

BATTLE ANALYSIS

Armor in the Maritime Environment: Lessons for Armor Employment from 1944 Leyte Campaign

by MAJ Matthew W. Graham

With the removal of tanks from the Marine Corps, the Army is now the sole provider of medium and heavy armor for the joint force. The definition of amphibious operations in Joint doctrine, and conceived of in the popular imagination, focuses on the landing operation. However, this limited focus runs contrary to the Army's historical experience of conducting significant land campaigns following its amphibious operations, and tanks play a major role in the success of those campaigns.

Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components*, currently appoints the Marine Corps as

the Joint-force proponent for amphibious operations, but it also requires the U.S. Army to conduct amphibious operations.¹ However, since Korea, the Army has not conducted large-scale amphibious assaults involving armor. With the increasing focus of the Joint force on the Indo-Pacific, what lessons can the Army learn from past amphibious operations to best support future joint amphibious operations, especially regarding armor employment?

There are many historical examples that can provide insight into this, but perhaps the most insightful case study of the potential opportunities and risks of armor's use in a maritime-dominated multidomain environment is the

campaign for Leyte in the Philippines archipelago in 1944.

Operational context: Philippines and Leyte 1944

The operational objectives for the Leyte invasion were to seize several coastal airfields and port facilities to rapidly build up land-based air power to ensure air superiority over the surrounding area and thus allow the buildup of multidomain combat power in preparation for follow-on operations against the island of Luzon, home to the Philippine capital of Manila.²

GEN Walter Krueger, a veteran commander of Sixth Army in the Southwest Pacific, led more than 202,500 men in the invasion of Leyte.³ Sixth Army organized its combat power into two corps, the X Corps (composed of 1st Cavalry Division and 24th Infantry Division) and XXIV Corps (composed of 96th Infantry Division and 7th Infantry Division).⁴ U.S. Seventh Fleet, under the command of ADM Thomas Kinkaid, was in overall command of the naval elements supporting the landings with amphibious transport and indirect naval fires.

Leyte's terrain is formidable. Tropical coastal areas give way to steep jungle mountains in the interior. There were few roads on the island, thus restricting mounted maneuver to roads and their surrounding areas. Also, the weather would be a critical factor in the coming battle. Sporadic heavy rain and resulting mud would severely hamper the ability to get captured airfields into operation, impacting land-based airpower's ability to provide close air support and interdiction. Moreover, the emerging kamikaze threat kept most naval aviation focused on defending the fleet, further depriving the land forces on Leyte of supporting fires.⁵

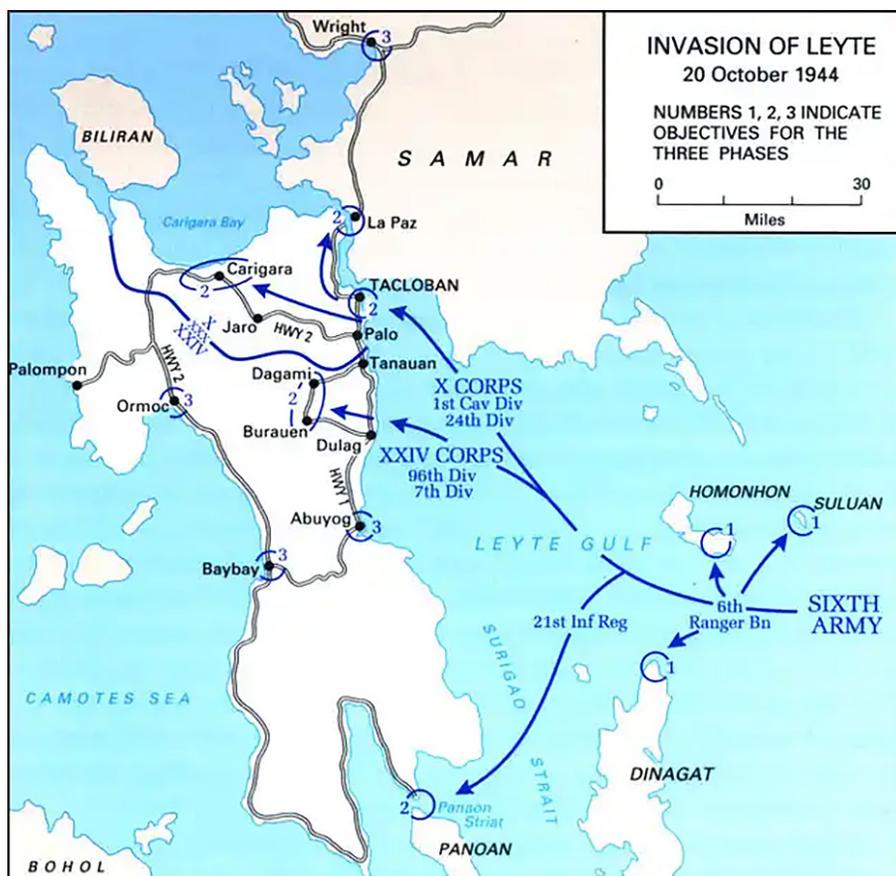


Figure 1. Invasion of Leyte Oct. 20, 1944. (From the official history *U.S. Army Campaigns of World War II*; public domain)



Figure 2. Leyte topographical map. (Courtesy of U.S. Army Center of Military History)

Due to the rugged terrain, key terrain such as the city of Tacloban and the airfield at Dulag were located near the coast. Armored forces were well suited to advance from the beachhead, over relatively traversable terrain, and rapidly seize these objectives in the first hours and days of the invasion. While there are many examples of the opportunities and risks of armor employment in such a campaign, no two examples demonstrate the potential and challenges of armor use in the Indo-Pacific better than 767th Independent Tank Battalion's battles along the Dulag-Burauen-Dagami Road and at the stone bridge.

Battle of Dulag-Burauen-Dagami Road

The 767th was in bivouac Oct. 22, 1944, near the recently captured Dulag airstrip – about four miles from the initial landing beaches – while supporting 7th Infantry Division. LTC H.R. Edmondson, 767th's commander, received orders to support the assault of 17th Infantry Regiment (-) the next morning, Oct. 23, as part of a larger XXIV Corps attack west along the Dulag-Burauen Road to seize the towns of Burauen, San Pablo and their adjoining airstrips.⁶ The 17th Infantry and 767th were to form the center of a division attack toward San Pablo. This attack was part of XXIV Corps' continuous advance west in coordination with 96th Infantry to the north.

MG John R. Hodge, XXIV Corps commander, prioritized the corps artillery fires to 7th Infantry Division and tasked them to make the "fullest use of tanks, field artillery, anti-aircraft guns, naval gunfire and aviation to support the advance."⁷ Unfortunately only one of these elements, the tank, would be used during the initial advance.

Edmondson and staff received their mission briefing at 17th Infantry Regiment headquarters around 9 p.m. Returning to the battalion headquarters around 11:45 p.m., the commander and the S-3 devised a maneuver scheme that envisioned Companies A, B and C attacking abreast along a 400-yard-wide frontage west along the Dulag-Burauen Road, while 17th Infantry would follow and support. Company D, composed of M5 Stuart light

tanks, would remain with the support elements as security at the bivouac area and provide convoy escort for any resupply convoys. The 767th Tank Battalion would commit more than 50 Sherman tanks to the attack, one of the largest tanks actions of the Pacific war.⁸ The 767th and 17th would face elements of the Japanese 2nd Battalion,

20th Infantry Regiment, which had fallen back to hasty defensive positions around Burauen and San Pablo.

At 6:30 a.m. Oct. 23, the 767th left its bivouac area and moved to attack positions near Moion, arriving around 7:40 a.m. At 8 a.m., the battalion crossed the line of departure and rapidly advanced along the Dulag-Burauen Road. Encountering sporadic but determined resistance, the battalion advanced the 3½ miles from its attack position to San Pablo in less than four hours, losing three tanks due to mines and Japanese satchel charges.⁹ (In place of ranged anti-tank weapons, the Japanese employed suicidal satchel-charge-wielding infantry. While inherently hazardous to the attacker's well-being, this tactic would prove effective in the restricted terrain of Leyte, especially when tanks lacked infantry support.) Despite these losses, 767th rapidly advanced to San Pablo and Burauen, facilitated by the battalion's mass, firepower and shock effect.

Reaching San Pablo by 11 a.m. and capturing one of its accompanying airstrips by 11:30 a.m., the battalion halted to reorganize and resupply. However, the terrain over which the tanks had so rapidly advanced proved difficult for the infantry to cross, and there was a growing gap between the battalion and its supporting infantry. The 767th resumed its attack at 2 p.m. and advanced rapidly, encountering no enemy resistance as it quickly captured San Pablo airstrip No. 2 and advanced into



Figure 3. Tank 28, nicknamed Man of War, 767th Tank Battalion, advances west from the village of Jualita along the Dulag-Burauen-Dagami Road. The dual radios indicate a command tank.

Burauen, securing the west side of the village by 4 p.m. while encountering only sporadic sniper fire.¹⁰ However, because of the infantry's inability to keep pace, 767th was ordered to withdraw two miles back to San Pablo to establish a bivouac.

This loss of ground would prove costly to the battalion the next day. At 8 p.m. Oct. 23, Edmondson received verbal orders from COL Francis Pachler, commander of 17th Infantry, to continue the attack toward Burauen the next morning, with the objective to secure the Buri airstrip and bridges over the Daguitan River. This would cause a change in the battalion battle plan. Company D, composed of M5 Stuart light tanks, would replace Company C on the main Dulag-Burauen Road. Company C would break off from the main battalion and reinforce infantry at the San Pablo airstrips and then move to capture the Buri airstrip in quick succession. Finally, Company B, operating on the north flank of the battalion's advance, would bypass the town of Burauen and attempt to envelop it from the north, eventually linking up with the main body via the Burauen-Dagami Road.¹¹

At 8 a.m. Oct. 24, the battalion recommenced its attack, advancing rapidly west to the outskirts of Burauen. However, the surprise and shock effect of the previous day's attack had worn off and the Japanese were waiting. Starting around 10:30 a.m., several tanks in the main column struck mines,

resulting in one damaged tank blocking the road and halting the advance. This caused the remaining tanks to attempt a bypass by leaving the road, resulting in several becoming bogged down in thick mud.

By 11:30 a.m., the battalion's main advance into Burauen had stalled, while elements of Company B had encountered another minefield 500 to 600 yards northeast of Burauen. A strong Japanese defense around Burauen forced Company B to withdraw around 12:05 p.m. Burauen would not fall until elements of Companies G and F of 1st Battalion, 17th Infantry Regiment, arrived around 1:30 p.m. and cleared the town. Both elements of Company B and 17th Infantry continued actions about 500 yards north of Burauen until 5:30 p.m. with little effect.¹²

In total, the two-day battle of the Dulag-Burauen-Dagami Road cost the battalion nine M4 Sherman medium tanks, three M5 Stuart light tanks, two Soldiers killed in action, six wounded in action, the relief of the battalion commander and the end of conventional tank-battalion-level actions on Leyte.¹³

In the end, 17th Infantry Regiment failed to support 767th Tank Battalion with even a company of tank-mounted or mobile infantry during its initial attack, or to reinforce it rapidly once it had occupied Burauen. This fundamentally violated the principle of infantry-tank cooperation as laid out in Field Manual (FM) 17-36, *Employment of Tanks with Infantry*, and resulted in the unnecessary battle Oct. 24.¹⁴ This highlights the importance of tank-infantry cooperation while also demonstrating the potential of the tank to capitalize rapidly on mass, firepower and shock --- three qualities that can prove decisive, as seen Oct. 23, if armor is available during or following an amphibious landing.

With the capture of Burauen, although at a higher cost than necessary, XXIV Corps had partially achieved its A-day mission to seize the Dulga-Burauen area.¹⁵

Battle of stone bridge

On Oct. 28 17th Infantry Regiment continued its attack north toward Dagami. The unit encountered stiff enemy

resistance about one mile south of the village, centered around a damaged stone bridge and adjoining wooden causeway crossing a stream, surrounded by swampy terrain.

Defenders from the Japanese 20th Infantry Regiment had built a formidable defense around the bridge about 1,000 yards south of Dagami, composed of mutually supporting pillboxes with interlocking fields of fire. The Japanese had also placed mines along the road leading into Dagami. These positions were located on high ground to the north of the bridge and had clear fields of fire across the length and width of the prepared engagement area. Japanese strength around the bridge was unknown, but in the greater surrounding area it was estimated to be anywhere from 1,500 to 2,500.¹⁶

The 767th, now in general support of 17th Infantry, was to provide one company of medium tanks for the coming assault.¹⁷ Jumping off at 8 a.m. with 13 medium tanks, Company C encountered resistance as it crashed into Japanese lines. The tank battalion effectively applied direct fire and destroyed many pillboxes and fighting positions, while the attacking infantry worked its way along the road and through the adjoining swamps.

By 10 a.m., one platoon of tanks had been able to cross the bridge and adjoining causeway. However, the vehicles' weight had further damaged the structures, limiting the ability of other armored forces to cross until repairs were made.

With a platoon now north of the stream and cut off from supporting infantry, they became the focus of concentrated Japanese direct and indirect fire. By 11 a.m., a suicidal Japanese satchel charge had destroyed one tank while land mines disabled another two, leaving one of the tank crews, that of Tank C-44, trapped and surrounded in their disabled vehicle.¹⁸ With supporting infantry pinned down by heavy Japanese machinegun and mortar fire, the attack was stalling.

However, the commitment of another infantry company -- and the flanking of Japanese positions to the east by a section of M8 armored-gun carriers operating in support of Companies E and G,

17th Infantry Regiment -- effectively suppressed the Japanese left flank and re-established fire superiority for the U.S. units. This enabled engineers to make necessary repairs to the bridges, allowing the remaining elements of Company C, 767th Tank Battalion, to move north of the bridge.

By 3:45 p.m., elements of Companies E and G had completed the destruction of the Japanese defenses' left flank. On the American left, more probing to the west and north by Companies C, F and B of 17th Infantry had located the enemy's right flank. With the support of a single medium tank, Company B, 2nd Battalion, 17th Infantry, was able to destroy pillboxes in this area and roll up the Japanese right. By 6:45 p.m. friendly forces finally reached the trapped crew of Tank C-44 and rescued them.

Having turned both flanks and penetrated the center of the enemy defensive line along the stone bridge, 17th Infantry went into defensive positions some 300 yards north of the bridge, while 767th's Company C withdrew to the regimental command post to re-consolidate.¹⁹

The breaking of the defensive line around the bridge enabled the capture of Dagami the next day, Oct. 29, and allowed the linkup between 7th and 96th Infantry divisions Oct. 30, thus solidifying XXIV Corps' front and securing X Corps' southern flank. The 767th would continue supporting 7th Infantry Division throughout the rest of the Leyte Campaign but mostly in section and platoon direct-fire support roles.

The combined-arms action at the bridge demonstrates the effectiveness of the tank-infantry team, even in highly restrictive terrain. The employment of armor in these scenarios, even in limited quantities, provides ready examples of armor's ability to capitalize on mobility and firepower to both enable maneuver and rapidly reduce enemy positions by direct fire. While the actions of 767th Tank Battalion between Oct. 17-30, 1944, represent the actions of only one tank unit of many involved in the campaign, it demonstrates the effects armor can achieve when employed and supported properly. The achievement of these effects would be impossible if tanks were not

part of the initial landing force or present in the follow-on waves of the amphibious operation.

The campaign on Leyte continued until Dec. 26 when GEN of the Army Douglas MacArthur declared operations complete.²⁰ Sixth Army, during the period between Oct. 20 and Dec. 26, 1944, suffered 2,888 killed and 9,858 wounded in action.²¹ Japanese losses during this time are hard to determine, but Sixth Army estimated it had killed more than 56,000 Japanese troops and captured 392.²² The use of armor on Leyte, even though in small numbers when compared to other campaigns, highlighted its usefulness and fulfillment of its doctrinal role. Without armor, it is doubtful that the land component of the Leyte Campaign would have successfully concluded in such a relatively short time.

Lessons observed, application of doctrine

Effective infantry-armor cooperation during amphibious operations was the single most important lesson of the Leyte operation. As noted in several after-action reports (AARs), two factors continually affected this coordination: infantry leaders' attitudes toward tanks and the level of tank-infantry training before the operation.²³

As one infantry-battalion commander expressed, "From my experience, the use of tanks under extreme conditions of weather and areas of tropical vegetation is hardly worthwhile."²⁴ Opinions like this hint at a lack of understanding of the tank's capabilities and a clear lack of experience on how best to employ them.

The second issue was a lack of

tanks-with-infantry training. The long distances and dispersed nature of the Pacific Theater limited the ability of units to conduct combined-arms rehearsals before operations. This severely impaired the development of mutual trust and understanding between infantry divisions and their assigned tank battalions.

As an example, the Leyte invasion fleet deployed from three departure points, each more than 1,200 miles from the invasion beaches at Leyte Gulf.²⁵ This dispersion of forces increased survivability but greatly limited the capability of units to train together before Leyte. However, some units did have experience and training at the division-level before departure for the theater.²⁶

The battle of the stone bridge and the Dulag-Burauen-Dagami Road

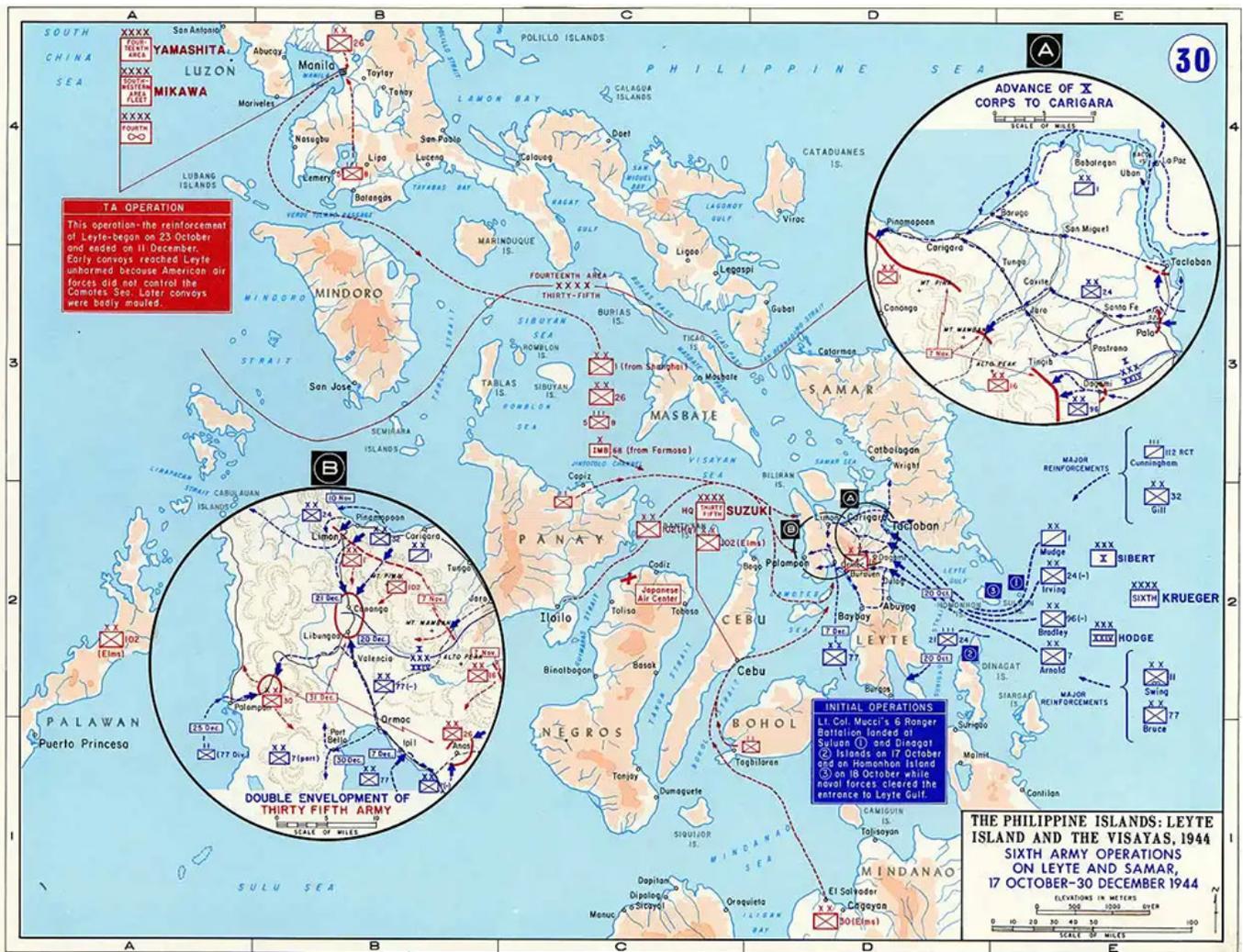


Figure 4. Sixth Army Operations on Leyte and Samar, October–December 1944. (Courtesy of U.S. Military Academy (West Point) Department of History)

demonstrate the need for tanks during the land campaign that typically follows an amphibious assault. When weather, enemy action and other issues limit the application of both artillery and airpower, it falls to the infantrymen and tankers to accomplish the mission. The capability of armor to apply shock, mobility and firepower to an enemy enables the infantry to close with and destroy that enemy. Similarly, the infantry's ability to clear, hold and maneuver in very restrictive terrain protects the tank from enemy-infantry anti-tank weapons.

Both infantry and armor form a symbiotic relationship that produces the greatest effect on the enemy. As FM 17-36 stated: "Success in battle can be assured only when there is complete cooperation of all arms. No one arm wins battles. Success is attained when each arm, weapon and individual is employed to afford the maximum of support to the remainder integrated to achieve the enemy's destruction. Since tanks and infantry are linked so closely one to the other, it is necessary that the doctrine, powers and limitations of both be understood by all."²⁷

At Leyte, the inability to develop land-based airpower and the Navy's commitment to a major engagement during the initial phases of the operation deprived the landing force of important air support. This increased the dependence on the other elements of the combined-arms team, including the tank. It is an interesting thought exercise to envision an amphibious operation on an island of similar size, such as Taiwan, occurring without tanks. One must wonder how successful and potentially costly such a campaign would be. It is without a doubt that the capability and willingness to deploy tanks during the initial phases of an amphibious assault in anticipation of the follow-on land campaign significantly contributed to the land victory on Leyte.

The Army should consider how the Marine Corps' recent removal of tanks will impact the Army's operational requirements in the Indo-Pacific in the future. Without a better understanding of lessons-learned in past Army amphibious operations and the role of armor within them,

the Army will likely have to relearn these lessons at the cost of blood and treasure.

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Notes

¹ Department of Defense Directive 5100.01, *Functions of the Department of Defense and Its Major Components*, Washington, DC: Government Printing Office, 2020.

² General Staff, *Reports of General MacArthur: The Campaigns of MacArthur in the Pacific Volume I*, Washington, DC: Government Printing Office, 1953; Sixth U.S. Army, "Report of the Luzon Campaign, 9 January 1945 - 30 June 1945," June 1945.

³ Sixth U.S. Army.

⁴ Ibid.

⁵ Committee 16, Armored [sic] School, "Armor on Leyte, Sixth Army Operations, 17 Oct - 26 Dec 44," research report, Armored School, Fort Knox, KY, 1949 – World War II operational documents collection, hosted by Ike Skelton Combined Arms Research Library Digital Library.

⁶ 767th Tank Battalion, "[AAR], 767th Tank Battalion, 23 October 44 thru 30 October 44; 1 January thru 31 December 44," World War II operational documents, Ike Skelton Combined Arms Research Library Digital Library.

⁷ Headquarters XXIV Corps, "Operation Report, XXIV Corps, Leyte, 20 October 1944 - 25 December 1944," World War II operational documents, Ike Skelton Combined Arms Research Library Digital Library.

⁸ 767th Tank Battalion AAR.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² Headquarters 7th Infantry Division, "Operation Report, 7th Infantry Division King II."

¹³ 767th Tank Battalion AAR.

¹⁴ FM 17-36.

¹⁵ Headquarters XXIV Corps operation report.

¹⁶ M. Hamelin Cannon, *Leyte: Return to the Philippines*, Washington, DC: Center for Military History, 1993.

¹⁷ 767th Tank Battalion AAR.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ GEN of the Army Douglas MacArthur, *Reminiscences*, New York: McGraw Hill, 1964.

²¹ GEN Walter Krueger, *From Down Under to Nippon*, Zenger Publishing Company Inc., June 1, 1979. First published 1953. Note: Krueger further stated that non-battle-related casualties were much higher.

²² Japanese numbers are hard to pin down. Japanese total losses, including air and naval loss, are estimated to 59,400 or about 1/5 of the Japanese forces in the Philippines. For more detailed information on Japanese and American casualties' numbers see Cannon's *Leyte: Return to the Philippines*.

²³ Committee 16.

²⁴ Ibid.

²⁵ Daniel E. Barbey, *MacArthur's Amphibious Navy*, Naval Institute Press, January 1969.

²⁶ Sixth U.S. Army report of the Luzon Campaign. Of note: 7th Infantry and 1st Cavalry had prior combat experience. The

7th Infantry and 96th Infantry Divisions both conducted full-dress practice landings on Maui, Hawaiian Territory, in September 1944. However, these landings did not cover actions inland, instead focusing on the assault landing only.

²⁷ FM 17-36.

ACRONYM QUICK-SCAN

AAR – after-action report
CGSC – Command and General Staff College

FM – field manual

Honoring our Armor and Cavalry Medal of Honor Heroes

Derived from Center of Military History information provided at <https://history.army.mil/html/moh/civwaral.html>. Listed alphabetically. Note: Asterisk in the citation indicates the award was given posthumously.

PORTER, AMBROSE

Rank and unit: Commissary sergeant, Company D, 12th Missouri Cavalry. Place and date of action: Tallahatchie River, MS, Aug. 7, 1864. Entered service: Rockport, Atchison County, MO. Born: Allegany County, MD. Date of issue: Aug. 24, 1905. Citation: Was one of four volunteers who swam the river under a brisk fire of the enemy's sharpshooters and brought over a ferry boat by means of which the troops crossed and dislodged the enemy from a strong position.

PORTER, WILLIAM SGT

Unit: Company H, 1st New Jersey Cavalry. Place and date of action: Sailors Creek, VA, April 6, 1865. Born: New York, NY. Date of issue: July 3, 1865. Citation: Among the first to check the enemy's countercharge.

POWELL, WILLIAM H. MAJ

Unit: 2nd West Virginia Cavalry. Place and date of action: Sinking Creek Valley, VA, Nov. 26, 1862. Entered service: Ironton, OH. Born: England. Date of issue: July 22, 1890. Citation: Distinguished services in raid, where with 20 men, he charged and captured the enemy's camp, 500 strong, without the loss of man or gun.

POWER, ALBERT PVT

Unit: Company A, 3rd Iowa Cavalry. Place and date of action: Pea Ridge, AR, March 7, 1862. Entered service: Davis County, IA. Born: Guernsey County, OH. Date of issue: March 6, 1899. Citation: Under a heavy fire and at great personal risk went to the aid of a dismounted comrade who was surrounded by the enemy, took him up on his own horse and carried him to a place of safety.

