the unit received its missions for the following twenty-four-hour period – sometimes from a squadron staff officer who visited the CP personally. Patrol leaders spent part of the night at the CP pouring over maps by flashlight and planning their operations for the next day. As an observer and participant in the process, Waite was impressed, boasting in his diary about “an ideal set-up . . . almost like a Hollywood scene.”¹⁰⁵ Across the regiment, the extent of preparation remained high even as the months passed. In May, Sergeant Allen Benton described how he and his soldiers “got all the information we needed” at a briefing by the squadron intelligence officer before heading out on their mission.¹⁰⁶ After previous campaigns, feedback gathered during a review of lessons learned highlighted grievances from

¹⁰⁴ Regimental diary entries throughout March 1945 support this description of patrolling activity.

¹⁰⁵ Waite Journal, 32-33, author's collection.

¹⁰⁶ Allen H. Benton, “The Story of Two Combat Patrols, May 1945,” n.d., author's collection.

junior officers and enlisted men regarding the 112th's manner of coordinating its patrols. On Luzon, the regiment responded to this acquired knowledge by increasing staff involvement and emphasizing the importance of planning at squadron and troop level.

At the same time, the organization sought to improve the quality of intelligence that its patrols collected through a formalized system of reporting. After returning from a mission, leaders submitted a typewritten account of their unit's actions and often included a sketch with the narrative. Copies of these documents made their way from the troop CP up the channels to regimental headquarters, where Miller and his key staff officers reviewed them. Each began with a description of the patrol's composition in terms of men and equipment and then identified its mission. The amount of detail provided in the memoranda varied. Most ran well over a page in length and mainly described the terrain, enemy sightings, and encounters with natives.¹⁰⁷ Some leaders put forward a brief analysis of their observations, but what the reports really offered upper echelons of the RCT was an assurance that the patrols themselves actually occurred. A less pronounced kind of adaptation, the institution of this system probably served to alleviate the suspicions that Cunningham had harbored since the Driniumor. Knowing their words would be read by senior commanders and had the potential to set in motion a follow-on combat mission, patrol leaders tended to refrain from fabrications – or so the thinking went. The general may have been the only one to hold such thoughts at this stage. In any case, the system provided Miller with a document that could easily turn a patrol leader who had been merely lazy into a liar as well if there were cause to believe so.

Evidence of improved patrolling operations appeared not only in the 112th's overall system but also in the performance of its junior leaders. Troop B platoon sergeant Claude Riggsby recalled a growing confidence in his abilities on patrol in Luzon. Previous experience bore fruit

¹⁰⁷ See for example, HQ Troop, 112th Cavalry, "Patrol Report," 23 February 1945 and 24 March 1945; Troop F, 112th Cavalry, "Report on Combat Patrol to Minalungao," 1 March 1945; HQ, 1st Squadron, 112th Cavalry, "Patrol Report," 4 April 1945; all in Patrol Reports, 28 January-12 November 1945, CAVR-112-2.11, Box 18092, Entry 427, RG 407, NA.

as Rigsby demonstrated technical skill and found that he could trust his instincts. More telling was the impact such seasoned GIs seemed to have had on replacements reporting to the regiment. Fresh from the States, Sergeant Benton joined B Troop early in the campaign but, by April, considered himself a veteran when it came to operating behind enemy lines. He acquired a self-assured expertise in a short time, yet knowledge related to selecting suitable bivouac sites or recognizing the sign of a Japanese ambush before it was sprung did not come naturally.¹⁰⁸ He had to be taught, and he was – despite no formal program to train new arrivals.

Suffice it to say, a lack of training did not equate to a lack of learning. The unit's primary assignment on Luzon afforded numerous opportunities to conduct patrolling. In a sense, the operational environment provided a form of stability that allowed the cavalymen to learn the nuances of this skill incrementally. Thus, as the organization improved its ability to distribute explicit knowledge through patrol reports and pre-mission briefings, the circumstances of the campaign facilitated the dissemination of tacit knowledge, too. Longtime veterans like Rigsby shared their experiences with troopers like Benton. The latter had time to internalize this information – perhaps even saw it modeled for them – and then had several chances to practice what they had been taught informally. Together, the distribution of explicit and tacit knowledge enabled to the regiment to learn and improve.

Establishing a better system of planning and accountability for patrolling operations may have exhibited the 112th's ability to interpret previously acquired knowledge, but it did not necessarily guarantee adequate reconnaissance. In the running battle between patrols and OPs northeast of Manila, the regiment not only screened a corps flank but also sought to determine the strength and disposition of the enemy defenses. To fulfill this responsibility, the cavalymen had to infiltrate the Japanese outpost line along the Bigti-Norzagaray road and work their way through

¹⁰⁸ Claude R. Rigsby, interview by author, Dallas, Tex., 13 October 2001, author's collection; Allen H. Benton, "One Dark Night in Luzon," 4, n.d., author's collection; Benton, "Two Combat Patrols," *ibid.*

unfriendly territory in search of the fortifications that comprised the more robust main line of resistance concentrated in the mountains north, south, and west of Ipo Dam. For nearly all of February, the regiment's patrols failed in their attempts to pass undetected through the opponent's forward positions. This lack of progress attracted Cunningham's attention, and the general on one occasion sent a staff officer from RCT headquarters to the front with the purpose of accompanying a patrol. At the end of the month, a few detachments managed to cross the road, but the information they provided was not enough to satisfy Miller, who complained of "having difficulty finding much about the enemy main strength."¹⁰⁹

To help solve the immediate issue of penetrating the outpost line and gathering intelligence throughout the depth of the Ipo Dam defenses, the 112th built upon its prior experiences and devised new techniques based on the employment of familiar tools. The Piper Cub pilots continued to perform yeomen's work for the RCT by calling for fire on targets well beyond the observation of ground patrols. As usual, the planes proved their versatility, serving as aerial platforms for relaying the communications of distant patrols and flying commanders and patrol leaders on reconnaissance missions. Coordinating indirect fire support remained a strength of the RCT. Small units probing the Ipo Dam defenses often relied upon the destructive power of the 148th Field Artillery, with enemy groups that chose to engage American patrols paying a price at the hands of skillful forward observers.¹¹⁰ Taking a procedure tried as an emergency measure on Leyte, artillery units incorporated navigational assistance into their plan for supporting long-range patrols and oriented cavalymen behind enemy lines by periodically firing rounds at their maximum range along a pre-determined azimuth.¹¹¹ As in defensive operations, the 112th leaned heavily on the tools it had grown comfortable using over the course of three

¹⁰⁹ Miller Journal, 7 March 1945, author's collection; "Regimental Diary," 24-28 February 1945, RG 407, NA; "Historical Report (Luzon)," 28 February 1945, *ibid.*

¹¹⁰ "Regimental Diary," 23 February, 1, 8, 19, 28-29 March 1945, RG 407, NA. Experienced patrol leaders equipped with handheld radios also took a toll on the Japanese with their own calls for fire. Rigsby interview, author's collection.

¹¹¹ "Regimental Diary," 6-7 March 1945, RG 407, NA.

previous campaigns and again leveraged its absorptive capacity. Once familiar with the capabilities of these tools, the organization readily applied them in innovative ways.

One possible solution to the frustrating tactical situation west of the Shimbu Line forced the regiment to adopt a method deeply at odds with a view held by veteran cavalymen of all ranks. Troopers emerged from the Arawe operation conceding that small units needed to train at night in order to “overcome [the] natural fear of darkness and instill confidence and ability to move in the dark.”¹¹² However, leaders made no serious effort to improve at the time. Although the 112th routinely repulsed Japanese attacks that came after sundown, GIs refrained from their own night offensive operations, considering movement outside the perimeter (or even within it) not the worth the risks it posed. Lessons learned from the Driniumor and Leyte supported the convention of stopping activity early enough in the evening to avoid exhausting the men and to afford them the opportunity to dig in before dark. Officers voiced the strongest opinions on the issue, and even Cunningham accepted that “night marches should be attempted in the jungle . . . only in the most urgent situations.”¹¹³ This restriction applied to patrolling as well.

Tagged with the duty of reconnoitering the area west of Ipo Dam but faced with the dilemma of approaching those defenses across largely open ground, the 112th seemed ready to reconsider its stance on night operations. Patrols in the hours of darkness first took place in late February. One detachment’s success in confirming the location of a series of OPs with no loss in American lives encouraged the future use of the technique, and soon troops positioned west of the dam began regularly sending out patrols with the mission of performing reconnaissance or, on occasion, setting an ambush. These small units sometimes killed enemy soldiers, but the incidence of gunfights was sporadic. Patrols typically spent their time moving in the shadows

¹¹² “Historical Report (Arawe),” 18, RG 407, NA.

¹¹³ “Historical Report (Aitape),” 17, RG 407, NA; Troop C, 112th Cavalry, “Lessons Learned in Combat,” 31 August 1944, 15; *ibid.*; Troop F, 112th Cavalry, “Summary of Lessons Learned,” 30 August 1944, 2, Lessons Learned, 1943-1944, CAVR-112-3.01, Box 18093, Entry 427, *ibid.*; Troop C, 112th Cavalry, “Lessons Learned in Leyte Campaign,” 4 January 1945, *ibid.*

under the moonlit sky, halting periodically to watch and listen before proceeding to their next objective. Primarily seeking targets for air strikes, artillery barrages, or possible daytime combat patrols, it was in their best interest to avoid contact, and they generally did so – sometimes with the help of scout dogs that alerted troopers to the presence of nearby Japanese.¹¹⁴

The regiment did not, of course, attempt to mimic its foe by conducting platoon or troop-sized assaults in hours of darkness, for this certainly would have surrendered many of the firepower advantages the GIs possessed. But the organization wasted little time before it realized the utility of employing a few patrols at night as a means of evading observation, penetrating the Japanese OP line, and then discovering something about the situation in the enemy rear. A surprising development given the cavalrymen's well-documented aversion to this type of operation, it nevertheless illustrated the 112th's ability to transform common practice when new conditions suggested or demanded a reinterpretation of that practice. Night patrols were not what ultimately ground down the Ipo Dam defenses, but the RCT deemed them valuable enough to emphasize their importance as it prepared for the invasion of Japan.¹¹⁵ New experiences had indeed brought about a new way of thinking.

The 112th was able to break away from an organizationally accepted norm and adopt a different technique in combat for a number of reasons. For one, the regiment approached the change gradually. It came after a string of daylight patrols had failed and was fully adopted only when initial attempts at the new tactic proved successful. Unlike Captain Johnson at Hot Corner, leaders had the time and opportunity to consider the implications of the change and determine how best to deal with it. With respect to patrolling, the unit had a substantial capacity to absorb

¹¹⁴ "Regimental Diary," 28 February, 8 March-6 April 1945, RG 407, NA; "Historical Report (Luzon)," 23 February 1945, *ibid.*; Campos interview, author's collection.

¹¹⁵ The memorandum outlining the unit's training program following the Luzon campaign specifically mentioned training at night in three separate instances. In contrast, a similar document published after the Driniumor fight – when Miller complained of "too much movement of troops after dark" – contained no references to the subject at all. See Miller Journal, 29 July 1944, author's collection; HQ, 112th Cavalry, Training Memorandum No. 1, 17 August 1944, RG 407, NA; and HQ, 112th Cavalry, Training Memorandum No. 8, 26 June 1945, 3-4, Historical Report (Part Three), CAVR-112-0.3, Box 18085, Entry 427, *ibid.*

new knowledge. It had acquired an appreciation for the value of small reconnaissance patrols as early as Arawe and had refined its abilities in this area during later campaigns. Once commanders accepted the necessity for night patrolling, GIs could draw on their previous experience to help them grasp more quickly the special skills associated with stealthy movement in hours of darkness. Reconnaissance patrols at night were, of course, not as complicated as squadron or troop attacks would have been, so the comparative simplicity of the knowledge allowed for its easy distribution among squad members. It did not take long, for example, to learn how to navigate by compass or with the help of the stars.¹¹⁶ Given what the cavalrymen already knew about patrolling (and defending at night, for that matter), the process of incorporating a new tactic was largely incremental. Discontinuous change was unnecessary.

The continuous improvement effort that occurred in patrolling operations differed sharply from the 112th's performance in an unfamiliar task conducted under urgent circumstances. The first squadron-sized offensive operation on Luzon demonstrated that the Japanese still had the capability to precipitate a crisis when the 112th's experience and training fell short of what the situation demanded. At the end of March, XI Corps unhinged the southern flank of the Shimbu Line and intensified its attacks on the central portion. Anticipating the next step to be an all-out assault on the Ipo area to the north, the corps commander ordered Cunningham to conduct a reconnaissance-in-force east along the Metropolitan Road with the intent of testing the enemy's defenses there. Since February, the cavalrymen had been gradually pushing the OP line toward the Bigti-Norzagaray road through patrolling and periodic platoon attacks. The new mission constituted a tougher assignment. Accordingly, XI Corps placed the 169th Infantry Regiment under Cunningham's control. In past campaigns, superiors had created similar ad hoc organizations to augment the 112th for a particular operation, and, each time, they could not resist

¹¹⁶ Benton, "Two Combat Patrols," author's collection; Campos interview, *ibid.*

naming the reinforced RCT after its commander's most distinguishing physical characteristic. Baldy Force went forward on 7 April.¹¹⁷

The advance began on a promising note but soon degraded into a near disaster. While one battalion from the 169th approached from the southwest, the 112th's 1st Squadron made an eastward thrust just to the north of the Metropolitan Road. Grant accomplished his initial goal when Troops A and B – both under the direction of Captain Harmon Boland – overran an OP and then consolidated on the objective, a wooded ridge about four miles west of Ipo Dam. After this opening success, the situation only got worse. Soldiers endured an hour-long barrage the night of the 8th and remained on edge throughout the following day thanks to continuous Japanese pressure. At least a platoon of enemy infantry sidestepped the position and established a trail block along the route leading back to the squadron CP, cutting off Boland and ambushing litter and ration trains on their way to support him. Grant dispatched a few squads of Captain Frank Fyke's C Troop, in reserve until this point, to reduce the trail block, but the rescuers themselves fell victim to an ambush. Fyke and about half of the relief column managed to make it to Boland's CP, and the two troop commanders conferred amid the clamor of rifle and shellfire.

The best contingency seemed obvious. The position the cavalrymen occupied was covered with tall grass and strewn with car-sized boulders, dangerously limiting fields of fire. Though the cavalrymen had held thus far, the perimeter was increasingly untenable given its vulnerable supply line and reports that two hundred Japanese were assembling to counterattack. Nearly all the troopers had drained their canteens on that hot day and were beginning to suffer from thirst. Moreover, Boland had several wounded that required medical attention, including himself and Fyke. It also dawned on the pair of captains that the mission had been accomplished. Troops A and B had broken through the outpost line and had provoked an energetic reaction from the enemy defending Ipo Dam. In doing so, the reconnaissance-in-force suggested that

¹¹⁷ HQ, Sixth Army, "History of the Luzon Campaign," vol. 1, 72-74, RG 407, NA.

something much stronger than a regiment would be needed to reduce the northern section of the Shimbu Line. Balancing all of this against the dangers of staying put, Grant, Miller, and Cunningham could not help but agree. The order was given for Boland's detachment to fall back at twilight.

Mildly put, the unit conducted this maneuver without a great deal of grace. Inherently difficult, the withdrawal under pressure proved even more challenging for the 112th because its troopers had never experienced anything like it. In the chaotic retrograde operation, men got separated from their outfits and friendly casualties were left behind.¹¹⁸ One sergeant sent to gather stragglers along the route observed a lieutenant running away from the action and exhorting those around him to keep up. Subsequent patrols recovered equipment strewn throughout the area in the weeks that followed.¹¹⁹

The botched withdrawal in the aftermath of the reconnaissance-in-force signified the danger even seasoned combat units courted when they were compelled to perform an unfamiliar task. Thus, even organizations that clearly demonstrate evidence of learning do not do so consistently. On the contrary, certain conditions impose limitations on the ability of organizations to adapt. The capacity to absorb new knowledge is low in instances where prior experience provides little context to help group members deal with the challenges of utterly new situations. Similarly, when a unit lacks the time to interpret and distribute new knowledge, it incurs a disadvantage vis-à-vis organizations that have the opportunity for continuous improvement in an environment that permits them to learn an unfamiliar task incrementally.

¹¹⁸ "Regimental Diary," 7-9 April 1945, RG 407, NA; Fyke, "Reconnaissance-in-Force," 2-4, author's collection. Casualties from Troops A and B on the day of the withdrawal were 6 men killed, 30 wounded, and 8 missing in action.

¹¹⁹ "Regimental Diary," 12, 24 April 1945, RG 407, NA; Benton, "One Dark Night on Luzon," 2, author's collection. Abandoned during the withdrawal were 8 machine guns, 2 60-mm mortars, and 11 carbines and rifles. HQ, 112th RCT, S-4 Journal, 11 April 1945, S-4 Annex, Historical Report (Part Three), CAVR-112-0.3, Box 18085, Entry 427, *ibid*.

CONCLUSION

Facing an array of challenges on Luzon from February to July 1945, the 112th Cavalry Regiment demonstrated its capacity to learn but did so with mixed success. During the campaign, the unit acquired new knowledge about the setting in which it operated and the enemy it confronted there. Leaders interpreted this knowledge in light of their previous experiences and used it to adjust their tactical methods and techniques to deal more effectively with the problems at hand. Finally, they distributed this knowledge throughout the organization, allowing other members of the 112th to benefit from what only a few had discovered. The learning process that led to improved performance on Luzon generally encompassed these three steps.¹²⁰ To leave it at that though, ascribes a monolithic quality to the regiment that simply did not exist. In reality, learning occurred inconsistently across the organization. Sometimes, the process affected nearly the entire outfit, with a number of subordinate units altering their collective behavior to attain greater proficiency in a particular task. On other occasions, the results were less widespread as only portions of the regiment acquired and interpreted new knowledge, applied it themselves in combat, but then were unsuccessful in their efforts to distribute that knowledge. Deciding whether or not to classify the 112th as a “learning organization” is not the issue. More important are questions related to the process of learning itself. Specifically, what factors enhanced the unit’s ability to learn, and, when certain elements failed to learn, what accounted for that failure?

Serving overseas for eighteen months and fighting in three campaigns during that time, the 112th had accumulated a substantial amount of combat experience prior to its arrival on Luzon. Operations on New Britain, New Guinea, and Leyte had transformed the regiment into a battle-tested military organization while exposing its troopers to a host of conditions. As they encountered changing enemy tactics, different physical environments, and a variety of missions, the cavalrymen tried to adapt in order to accomplish their assigned tasks as well as increase their

¹²⁰ This framework for understanding learning organizations is explained in Jackson, *Aptitude for Destruction*, vol. 1, 9-16.

chances of survival. Often, these efforts were successful. Sometimes, they were not. In any case, the experience gained in the 112th's previous campaigns affected how the unit learned on Luzon. It provided the context that allowed leaders to reflect on the strengths and weaknesses of their outfit and established the basis for deciding where to invest attention and precious time as the regiment prepared for the future. Experience also served as a springboard for further adaptation. Its effect was not uniformly positive, though. On occasion, what the troopers had seen and done in past operations formed biases that worked to hinder the learning process.

The defense of Hot Corner demonstrated the ability of the 112th to build upon its prior experience while adopting slightly different methods to meet unfamiliar challenges. Dug in near a key road intersection northeast of Manila, Troop C fought off repeated Japanese attacks through the effective application of indirect fire support and the cavalymen's own expertise in the area of perimeter defense. Success was no accident. Techniques that maximized the destructiveness of artillery bombardments and skills that enabled GIs to employ captured enemy weapons had been developed and refined over the course of several campaigns. Leaders initially struggled with the problem of surprisingly intense Japanese artillery fire, and their efforts to mitigate the unusual threat showed the extent to which learning in the midst of combat relied on previous experience. The troop commander at Hot Corner acquired new knowledge, observing that the shelling of his position seemed to stop whenever the 112th's liaison plane flew overhead in search of enemy guns. He interpreted this knowledge in the context of the practices the unit had developed over time. Thus, the regiment's routine employment of the Piper Cub in several unconventional roles prompted the captain to propose that it perform yet another one – in this case, air cover. Senior leaders not only accepted his request but weeks later, showed evidence of distributing the new knowledge when they dispatched the liaison plane on a mission with a similar purpose.

The episode at Hot Corner also suggested something about the unevenness of the learning process as it took place across different parts of the organization. Nothing guaranteed that what one element learned could be transferred to another simply in passing. Indeed, hard-earned

lessons shared among units stood a chance of quick dismissal depending on the recipient's biases. The commander of the troop that came to relieve Hot Corner's defenders had no exposure to the kind of bombardments the outpost at the road junction had recently experienced. Indeed, past campaigns had probably given him little cause for concern along those lines. He positioned his men to defend against the familiar threat of a night attack while neglecting the danger posed by enemy artillery, and his unit paid a price for it. Likewise, he made no attempt to use the Piper Cub to lessen the severity or frequency of the shelling. His omission here was really no surprise given the nature of the new technique. It involved an unusual problem and an unconventional solution. The exchange of such anomalous information – not to mention the conceptual leap required to make sense of it – could not happen during a hurried meeting of commanders on the battlefield. To incorporate relatively complicated knowledge into the learning process and counter the biases ingrained through prior experience demanded a more deliberate or formal manner of distribution. It was different at the lower levels of the organization, where simpler knowledge proved transferable through informal methods.

Patrolling operations west of Ipo Dam illustrated the 112th's reliance on incremental learning as a means of improving performance. Throughout its service in SWPA, the regiment had carried out this type of duty before, and the time spent probing the Shimbu Line afforded the cavalymen ample opportunity to build upon past experience and refine this set of skills. Prior operations in SWPA had given the unit a keen awareness of the strengths and weaknesses of its adversary, and this refined understanding influenced the outfit's actions in combat. Months on Luzon gave rise to more sophisticated and innovative uses of familiar tools, like the Piper Cub and field artillery. The organization also showed progress in its ability to plan and coordinate multiple reconnaissance and combat missions on a daily basis. Most significantly, the 112th broke from established convention and began conducting patrols in hours of darkness. The failure of repeated attempts to infiltrate the screen of Japanese outposts had driven commanders to reconsider the utility of night operations. It helped that there was time to reflect on the

problem and then test possible solutions with minimal risk. For their part, junior leaders and their men adapted without much difficulty, adding to their already sharpened patrolling skills an understanding of how to operate in hours of darkness. Moreover, the recurring mission facilitated the gradual distribution of this new knowledge as increasing numbers of night patrol veterans passed lessons on to their comrades.

Performance in the area of patrolling, where the regiment progressed on the basis of experience and steadily improved over the course of several weeks, diverged noticeably from the outfit's conduct in the immediate aftermath of its reconnaissance-in-force up the Metropolitan Road. Though an implicit strength of learning organizations seems to be an ability to adapt to new conditions, the case of the 112th suggests that it is unwise to assume they will do so consistently in all circumstances – especially when the time to interpret and distribute new knowledge is limited. Neither previous operations nor unit training had adequately prepared elements of 1st Squadron for a withdrawal under enemy pressure. Consequently, this formidable task was handled ineptly to say the least, even under the command of seasoned officers.

While learning in a complex environment does not happen by chance, neither do military units in combat learn according to a prescribed or uniform pattern. Given the 112th Cavalry's experience on Luzon, it seems clear that learning occurs differently across the multiple levels of an organization and even varies among separate parts of the same level. Likewise, failure to learn in one area does not, as a matter of course, undermine advancement in all. A more important lesson, perhaps, lies in recognizing the danger in believing that learning organizations can adapt quickly to every situation that confronts them. Much depends on the role of experience, the intricacy of the knowledge involved, and the presence of other conditions that facilitate or disrupt the learning process. Leaders must appreciate how these factors affect the way in which their units acquire, interpret, and distribute new knowledge. Along these lines, an examination of the 112th as it learned on Luzon offers relevant lessons for contemporary military organizations.

Increasing the comprehension of how units learn plays a central part in the U.S. Army's efforts to prepare leaders and soldiers for the complex security environment of the twenty-first century. In its ongoing intellectual and cultural transformation, the Army seems to have embraced the language associated with learning organizations. It seeks to grow adaptive leaders, grounded in a set of core values, capable of "leading change" in ambiguous and unpredictable situations, and driven by a desire for life-long learning. In describing the imperative for a culture of innovation, Army documents hint at the inadequacy of deliberate, incremental learning in today's fast-paced, ever-changing world and stress the pursuit of radical solutions. At the same time, the institution clings to the methodology it dismisses as antiquated. Senior leaders hope to leverage lessons learned in combat along with the accumulated expertise of veterans in order to build on recent experience and thus improve the capabilities of the current and future force. The latter process is one that the GIs of the 112th would have clearly recognized. While the two approaches have merit, the promotion of both simultaneously suggests the need for clarification. "Do we completely understand how the Army learns in this dynamic and frequently uncertain operational environment?"¹²¹ As he took charge of the U.S. Army Training and Doctrine Command in October 2005, General William S. Wallace posed this question. He provided an answer just by asking. As the Army transforms, the institution must do so with an appreciation for the nuances of learning, maintaining an awareness of the conditions that influence the process as it occurs within units.

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¹²¹ William S. Wallace, "Remarks by Gen. William S. Wallace at the TRADOC Assumption-of-Command Ceremony," 13 October 2005, [article on-line]; available from <http://www.tradoc.army.mil/AOC.htm>; accessed on 21 March 2006.

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