

TANKS ON PELELIU: THE M4 MEDIUM TANK
IN THE PACIFIC

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Military History

by

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ABSTRACT

TANKS ON PELELIU: THE M4 MEDIUM TANK IN THE PACIFIC, by MAJ Christopher D. Quinlan, 137 pages.

Combat operations in the Pacific Theater during World War II presented unique challenges to the United States Marine Corps. The complexity of routing Japanese forces from the many, and heavily defended, islands of the Western Pacific required a specialized force trained and equipped in the employment of amphibious operations. However, existing amphibious doctrine developed between the 1920s and 1930s failed to fully address the evolving tactics of island defense employed by the Japanese Imperial Army. Additionally, amphibious doctrine lagged behind in light of new advancements in equipment such as the fielding of the M4 median tank (Sherman). The Sherman had seen little action in the Pacific up to 1944, but was fielded at a critical time when Japanese island defense tactics had significantly matured. The amphibious assaults of 1944 and 1945 were much different than the unopposed landings in earlier years. Moreover, the Marine crews who served on the Sherman faced additional challenges as they adjusted from operating the M2/3 light tank (Stewart) to the heavier M4. Although most commonly studied and debated for its strategic significance, the battle of Peleliu offers a unique examination of the employment of the M4 Sherman tank in relation to the challenges of amphibious operations and Japanese island defense tactics.

ACKNOWLEDGMENTS

I grew up hearing stories from my grandfather about the exploits of his brother, Daniel Quinlan, who served in the U.S. Marine Corps between 1941 and 1944. Daniel was killed in the battle of Peleliu on 15 September 1944 while serving as a tank commander. Upon writing this thesis, I initially set out to learn more about his service and the circumstances surrounding his death, as the specific details were unknown to my grandfather or me. I searched for his name everywhere, hoping to see something that would tell me more about his service or death. As my research progressed, I discovered the unit he served with from the beginning of the war until his death. It is his experience and effort within his unit on which this thesis is based. Interestingly, Daniel's story represents a much larger history, when the Marine Corps sent tanks into combat, something it had never done before. Daniel was part of that effort and his contribution was essential to winning the war in the Pacific- a commitment he gave his life for.

This work is dedicated to my grandfather, Francis, and his brother, Daniel. My grandfather has always been a great source of encouragement to me and my hope is that this work will be of great encouragement to him. The story that follows is more than a compilation of research and facts, but a family history that I will pass on to my own children. Although I never knew him, I feel a close connection to Daniel as this project allowed me to reflect on what he experienced. He displayed uncommon bravery in the face of extreme danger, endured great hardship in the worst conditions, and showed compassion to the Marines with whom he served and led. After 72 years, we now know how Daniel died, but greater still, we know how he lived.

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ACRONYMS

CTL	Combat Tank Light
LCM	Landing Craft Mechanized
LSD	Landing Ship Dock
LVT	Landing Vehicle Tracked
MECB	Marine Corps Equipment Board
U.S.	United States

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CHAPTER 1

INTRODUCTION

Introduction

I knew one of the guys, he was a professional wrestler, who was tank commander of one of the tanks. This guy was named Quinlan. ‘Beast’ Quinlan was what we called him.

— Bill Finley, *Marine Tank Battles*

Sergeant Daniel Quinlan scanned across the horizon, sitting in the commander’s seat of his M4A2 medium tank. He could see the rising smoke in the distance. He could hear the sound of the twin General Motor diesel engines as they powered through the waters of the coral reef. As he drew closer, Quinlan could hear the sound of stray bullets splashing around him, the “crack” and “ping” as they deflected off the tank’s hull.¹ Quinlan’s tank, wading in open water, presented a tempting target for the skilled Japanese machine gun crews dug in securely behind the beach. A hail of mortar and artillery fire rained down on the tank as well, splashing in the water all around. Quinlan’s tank would receive at least one direct hit before reaching the shore, a deafening “bang” as the round exploded on the three inch thick armor, too strong for the Japanese mortar rounds to penetrate.²

¹ James H. Hallas, *The Devil’s Anvil: The Assault on Peleliu* (Westport, CT: Preager Publishers, 1994), 58-59. Corporal Bill Myers, assigned with the First Tank Battalion, described the bullets that spattered against the turret “like rain . . . and it was comforting to be inside [the tank].”

² Harry A. Gailey, *Peleliu 1944* (Annapolis, MD: The Nautical and Aviation Publishing Company of America, 1983), 70.

So great was the enemy machine gun and mortar fire that by the end of the assault, all 30 tanks in Quinlan's unit would receive between one to four direct hits in the 700-yard trek from ship to shore. As Quinlan approached, he could see the burning amtraks and landing craft used by the first waves of the assaulting force strewn along the beach. As he looked upon the chaos unfolding ahead, he could see hundreds of men, crammed and crowded, trying to find cover and safety on only a few hundred yards of open beach. The Japanese defenders had the beaches zeroed in on by their machine gun and mortar crews with interlocking sectors; they rained down unrelenting fire.³ With the ocean and their burning vehicles behind and a determined enemy in front, the trapped Marines had few options. However, they needed not wait long as Quinlan and the tanks of the First Tank Battalion, First Marine Division were approaching close behind.

Assigned to Company A, 1st Tank Battalion, 1st Marine Division, Quinlan was familiar with the realities of war, having served in three major campaigns- a veteran of Guadalcanal, Cape Gloucester, and now Peleliu. He enlisted in the Marine Corps on 17 December, 1941 at the Marine Corps recruiting station in Springfield, Massachusetts, only ten days after the infamous bombing of Pearl Harbor by the Japanese on the 7th of December. At the time of the Peleliu assault in September of 1944, Quinlan was 27 years old and considered an old-timer by the much younger Marines typically no older than 18.

Quinlan was nicknamed "The Beast" by his fellow tankers, known for his "cold hatred of the Jap and his uncanny ability to seek them out and destroy them," as

³ Hallas, *The Devil's Anvil*, 59.

described by his Company First Sergeant, Fred Adams.⁴ Quinlan earned a reputation as a skilled tanker and was able to destroy enemy positions with a single round “as the average turret gun operator used two or three shells in order to take a Jap position out of combat.”⁵ Within two years, Quinlan would master his craft as a tanker, serving as a driver, gunner, and commander. He would also rise to the rank of First Sergeant and train the next generation of tankers in lessons hard learned in tank battles and engagements against the Japanese.

After fighting in the South Pacific for over two years, Quinlan was informed he would be rotated back stateside in the summer of 1944. Many veterans of the division rotated back after Guadalcanal and New Britain, but he remained to participate in the Peleliu Campaign. In anticipation of his return home, he purchased a dress blue uniform with the newly designed division patch reflecting the action at Guadalcanal, his first combat experience as a tanker. However, soon after, he learned his orders had been changed and he would remain in the Pacific. The division was in need of experienced Marines for the preparation and execution of the next campaign, especially tankers like Quinlan.⁶

On 15 September, 1944, Sergeant Daniel E. Quinlan and the Marines of the 1st Tank Battalion would assault the island of Peleliu, a small island in the Palau Island

⁴ “Irish Danno Quinlan Had Great Record as Jap-Killing Tank Driver,” *Daily Hampshire Gazette*, 1944. While conducting research, author received article from his Grandfather, Francis Quinlan.

⁵ Ibid.

⁶ Frank O. Hough, *The Assault on Peleliu* (Washington, DC: Historical Branch, G-3 Division, Headquarters, U.S Marine Corps, 1950), 12.

group in the South Pacific. By the end of fighting on the first day, 200 Marines were dead, 10 percent of the assaulting force, including Quinlan.⁷ He would never get the chance to wear his new dress blues.⁸

Background

Quinlan served in the Marines during a time of great change for the Corps. When he enlisted in December 1941, the Marines were gearing up for a long-anticipated war against the Japanese, one that military leaders had foreseen in the decades before December 7th.⁹ During this time, the Marines developed doctrine, conducted exercises, and experimented with technology. This provided the framework for operations in the Pacific, chiefly the first island assault on Guadalcanal in 1942. Although largely anticipated, the Marines had yet to validate their preparations in combat.

By 1944, the country was three years into a war with the Empire of Japan in the Pacific. American forces were on the offensive after the victory at Midway, pushing

⁷ SGT Quinlan's casualty card, obtained from the Marine Historical Division, Quantico, VA, indicates the cause of death as "Wound, frag mortar head". The exact circumstances surrounding his death were unknown until Bill Finley, a member of A Company who knew Quinlan, described his death in an interview presented by Oscar E. Gilbert in his book, *Marine Tank Battles in the Pacific*. Quinlan was killed when he was struck by a round from a Japanese tank during a counterattack in the afternoon of 15 September 1944.

⁸ SGT Quinlan mailed his new uniform to his family in South Hadley, MA in the summer of 1944, just months before he was killed on Peleliu. A picture exists of Quinlan's younger brother, Francis, wearing the uniform in late 1945. The Division patch can be clearly seen, as well as a Purple Heart for wounds received on Guadalcanal.

⁹ Williamson Murray, "Assault from the Sea," in *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan R Millett (New York: Cambridge University Press, 2009), 56.

Japanese forces back in an island-hopping campaign which began in August of 1942 in the Solomon Islands. During the Solomon campaign, Quinlan would participate in the first United States (U.S.) amphibious landing in the Pacific on the island of Guadalcanal. However, his experience on Guadalcanal in 1942 was vastly different in contrast to the Peleliu assault in 1944. The Marines of the 1st Tank Battalion would be called upon to accomplish a difficult task: operate tanks in an amphibious environment for the first time. Their training would be hurried, equipment outdated, and experience limited in the employment of tanks on such a large scale.¹⁰ However, these limited preparations served as a starting point for the necessary changes and innovation that would be required to overcome the unforeseen challenges of conducting operations in such a challenging environment. Quinlan would experience first-hand, the changing nature of tank warfare in amphibious operations at a critical time, the two years between 1942 and 1944.

Quinlan would assault the beaches of Guadalcanal, unopposed by the Japanese defenders, using light tanks developed 20 years earlier. He would execute doctrine developed in a time when amphibious operations were being studied and tested. However, this doctrine failed to fully account for the challenges of tank operations in the non-permissive environment of the Pacific. Specifically, the islands of the South Pacific varied greatly as each beach presented different problems such as coral reefs and dense jungles, a significant obstacle to the logistics of tank transportation and employment. Additionally, the Japanese on Guadalcanal had hastily occupied the island with little time to establish defenses before the Marines came ashore. Although fighting was intense, the

¹⁰ Kenneth W. Estes, *Marines Under Armor: The Marines Corps and the Armored Fighting Vehicle, 1916-2000* (Annapolis, MD: Naval Institute Press, 2000), 50.

Marines did not face well-entrenched enemy defenses, especially on the beaches. Lastly, Japanese defense doctrine had yet to fully exploit the vulnerabilities of Marine assault tactics as seen on Peleliu.

Two years later, Quinlan would assault the island of Peleliu in a war much changed by the forces of necessity and adaptation brought on by the enemy. On Peleliu, he would face challenges beyond those of Guadalcanal. New tactics would be employed, many for the first time, with greater speed, accuracy, and destructive force. New equipment would be introduced as he would assault Peleliu in a new medium tank much superior and more effective than the light tank. As a tank commander, Quinlan understood the importance of the mutually supporting role of the infantry-tank team, a relationship critical to mission success and survival. Many of these tactics had not been addressed in the doctrine developed in the 1920s and 1930s and certainly were not a factor during the Guadalcanal campaign.

The Marines of 1942 would need to overcome the many challenges of amphibious operations: transportation, island terrain, insufficient equipment, and evolving Japanese tactics. In many ways, the Marines were fortunate that the Japanese did not compete on the same level. The success of the Marines in the Pacific may have been threatened had the Japanese fielded a larger tank, even one equal to the Marines' light and medium. Lieutenant Colonel Arthur Stuart, Battalion Commander of the 1st Tank Battalion, lamented after the war that the Marines' advantage over the Japanese was in many ways slight, since, in amphibious operations, the advantage tends towards the defending

force.¹¹ Regardless of speculation, the Marines would still need to adapt to the changing tactical environment and consider the enemy's resolve and creativity to defend in ways that exceeded their pre-war planning efforts. With only 25 months between them, amphibious operations drastically changed between August of 1942 and September of 1944.

Primary Research Question

What did the Marines learn from the amphibious campaigns at Guadalcanal and Peleliu between 1942 and 1944 that allowed them to adapt in such a significant way?

Secondary Research Questions

1. What did the existing doctrine say about the employment of tanks? Were tanks considered in the development of amphibious doctrine? If so, how, and was it effective?
2. What role-capacity did tanks serve in island assaults? How was the Marine First Tank Battalion organized and assigned to support ground forces?
3. What challenges did the M2/3 light tank pose to Marine crews during earlier assaults on Guadalcanal and New Britain? What led to the decision to adopt the M4 medium tank?
4. Did the M4 medium tank change the way the Marine Corps conducted amphibious operations? How and what were the limitations-challenges?

¹¹ Estes. *Marines Under Armor*, 93.

CHAPTER 2

AMPHIBIOUS DOCTRINE

Introduction

The United States Marine Corps defied orthodoxy. They developed an entirely new doctrine of frontal assault from the sea, a concept that flew in the face of every current military principle, but on which proved fundamental in the destruction of Imperial Japan. The Marines also moved forward by looking back, refining the doctrine of the slow moving infantry tank.

— Oscar E. Gilbert, *Marine Tank Battles*

To understand the employment of tanks in the Pacific between 1942 and 1945 requires an examination of the development and evolution of amphibious doctrine in the years leading to war with Japan. Long before Quinlan landed on Guadalcanal in the summer of 1942, the Navy and Marine Corps had conducted amphibious landings throughout their history. However, early amphibious experiences fail to compare to the complexity and lethality of assaults seen in the Pacific campaigns between 1942 and 1945. However, these early operations reflect the general elements that compose an amphibious assault learned through years of experience and examination. This collective experience and the emerging threat in the Pacific, with its unique requirements, would propel the Marine Corps to become the premier amphibious fighting force that emerged after World War II.

The Marines would attempt to assume new roles at the turn of the century in an effort to define a unique and distinct service role that would not compete with the U.S. Army and interests of the U.S Navy. To achieve this, the Marines would pursue service as the Navy's expeditionary Advance Base Force in the Pacific and Central America, fight alongside the Army during World War I in Europe, and continue to perform duty on

ships and U.S garrisons throughout the world. Despite these pursuits, the Marine Corps would struggle to realize its true function until the years leading to war with Japan. The years preceding this realization would be marked by experiences that would foreshadow their accent as the nation's premier amphibious force, but would also shape the identity and culture of Corps that would bolster their success in this role.

Mexican War (1846 to 1848)

The U.S. Marine Corps, established in 1775, served primarily aboard ships as guards and boarding parties, the naval infantry of the U.S. Navy.¹² The Marines also secured territorial garrisons, an increasing role as the U.S expanded influence abroad in the later parts of the Twentieth Century. The Marines also served beyond these roles during wartime. During the Mexican War, Marines participated in major battles such as the battle of Mexico City and the famous battle of Chapultepec. The siege on Chapultepec, a castle known as the Halls of Montezuma, would take on the bravado of the Marine Corps, included in their service hymn, as their definitive battle cry which would rally Marines long after.¹³

During the Mexican War, Marines would participate in an inter-service amphibious operation, the first of its kind that would include elements of the Navy, Marines, and Army. A Battalion of Marines participated in the unopposed landings at Veracruz on 9 March, 1847. The assaulting force, comprised of over 6,000 Soldiers,

¹² Murray, "Assault from the Sea," 71.

¹³ Gabrielle M. Santelli, *Marines in the Mexican War* (Washington, DC: History and Museums Division, Headquarters, U.S. Marine Corps, 1991), 33.

Sailors, and Marines, was the first large-scale amphibious operation conducted by the United States. The joint assault on Veracruz was a success with only little harassing fire from the fleeing Mexican defenders. Although unopposed by the Mexican Army, the assault represented the first joint-service operation between the Army, Navy, and Marine Corps.¹⁴ The landing at Veracruz would be the first of many joint amphibious operations conducted in the Nineteenth and Twentieth Centuries. Future amphibious operations would be the source of much debate, contention, and rivalry between services, but would also engender creative innovations which would strengthen American military capability.

Wars of Intervention (1898 to 1934)

Ironically, the Marines would assault Veracruz a second time during the wars of intervention, a series of military operations in Central America and the Caribbean between 1898 and 1934. The Marines were the primary force used to seize and secure terrain during this period, including the U.S occupation of Veracruz during the Mexican Revolution in 1914. Colonel John A. Lejeune, a future Marine Corps Commandant and advocate of amphibious doctrine, participated in the Veracruz occupation. Lejeune would become the thirteenth Commandant of the Marine Corps and realize the significance of amphibious operations for the Corps. He would direct much of the development of amphibious doctrine and acquisition of equipment. Lejeune would also serve at Guantanamo Bay, Cuba, secured by Marines in 1898 as well as Manila, Philippines and Panama between 1907 and 1914.

¹⁴ Santelli, *Marines in the Mexican War*, 33.

In the early Twentieth Century, as the U.S. continued to expand, the responsibility and reach of the U.S. Navy expanded as well. The seizure of territories in Cuba, Panama, and the Philippines offered the naval fleet potential service locations and protection at advanced bases. In 1900, the General Board of the Navy determined the Marines as an ideal force to occupy and defend these bases. As an expeditionary force, the Marines were generally equipped and organized to assume this unique role. Lejeune, then a major, agreed the Marine Corps was the preferred force for Advanced Basing as it was flexible and able to train and deploy quickly for such a mission. The Marines were a more flexible force compared to the Army and had a reputation for conducting non-traditional roles.¹⁵

The Marines immediately began to prepare for this new role as the Navy's Advanced Base Force and participated in a series of exercises between 1902 and 1907. Major Lejeune, while stationed in the Philippines, participated in the 1907 exercises that focused on moving troops and equipment from ships to shore at the naval base in Olongapo. In large part, Lejeune's experience with the advanced base mission impressed upon him the importance of amphibious operations, a role he would later study and promote as Commandant in the 1920s. The Philippine exercises also included the bolstering of defenses on Olongapo as rising tensions between the U.S. and Japan emerged.¹⁶

¹⁵ John A. Lejeune, "The United States Marine Corps," *United States Naval Institute Proceedings* 51, no. 272 (October 1925): 1861.

¹⁶ Edward S. Miller, *War Plan Orange: The U.S. Strategy to Defeat Japan, 1897-1945* (Annapolis, MD: Naval Institute Press, 1991), 21-22.

Although the concept of an Advanced Base Force seemed appropriate for the Marines, the mission failed to overcome the primary roles Marines were historically known to fulfill. As the Navy continued to expand, so did the many tasks required of the Marine Corps to perform. Personnel shortages and increased demands for ships' detachments, garrison duty, and expeditionary responsibilities at bases in Central America and the Pacific overtasked the Marines. The training and equipping of an Advanced Base Force did little to compete with these seemingly high priority demands. Although directed by the General Board of the Navy, the Advanced Base mission gained little momentum and was not seriously resourced or pursued until after World War I.¹⁷

Emerging out of the Advanced Base Force concepts of the early 1900s was the *Landing-Force and Small-Arms Instructions* manual, published in 1905. This manual was the Navy's first attempt to document landing operations and give direction to its implementation. As a foundational document, the *Landing-Force Manual*, renamed in 1918, prescribed the organization, equipment, and landing of a waterborne operation. Although limited in detail, the manual discussed selecting landing sites, naval artillery fire, and actions after landing. The doctrine reflected the experiences of past operations and favored unopposed or lightly defended sites that would facilitate a successful landing.¹⁸

¹⁷ Daniel C. Emmel, "The Development of Amphibious Doctrine" (Master's Thesis, U.S. Army Command and General Staff College, 2010), 12.

¹⁸ U.S. Navy Department, *Landing-Force Manual: United States Navy, 1905* (Washington, DC: Government Printing Office, 1905), 7.

The 1905 *Landing-Force Manual* recognized, early on, key aspects of ship-to-shore movements. On the topic of transportation, it asserted that “transportation is a matter of first importance” and that “with insufficient facilities it may not be possible to equip fully the special details for effective service.”¹⁹ This recognized the challenge of transporting troops and supplies from ships to the landing sites. Additionally, the manual discussed the flow of troops and stated that “the landing force of each ship be as large as possible...that the maximum force may be ready.”²⁰ By 1905, the practice of massing troops on landing sites was an important planning and execution factor that would have significant implication for the Marine Corps between 1942 and 1945. The Navy’s *Landing-Force Manual* was a critical first step toward amphibious doctrine because it documented and prescribed a unique function that would emerge as the Marines Corps niche after World War I.

World War I

Although the proven and preferred expeditionary force for a small-scale action, the Marines historically have experienced periods where their existence has been questioned. In the years leading to World War I, the Marines faced scrutiny from President Theodore Roosevelt in 1908 as he moved to abolish the Corps and recommended that it be absorbed by the Army.²¹ The Marines had demonstrated they

¹⁹ Ibid., 18.

²⁰ Ibid., 8.

²¹ Allen Axelrod, *Miracle at Belleau Wood: Birth of the Modern Day U.S. Marine Corps* (Guilford, CT: Lyons Press, 2007), 4.

were an ideal force to conduct small-scale, amphibious operations when necessary. However, when such functions were not necessary, the Marines were often neglected, if not threatened.²² The Marines would continue to struggle with this stigma after World War I as force levels plummeted and their service role became ill-defined. Questions would again rise as to the purpose of their existence and possible disbanding. The Marines would need to clearly articulate and demonstrate a unique ability that would set them apart from the well-established Army and Navy functions.

When the United States entered the war in 1917, the Marine Corps needed to adapt to a land-based war that did not call upon the use of their pre-war roles. The Corps immediately began building its force to fight alongside the much larger U.S. Army. At the onset of war in April 1917, the Marines' active strength totaled 419 officers and 13,214 enlisted men. Half of that force continued to serve aboard ships and guard U.S. territories, fulfilling their primary role.²³ War authorizations grew steadily in 1917, first growing the Marine Corps to 30,000 active troops by September and then to 50,000 by December. These numbers allowed the Marines to contribute significantly to the war in Europe and secure a place as a capable land-based force similar in function to the Army and to maintain base and at-sea duties.

The Marine infantry brigades that served across the battlefields of Europe between 1917 and 1918 distinguished themselves and garnered worldwide recognition.

²² Axelrod, *Miracle at Belleau Wood*, 4.

²³ Edwin N. McClellan, *The United States Marine Corps in World War I* (Washington, DC: U.S. Historical Division, Headquarters United States Marine Corps, November 1919), 11.

At the Battle of Belleau Wood in June 1918, the Marine units of the 5th and 6th Regiments defended against German attacks along the Marne River, holding Belleau Woods and mounting a daring, but costly, counter attack that drove the Germans out of the woods entirely. According to Marine Corps lore, the famous nickname “Devil Dog” was earned during this battle based on claims that German Soldiers referred to the Marines as “Tefelhunden,” or devil-dog, for their tenacious fighting spirit. These exploits, and many more, drew much attention to the Corps and as a result, recruitment soared. By the end of the war in November, 1918, the Marines’ total strength exceeded 75,000, the largest in its history.²⁴

The Marine Corps would emerge from World War I a much different organization. It had grown nearly six times its pre-war size and proven itself as an effective fighting force alongside the much larger Army. The success of the Marines was in large part due to the war itself, as the Corps historically demonstrated its abilities when called upon. However, during times of relative peace, the Marine Corps tended to draw negative attention, typically from the Army, and at times, the Navy as well. Post-war reductions began across the armed services almost immediately after peace was declared.

The Marines issued Order No. 56 on 20 November 1918, a mere nine days after the signing of the armistice. This began a massive reduction of force and by December 1919 practically all of the amassed war personnel were discharged. This brought the Corps down to below 27,000 total troops, still double the pre-war force. However, these reductions were more severe as the Corps assumed additional duties during the war as the

²⁴ McClellan, *The United States Marine Corps*, 11.

U.S. influence expanded throughout the world. These reductions threatened their ability to meet their pre-war roles and missions in light of the gains made as an established fighting force. The Marines struggled to preserve these gains in the years after World War I as the U.S. became more isolated and anti-war. The Corps would be left to establish its own unique function amid heightened service rivalries and competition between roles and missions.²⁵

Interwar Period (1918 to 1942)

As the Marines attempted to recover from post-war force reductions in 1918, it and the nation would quickly focus its attention on the Japanese threat in the Pacific. As a result of negotiations at Versailles in 1919, Japan gained control of islands and territories across the Pacific: the Marianas, Marshall, Caroline, and Palau. The U.S. maintained control of Hawaii, Guam, and the Philippines, but became increasingly concerned by the growing control and influence by the Japanese. This threatened U.S. access and trade routes in the Pacific and Japan became a focus for the Navy as a potential adversary. So serious was this threat that military planners designed War Plan Orange. One of a number of “color-plans,” Orange was the strategic plan to deter and combat Japanese presence in the Pacific.²⁶

War Plan Orange dominated much of the early Twentieth Century for military leaders. The need for a strong naval force became paramount as the vast Pacific Ocean posed a serious challenge. The U.S. Naval fleet would have to travel great distances to

²⁵ McClellan, *The United States Marine Corps*, 80.

²⁶ Miller, *War Plan Orange*, 13-15.

reach U.S. territories and interests. Of concern was the defense of the Philippines and maintaining the sea-bases necessary to secure and sustain a naval force operating throughout this region. These interests became the focus of War Plan Orange. By the end of World War I, the strategic picture began to change for both the U.S. and Japan, mostly in favor of Japan. Naval restrictions were established by the Washington Naval Conference in 1921 and 1922. The conference set limits on the number and weight of naval vessels for each navy. The conference also established that no additional naval bases would be constructed, a serious problem for U.S. naval options under War Plan Orange.²⁷

As bureaucratic controls limited naval fleet expansion and basing, the Navy continued to adjust War Plan Orange. Since no additional basing was authorized under the Five Powers Naval Treaty of 1922, the Navy adjusted its Advanced Base Force doctrine in the Pacific. In the event of war with Japan, the Navy foresaw a need to seize advanced bases from the Japanese. Naval planners realized that the U.S. would be unable to rapidly respond to Japanese aggression due to the time and distance of deploying naval forces from the U.S. West Coast. The Japanese would use that time to seize and fortify bases throughout the Pacific. The U.S. Army was particularly concerned with defending and holding the Philippines long enough for a naval force to arrive. The Navy needed additional bases in the Pacific to conduct any large scale sustained operation. The challenge would be, with Japan now occupying key terrain throughout the Pacific, to seize that terrain from the Japanese, a difficult task which required a specialized force.

²⁷ Ibid., 18.

In response, the Marine Corps immediately began building on the concept of the Advanced Base Force developed before World War I. Major General John A. Lejeune, now Commandant as of 1920, began to focus his efforts on shaping the Marine Corps to serve in this role. Although some believed the Corps should focus on expanding its role as a land-based force alongside the Army as it did in World War I. Lejeune believed the Marine Corps would be of better use linked to the Navy.²⁸ He recognized the importance of the amphibious assault function outlined in War Plan Orange. When Japan emerged as the likely adversary in the Pacific, War Plan Orange became increasingly relevant, as well as the existence of a force with the capability and capacity to perform such a mission.

As a result, the Marine Corps began developing doctrine and participating in joint exercises with the Navy and Army between 1920 and 1935. First, Operation Plan 712 was published in 1921 by Major Earl Ellis, an officer who was directed by Lejeune to conduct a study on advanced base operations in the Pacific in light of Japanese presence. Plan 712 identified the critical functions of an advanced base force, but also recommended a shift in approach, one from defense to that of offense. Again, due to the lack of additional sea-based locations across the Pacific, the U.S. would have to seize them from the Japanese. Ellis prescribed the sequence of seizures in three phases starting with the occupation of the Marshall Islands, the western Caroline Islands, and the Palaus. The seizure of these islands would provide the Navy with sea-bases for supply and protection necessary to conduct full-scale naval campaigns throughout the Pacific. Plan

²⁸ Lejeune, “The United States Marine Corps,” 115.

712 also gave detail to the type of Marine force necessary to conduct the seizure of islands from the Japanese, one that could quickly organize and execute by overwhelming force.²⁹ However, the Marine Corps still had not established how to achieve this at the tactical level and only had limited experience seizing undefended islands by 1920.

Plan 712 was the first focused study conducted by the Marines that considered the strategy to overcome the lack of advanced bases in the Pacific. However, the plan did not detail the specific actions at the tactical level that would be required to execute amphibious operations. The closest doctrinally-based manual that described an amphibious assault was found in the recently published *Strategy and Tactics of Small Wars*, a manual composed of lessons based on the Marines' experience conducting small-scale interventions in Central America and the Pacific. The manual, originally published in 1921, prescribed the conduct of a small war through five distinct phases. The first phase, described as the initial demonstration or landing and action of vanguard, outlined the actions required to land a Marine force and establish operations. Sub-paragraph No. 2 read:

During the initial phase small numbers of troops may be sent to shore to assume the initiative, as a demonstration to indicate a determination to control the situation, and to prepare the way for any troops to follow. This vanguard is generally composed of marine detachments or mixed forces of marines and sailors from ships at the critical points. Owing to its limited personnel, the action of the vanguard will often be restricted to an active defense after seizing a critical area.³⁰

²⁹ Earl H. Ellis, *U.S. Marine Corps 712H Operation Plan: Advanced Base Operations in Micronesia* (Intelligence Section, Division of Operations and Training, United States Marine Corps, July 23, 1921), 31.

³⁰ U.S. Navy Department, *Small Wars Manual* (United States Government Printing Office, 1940), 6.

This excerpt identifies the considerations of an amphibious landing action as experienced by the Navy and Marine elements leading to 1921. The first critical action identified was the task of transporting troops from the sea to shore in order to “assume the initiative.” This process was generally straightforward in the years between 1898 and 1934 as demonstrated by numerous landings conducted by the Navy, Marines, and Army units. During this time, ferrying troops from ship to shore was accomplished through the use of long surfboats acquired for such a purpose. Troops would load these boats from a transport vessel a short distance from shore and then make their way, powered by oars, to the beach to unload. The landings at Veracruz in 1847 included the use of 65 surfboats that transported over 8,000 troops without incident in just a few hours.³¹

The second critical action identified in the *Small Wars Manual* was an effort to “control the situation, and to prepare the way for any troops to follow.”³² This included tasks to establish a foothold on the landing beach by eliminating obstacles, and if necessary, to engage opposing hostile forces if present. This phase of the landing was critical because it relied on gaining momentum and landing enough troops on the beaches to hold its position while forces continued to flow from ship to shore. The manual also described a “mixed force” of Sailors and Marines working together at “critical points” through all phases of the landing. This point draws attention to the coordination and synchronization necessary to conduct a landing. Lastly, the manual suggests that due to limited personnel [on the beach], the vanguard or assaulting force would be restricted to

³¹ Santelli, *Marines in the Mexican War*, 33.

³² U.S. Navy, *Small Wars Manual*, 6.

an active defense. This point stresses the vulnerability of an amphibious landing in the initial stages. The initial force would be largely susceptible to enemy attack due to their small number. This point underscores a major risk in conducting a landing of this kind and would represent a significant challenge for the Marine assaults of World War II.

The *Small Wars Manual* also addressed an important factor in conducting amphibious operations: command relationships. The Marines, a service in the Department of the Navy, held limited overarching command roles and were usually under the control of a naval commander. However, when conducting water landings and land-based operations, who would command? Article 575 established that Marine forces are to be “under the orders of the senior officer in command of vessels.”³³ This created an obvious challenge for Marine forces planning and executing amphibious operations and directing actions beyond the beachhead. Contention and confusion often arose as described in paragraph 1-25, which addressed the issue.

Marine officer commanding ashore—a. When the force landed comprises a Marine brigade or smaller organization under the command of a Marine officer, and such forces become engaged in a type of operation that does not lend itself to the direct control of the naval commander afloat, many questions with regard to the relationship between the Marine forces ashore and the naval commander afloat will present themselves.³⁴

Command relationships between Marine and Navy commanders presented a challenge to both organizations. Each attempted to perform their unique functions. However, in a joint environment, these functions invariably overlapped, especially when conducting ship-to-shore landings. The primary challenge was one of coordination and

³³ U.S. Navy, *Small Wars Manual*, 35.

³⁴ *Ibid.*, 37.

speed, especially when moving troops from transport ships to landing craft. The second problem was one of command and control, as land-based operations fell under the Marines to perform, but one the navy was overall responsible for.³⁵ By 1921, Marine forces would continue to answer to their senior naval commanders operating on ships. However, the complexity of amphibious operations that emerged in the years before 1942 would prescribe a different approach to the naval command structure.

The *Small Wars Manual* served to put in context and define the type of operations the Marines had been conducting since the late Nineteenth Century. The manual would serve to do much more. These experiences would inform the development of amphibious doctrine in the years leading to war with Japan. Although broad, the items outlined in the *Small Wars Manual* for landing a Marine force represent the combined experience of conducting small-scale, waterborne operations in a relatively permissive environment. The Navy would soon realize the complexity of conducting such an operation was considerably challenging, even during peace time. These factors would come to represent the body of knowledge used to plan and assess the actions necessary to conduct an amphibious assault in the twenty or so years before 1942. The Navy and Marines would build on their experiences and learn their previous successes would compare little to the challenges presented for the Marines of 1942 and beyond.

Using the *Small Wars Manual* as a guide, the Marines began conducting and participating in landing exercises both as a separate service and jointly. The Marine Expeditionary Force, newly renamed by General Lejeune to reflect its offensive focus,

³⁵ U.S. Navy, *Small Wars Manual*, 35-37.

conducted its first landing exercise in 1922. Although limited only to a few companies of Marines, the landing focused on the logistics of moving artillery to the shore, similar to the exercise General Lejeune participated in as a younger officer in the Philippines in 1907. Though beneficial, these limited exercises did little to tackle the larger problem of conducting an assault on a defended beach.

The first large-scale amphibious exercise against a defended beach was a joint maneuver in conjunction with the Army in 1924. Fleet Problem No. 3 included an assault on the Panama Canal garrison by 1,750 Marines and another 1,550 to establish an advanced base at Culebra. The resulting assault on the Panama Canal garrison was successful, however logistic and coordination problems caused delays during the ship to shore phase, naval gunfire support, and issues with landing craft.³⁶ The Marines participated in landing exercises again in 1925 on a much larger scale in Hawaii. This exercise simulated the assault of two division-sized elements (approximately 40,000), against a defending force of 16,000 Active and National Guard Army units. Lessons drawn from the 1925 exercises concluded that further development of landing craft was necessary to overcome the shortfalls in transporting troops and materials to shore, including tanks.³⁷ The Marine Corps continued to participate in joint landing exercises throughout the 1920s and used these experiences to formulate the amphibious assault doctrine that emerged in the mid-1930s.

³⁶ Dion Williams, "The Winter Maneuvers of 1924," *The Marine Corps Gazette* 9, no. 1 (March 1924): 21-25.

³⁷ Dion Williams, "Blue Marine Corps Expeditionary Force," *The Marine Corps Gazette* 10, no. 2 (September 1925): 87.

The development of amphibious doctrine in the years leading to World War II relied heavily on the lessons coming out of the joint landing exercises conducted in the 1920s. The insights and lessons gained from these exercises led to the development of the *Tentative Manual for Landing Operations*, published by the Navy in 1934. This manual was the first detailed publication that prescribed the specific tactics of conducting an amphibious operation. It built upon the *Small Wars Manual* and expanded the scope of the landing operation to include objectives, task organization, landing boats, ship to shore movement, naval gunfire, aviation, communication, artillery, and tanks.

The *Tentative Manual for Landing Operations* discussed, for the first time, the employment of tanks in an amphibious assault. Although relatively new, the tank offered a unique capability during an amphibious assault that could compensate for the disadvantages of attempting to seize a defended beachhead. In World War I, the tank served only to break through enemy defenses after crossing between lines in an attempt to break the stalemate of trench warfare. However, these tanks saw limited use and only relative success in the late battles of 1917 and 1918. Although a conceptually ideal solution to the challenges of trench warfare, the tank brought with it multiple challenges and difficulties. The tanks of the early Twentieth Century were large, slow targets, difficult to maneuver, and mechanically unreliable, a weapon that promised victory but usually disappointed. However, tanks did show promise as demonstrated in the Battle of Cambrian in November 1917 where British tanks were successfully used in a surprise attack against German defenses. Again in August of 1918 at the Battle of Amiens, the Canadian and Australian assault demonstrated that tanks could be successful in infiltrating enemy defenses. However, in both battles, gains were lost to German

counterattacks while the many shortcomings of the tank continued to yield heavy vehicle losses.³⁸

By the end of World War I in 1918, both the Allied and Axis powers recognized the potential of the tank. Tactically, the tank represented a mobile weapon that could cross open terrain and penetrate defenses that conventional infantry could not accomplish without significant loss. The tank was a solution that could potentially reduce these losses and make significant gains by overwhelming firepower and mechanical momentum on the battlefield. In theory, the role of the tank in amphibious operations would continue to reflect similar concepts in penetrating defenses and seizing terrain.

The *Tentative Manual for Landing Operations* prescribed the use of the tank in specific terms during an amphibious assault. The manual established the primary mission of the tank as follows:

Use of Tanks in Landing Operations—a. The primary mission of tanks in the landing operation is to facilitate the passage of infantry through the immediate beach defenses by destroying enemy wire and machine gun defenses at or near the waters' edge. They are particularly valuable in covering the flanks of the landing.
b. In addition, tanks in adequate numbers should be provided to support the advance to the final objective. Their speed and maneuverability make them particularly effective for rapid exploitation.³⁹

This description offers insight into the initial role tanks would serve in an amphibious assault, one that was similar to its original purpose, to penetrate enemy defenses and to support operations further inland. However, specific to an amphibious assault, the

³⁸ Murray, "Assault from the Sea," 6.

³⁹ U.S. Navy Department, *Tentative Manual for Landing Operations* (Washington, DC: Office of Naval Operation, Division of Fleet Training, United States Government Printing Office, 1935), 181.

challenge was always transportation from ship to shore which, for obvious reasons, was problematic. The manual identified the need for a landing craft that was capable of delivering tanks to, or as close to shore as possible. Such a craft, however, did not exist. The discussion of the method of landing reveals the need for such a craft described as “a special self-propelled landing craft or ship be provided which can keep up with the leading boats and permits the tank to run rapidly to shore under its own power as soon as the craft beaches.”⁴⁰

Additionally, the manual identified a critical vulnerability of the assaulting force that the tank could minimize. Timing was a critical issue as naval gunfire and aviation support were closely coordinated. However, as the assault ships approached the beach, the naval gunfire had to be shifted further inland so aviation could to keep from friendly-fire. A gap in support existed between the shifting of naval fires and the 20 to 30 minutes it would take the field artillery to provide supporting fire existed. The “tank[s] will be of the most value” to provide the necessary direct fire coverage needed to support the assault troops.⁴¹ In order to achieve this, the tanks would be deployed with or as close to the first waves as possible. (see figure 1)

Lastly, the manual describes the function of tank support after securing the beachhead in broad terms. In reality, the Marines had little experience working alongside tanks in this capacity. The manual asserts that “the tactics of tanks after landing are much the same as those of ordinary land warfare . . . but tank commanders must use great

⁴⁰ U.S. Navy, *Tentative Manual for Landing Operations*, 181-183.

⁴¹ *Ibid.*, 182.

initiative.”⁴² The relationship between Marine tank crews and infantry units had yet to be developed beyond mere acknowledgment. Military planners knew the tank offered a unique advantage once on the beaches, but they did not foresee the challenges of armored warfare on islands and jungles across the Pacific. The critical nature of the role of tanks would not truly be realized until after the initial island assaults of 1942 and 1943. The emerging amphibious doctrine developed in the years during the interwar period would underscore the importance of the tank but would underestimate the difficulties of employing them exclusive only to amphibious operations.

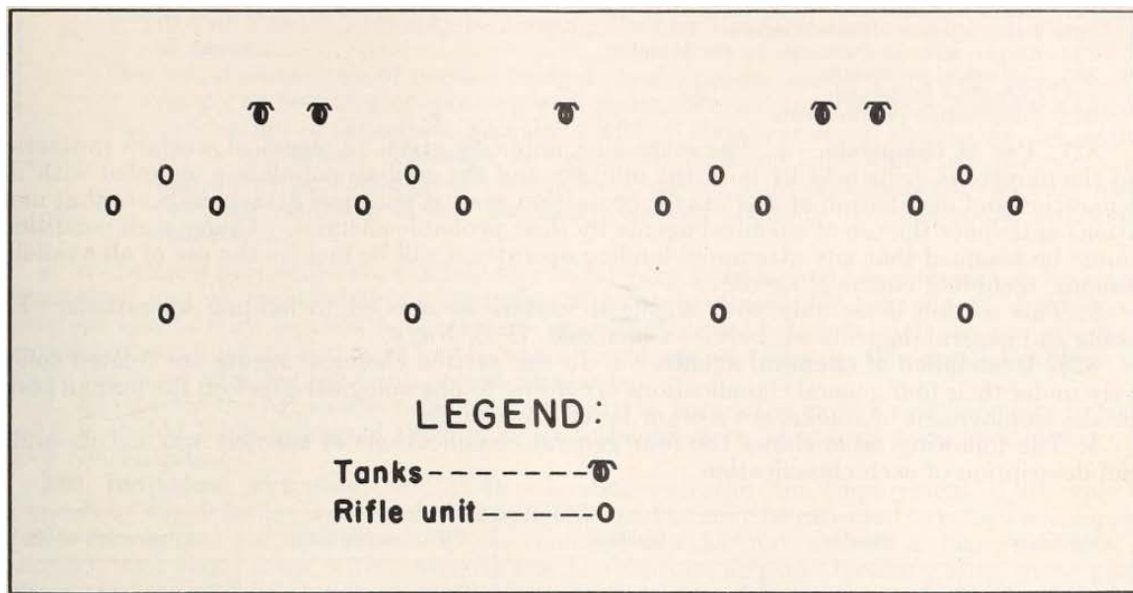


Figure 1. Tank Lighters in Leading Wave

Source: U.S. Navy Department, *Tentative Manual for Landing Operations* (Washington, DC: Office of Naval Operation, Division of Fleet Training, United States Government Printing Office, 1935), 183.

⁴² U.S. Navy, *Tentative Manual for Landing Operations*, 183.

CHAPTER 3

EARLY TESTS AND FIRST ACTION

Introduction

These tanks do not hold up under the strain of field conditions and are constantly breaking down during field training exercises. There have been on the average of five tanks a day on deadline due to these necessary repairs.

— Captain Gardelle Lewis, *Marines Under Armor*

We watched these awful machines as they plunged across the spit and into the edge of the grove. It was fascinating to see them bustling amongst the trees, pivoting, turning, spitting sheets of yellow flame.

— Richard Tregasis, *Guadalcanal Diary*

The *Tentative Landing Manual* prescribed, for the first time, the purpose and employment of the tank in an amphibious assault. However, this only represented the theory of how the tank should be used to best support the Marine Expeditionary Force. The Marine Corps needed a specialized vehicle, uniquely designed that could perform within the amphibious function. The primary function was that it needed to be light enough for the Navy to transport. More importantly, light enough to lift from transport vessel to landing craft. The Navy's hoist capability in the 1920s was limited and landing craft for tanks nonexistent. The Marines sought to design and produce a vehicle within these constraints, but soon realized a vehicle this size would struggle to perform a wide range of functions relatively well.

The Marines experimented with the armored car and their own variant of the light tank, the Combat Tank Light (CTL) throughout the 1920s and 1930s. The CTL failed to meet expectations after years of development and design improvements. Marine leadership also resisted efforts to adopt, or even consider, other service options until the

pressures of war and limited time forced them to act. The Marine Corps would adopt, out of the necessity of war, the Army's M2A4 light tank. In 1941, the Marines were thrust into combat quickly with a hastily procured tank. The tankers went to war with limited training and confidence in their new vehicles. Additionally, the tankers were tasked with a mission only practiced during a series of fleet landing exercises on a much smaller scale. First contact with the enemy would test the light tanks and its crews in an unknown environment against an experienced enemy.

Armored Cars

The Marine Corps first began experimenting with armored vehicles in 1916 when the quartermaster secured funds to purchase two armored cars under the direction of Captain Andrew B. Drum. The armored car, a four-wheeled, armor-plated, 37mm automatic gun mounted vehicle, powered by an eight-cylinder motor appealed to Drum as useful in support of the Advanced Base Force mission. (see figure 2) Although the tank began to see action during this time in Europe the armored car was available locally and Drum intended to explore its usefulness. The first two prototypes provided by the Detroit Armored Car Company were sent to the Mexican border for trials with the expeditionary force in August. By October, Franklin D. Roosevelt, Assistant Secretary of the Navy, approved the purchase of the armored cars and the subsequent acquisition of six more at a cost of no more than \$5,500 each.⁴³

Drum formed the Armored Car Squadron in late 1916 with a total of eight, three-man Armored Car Company cars. The squadrons' mission was vague with no established

⁴³ Estes, *Marines Under Armor*, 2.

purpose or doctrine. However, the squadron was assigned to the First Marine Regiment, an indication of their role in the defense of advanced naval bases. During trials in Mexico in 1916, the armored car was tested for naval compatibility as part of the Marines expeditionary mission requirements. These tests included “loading and unloading successfully from a 40-foot motor sailing launch using improvised ramps placed over the stern.”⁴⁴ Later tests revealed use of the cars primarily in mobile patrolling roles. However, the armored cars never saw action and were loosely maintained by untrained crews through the 1920s. The potential of the armored car never fully materialized or seemed to fit the expeditionary mission. The car required special transportation and fitting for amphibious landings and offered negligible advantage to the Advanced Base Force. The squadron was subsequently disbanded in May 1921.

⁴⁴ Ibid., 2.



Figure 2. Troops of the 2nd Marines Train with a King Armored Car in Haiti in the mid-1920s

*Source: Kenneth W. Estes, *Marines Under Armor: The Marine Corps and the Armored Fighting Vehicle, 1916-2000* (Annapolis, MD: Naval Institute Press, 2000), 107.*

The Light Tank

Under the direction of Commandant John Lejeune the Marines embraced the amphibious assault mission as part of the broader strategy in the Pacific. The Marines also realized the changing nature and roles of the advanced base force from one of defense to offense in seizing islands occupied, and heavy defended, by the Japanese. Major Earl Ellis's study, *Advanced Base Operations in Micronesia*, provided the Marines with insight into the types of fixed and mobile beach defenses they may face. Thus, the

Marines acceptance of the mission to conduct forcible entry against defended beaches necessitated the employment of tanks.⁴⁵

The development of the light tank grew out of the specific requirements of the Marine Corps amphibious assault mission. The Marines needed a light, mobile, and reliable vehicle that could destroy enemy beach defenses and make way for follow-on troops. With no funding allocated for acquisition of such a vehicle the Marines turned to the Army. The Army possessed over 900 World War I era tanks, the M1917, a variant of the French Renault FT17, which by 1920 was generally obsolete. The M1917 housed a 37mm gun, one variant, or a .30 caliber M1919 machine gun, a second. The Marines borrowed three from the Army to participate in the Navy's 1924 Winter Maneuvers.⁴⁶

The joint maneuver in 1924, named Fleet Problem No. 3, was the first exercise that included seizure of a defended beach on the Panama Canal garrison. The three M1917 tanks were operated by the light-tank platoon, created just before the exercise in late 1923. The tank platoon consisted of two officers and 22 men. Preparation and training for crews was minimal as the Army operated the only tank school in the country at Camp Meade, Maryland. Since 1922, the Marines attempted to secure seats for their officers and enlisted men in order to build the necessary knowledge and experience to train the future Marine Corps tank force. The tank platoon unloaded their three light tanks at the port of Culebra and quickly joined the Expeditionary Force. However, the tanks

⁴⁵ Ellis, *U.S. Marine Corps 712H Operation Plan*, 31.

⁴⁶ Arthur E. Burns III, "The Origin and Development of the U.S. Marine Corps Tank Units: 1923-1945" (Student Paper, Marine Corps Command and General Staff College, Quantico, VA, 1977), 2.

were never used during the exercise, assigned a counterattack mission that was subsequently cancelled. The tank platoon returned to Quantico, Virginia and continued to grow through a formal loan agreement with the Army.

By 1927, the tank platoon grew to eight M1917 tanks and its ranks swelled in preparation for an expedition to China. The Chinese civil war compelled the U.S. to bolster its presence in Shanghai and guard the international community at Peking. The expedition commander, Brigadier General Smedley Butler, requested the support of armored cars, but the Marine Corps had divested its fleet of eight Armored Car Company cars in 1921. In response, the light tank platoon was dispatched to support the now brigade sized force. Although the tanks saw no combat action in China they did conduct drills and instruction, practicing visual signals, maintenance and care of the machine gun and 37mm gun. The tank platoon also practiced maneuvers and experimented with tactics in both offensive and defensive roles.

Assessment of the tanks role at the conclusion of operations in China revealed mixed emotions concerning usefulness of the tank. Major A. Archer Vandergrift, future Commandant of the Corps and brigade operations and training officer during the China expedition, noted that the tank could be used as a “movable pillbox[s] in street fighting and mob control.”⁴⁷ While General Butler believed the tank was unnecessary and “it would be better suited to have a mobile blockhouse trailer which would be better suited to perform duty assigned to a tank platoon.”⁴⁸ However, in both cases, these observations

⁴⁷ Estes, *Marines Under Armor*, 15.

⁴⁸ *Ibid.*

were noted in reference to the nature of the mission conducted in China: urban operations. The tank platoon departed China in September 1928 arriving in San Diego in October and quickly disbanded in November. The eight M1917 tank never saw service again and were disposed of in 1935.⁴⁹

In 1933 the Expeditionary Force was renamed the Fleet Marine Force, further indication the Marines embraced their role in amphibious operations as a matter of naval policy. However, with onset of the Great Depression, naval exercises ceased between 1929 and 1934. During this time of inactivity, under the direction of Commandant John Lejeune, the Marine schools focused on the development of doctrine and studied amphibious operations in history. Specifically, the disastrous British Gallipoli Campaign in 1915 became the focus of study in the early 1930s. The Marines sought to learn from the failures of the Gallipoli Campaign in an attempt to ensure they not repeat them in the execution of amphibious operations under War Plan Orange.⁵⁰

One of the failures of the Gallipoli Campaign was the ineffectiveness of the British to penetrate further inland after the beachhead was established. Again, the tank seemed the obvious solution as reflected in the Tentative Manual for Landing Operations. A document heavily influenced by the study of the Gallipoli Campaign.⁵¹ In response, the Marines continued to look to the tank as a viable option that could destroy enemy strong points on the beach and support ground troops in an advance inland. By 1934, the Fleet

⁴⁹ Estes, *Marines Under Armor*, 8.

⁵⁰ Emmel, "The Development of Amphibious Doctrine," 41.

⁵¹ Robert H. Dunlap, "Lessons for Marines from the Gallipoli Campaign," *Marine Corps Gazette* 6, no. 3 (September 1921): 238.

Marine Force planned to establish another tank company, this time developed and acquired specifically for the Marines unique mission.⁵²

The Marines envisioned a light tank that could overcome the logistical limits of the Navy and perform the functions to support an amphibious assault. The weight of the tank needed to be limited to under three tons, carry a 1.1-inch automatic gun, or a 37mm. Additionally, the light tank needed armor to resist small arms and .50 caliber rounds while capable of maintaining speeds between 25 to 30 MPH. Although no such tank existed, these specifications represented the ideal vehicle, capable of satisfying all requirements. By the mid 1930s, Navy cranes and cargo-handlers were limited to 5 tons, anything larger would require development of specialized equipment. The Marines wanted a tank within the existing lifting capability of the Navy.⁵³

On 29 November 1935, Major General John H. Russell, Marine Corps Commandant, ordered the procurement of five light-tanks that would serve, exclusively, as the Marine Corps' amphibious assault tank. The Marmon Herrington Company of Indianapolis was selected as the preferred bidder. (see figure 3) Their 1935 Combat Tank, Light weighed in at just over three tons, fitted with quarter-inch armor, and operated at speeds above 30 MPH. The Marine Corps believed the CTL could be modified to fit their desired specifications. Subsequently, the CTL-2 was developed which increased its armor to 3 inches and the CTL-3 added a .50 caliber machine gun, and .45 caliber sub machine

⁵² Estes, *Marines Under Armor*, 8.

⁵³ Kenneth J. Clifford, *Progress and Purpose: A Developmental History of the United States Marine Corps, 1900-1970* (Washington, DC: HQMC, 1973), 52-53.

gun. The 37mm cannon was never added, but was accepted by the navy contracting board on 5 June.⁵⁴



Figure 3. A Marmon Harrington Combat Tank Light (CTL) unloading from a 45-foot Tank Lighter

Source: Kenneth W. Estes, *Marines Under Armor: The Marine Corps and the Armored Fighting Vehicle, 1916-2000* (Annapolis, MD: Naval Institute Press, 2000), 109.

Major Hartnoll Withers, newly graduated from the Army's tank school now located at Fort Benning, activated the 1st Tank Company, 1st Marine Brigade, on 1 March, 1937.⁵⁵ Production of the CTL-3 progressed and the new light tank was fielded

⁵⁴ Fred Crimson, *U.S. Military Tracked Vehicles* (Osceola, WI: Motorbooks International, 1992), 65-66.

⁵⁵ Estes, *Marines Under Armor*, 13.

to the 1st Tank Company in time for Fleet Exercise No. (FLEX 4). FLEX 1-3 were conducted between 1935 and 1937 with landings at Culbera Island in the Caribbean for both FLEX 1 and 2 and landings at San Clemente, California for FLEX 3. These exercises focused on validating the doctrine of the *Tentative Manual for Landing Operations* to include ship-to-shore movement, synchronizing naval and aviation fires, and the use of specialized landing craft still insufficiently developed. However, tanks were not included in these first three exercises and the Marines of the 1st Tank Company were eager to test their new machines.

Now under the command of First Lieutenant Hector de Zaya's, a 1932 Naval Academy graduate and experienced infantry officer, the tank company participated in FLEX 4 at Puerto Rico between January and March of 1938. The five Herman-Herrington CTL-3's were administratively unloaded at Culebra Island, each being shuttled to shore by a single tank-lighter. The tank-lighter designed at the same time as the CTL provided a solution for the problem of landing heavy equipment, artillery, and tanks on shore. The tank-lighter designed for the CTL was a 38-foot, self-powered craft first employed during FLEX 4. After being unloaded at Culebra, Zaya and his tank company proved effective, destroying the enemy's reserve force during the mock exercise.⁵⁶

During FLEX 4, the 1st Tank Company participated in a second landing on the nearby island of Vieques, this time, as part of the assaulting force. The tank-lighter was again used and transported its single CTL-3 with the first assault wave without issue. The

⁵⁶ Ibid., 15.

single CTL was “credited with the neutralization and destruction of beach defenses in support of the assaulting infantry.”⁵⁷ This was significant because, for the first time, a Marine tank was successfully used to assault a defended beach and destroy enemy positions in support of troops. The 1st Tank Company was successful in fulfilling its conceived role outlined in the *Tentative Manual for Landing Operations*, however limited. Although successful, the performance of the CTL-3 would reveal significant material shortfalls that would redefine the performance parameters of the Marine Corps light tank.

At the conclusion of FLEX 4, the 1st Tank Company returned to Quantico for much needed repair. The CTL-3 displayed much potential as the Marine Corps’ light tank but also showed signs of inadequacy. Lieutenant Zayas criticized the tank as underpowered and often unreliable during cross-country movements. The CTL-3 suffered from a litany of weaknesses: broken drive shafts, cracked armored plates, and failed differentials. Moreover, crews returning from FLEX 4 commented on the difficulties in operating the cramped, two-man tank. Feedback from crews indicated difficulty in manning three machine guns as well as driving and others duties. Additionally, the CTL was turretless with machine guns oriented toward the front in the direction of movement. This left the tank undefended on each side and rear.

The CTL-3A was launched in response to the varied design flaws identified by crews during FLEX 4. The tanks were outfitted with stronger Hercules engines to deliver more power when needed. Improvements in suspension were made as well in an effort to

⁵⁷ Ibid.

reduce operating impacts and vibrations that tended to damage other components. However, the design of the CTL remained relatively unchanged and a turret was never added. Consequently, under intense scrutiny by officers and crew, the CTL program was in doubt. This led to a series of inquiries that would put the validity of the CTL to the test and propel the Marine Corps to consider other light tank options.

The Marine Corps Equipment Board (MECB), formed in 1935 to acquire equipment and material to outfit the Fleet Marine Force, moved to terminate the CTL contract in 1938, only three years after the program was launched. The CTL-3A continued to fall short in trials and the MECB cited unreliability as its primary defect. However, the board approved one final test upon the urging of Major General Thomas Holcomb, Marine Corps Commandant in 1938. Holcomb believed in the light tank concept and the Corps desperately needed more tanks. The MECB approved the request and the Marmon Harrington Company conducted a retrial in November, passing marginally in all categories. Production of the CTL-3A began and by June, 1939 five “improved” light tanks were delivered to the newly formed 2nd Tank Platoon of the 1st Tank Company.

The changes to CTL-3A were still lacking and crews continued to see serious maintenance trends and reliability issues. However, Marine Corps leadership continued to favor a light tank solution for its amphibious mission. Opposition to the CTL-3A continued to mount as Lieutenant Colonel Lemuel C. Shepherd, Senior Member of the Committee on Tanks, urged the board to begin work on changing the Commandants (light tank) policy. During a 15 September, 1938, meeting, the MECB concluded “that adequate performance and fire power cannot be obtained in any tank with the weight

limitations of our present model tank.”⁵⁸ The five-ton weight limit seemed to hamper design of a tank that could offer the advantages the Marine’s wanted in a light tank. The Board continued in its assessment:

The Board fully concurred in the opinion of many well-advised officers of the Marine Corps that all of our equipment should be as light as possible consistent with adequate performance and will continue to keep this factor in mind, but it has been clearly demonstrated that the present weight limitation is a serious handicap to the manufacturer and that in order to obtain better performance and greater effective fire power the weight of our tanks will continue to increase. This may eventually eliminate any advantage of the Marine Corps tank over the Army tank.⁵⁹

By 1938, the Army had developed two competing armored vehicles, the M2A2 (Stewart) light tank and the M-1 combat car. The arguments against adapting such vehicles for Marine Corps use was based on the weight limit restriction. However, the board continued to question the weight restriction as the Navy began to acquire lifting assets that exceeded five tons. Interestingly enough, Lieutenant Zayas commented after his return from FLEX 4 that he observed the Navy lift the 21-ton tank-lighter, designed for the CTL, from its transport into the sea. He suggested the use of a heavier tank, those being developed by the Army, in lieu of the inferior CTL.⁶⁰ Debate within the Marine Corps concerning the validity of the CTL and adapting a different vehicle all together would be an area of contention and pride.

The MECB, led by Shepherd, continued to pursue an alternate solution to the CTL, one that favored existing options. The board believed the operating limits placed on

⁵⁸ Estes, *Marines Under Armor*, 15.

⁵⁹ *Ibid.*, 19.

⁶⁰ Burns, *The Origin and Development*, 2.

the CTL were no longer valid now that the Navy possessed lifting capabilities far exceeding five tons. The principle argument against acquiring heavier tanks centered on weight restrictions and difficulties in procurement of an additional light tank. However, the MECB believed the Army M2A2 tank was a more capable and reliable light tank solution as described in the same 15 September meeting. “While the Army tanks mentioned above are not generally conceded to be perfect, the Board believes that in their present status they are superior in performance and fire power to ours as was shown by actual demonstration at this Post.”⁶¹ The board recommended purchase of one M2A2 from the Army to be included in the upcoming Fleet Exercise No. 5.

The board forwarded their recommendations to the Marine Corps staff at Quantico, but were quickly denied in favor of the pending improvements of the CTL-3A. However, the MECB had observed the M2A2 during tests in April when the Army drove two from Aberdeen Proving Ground to Quantico covering 110 miles without issue. The two tanks conducted maneuvers alongside two CTL-3s for comparison. Each tank was loaded and unloaded from standard tank and artillery lighters. One of the CTLs fell out of the test when it suffered a broken differential and the other CTL was disabled by a thrown track shortly after conducting a river crossing. The two Army tanks continued to perform well, fording streams, maneuvering through varied terrain, toppling four-inch oak trees, and scaling three-foot-high mud embankments with ease. The Army tanks outperformed the CTL in all but one performance parameter, weight. Regardless, the

⁶¹ Estes, *Marines Under Armor*, 19.

Marine Corps staff still believed in a separate Marine tank program and dismissed the Army's M2A2.

By 1939, the 1st Tank Company had now expanded to two platoons with five CTL-3s and five CTL-3As, far below the programmed 15 per platoon goal. The improvements to the CTL-3A were undermined by reports emerging from crews that identified weaknesses in armor protection. It was discovered during testing that small arms fire, as small as .22 caliber, could penetrate vision ports and engine radiators. The vehicle could not perform its designed mission if crews, engine radiators, and fuel lines were vulnerable to enemy small arms fire. During FLEX 5 between January and February 1938, the CTL experienced 107 mechanical failures which required intensive maintenance support. During the 50-day deployment, each CTL averaged 100 miles total operating distance which paled in comparison to the Army's M2A2, which traveled 110 miles in a single day.

As dissatisfaction with the CTL grew, complaints now began to be taken seriously. Shepherd appealed to the commandant through Brigadier General Emile P. Moses, now the president of the MECB. Shepherd called for the "abandonment of the Marine Tank policy in favor of standard army machines."⁶² The commandant conceded to the acquisition of new [Army] tanks in the 1941 procurement plan but did not cancel the CTL program. The Marine staff had reviewed the protection problem of the CTL-3 and concurred with its findings. The Marines loaned one Army M2A4 light tank to be tested in FLEX 6 scheduled for 1940; the Marine Corps first wartime exercise.

⁶² Estes, *Marines Under Armor*, 23.

Captain Charles G. Meints, now commander of the 1st Tank Company, accompanied by both platoons of CTL-3 and -3A tanks, and its single M2A4 Army tank participated in FLEX 6 between January and February 1940. With war in Europe now a reality, the exercise became more relevant as the Navy and Marines tried to envision their role outside of War Plan Orange. During FLEX 6, again in the Caribbean, the Navy tested new larger landing craft for the tanks and artillery.⁶³ In spite of weight concerns, the Army M2A4 was successfully loaded and unloaded in one of the two tank-lighters. This dispelled concern that the Army's light tank was too heavy for naval vessels and loading equipment. The M2A4 performed well during the exercise as it provided additional fire power with its 37mm main gun and increased reliability during maneuvers.

Pressure mounted to grow the Marine tank force by 1940. However, the debate between the Marine CTL and the Army light tank remained at the forefront. General Holcomb directed the MECB to recommend additional improvements to the Marine light tank and possible procurement of additional Army M2A4s. On 3 April 1940 the MECB convened a hearing to determine the future of the Marine tank program. Attendees included key officers from the 1st Marine Brigade and commanders of the tank schools to give their advice in addition to the board. During the day-long session, the board heard testimony from both sides of the debate. Brigadier General Holland advocated for increased fire power and mobility during ship-to-shore movement in favor of an improved Marine tank. Colonel Julian Smith and Colonel Charles D. Barrett agreed that the present tank lacked protection and sufficient fire power but still favored a vehicle of

⁶³ Holland Smith, "The Development of Amphibious Tactics in the U.S. Navy, Part IV," *Marine Corps Gazette* 30, no. 9 (September 1946): 46-58.

Marine origin. Master Technical Sergeant C.E. Anderson was one of the few who advocated for adoption of the Army light tank. Anderson had gained extensive experience with the Army light tank and recommended its superior power, protection, and reliability. After all testimony was heard, the board took a trial vote between three candidate vehicles: improved CTL-3 series, U.S. Army light tank, or an alternative turreted tank.

The results of the preliminary vote favored improving the current fleet of CTLs and to develop a new, heavier, turreted tank. Interestingly, voting trends showed senior officers, Colonel and General, favored retaining and growing an exclusive Marine tank. While younger officers and enlisted men favored adapting the Army light tank. The official MECB voted to improve the CTL for use clearing the initial beach area in an assault and design and procure a turreted tank used for operations inland. The board forwarded its recommendations to the Marine staff and the commandant signed off within a week.⁶⁴ Although highly favored by younger officers and crew, the Army tank option did not bode well with senior Marine leadership. The MECB voted in favor of the preferred policy even after acknowledging the serious shortfalls of its own light tank. It seemed, by 1940, the Marine Corps preferred a tank uniquely their own regardless of its faults.

The timing of the decision to pursue improvements to the CTL and design a new tank was problematic as the Corps cautiously monitored the war in Europe. Barrett, the commandant's chief of plans, sounded a new urgency for growth in the tank program. He

⁶⁴ Estes, *Marines Under Armor*, 26.

realized that the Corps may not have the time to bolster its tank program as decided by the MECB. Improving the CTL would take time and developing a new tank would take even more time. The obvious solution was to adapt an existing vehicle that could perform the functions desired by the Marines. Barrett warned the “possibility of being ordered on operations before new tanks can be built has been increased. In this case, Army tanks actually on hand would constitute the only supply . . . if the emergency were sufficiently great.”⁶⁵ It appeared the decision to pursue a new tank was far from feasible if it was to be used in a war the U.S. was likely to participate. Improvements to the CTL were more feasible, but the vehicle was unsuitable beyond the beach during an assault. On 8 July 1940, the Secretary of the Navy requested, from the Secretary of the Army, the acquisition of 36 M2A4 light tanks.

The M2A4, with an operating weight of almost 13 tons, in use as the Army’s light tank since 1939, the M2 was developed from earlier variants since 1934. (see figure 4) The improvements from earlier designs focused on increased armor and firepower. The M2 was fitted with one 37mm main gun mounted on a two-man manual turret. The turret also housed two .30 caliber machine guns, one mounted with the main gun and one externally as an anti-aircraft gun. Three additional .30 caliber guns were mounted in the bow of the hull, operated by the driver and assistant driver on each side. In all, the M2 housed five .30 caliber machine guns and one 37mm main gun. The tank boasted a top speed of 36 MPH powered by a 262 hp, air-cooled radial engine, and a five-speed manual transmission. The M2 offered speed, protection, firepower, and reliability to crews of the

⁶⁵ Estes, *Marines Under Armor*, 28.

1st Tank Company, benefits they were unaccustomed to after years of operating the CTL.⁶⁶



Figure 4. The M2A4 Light Tank in Pre-trials at Fort Knox

Source: Kenneth W. Estes, *Marines Under Armor: The Marine Corps and the Armored Fighting Vehicle, 1916-2000* (Annapolis, MD: Naval Institute Press, 2000), 111.

In September 1941, 18 M2A4s arrived at the 1st Tank Company, only weeks before FLEX 7 was conducted in Guantanamo, Cuba. On 10 October, the company embarked for Cuba with its 10 CTL-3As, 1st company, and the new M2A4s, 3rd tank company. The 2nd and 4th tank companies supported the 2nd Marine Brigade on the west coast. The new light tank performed exceedingly well during FLEX 7, again

⁶⁶ Richard P. Hunnicutt, *Stuart: A History of the American Light Tank* (Novato, CA: Presidio, 1992), 119-120.

demonstrating that the heavier tank could be successfully transported and employed in an amphibious operation.⁶⁷ General Holland Smith, an advocate for the CTL during the decision board a year earlier, praised the M2, commenting that the tank was far superior to the CTL in every way. Smith recommended cancelling the CTL program entirely until a comparable replacement be developed.⁶⁸

The fate of the CTL program would remain unclear as the Marine Corps continued to grow to division size in February, 1941 when the 1st and 2nd Marine Divisions were formed. The 1st Division operated on the east coast at Quantico while the Second Division headquartered out of San Diego on the west coast. Each division grew significantly throughout 1941, adding tank battalions to support each division. The 1st Tank Battalion, activated in November, 1941 supported the 1st Division and the 2nd Tank Battalion, activated in December, supported the 2nd Division. The 3rd tank company, with its new M4A2s, became A Company, 1st Tank Battalion, and 1st Marine Division. The 1st tank company, composed of CTLs would be relegated to a different role from what was originally intended. The CTL, outperformed and replaced by the M2A4, was now envisioned for use as a reconnaissance vehicle. The 1st tank company now fell under division special troops and re-designated as scout companies. The CTL never saw combat, serving only to garrison Samoa and Uvea Island in the Wallis Island group in the South Pacific until their deactivation in 1943.⁶⁹

⁶⁷ Norman Friedman, *U.S. Amphibious Ships and Craft: An Illustrated Design History* (Annapolis, MD: Naval Institute Press, 2002), 99-100.

⁶⁸ Estes, *Marines Under Armor*, 28.

⁶⁹ *Ibid.*, 30-31.

After years of debate, frustration, and effort, the Marine Corps had acquired a light tank that could support an amphibious operation: assault a defended beach and reliably operate inland. However, the M2A4 was hastily acquired in the few years before the U.S. entered the war. The Marine Corps now faced the challenges of training a force capable of effectively operating and maintaining a vehicle they had little experience with. This, during a time when force generation was at its highest levels. Men were needed to fill the ranks of the ever-expanding tank battalions; men with the aptitude and skill necessary to master these machines. These men would also need to be capable of learning how to employ tanks against an enemy with little experience.

Pearl Harbor

As the new tank battalions began to take shape on 7 December 1941, the U.S. was thrust into war when the Japanese attacked the naval base at Pearl Harbor, Hawaii. President Roosevelt gave his famous Infamy Speech on 8 December during a joint session of congress calling for a declaration of war. The United States declared war on Japan within the hour. Four days after the attack, Daniel E. Quinlan, of South Hadley, Massachusetts, walked into the armed forces recruiting station in Springfield, and enlisted in the U.S. Marine Corps.⁷⁰ Quinlan would be operating the M2A4 light tank in combat by August. However, now at war with Japan, Germany, and Italy, the U.S. needed more men and equipment to meet the demands of an ever expanding war.

⁷⁰ Department of the Navy, Casualty Card, obtained from the Marine Historical Division, Quantico, VA, September 2016.

The U.S. Armed Forces faced a mobilization crisis in the months following the December attack on Pearl Harbor and subsequent entry into the war. The Marine Corps was not unprepared for war in 1941 and had been expanding in size since 1939, reaching 63,000 enlisted strength. The Corps had been operating under the U.S. “short-of-war” policy, a 27-month period of growth between 1938 and 1941. During this time, the Marine Corps had acquired new equipment, developed doctrine, and conducted landing exercises in anticipation of entering the war in Europe. The Corps expected to grow to 75,000 before the President increased that number to 104,000 on 16 December. The Marine Commandant, General Holcomb, decided to meet that target strength by 1 March, growing the Corps by 60 percent in three months’ time.⁷¹

Recruitment soared in the early months of 1942 as thousands of young men from across the country overwhelmed recruit stations. The average monthly enlistment jumped from 1,978 in November, to 10,224 in December, then 22,686 in January, and 12,037 in February. The Marines easily exceeded the 1 March target date set by General Holcomb. However, the task of training these additional troops posed an even greater challenge. The two Marine recruit depots, located at Parris Island, South Carolina and San Diego, California produced an average output of 1,600 a month. In order to meet the 104,000 force by March, the depots would need to output 6,800, far beyond their capacity. Due to these limits, the commandant reduced recruit training from seven to six weeks and again

⁷¹ Kenneth W. Condit, *Marine Corps Ground Training in World War II* (Quantico, VA: Headquarters, U.S. Marine Corps, Historical Branch, 1956), 155.

to down to five weeks on 1 January. Length of recruit training would fluctuate throughout the war and used as the mechanism to increase output during times of high demand.⁷²

The reduced five-week course allowed the Corps to reach its target mobilized force by March 1941, but the quality of training was of concern. New recruits under the five-week course were housed in make-shift barracks tents while additional housing was being built. In January, the depot at Parris Island began transferring recruits, 500 a day, to San Diego due to disproportional enlistments on the east coast. During the reduced five-week course, recruits received a total of 188 hours of instruction: 96 hours for weapons training, 36 hours for field subjects, 56 for garrison type subjects, and four hours for physical conditioning. Upon completion of recruit training, graduates were quickly shipped off to their assigned units.

Advanced training for new recruits was limited by occupational specialty. A majority of recruits, mostly filling infantry regiments, received on-the-job-training in lieu of formal advanced schools. In May 1941, 3,610 recruits completed training at Parris Island. Of those, 2,652 were sent directly to ground duty while 958 received specialized training in various fields: 37 percent. For tankers, the Marine Corps had no formal school and relied on the Army tank course at Fort Benning to train its officers and enlisted. However, these slots were limited and graduates of the Army courses usually became the primary trainers for those new Marines arriving to their units. Selection of occupational

⁷² Ibid., 158-159.

specialty was also a challenge and putting the right men in the right jobs was, especially in the execution of amphibious operations, critical.⁷³

Selection of occupational specialty in the Marine Corps was an issue of function. The Corps believed it was primarily a fighting force and focused on putting the maximum number of troops on the firing line. The Corps sought to keep supporting functions to a minimum. However, as technology advanced into the war, the need for specialized training became apparent. The tank and armored tracked vehicles had developed significantly and the results of the Fleet Landing Exercises between 1935 and 1941 showed the complexity of executing amphibious operations. The Corps needed to build an amphibious force of men and equipment capable and technically competent to organize and execute ship-borne operations at sea. This would be particularly challenging for the tank units.

When Daniel Quinlan graduated from the five-week recruit training course at Parris Island in the winter of 1942, he was assigned to the newly formed 1st Tank Battalion, 1st Marine Division. Quinlan showed great aptitude for all things mechanical, an interest that would propel him to become a skilled tanker.⁷⁴ By 1942, the selection system for occupational specialty was based on three criteria: education, previous experience, and aptitude. Some specialties required a certain education level, i.e. two (photography) or four (parachute, radar operators) years of high school or perhaps two

⁷³ Condit, *Marine Corps Ground Training*, 161-164.

⁷⁴ Personal testimony obtained from Sgt. Quinlan's brother Francis Quinlan indicates he was very mechanical-minded and tinkered with cars and was fascinated by anything motorized.

years of college (topographic computer). Others, such as tankers required “mechanical aptitude,” usually determined by a new recruit stating he had experience as a mechanic or other related experience in civilian life. The Marine Corps comprised a total of twenty-one occupational fields by 1945. Most Marine recruits flowed into the infantry or aviation, its two largest. Total infantry exceeded 47,000 and aviation totaled at 55,786. The tank and amphibious tractor field totaled at 7,543, just 2 percent of the total Marine force.⁷⁵ Quinlan was part of an exclusivity small field, however largely critical in every amphibious assault of the war.

Guadalcanal (August 1942)

By 1942, the Empire of Japan had expanded throughout the south and central Pacific in the Far East. (see figure 5) The Japanese established a defensive ring east to the Marshall Islands and then south to the northern tip of New Guinea. In the West, Japanese territory extended from China to Burma and south to the Dutch East Indies. Strategically, the Japanese wanted to secure territory further south to the Solomon Islands to protect its airbases in Rabaul and Truk while also seeking to disrupt Allied supply access to Australia. In May, Japanese forces secured the island of Tulagi for use as a seaplane base and in July, occupied Guadalcanal, a neighboring island. The Japanese began building an airstrip on Guadalcanal to serve as an advanced base for future operations south toward New Zealand and Australia. In response, the U.S. developed Operation Watchtower, a

⁷⁵ Condit, *Marine Corps Ground Training*, 197.

plan that would seize Tulagi and Guadalcanal from the Japanese before they could establish a strong defensive foothold.⁷⁶

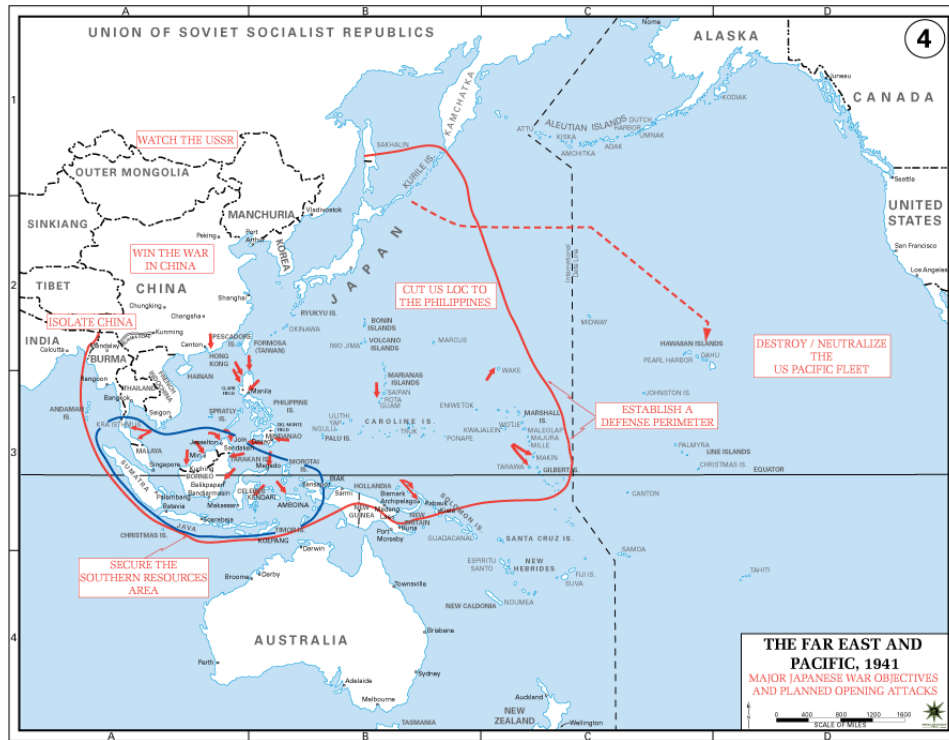


Figure 5. Major Japanese War Objectives and Planned Opening Attacks, 1941

Source: United States Military Academy, Department of History, “The Far East and Pacific,” 1941, assessed 8 March 2017, <https://www.westpoint.edu/history/SitePages/Our%20Atlases.aspx>.

Operation Watchtower was a three-phased effort beginning with the seizure of Tulagi and Guadalcanal, led by the Navy under the command of Admiral Chester Nimitz, Commander of the Pacific Ocean Area. The second phase, led by the Army, would seize

⁷⁶ Ronald H. Spector, *Eagle Against the Sun: The American War with Japan* (New York: Vintage Books, 1985), 155-156.

Rabaul under the overall command of General Douglas MacArthur, Commander in Chief of the Southwest Pacific Ocean Area. The final phase would end with the seizure of New Guinea by the Army and New Britain by the Navy. For the Tulagi-Guadalcanal Campaign, Nimitz appointed Rear Admiral Richard K. Turner as Commander, Amphibious Task Force and Major General Alexander A. Vandergrift, Commander of the 1st Marine Division, as Commander Landing Force under Turner.

In the spring of 1942, while the Japanese seized Tulagi, the 1st Marine Division was spread throughout the South Pacific in Samoa, New Zealand, and at sea. General Vandergrift deployed with the bulk of his division, including the 1st Tank Battalion of which Quinlan was now assigned, to establish a training base in New Zealand. Vandergrift had anticipated several months of training to ready the division for combat operations planned for 1943. However, the Tulagi-Guadalcanal Campaign was concurrently being planned and set for 1 August. The execution date of the operation was changed to 7 August when problems arose in loading transport ships and gathering the entirety of the task force delayed movement. The division had little time to train and conducted a hurried landing exercise on the island of Koro in the Fijis, from 28 to 31 July. Soon afterward, the Amphibious Task Force headed for the Amphibious Objective Area.⁷⁷

Planning and preparation for Operation Watchtower by the assaulting units was hasty and disorganized. The practice landing at Koro Island in July did not account for the coral reef around the landing beach resulting in only a portion of the force being able

⁷⁷ General A. A. Vandergrift and Robert B. Asprey, *Once a Marine: The Memoirs of General A.A. Vandergrift* (New York: W. W. Norton and Company, 1964), 110.A A.

to land. Although negotiating a coral obstacle would come later for the Marines in 1943, Guadalcanal had no such obstacle. Additionally, the secrecy of the operation required radio silence during the practice landing which prevented air coordination. Lastly, availability of transport vessels continued to hamper movement. For the men and tanks of the 1st Tank Battalion, this meant only Company A and B would go ashore on Guadalcanal and Company C would support the assault on Tulagi. Battalion headquarters and D Company stayed back at Wellington, New Zealand.⁷⁸ (see figure 6)

⁷⁸ John L. Zimmerman, *The Guadalcanal Campaign* (Washington, DC: Historical Division, Headquarters, U.S. Marine Corps, 1949), 43.

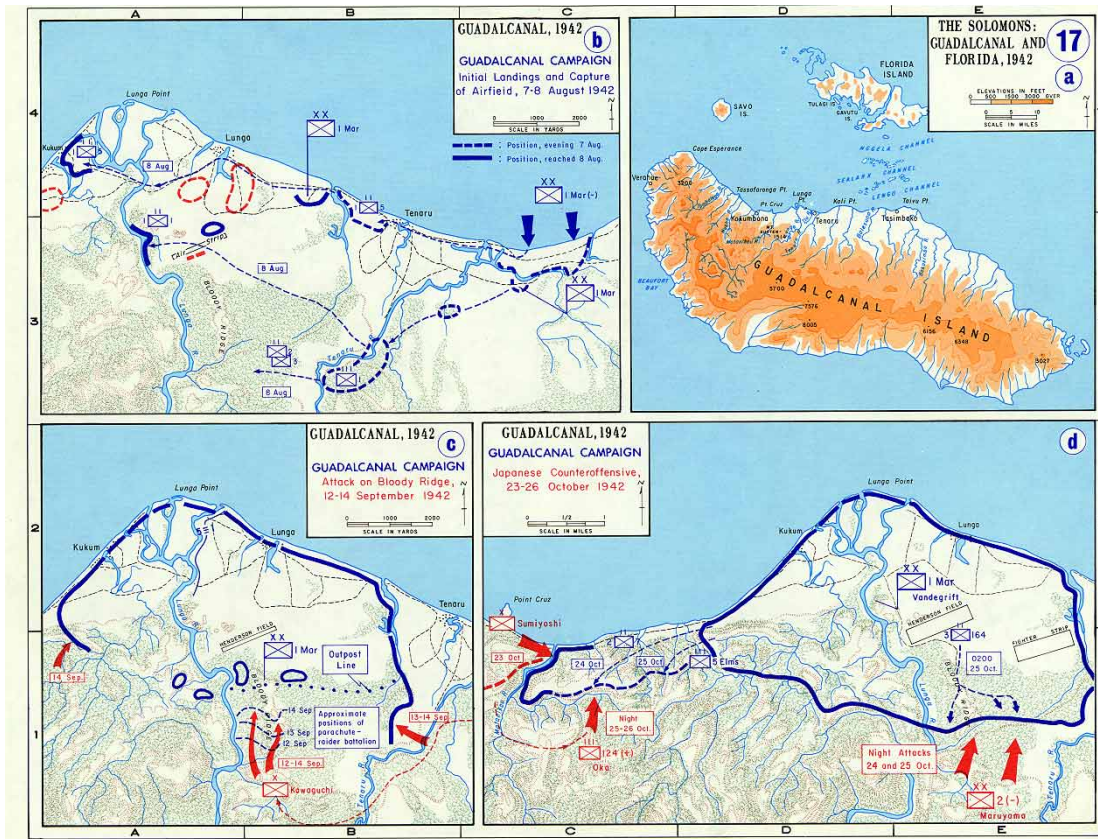


Figure 6. The Solomon's: Guadalcanal and Florida, 1942

Source: United States Military Academy, Department of History, “The Solomons: Guadalcanal and Florida,” 1942, accessed 8 March 2017, <https://www.westpoint.edu/history/SitePages/Our%20Atlases.aspx>.

The assault on Guadalcanal began on the morning of 7 August with simultaneous landings on Tulagi, Gavutu, and Tanambogo. The Japanese were caught by surprise with no resistance on the beaches (see figures 7 and 8). However, Army units on Tulagi and Tanambogo saw more resistance and tanks from C Company, commanded by Captain Thomas Culhane, struggled to maneuver his tanks on the hilly island of Tulagi. On Guadalcanal, M3 tanks from A and B Company unloaded from 45-foot tank lighters. Quinlan, by then an M2 driver and gunner with A Company, landed ashore and

accompanied the infantry as they moved through the dense jungle across the Tenaru River in support of the 1st Marine Regiment. The 1st Marines objective was to secure the airfield still in construction by the Japanese.



Figure 7. M2A4 Light Tank, 1st Tank Battalion, moves up the Beach on Guadalcanal

Source: Steven J. Zaloga, *U.S. Marine Corps Tanks of World War II* (Long Island City, NY: Osprey Publishing, 2012), 11.



Figure 8. M2A4 Lights, 1st Tank Battalion Tanks advance inland on Guadalcanal

Source: Steven J. Zaloga, *U.S. Marine Corps Tanks of World War II* (Long Island City, NY: Osprey Publishing, 2012), 11.

Intelligence leading to Operation Watchtower was minimal and vague especially the unknown strength of the Japanese force that occupied the island. Planning efforts were hindered by a lack of existing maps and knowledge of the terrain.⁷⁹ The M2s unloaded successfully from the tank lighters and maneuvered effortlessly on the beach but slowed significantly in the thick vegetation further inland. Tank-infantry cooperation had yet to be developed by 1942 as the primary role of the tank was to clear the beach of

⁷⁹ John L. Zimmerman, *The Guadalcanal Campaign* (Washington, DC: Historical Division, Headquarters, U.S. Marine Corps, 1949), 43.

enemy strong points. On the island of Tanambobo, where fighting was fiercest on the first day, Marine tanks learned their limits and vulnerabilities for the first time.

Led by Second Lieutenant Robert J. Sweeney, two tanks from C Company, landed in support of I Company, 3rd Battalion, 2nd Marines, covered the infantry advance. Sweeney was killed by small arms fire when his tank was disabled as it rounded one side of a hilltop. The other tank continued in advance of I Company and engaged a Japanese pillbox and was subsequently swarmed by Japanese Soldiers and disabled. The swarming Japanese, using iron bars, disabled the tanks tracks and set it on fire killing two of the crew. The two-remaining crewman, severely wounded, fought off the attackers until I Company closed the gap and secured the tank. Forty-Two Japanese bodies were found sprawled out around the tank.⁸⁰

On Guadalcanal, the 1st Marines secured the Lunga Point Airfield (later renamed Henderson Field) by the end of the day. Tanks from A and B Company were dispersed around the airfield for security. The tanks were designated as the division's reserve force and, if needed, used to repel enemy counterattacks. The tanks were considered mobile-pillboxes and guarded the airfield during all of August and into September. A Company was pivotal in the defense of the airfield during the Battle of Tenaru. On the night of 21 August, the Japanese mounted a surprise counterattack from the east after landing a detachment of 900 Japanese Soldiers at Taivu Point with orders to retake the airfield. Under the command of Colonel Kiyonao Ichiki, the comparatively small force to the 11,000 Marines, executed a frontal attack along the beach at Alligator Creek. The

⁸⁰ Richard B. Frank, *Guadalcanal: The Definitive Account of the Landmark Battle* (New York: Random House, 1990), 77-79.

defending 1st Marines routed the attackers and General Vandergrift ordered a tank attack.⁸¹

A platoon of M2A4 light tanks from Quinlan's A Company responded quickly and moved to engage the remnants of the Japanese force. After crossing the mouth of Alligator Creek, where the tide meets the stream, the tanks entered a tree grove just before nightfall and engaged the enemy with their 37mm guns and machine gun fire. The two leading tanks, again without infantry support, were initially disabled, but their crews escaped under supporting fire from the other tanks. The personal war diary of Richard Tregaskis gives a detailed account of this tank engagement:

We watched these awful machines as they plunged across the spit and into the edge of the grove. It was fascinating to see them bustling amongst the trees, pivoting, turning, spitting sheets of yellow flame. It was like a comedy of toys, something unbelievable, to see them knocking over palm trees which fell slowly, flushing the running figures of men from underneath their trees, following and firing at the fugitives. It was unbelievable to see the men falling and being killed so close, to see the explosions of the Jap grenades and mortars, black fountains and showers of dirt near the tanks, and see the flashes of the explosions under their very treads.⁸²

This would not be the last Japanese counterattack on Guadalcanal as attacks continued into September. B Company suffered heavy losses on 14 September in support of 3rd Battalion, 1st Marines, in the aftermath of the Battle of Edson's Ridge.

The Japanese continued attempts to retake Guadalcanal into the fall of 1942 and diverted forces to conduct a second landing at Taivu Point. This time, a Japanese force of 6,000, under the command of Major General Kiyotake Kawaguchi moved inland and

⁸¹ Frank, *Guadalcanal*, 77-79.

⁸² Richard Tregaskis, *Guadalcanal Diary* (New York: Random House, 2000), 142.

attacked the Marine defenses South of Henderson Field. The Marines were able to fend off the attacking Japanese after three days and nights of fighting. At daybreak on 14 September, believing a battalion of Japanese were in the area, six light tanks from B Company were called to clear ahead of the Marine lines. Again, tanks were employed without infantry support and three were initially destroyed by four Japanese 37mm anti-tank guns. One of the six, rolled over a bank and plunged 30 feet into the Tenaru River killing all four of its crew. The fifth tanks track was shot out by the anti-tank gun, forcing the crew to abandon the tank, some were bayoneted by swarming Japanese troops. Only one of the tanks returned to Henderson Field. B Company lost one officer, 13 men, and five tanks in a matter of hours.⁸³

Conclusion

In December, the 1st Marine Division was relieved by the Army's XIV Corps which continued in combat operations until February 1943 when the Japanese gave up efforts to retake the island. For Quinlan and the tankers of the 1st Tank Battalion, the actions on Guadalcanal and the surrounding islands represented hard learned lessons which cost precious lives and resources. Although unopposed at the beaches on Guadalcanal, the Marines of A and B Company confronted challenges not previously conceived during training and preparation. The Marines had successfully conducted an amphibious assault as designed by the landing doctrine in the years leading to 1942. However, the doctrine for tank operations inland, after the assault, was nonexistent. The

⁸³ Estes, *Marines Under Armor*, 50; Frank, *Guadalcanal*, 77-79.

Marine tankers learned through trial and error how to defeat the Japanese on Guadalcanal and surrounding islands.

First, the close action in dense jungles taught them that the infantry-tank relationship was essential for their mutual protection. The tanks needed the infantry close enough to protect against Japanese swarming attacks while the infantry needed the tanks to destroy defensive strong points and pillboxes. The infantry-tank team concept would grow out of the experience at Guadalcanal. Tank crews needed to coordinate efforts with infantry units and communicate throughout the battle. B Company's experience at Edson's Ridge in September demonstrated the risks of uncoordinated efforts that resulted in the loss of five tanks and the lives of multiple Marines. On the island of Tulagi, C Company experienced the same results when two tanks operated too far forward from the infantry. The Japanese swarmed the tanks and disabled them using whatever means necessary while the crew was helpless at such close proximity.

Second, the light tank drew criticism as well, struggling to cope with the environment and terrain on Guadalcanal. The tank was easily slowed by the thick, swampy jungle and needed to be towed repeatedly by other tanks. Tank crews had difficulty seeing through the jungle through the small viewing ports and relied on infantry units to direct their movement. Additionally, the tanks armor protection, effective against small-arms fire and smaller artillery, was vulnerable against higher caliber weapons. Three M2s from B Company were knocked out by a Japanese 37mm anti-tank gun during the Battle of Edson's Ridge. The other tanks had to withdraw because they could not see where the gun was positioned. Lastly, the M2s 37mm main gun lacked the firepower

needed to destroy heavily fortified enemy positions. The 37mm was ineffective against thick concrete bunkers and some bamboo enforced positions.

As a result, the Marines developed tank-infantry tactics that countered or at least minimized these vulnerabilities. To overcome the visibility issues, the Marines alternated firing between canister and high-explosive 37mm rounds. This allowed the tanks to clear away the vegetation and expose Japanese positions. The Marines also began the practice of assigning 30 infantrymen to a single tank. These infantry would accompany the tanks through the jungle and repel close attacks against the tanks. The infantry would then move ahead when the tank cleared each enemy position. The Marines also experimented with improvements to their tanks by adding radios on the outside rear to improve communication with the infantry. The Marines also mounted the infantry flamethrower using the bow machine gun as a brace. Although minimally effective these improvements indicate the solutions Marine crews developed to overcome the limitation of their tanks and the challenges of the enemy.⁸⁴

After five months of combat, the weary 1st Marine Division relocated to Melbourne, Australia to recover and refit. The Marines of the 1st Tank Battalion would turn in their old, worn out M2A4s for a new medium tank better suited to defeat Japanese defenses in future campaigns. The tankers would continue to refine improvements in Australia and focus on further development of the infantry-tank relationship while experimenting with their machines. The new tank would offer the Marines added

⁸⁴ Henry I. Shaw Jr. and Douglas T. Kane, "Isolation of Rabaul," in *The History of the U.S. Marine Corps Operations in WWII* (Washington, DC: Historical Division, 1963), 54-163.

protection, firepower, and maneuverability, but it would also present new challenges to conducting amphibious operations. The Japanese learned lessons on Guadalcanal as well and their tactics would continue to adapt in each successive campaign. For the tankers of the 1st Tank Battalion, this would result in an escalation of effort and counter-tactics in order to maintain relative advantage. The new medium tank arrived just in time for the Marines to cope with these changes as amphibious warfare continued to evolve in 1943.

CHAPTER 4

LESSONS AND IMPROVEMENTS

Introduction

Next to his rifle, the infantryman cherished the tank, which like a lumbering elephant, could either strike terror into a foe or be a gentle servant to a friend. In attack, the Marine tank-infantry team felt itself unbeatable. The medium tank would precede the riflemen, who, in return, protected the tank from Japanese antitank grenades. Each half of the team needed the other.

— Henry I. Shaw Jr., Bernard C. Nalty, and Edwin T. Turnbladh,
Central Pacific Drive

The 1st Marine Division proved themselves capable on Guadalcanal against an enemy considered in many ways superior. The Japanese had significant combat experience, fighting in Southeast Asia and the South Pacific since 1940 during their early conquests. The Marines were untested and their equipment was largely outdated. However, they successfully executed the amphibious doctrine as designed in the years leading to 1942 and validated the many exercises that led to the Guadalcanal assault. However, the division did surprise the Japanese who were caught off guard, allowing the Marines to come ashore unopposed. Additionally, the light tank, although superior to the CTL, performed marginally well in the dense jungle of the Solomon Islands. The light tank maneuvered better than its predecessor, but the tankers quickly learned that the 37mm gun was too small to destroy many of the Japanese defenses.

The Marines quickly looked for a solution and adopted another Army tank, the M4A1. The M4 was a medium class tank, much heavier than the M2, which would pose transportation challenges. However, the medium tank offered increased firepower and protection, boasting a 75mm main gun and three-inch armor. The tank offered more

power as well, able to negotiate significant obstacles. The acquisition of the M4 came just in time for the Tarawa Campaign, a battle that would reveal significant flaws in amphibious planning and execution. Tarawa was followed by the Cape Gloucester campaign, which saw the 1st Division back in action, also equipped with the new medium tank. The tankers would implement changes based on the lessons from Tarawa. They would continue to build on these lessons as they looked to the Central Pacific in 1944 and would learn that Japanese defense tactics had changed much on Peleliu.

Tarawa (November 1943)

While Quinlan and the Marines of the 1st Division recuperated in Melbourne following the Guadalcanal campaign, the 2nd Marine Division was preparing to seize Betio, the main island of Tarawa. (See figure 9) The Japanese occupied Betio after they took control of the Gilbert Islands in December, 1941. The Gilberts, a group of 16 atolls southwest of the Marshall Islands, served strategically as the entry point of the U.S. push through the Central Pacific to the Philippine Islands. The 2nd Tank Battalion, the Division's organic tank support, would be tested beyond any other tank unit yet experienced in the Pacific.

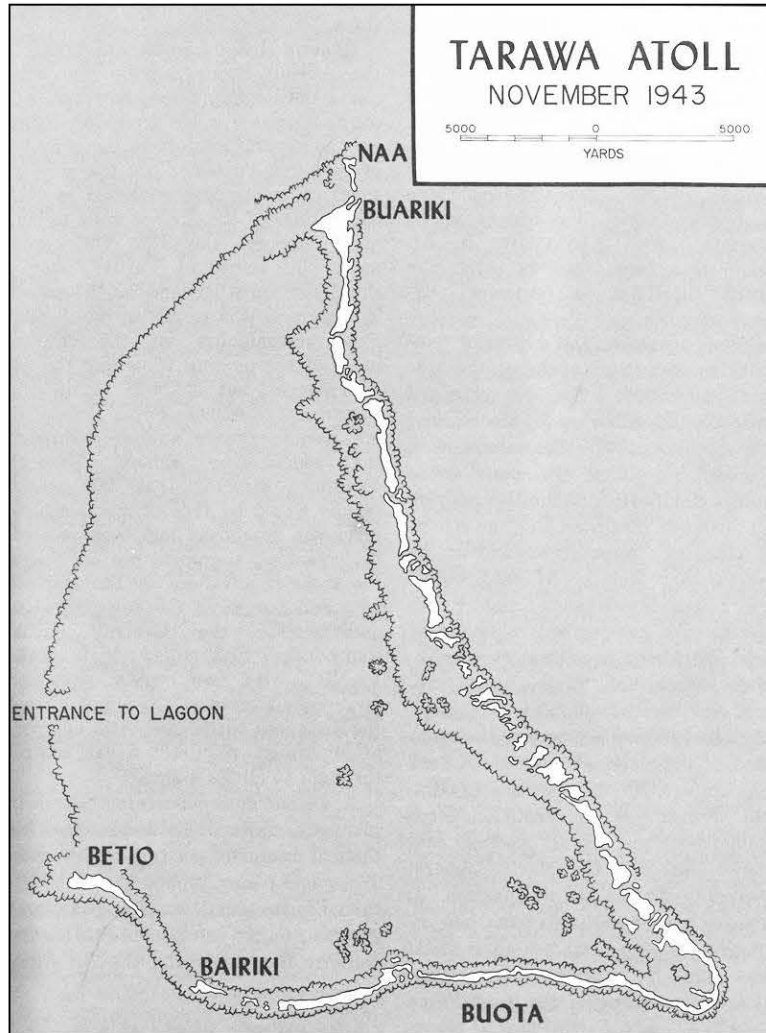


Figure 9. Tarawa Atoll and Betio Island, November 1943

Source: James R. Stockman, *Marines in World War II Historical Monograph: The Battle for Tarawa* (Washington, DC: Historical Section, Division of Public Information, Headquarters, U.S. Marine Corps, 1947), 13.

Unlike Guadalcanal, the Japanese had occupied Betio for over a year, which allowed them to properly fortify the island. Under the direction of Rear Admiral Tomanari Sachiro, a skilled engineer, the Japanese dug trenches, fighting holes, antitank ditches, and built over 500 bunkers and pillboxes constructed of concrete. The defenses included 20 heavy cannons, 25 field guns, and 31 heavy machine guns. On Betio, the

Japanese would defend the beach against attack and establish machine gun positions with interlocking fire. Wire was placed in the shallow waters just off the beach to slow infantry and trap them in the crossfire. A coconut log seawall was constructed around the rim of the island and posed a serious obstacle to tracked vehicles that would expose their underbellies as they pitched up to scale it. Sachiro's goal was to delay the assault at the water's edge long enough for the Japanese to mount a counterattack, which included seven Type 95 Ha-Go light tanks.⁸⁵

The campaign to secure the Gilberts, including Tarawa, was code named GALVANIC. Early on, the Navy-Marine planning team identified significant challenges. First, the tides were unpredictable and especially low in late November, the proposed landing date. The problem with the tides meant that landing boats would fail to reach the shore due to the likelihood they would ground on the edge of the reef. The assaulting Marines would be stranded on the reef and forced to dismount their vehicles and make their way on foot under intense Japanese fire. As a solution, it was suggested that the tracked amphibian cargo carriers, Landing Vehicle Tracked (LVT), could carry men over the reef if the tide was low. The LVT was designed as an amphibious cargo vehicle and was first used at Guadalcanal to ferry supplies to shore. Although capable of negotiating challenging terrain, the LVT was lightly armored and gave little protection against enemy small arms fire. Additionally, the LVTs were in disrepair and the 1st Amphibious Tracker Battalion, supporting the 2nd Marines, could only field 75 marginally functional vehicles.

⁸⁵ James R. Stockman, *Marines in World War II Historical Monograph: The Battle for Tarawa* (Washington, DC: Historical Section, Division of Public Information, Headquarters, U.S. Marine Corps, 1947), 7.

The Navy provided an additional 50, barely enough to carry the first three assault waves.⁸⁶

The 2nd Marine Division would also benefit from the support provided by the new medium tank on Betio. The Marine Corps acquired the M4 from the Army beginning in October 1942 with an initial delivery totaling 22 tanks. The M4, or “mediums” as the Marine tankers called them, were manufactured with multiple engine variants: the M4A1 with a Continental radial gasoline engine, the M4A2 with a twin diesel engine (see figure 10), the M4A3 with Ford gasoline engine, and the M4A4 with a Chrysler A57 multi-bank gasoline engine.⁸⁷ The Marines received the diesel M4A2 tank, a model the Army refused to accept for combat service.

⁸⁶ Oscar E. Gilbert, *Marine Tank Battles in the Pacific* (Boston, MA: Da Capo Press, 2001), 78.

⁸⁷ Steven J. Zaloga, *U.S. Marine Corps Tanks of World War II* (Long Island City, New York: Osprey Publishing, 2012), 14.



Figure 10. M4A2 Medium Tank Test Vehicle. Aberdeen Proving Ground, Maryland 1943

Source: The Sherman Tank Site, “Category Archives 90mm M3,” assessed 15 May, 2017, <http://www.theshermantank.com/category/90mm-m3/>.

The M4A2 was cited by the Army as unreliable with high maintenance requirements caused by the diesel engine. When the Marines received the first M4s from the Army, the tanks still displayed the stamp “rejects” on the sides of their hulls.⁸⁸ The Marines however, preferred the diesel.

Marine tankers preferred the M4A2, the diesel variant, because the twin diesel engines produced excellent torque at low speeds. The Marine tankers on Guadalcanal had to cope with the lack of power that plagued the light tank. Increased power and torque meant that the tanks could penetrate deeper into the dense jungles and better support

⁸⁸ Personal testimony of Jerry Ingram, Ssgt. USMC. Oral Interview conducted by author, 17 April, 2017.

operations.⁸⁹ An added benefit of the A2 was that its diesel fuel was compatible with landing boat engines, thus making it that much easier to conduct logistical refuel operations. Although the diesel M4 offered the Marines some benefits, the challenges of transporting and employing the 20-foot, 35-ton tank became obvious. Compared to the M2 light tank, its 13-ton predecessor, the M4 operated at a max speed of 26 MPH, boasted a 75mm main gun, and two .30 caliber machine guns. However, the M4 exceeded the Navy's boom capability and could not be lifted into a tank lighter, or be transported by one as the light tank had.⁹⁰

The solution to the transportation issue surrounding the M4 was the development of the Landing Ship Dock (LSD) and the Landing Ship Tank. Both ships were designed to carry cargo, vehicles, troops, and tanks. Their basic design function served to support amphibious operations by delivering payloads without the use of a dock or pier. The LSD delivered its payload from the stern by flooding its ballast tanks in order to fill well decks at the rear of the ship where the assault vehicles were located. The stern gates were then opened and vehicles disembarked for the beaches. The Landing Ship Tank had a flat keel, which allowed it to land directly on a beach, unload its cargo, and then depart. Two large doors on the bow of the ship opened and a ramp deployed directly on the beach. The U.S.S. Ashland, the first LSD of its kind, would transport the 2nd Tank Battalion to Tarawa.⁹¹

⁸⁹ Zaloga, *U.S. Marine Corps Tanks*, 14.

⁹⁰ Gilbert, *Marine Tank Battles*, 82.

⁹¹ *Ibid.*

Planning and preparation continued for operation GALVANIC into the Fall of 1943. The Marines of the 2nd Tank Battalion looked to solve the challenge of employing their new M4s from the Ashland. Waterproofing kits were not available in the Pacific in 1943 and the tank would have to ford through water after disembarking from the Ashland. However, the M4 was not designed to ford deep water above its intake and exhaust ports. If water entered these areas the engines would flood and stall. The technical manual stated the M4 could ford up to a maximum 40 inches of water. The unpredictability of the tide and the water level was of particular concern because if the tide was too low, the landing craft would get stuck, but if the tide was too high, the tanks would drown. First Lieutenant Ed Bale, commanding officer of Company C, recounted that while in New Zealand, the battalion sent two M4s to Hawke's Bay to test how much water the M4 could ford. It was 40 inches.⁹²

Training and preparation between tank and infantry units also lacked prior to Tarawa, just as with the 1st Marine Division before Guadalcanal. The lack of coordination was worse in the case of the 2nd Tank Battalion because it was geographically separated from the Division leading to the Betio assault. Bale asserted, "There was no training with the infantry. None at all . . . our orders were simply to land on the three beaches behind the three battalions."⁹³ The Tank Battalion finally met up with the division on the island of Efate, a staging base where a hasty rehearsal was conducted days prior to the assault. Bale describes the deficiencies in the rehearsal on

⁹² Gilbert, *Marine Tank Battles*, 82-83.

⁹³ *Ibid.*

Efate: “after the Hawke’s Bay exercise, [we] rejoined at Efate for the rehearsal, which in the case of the tank company consisted of coming out of the well of the LSD and unloading on the beach . . . the rehearsal really didn’t do much for us, except give us a chance to move the vehicles out of the landing craft.”⁹⁴

The landings on Betio were planned for the northern shores with three designated sectors: RED-1, RED-2, and RED-3. (see figure 11) Bale’s C Company, with 14 M4s, would land ahead of the fourth wave. 1st Platoon, with six tanks, would land on RED-1, 2nd Platoon, with four tanks, on RED-2, and 3rd Platoon, with four tanks, would land on RED-3. On D-Day, 20 November, the assault ships unloaded their LVTs and landing craft after the naval preparatory fire had ceased. Planners believed a barrage of naval and air fire prior to the assault would weaken Japanese defenses and destroy strong points. However, the Marines would quickly learn the effectiveness of these attacks was grossly overestimated.⁹⁵

Things began to go wrong shortly after the LVTs disembarked from their transport vessels. In the predawn darkness, the landing craft quickly became disorganized and separated. When the advanced party, on a single Landing Craft Vehicle Personnel, attempted to secure a Japanese pier, they discovered they were unable to maneuver alongside because the tide was too low. The reef could be seen above the waterline and confirmed fears by planners that the landing craft would get stuck before they reached the

⁹⁴ Ibid., 83.

⁹⁵ Gilbert, *Marine Tank Battles*.

shore. The Japanese defense plan anticipated this and hoped to halt the assault on the shallow reef at the water's edge.⁹⁶

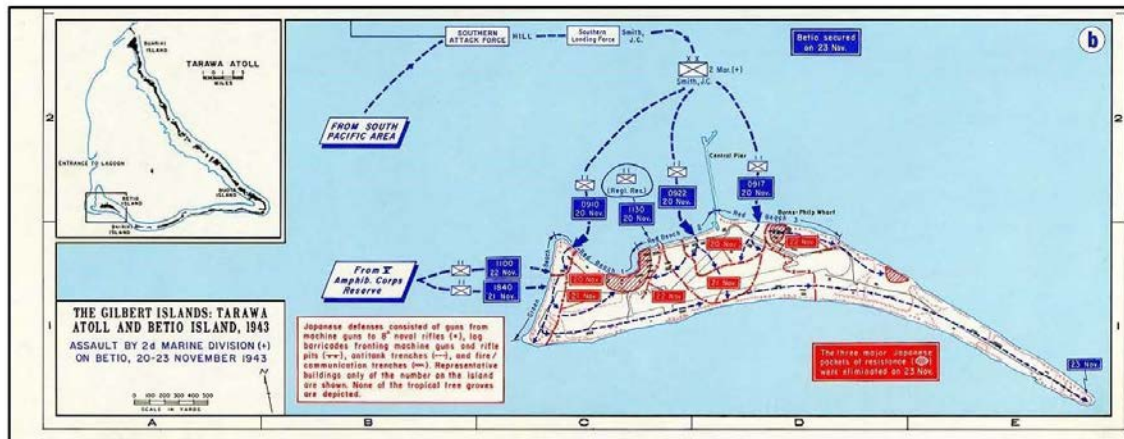


Figure 11. The Gilbert Islands: Tarawa Atoll and Betio Island, 1943

Source: United States Military Academy, Department of History, “The Gilbert Islands,” 1943, assessed 12 April 2017, <https://www.westpoint.edu/history/SitePages/Our%20Atlases.aspx>.

When the first LVTs attempted to negotiate the reef off shore, they were quickly engaged by accurate machine-gun and cannon fire. The rounds easily penetrated the LVTs’ thin armor, killing many Marines inside. As daylight emerged, more LVTs were destroyed on the reef. When one LVT reached the seawall, heavy machine-gun fire tore through the thin front armor plates as the vehicle pitched up, killing its occupants and stopping their advance. The worst fighting was on RED-1 where Japanese machine-guns cut down Marines as they disembarked their LVTs in a three-way crossfire. By 0930, the fourth wave, consisting of Landing Craft Vehicle Personnel, reached the reef, but due to

⁹⁶ Stockman, *Marines in World War II*, 7.

the low tide could not reach the shore. They were forced to unload their passengers into a hail of machine-gun and mortar fire. The Marines waded in waist-deep water through massed machine-gun fire. Casualty rates per rifle company averaged about 50 percent just to make it to the seawall.⁹⁷

The M4s were successfully unloaded from the Ashland and ferried to the reef on Landing Craft Mechanized (LCMs). The LCM, a 50-foot craft used to transport larger vehicles from amphibious ships to shore, could hold a single M4 at a time. Lieutenant Bale's 14 tanks, loaded in LCMs, arrived at the edge of the reef at approximately 1000 just ahead of the fourth wave. Bale measured the water level using a boathook marked in 6 inch increments up to 48 inches. The depth of the water at the reef measured 30 inches, 10 inches shy of the 40-inch max. Bale decided to launch his tanks. All 14 M4s entered the water at the edge of the reef, 1,000 yards from shore. Only half would make it across the reef and onto the shore.⁹⁸

Bale splashed into the water and set off for RED Beach-1 with two headquarters and four 1st Platoon tanks under his control. According to the plan, a 20-man recon element, loaded in Landing Craft Vehicle Personnel would guide the tanks toward their landing area. Their mission was to guide the tanks around the bomb craters left by the naval pre-assault bombardment. Sergeant Melvin Swango described his experience as a tank guide:

They outfitted us with some floats about the size of a soccer ball. We each had three floats with about a six-foot cord and an anchor. By the time we hit the edge of the reef the machine-gun fire was so intense it was tearing through the

⁹⁷ Stockman, *Marines in World War II*, 15.

⁹⁸ Gilbert, *Marine Tank Battles*, 87-88.

bulkheads of the Higgins boat . . . five or six of the men fell there dead or wounded. We divided up the floats but soon found that they all were tangled in the salt water, and we couldn't do anything with them. Wherever we found a bomb crater, one man would stand there to wave the tanks around us. Each time I looked around, there would be fewer of us. Most of the tanks got in . . . then it was up to us to follow the tanks in, if there were any of us left, and replace the tank crew members whenever necessary. I only know of three of us that survived.⁹⁹

As Bale's tanks approached RED Beach-1, three of the six made it to shore. The other three either fell into shell craters or became disabled due to saltwater damage to the electrical junction box secured to the M4's deck. Sadly, the crews that fell into shell craters typically drowned with their tanks in less than 10 feet of water. The tanks that were disabled by salt water became prime targets for Japanese cannon fire. Many crew members were seen firing back from their turret-mounted .30 caliber machine-guns as the tanks sat helpless in open water. As his tank approached, Bale could see dead and wounded Marines all along the beach. Due to the congestion and fear of driving over his own men, Bale decided to move around to the right, further down the beach. Bale recounts his actions as his tank approached the shore:

We started inland, toward the beach, and the water got deeper. . . . We took a round in the left sponson, up fairly high. Nobody was hurt or anything, but the water got deeper. My command tank, *Cecilia*, . . . arrived just to the left of Red Beach One. The beach was filled with bodies, wounded, individual equipment, and wrecked LVTs. I reentered the water and ran parallel to the beach to try and find a place [to get through].¹⁰⁰

As Bale and his three tanks maneuvered further down the beach, one of the tanks became disabled when its electrical system was shorted out by salt water. Bale and his two

⁹⁹ Ibid.

¹⁰⁰ Gilbert, *Marine Tank Battles*, 89.

remaining tanks continued to look for a suitable entry point. They found an opening in the seawall between Red Beach and Green Beach toward the northwestern edge of the island. Bale's main gun was disabled when it received a lucky hit from a Japanese tank, a 37mm round that hit the end of *Cecilia's* gun tube. The main gun could not be used as fragments damaged the inside of the tube. The second tank that accompanied Bale easily destroyed the Japanese tank with its 75mm gun. Lieutenant Bale decided to return to the beach to assess the damage, leaving the second tank to continue to support the Marine infantry units.¹⁰¹

The other two platoons, scheduled to land on Red Beach 2 and 3 experienced much of the same challenges as 1st Platoon. On Red-2, the four tanks from 2nd Platoon made little progress. The first tank plunged into the water up to its turret, above the 40-inch line, immediately upon exiting the LCM and was flooded out. A second tank was lost when Japanese cannon fire destroyed the LCM it was embarked on. The LCM became disabled 100 yards off shore, blocking the channel along the pier. However, the tank was somehow able to exit the destroyed LCM but quickly dropped into a crater hole and became disabled. The two remaining tanks were able to make it to shore unscathed and were ordered to support an infantry assault across the airfield. Unfortunately, coordination between infantry and tank crews was poor and the tanks operated in front of the infantry, too far for mutual support. The first tank tumbled into a crater after trying to

¹⁰¹ Ibid.

avoid enemy fire and was quickly abandoned while the second was disabled by a Japanese magnetic mine. The two tanks provided support for a mere 20 minutes.¹⁰²

The four tanks from 3rd Platoon struggled as well. Although all four reached shore, only one remained fully functional by 1800. The tanks again suffered great losses because they operated too far forward from the infantry. Two were knocked out by point-blank 75mm anti-tank guns and the third was abandoned when it entered a Japanese fuel dump and caught fire. The fourth tank barely survived a fire set by a hand-thrown gasoline bomb. The crew quickly maneuvered the flame-engulfed tank back to the beach and into the water, putting out the fire and saving the tank. Although the support offered by the tanks of 3rd Platoon was short-lived, they were still able to destroy two antitank guns, five pillboxes, and advanced nearly to the south shore of the island. However, due to lack of coordination and proper employment, the M4 had little impact on Betio. After the first day of fighting, only two tanks remained operational out of the fourteen that originally embarked.¹⁰³

After a costly first day, Bale and his two remaining tanks, now accompanied by light tanks from the 2nd Tank Battalion, quickly learned the importance of tank-infantry coordination. Working closely with the infantry was the only way to bring the full advantage of the medium tank and its 75mm main gun to fruition. On the second day, Bale supported an attack to clear Green Beach in support of Marines commanded by Major Mike Ryan. The attack began at 1120 moving south on a 100-yard-wide front.

¹⁰² Ibid., 92.

¹⁰³ Ibid., 93-95.

Bale's lone tank, *Cecilia*, maneuvered carefully, making sure not to exceed the protective reach of the supporting infantry. Within two hours, *Cecilia* cleared the entire western shore of the island, blasting pillboxes, identified by the advancing infantry, with its 75mm cannon.¹⁰⁴

As tank-infantry cooperation improved into day two of fighting, the second surviving M4 *Colorado*, working with Major Crowe on Red Beach-3, advanced cautiously. The day before, Crowe had ordered all four tanks of 3rd Platoon to advance without infantry support. Crowe now worked closely with the sole surviving tank. Communication between tank crews and infantry continued to be a problem. The tank internal radio was not compatible with the infantry field radio. The problem of communication compounded when advancing infantry identified an enemy position but were unable to attract the tanks' attention to direct its fire. The Marine infantrymen tried whatever they could, banging on the side of the tank with shell casings and at times, riding on the tank behind the turret. These techniques, although highly dangerous for the exposed infantryman, allowed the M4 and its crew to contribute significantly to the fight. When the island was officially declared secure on the third day, 23 November, Lieutenant Bale's two tanks, *China Gal* and *Colorado* still remained operational. The improved coordination and employment techniques implemented by Bale and the infantry allowed the M4 to remain a presence on the battlefield.

¹⁰⁴ Ibid.

Cape Gloucester (December 1943)

While Bale and the tankers from the 2nd Marine Division recovered from Tarawa, Daniel Quinlan, now a Sergeant, prepared to assault the large island of New Britain in December of 1943. The lessons of Tarawa had reached the 1st Tank Battalion as it continued to train in Melbourne. These lessons would be even more important for Quinlan in A Company, the only unit to receive the new medium tanks in the battalion. The first improvement was the replacement of the ineffective naval radio that could not communicate with the infantry field radios. The new radio, an FM 10-channel SCR508 and SCR528 could now communicate with infantry. Arthur Rowe, a communications specialist assigned to C Company commented on the tank's radio challenges:

The old GF-RU was originally an aircraft radio. When they [the navy] got newer stuff, we wound up with the old stuff in the tanks. It was not totally unreliable, but very difficult to keep on frequency. Most of the tankers did not like it, and as a result they did not have much faith in communications people or equipment. When the new ones came, that made a big difference. The old stuff was AM and subject to a lot of noise, whereas the FM was virtually noise-free.¹⁰⁵

Another improvement saw the adaptation of the infantry flamethrower mounted on the bow of the tank. The first of these were mounted on the light tanks, fixed in place of the bow machine gun, using an aircraft propeller hub as a ball mount. The battalion experimented with the flamethrower while training on Goodenough Island, northeast of Papua New Guinea. The battalion was shipped from Melbourne to Milne Bay in early December in preparation for the New Britain campaign. The improvised tank-mounted flamethrower never saw combat because the fuel, a mixture of diesel and gasoline was

¹⁰⁵ Gilbert, *Marine Tank Battles*, 107.

unreliable and “created a gorgeous big ball of flame”¹⁰⁶ as recounted by Rowland Hall. Additionally, greater emphasis on coordination between tank and infantry units became the focus of training prior to the assault, which was planned for 26 December. The 1st Tank Battalion had learned much from their experience at Guadalcanal and knew their tanks relied on the infantry just as much as the infantry relied on them.

The New Britain Campaign, code-named Operation Backhander, sought to capture and expand the Japanese airfield at Cape Gloucester. This action would further isolate the main Japanese logistical base at Rabaul on the northeastern end of the island. Rabaul, seized by the Japanese in 1942, grew into a main logistics hub which resupplied Japanese units in the South Pacific. With over 100,000 defenders, the fortress of Rabaul posed a serious threat to General MacArthur’s push to recapture the Philippine Islands. Initial plans considered conducting an assault to seize Rabaul but were discarded due to the high casualty rate expected to defeat the large base. Instead, a strategy of isolation focused on capturing key bases and airfields in the surrounding area was adopted. Cape Gloucester and its associated airfield, on the western point of New Britain was the 1st Marine Division’s objective.¹⁰⁷ (see figure 12)

¹⁰⁶ Ibid., 108.

¹⁰⁷ Frank O. Hough, *The Campaign on New Britain* (Washington, DC: Historical Branch Headquarters, U.S. Marine Corps, 1950), 14.

American light cruisers opened fire on the areas surrounding Cape Gloucester. The naval bombardment, which had become standard procedure, proceeded for the next 90 minutes as hundreds of 6 and 8-inch high explosive rounds impacted the airfield and the YELLOW Beach landing area. The landings also included a squadron of B-25 medium bombers called in after the naval bombardment. The bombers were to precede a hail of rocket fire from assault ships off shore. This signaled the landing craft to cross the line of departure toward the beach. The first LCMs landed on the beach at 0748 and dropped their ramps.¹⁰⁸

¹⁰⁸ Hough, *The Campaign on New Britain*, 51.

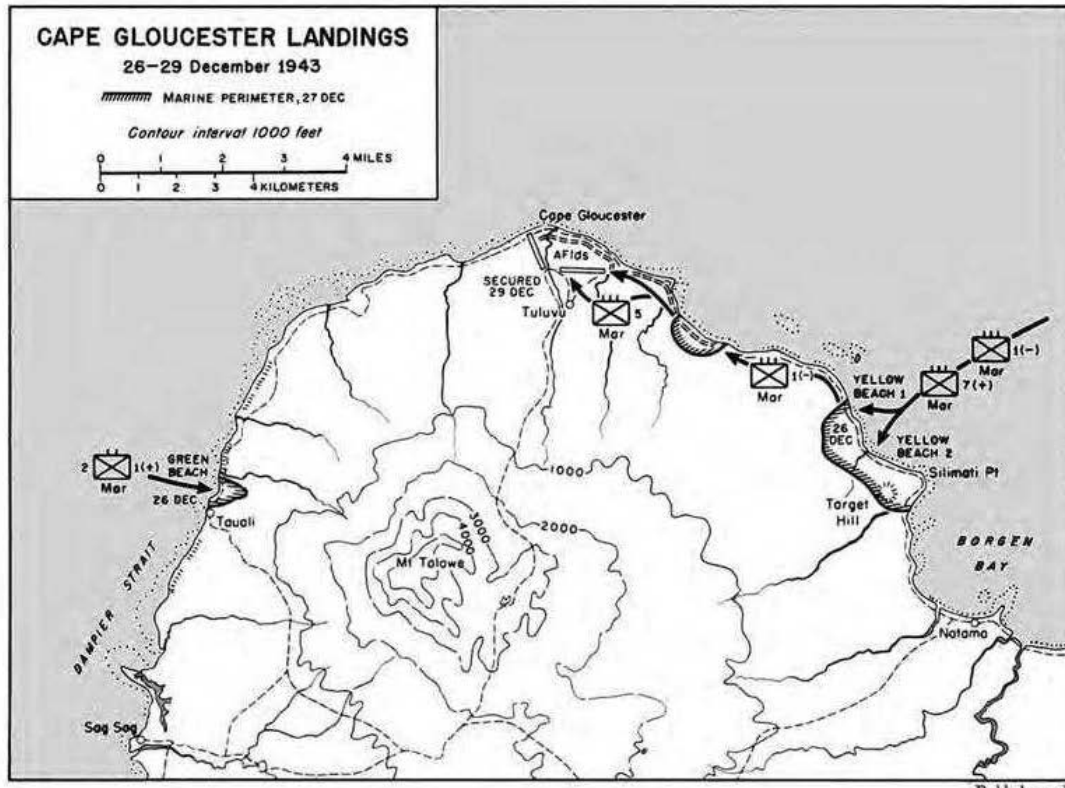


Figure 13. Cape Gloucester Landings: 26-29 December 1943

Source: Frank O. Hough, *The Campaign on New Britain* (Washington, DC: Historical Branch Headquarters, U.S. Marine Corps, 1950), 62.

The first wave arrived on the beach without enemy opposition. The Japanese did not expect the Marines to land where they had. They anticipated a landing closer to the airfield on better ground. During planning, the YELLOW Beach locations were selected because, on the American maps, the sites were described as damp, flat ground. In reality, and unbeknownst to the planners, the area behind the YELLOW Beach was dense jungle swamps. An anonymous Marine described it as “damp up to your neck.”¹⁰⁹ The Japanese had prepared defensive positions closer to the airfield, west of the landing site. However,

¹⁰⁹ Gilbert, *Marine Tank Battles*, 108.

the dense swamp hampered movement and slowed the Marines' progress. The wet terrain would wreak havoc on the tanks, especially the new mediums, operating at a hefty weight of 30 tons.

As the initial units pushed inland, the tanks of Quinlan's 1st Battalion were being unloaded by Landing Ship Tanks directly onto the beach. The weight of the heavy tanks sank deep into the soft volcanic sand, making progress slow. The first enemy contact was encountered along the coastal road, west of YELLOW Beach. The Marines of the 3rd Regiment (3/1) located four mutually- supported bunkers and called for tank support. However, the tanks were still sloshing their way down the beach, unable to penetrate inland due to the dense swamp waters. (see figure 14 and 15) By nightfall, a secure beachhead was established and the Marines prepared for a Japanese counterattack. The Japanese attacked throughout the night in piecemeal and could not penetrate the Marine lines. The fighting was treacherous and compounded by gale force winds and driving rains from a storm that blew in from the Bismarck Sea north of the island.¹¹⁰

¹¹⁰ Hough, *The Campaign on New Britain*, 65.



Figure 14. M4A1 Medium Tank, A Company, 1st Tank BN, unloads from Landing Ship Tank on Cape Gloucester

Source: Marine Corps Vietnam Tankers Historical Foundation, “The Evolution of Marine Tanks,” assessed 15 May, 2017, http://mcvthf.org/History/Evolution_of_Marine_Tanks.html.



Figure 15. Tanks from 1st Tank Battalion move along the beach on Cape Gloucester

Source: Marine Corps Vietnam Tankers Historical Foundation, “Evolution of Marine Tanks,” assessed 15 May, 2017, http://mcvthf.org/History/Evolution_of_Marine_Tanks.html.

Fighting on Cape Gloucester quickly became a contest against the conditions in addition to fighting the enemy. Both sides were unable to dig fighting positions because they quickly filled with water. Heavy rains consistently hampered movement and the expansion of the perimeter. The heavy tanks were limited to roads and areas where the infantry cleared paths to known enemy positions. On the second day, the 1st Regiment was able to make good progress reaching within two miles of the airfield when they encountered heavy resistance. A dozen bunkers built with logs and oil drums filled with crushed rock defended the area. The position was protected by barbed wire, mines,

mortars, and fire lanes for heavy machine guns which extended outward 300 yards. The assault was delayed to allow A Company to bring up their tanks to lead the attack.¹¹¹

At 1100 on 28 December, in a heavy downpour, a platoon of three medium tanks advanced against the enemy strong point in a frontal attack supported by 3/1. Eugene Viveiros, Gunnery Sergeant for A Company, described the assault: “We started to form tank-infantry teams here. This is where it was put together as far as my knowledge goes. We would advance with a tank plus a squad of infantrymen, busting through heavy jungle foliage.”¹¹² The lead tanks were supported by an echelon of three additional tanks, followed by rifle squads and two rifle companies in tow. The tanks engaged the bunkers with their 75mm cannons with devastating effect. The tanks easily climbed up over the log bunkers and collapsed their roofs. The Japanese tried to defend using 75mm howitzers, but the tanks’ three and a half inch thick armor deflected each round.¹¹³

At 1200, the Japanese responded with a counterattack against the lead tank elements. The attackers, armed with hand-held satchel charges, sack mines, and shoulder-pack mines charged toward the tanks. A Japanese sack mine consisted of five to ten kilograms of explosives in a burlap bag equipped with a detonator, triggered by a pull cord. The shoulder-pack mine was similar to the sack mine but allowed the attacker to carry the explosive on his back with shoulder straps. Japanese Soldiers usually tossed the

¹¹¹ Gilbert, *Marine Tank Battles*, 110.

¹¹² *Ibid.*

¹¹³ *Ibid.*

device under the tank or threw himself with the charge underneath, then pulled the cord.

Gunnery Sergeant Viveiros recounted:

These guys worked in groups of three, and they would have a heavy charge all bundled up inside this straw matted stuff that they would weave. It had a neck harness. The guy who was supposed to blow the tank up, his job was to if possible get up close to the tank and affix a heavy demolition charge within the suspension, or wherever he could get it. Then he would pull his igniter, and set off the charge. In most cases this guy went to meet his ancestors along with it. Hell, that one tank it must have went 15 or 20 feet straight up when that guy set that charge off. Blew the whole suspension off of one side of the tank. Tank came down and it was all burnt black on one side. We were able to rescue the crew, and other than looking kind of glassy-eyed none of them sustained any serious injuries. The tank was completely knocked out.¹¹⁴

Japanese suicide attacks became one of the largest threats to the tanks, especially the light tanks still operating in 1944. The light tank assumed a support role to the larger and more capable mediums. On Cape Gloucester, the light tanks usually followed behind the mediums, providing protective fire against Japanese attack. Bill Finley, assigned to B Company followed the mediums on a light tank. He described one particular engagement: “The Japanese had a 77mm pack-howitzer there. . . . They said that this Japanese officer was just standing there with his hand on the lanyard. As soon as that Sherman tank turned where he could see it, he fired and hit that tank. It just scratched it, maybe an eighth of an inch deep, but it didn’t hurt it.”¹¹⁵ The medium tanks quickly proved their worth against the Japanese, who struggled to cope against the superior protection and firepower the M4

¹¹⁴ Ibid., 111.

¹¹⁵ Ibid., 112.

offered. The attack on 28 December, known as “Hell’s Point,” resulted in nine Marines killed in action and 36 wounded. The Japanese suffered 260 killed.¹¹⁶

On 30 December, the Marines had secured the airfield after tanks were called up to clear one final enemy strong point. By 1130, a total of 30 bunkers were destroyed. At 1200, General William Rupertus reported the capture of the airfield to General Walter Krueger, presenting it as an early New Year’s gift.¹¹⁷ He then looked to continue the advance to the southeast. On 1 January the division began an offensive to the southeast in order to push the Japanese back toward Rabaul. The Japanese, believing they faced a much smaller force, prepared to attack in an area that would become known as Suicide Creek. On 2 January, the Marines met heavy resistance while attempting to cross a small stream with high banks. The Japanese were attempting to stop the Marine advance by utilizing the high bank as a defensive barrier. The next day, after four attempts to cross the bank failed, a bulldozer was called forward to reduce the height of the bank. By 1600 the bulldozer had reduced the bank at great hazard to the engineers who sat exposed, one operating the pedals with a shovel and the other, the levers.¹¹⁸

The next morning, 4 January, with the bank reduced, three tanks from A Company moved forward and crossed the creek. (see figure 16) The tanks were immediately attacked by Japanese with satchel charges but were quickly cut down by

¹¹⁶ Bernard C. Nalty, *Cape Gloucester: The Green Inferno*, Marines in World War II Commemorative Series (Washington, DC: History and Museums Division, Headquarters, U.S. Marine Corps, 2013), 11.

¹¹⁷ Hough, *The Campaign on New Britain*, 87.

¹¹⁸ Gilbert, *Marine Tank Battles*, 112.

riflemen supporting closely behind. The tanks successfully broke through the enemy defenses, destroying multiple machine gun positions. The Japanese withdrew under pressure from the tank advance, leaving 500 dead in the area surrounding Suicide Creek. The Marine advance continued through January, progressing slowly as the thick jungles and torrential rain fought against both sides. By February the Japanese were in full retreat to Rabaul. The seizure of Cape Gloucester resulted in over 1000 Japanese killed and the successful isolation of Rabaul. The 1st Marine Division suffered 310 killed and over 1000 wounded, mostly succumbing to the extreme environment.¹¹⁹

¹¹⁹ Gilbert, *Marine Tank Battles*, 114.



Figure 16. Tank from A Company, 1st Tank Battalion crosses Suicide Creek on 4 January, 1944

Source: Frank O. Hough, *The Campaign on New Britain* (Washington, DC: Historical Branch Headquarters, U.S. Marine Corps, 1950), 99.

Before fighting on Cape Gloucester ceased, General Rupertus feared that his division would be retained by General MacArthur, who by now was confident in their capabilities and called them “My Marines.” So serious was this concern that General Alexander Vandergrift, Marine Corps Commandant, petitioned Admiral Ernest J. King, Chief of Naval Operations, to remove the division from Cape Gloucester in order to keep them “a well-trained fighting division.”¹²⁰ It was rumored that MacArthur had plans to

¹²⁰ Nalty, *Cape Gloucester*, 31.

retain the Marines on the island. However, Fleet Admiral Chester W. Nimitz, Commander in Chief Pacific Operations Area wanted the Marines to spearhead the amphibious assault in the upcoming Palaus Campaign. In the end, Nimitz traded the Marines for the Army's 40th Infantry Division, but not before MacArthur had one more mission for a special unit, A Company, 1st Tank Battalion.¹²¹

MacArthur wanted the medium tanks from A Company to support the 24th Infantry Division landings on northern New Guinea as part of Operation Reckless. Apparently, MacArthur was aware of how important the medium tank was to the success of Cape Gloucester. He had requested the tankers, including Sergeant Quinlan "as one of the eight tankmen [he] made a request for from the Marines to terrorize the Japs in the island campaign."¹²² Quinlan, and the tanks from A Company, landed at Hollandia in Tanamerah Bay on 22 April, but the tanks found themselves trapped on the beach between the sea and a deep area of swamps and could not move inland. Anticlimactic, the tanks did not see combat on New Guinea.¹²³

By the end of April, the 1st Marine Division sailed to the Solomon's to recoup and refit after three months of treacherous fighting in the worst conditions possible. The physical toll was debilitating as most Marines suffered from a combination of tropical diseases and extreme weight loss. Quinlan, in fighting trim, weighed 210 pounds, but was down to 185 by the end of the Cape Gloucester action. He also suffered blood poisoning

¹²¹ Ibid.

¹²² Local article, "Irish Danno; Tank Driver," *Daily Hampshire Gazette*, 1944.

¹²³ Nalty, *Cape Gloucester*, 31.

when shrapnel from a Japanese shell pierced his arm. Quinlan chose to continue fighting, as did many other wounded Marines, rather than come off the line. These exploits were common amongst Marines, especially tankers. Fred Adams, Gunnery Sergeant in 3rd Platoon, received the Navy Cross for his actions on Cape Gloucester. The citation read in part:

The President of the United States takes pleasure in presenting the Navy Cross to Frederick Louis Adams . . . in action against enemy Japanese forces at Cape Gloucester, New Britain, from 26 to 28 December 1943. Courageously exposing himself to severe, persistent hostile fire, Gunnery Sergeant Adams skillfully directed his tank with aggressive determination against enemy pillboxes during two days of fierce, incessant fighting. On 28 December, he led his tank platoon in support of attacking Marine forces and, arriving at the front lines, dismounted and personally made an extremely hazardous reconnaissance to discover the location of hostile antitank guns. Placing his tank in the lead of his deployed platoon and bravely standing in the open turret, he accurately controlled the devastating fire of his tanks and, despite direct hits sustained by his own vehicle, successfully destroyed two antitank guns. Thereafter, he walked ahead of his platoon in the face of intense enemy machine-gun fire and pointed out targets for his tanks.¹²⁴

The 1st Marine Division proved, once again, that they could overcome Japanese defenders even under the worst of conditions. They also learned the Japanese were now becoming more brazen and determined in their efforts. The tankers of the 1st Tank Battalion, and specifically A Company, demonstrated that tank support was an essential element to the Marines' success on Cape Gloucester. The debut of the medium tank confirmed that the light tank was greatly insufficient with its less than impressive 37mm gun and light armor. The light tank would not see combat again in the 1st Division. The medium, with its 75mm cannon and superior armor, proved it could hold up to most

¹²⁴ Spot Award, Fleet Marine Force, Pacific: Serial 0689, March 28, 1944. Award citation received from the personal collection of the author's grandfather, Francis Quinlan.

anything the Japanese could throw at it. Coordination and communication between tank and infantry units were now common practice. The tank-infantry team became standard procedure to the point where major advances were not executed without tank support, if not in the lead. (see figures 17 and 18) The tankers would need to bring all these skills to bear in the next campaign, one that would be much more costly than Cape Gloucester.



Figure 17. Tank-Infantry Team operating on Cape Gloucester, 1944

Source: Bernard C. Nalty, *Cape Gloucester: The Green Inferno*, Marines in World War II Commemorative Series (Washington, DC: History and Museums Division, Headquarters, U.S. Marine Corps, 2013), 32.



Figure 18. Tank-Infantry Team operating on
Cape Gloucester, 1944

Source: Kenneth W. Estes, *U.S. Marine Corps Tank Crewman 1941-1945* (Long Island City, NY: Osprey Publishing, 2005), 24.

Peleliu (September 1944)

By the fall of 1944, American forces had swept across the Central Pacific seizing the Marshall, Gilberts, and Mariana Islands led by Admiral Chester Nimitz. In the Southwest, MacArthur pushed from Guadalcanal up through the Solomon's chain of New Georgia, Bougainville, New Britain, and across New Guinea. Under a two-pronged strategy, MacArthur would continue to push to retake the Philippines while Nimitz pushed to take Iwo Jima and Okinawa and the final objective, the Japanese home islands.

The Japanese, clearly on the defensive, would attempt to delay the U.S. advance in a war of attrition.¹²⁵

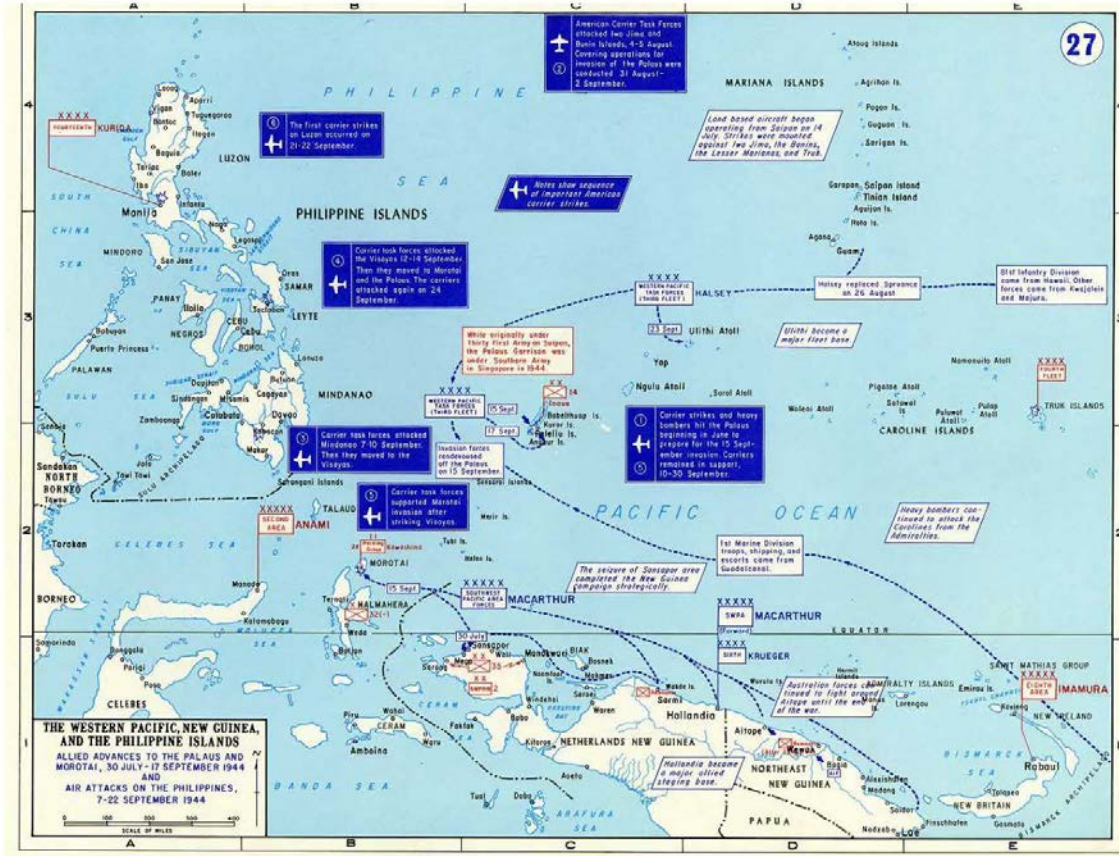


Figure 19. The Western Pacific, Allied advances to the Palau, 17 September 1944

Source: United States Military Academy, Department of History, “The Western Pacific,” assessed 12 April, 2017, <https://www.westpoint.edu/history/SitePages/Our%20Atlases.aspx>.

¹²⁵ Gailey. *Peleliu 1944*, 4.

The Palau Campaign, code-named Operation STALEMATE, sought to protect MacArthur's eastern flank as he pushed north from New Guinea to Morotai and then on to the Philippines. The Palau Island group, a collection of 100 islands and inlets spanning 100 miles from southwest to northeast, was seized by the Japanese in 1914. In spite of American opposition, the League of Nations mandated control to the Japanese in 1920. During the interwar period, Japan had established a major presence on the Palaus and built airfields, seaplane bases, submarine bases, and coastal defenses on the islands of Babelthuap, Koror, and Peleliu. It was on the island of Koror that Lieutenant Colonel Earl Ellis mysteriously died in 1922 during a covert fact-finding mission under the order of General Lejeune, Marine Corps Commandant. Ellis warned of a future conflict with the Japanese and authored the *Tentative Landing Manual*, the base of doctrine that informed amphibious operations in World War II.¹²⁶

At the height of Japanese expansion in 1942, the Palaus served as a main supply and training base to support offensive operations. By 1944, under the "Absolute National Defense Zone" strategy, the Japanese sought to contain their holdings and looked to the defense. The Japanese correctly anticipated an assault from the southwest on the islands of Peleliu and Anguar. Peleliu, a small coral island at the southern point of the Palaus Island group housed 11,000 Japanese defenders. The defense of Peleliu focused on maintaining control of the airfield on the southwestern end of the island. The 1st Marine Division, tasked with seizing Peleliu, considered multiple assault locations, but ultimately decided on the southwest area due to its close proximity to the airfield. The defense of

¹²⁶ Jim Moran and Gordon L. Rottman, *Peleliu 1944: The Forgotten Corner of Hell* (University Park, IL: Osprey Publishing, 2002), 7.

Peleliu fell to Lieutenant Colonel Kakagawa Kunio, Commander of the 2nd Infantry Regiment, with a force of over 11,000.¹²⁷

Kakagawa prepared for the impending assault differently than previous island defenses. This time, there would be no mass suicidal *banzai* charges as practiced in previous defenses, such as on Guadalcanal, the 1st Marine Division's first combat experience. Kakagawa divided his forces into four defense sectors. Each sector would develop a network of caves, utilizing the coral terrain to mask pillboxes supported by artillery, tanks, and engineer units. The Japanese would also defend the landing beaches more fervently, placing machine gun positions with inter-locking fields of fire and concentrating heavy mortar fire on the landing force.¹²⁸ By 1944, the Japanese knew they could not compete with American industrial might, but they believed they could delay the inevitable. Japanese headquarters at Koror issued an 11 July order titled "Palau District Group Training for Victory," it read in part: "The ultimate goal of this training is to minimize our losses . . . and, on the very night of the enemy landing, to take advantage of the fact that their equipment is not fully consolidated, to destroy their bridgehead at one blow."¹²⁹

The 1st Marine Division was an experienced unit in the fall of 1944 and had seen significant combat on Guadalcanal in 1942 and Cape Gloucester in 1943. However, the Marines had yet to experience an opposed landing. The battle of Tarawa, in November of

¹²⁷ Derrick Wright, *To the Far Side of Hell: The Battle for Peleliu, 1944* (Tuscaloosa, AL: The University of Alabama Press, 2005), 57-58.

¹²⁸ *Ibid.*

¹²⁹ Moran and Rottman, *Peleliu 1944*, 22.

1943, suggested the Japanese were beginning to change their tactics, specifically the defense of the beach where the initial landing force was most vulnerable. The 2nd Marine Division experienced 3,166 casualties, 894 killed in action, while 4,690 Japanese defenders were killed and 17 surrendered within the 76-hour battle. The high casualty rate was alarming in light of the battle's short duration, and signaled a new fervor and tenacity by the Japanese.¹³⁰

D-Day for operation STALEMATE was scheduled for 15 September. Major General William H. Rupertus, Commanding General of the 1st Marine Division declared "it will be a short operation, a hard-fought 'quickie' that will last four days, five at the most, and may result in a considerable number of casualties, however you can be sure, the 1st [Marine] Division will conquer Peleliu."¹³¹ Rupertus, although confident in his Division, was correct in the high casualties that would be incurred to take Peleliu. However, he was wrong in his assertion of the length of the battle as it would take months, not days, to take Peleliu.

The battle of Peleliu is shrouded in controversy, not because of the high casualties incurred, although devastating, but because of the debate as to the necessity of the operation at all. Just two days before the Peleliu assault commenced, Admiral William Halsey, Commander of the Western Pacific Task Force, recommended to Admiral Nimitz the operation be cancelled and Peleliu bypassed. Halsey, overall responsible for supporting operations, had performed carrier-based air-strikes on the southern Philippines

¹³⁰ Hallas, *The Devil's Anvil*, 23.

¹³¹ Moran and Rottman, *Peleliu 1944*, 22.

and Palaus in the weeks leading to the Peleliu assault. Halsey received numerous reports that the raids on the Philippines and Palaus were lightly contested, which signaled to him that the Philippine island of Leyte and Peleliu were not as heavily defended as initial intelligence had indicated. On 13 September, Halsey sent an urgent message to Admiral Nimitz recommending the following:

1. Plans for the seizure of Moratai and Palaus be abandoned.
2. That the ground forces earmarked for these purposes be diverted to MacArthur for his use in the Philippines.
3. That the invasion of Leyte be undertaken at the earliest possible date.¹³²

Admiral Nimitz forwarded Halsey's message to the Joint Chiefs but did not concur with the first two points and recommended the assaults continue as planned. The Joint Chiefs met on 14 September, one day before the Peleliu operation, and conferred with MacArthur. It was decided to speed up the Leyte offensive by two months, but to go ahead with the seizure of Peleliu and Moratai. This decision would have little effect on the Army's 31st Infantry Division, tasked with assaulting Moratai, because the island was in fact lightly defended and cost little in lives and resources to secure. However, for the 1st Marine Division, the decision to capture Peleliu would cost hundreds of lives and nearly cripple the division.¹³³

After the war, Nimitz never fully explained his decision to override Halsey. The original objective of the Palaus campaign was to secure MacArthur's right flank as he approached the Philippines. The airfield on Peleliu threatened to disrupt the Philippine

¹³² Gailey, *Peleliu 1944*, 33-34.

¹³³ *Ibid.*

invasion force if the Japanese could launch a successful air strike. Additionally, there were thousands of Japanese troops that could reinforce the Philippine garrison from the Palaus. Halsey contested that both could be dealt with by the use of carrier-based aircraft and naval bombardments without committing ground forces.¹³⁴ Was Admiral Halsey correct? Could the 11,000 Japanese defenders, naval, and air assets be contained to prevent disruption of the Philippine invasion? Was Admiral Nimitz correct in overruling Halsey and moving forward with the assault? Regardless, the assault commenced as scheduled on 15 September.

In the months leading to D-Day on Peleliu, the 1st Marine Division recovered from the Cape Gloucester campaign on the island of Pavavu. A small, rat-infested and coconut-laden island located in the Solomons, Pavavu was less than ideal for the recuperation the division so desperately needed. In addition to the rats and rotting coconuts, Pavuvu was mostly swamp, a terrain feature the Marines were all-too familiar with. Training was hampered because of the swamps, especially for the tanks that struggled to maneuver their mediums through the terrain. While on Pavuvu, the division received 4,000 new replacement troops to fill the losses of the previous month's fighting. Additionally, Marines also started to rotate back to the states. This created a challenge for the division as it prepared for Peleliu.¹³⁵ Veterans of Guadalcanal and Cape Gloucester were now leaving the division, and with them, their valuable knowledge and experience.

¹³⁴ Ibid.

¹³⁵ Hough, *The Assault on Peleliu*, 25.

Some were chosen to stay to train the replacements and lead them into combat. Sergeant Quinlan was one of them.

The first wave disembarked from their transport vessels in the pre-dawn hours of 15 September. Naval gunfire had raked the beach and inland for over an hour while the landing craft assembled off shore. When the naval bombardment ceased, the LVT's started toward the beach. As the LVTs approached, a hail of mortar fire rained down only a few hundred yards from the beach, destroying some of the LVTs and killing their occupants. The landing plan consisted of five sectors with the 1st Marine Regiment assigned to WHITE Beach 1 and 2 on the left, 5th Regiment on ORANGE Beach 1 and 2 in the center, and the 7th Regiment on ORANGE 3 on the right. (see figure 20) The tanks would go ashore with the fourth wave, earlier than any other previous assault.¹³⁶

¹³⁶ Ibid., 36-37.

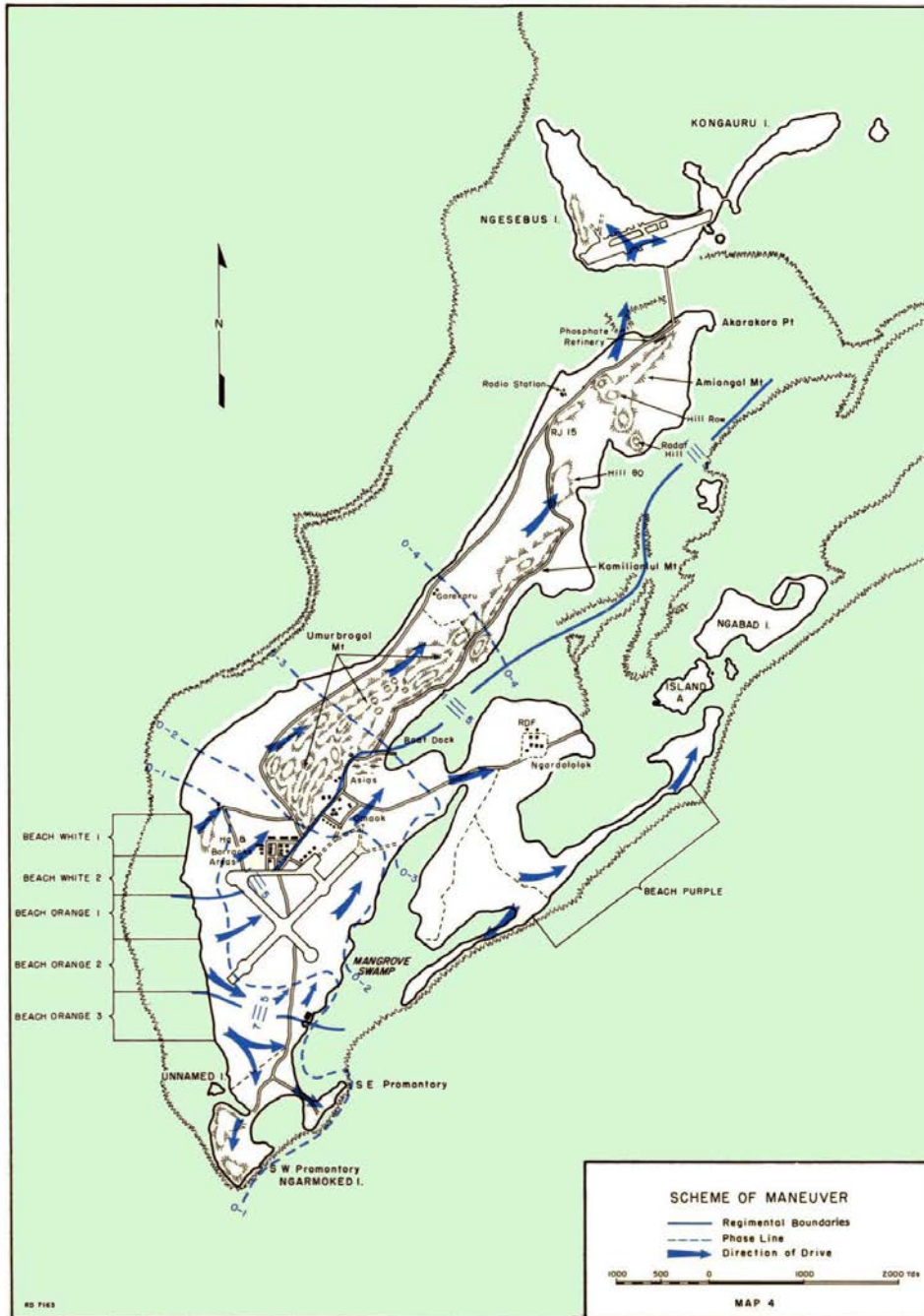


Figure 20. Scheme of Maneuver: Peleliu Assault, 15 September 1944

Source: Frank O. Hough, *The Assault on Peleliu* (Washington, DC: Historical Branch, G-3 Division, Headquarters, U.S Marine Corps, 1950), 21.

The first wave of LVTs reached the beach at 0832, two minutes behind schedule. They were met by a blanket of enemy machine gun fire on the water's edge. LVTs were specifically targeted by the heavy mortars, destroying vehicles on the reef and along the beach. The naval bombardment, it seemed, had little effect on the well-entrenched Japanese positions. Colonel Nakagawa chose to designate 1,200 men to defend the westward beaches. The well-entrenched defenders were protected by coral bunkers they had excavated and suffered little from the naval bombardment.¹³⁷ The Marines were quickly pinned down by the deadly and unrelenting fire. The tanks arrived 30 minutes later, just in time to relieve the trapped Marines, especially on the far left.

To support the division 30 tanks came ashore. Due to shipping shortages 16 had been left behind on Pavavu. Operations in the Marianas had absorbed much of the Navy's transport vessels, leaving only four LSDs available: two of which went to the Marine Division. Although short on tanks, all crews from the tank battalion accompanied the task force. This would pay dividends for the tankers during the battle. The tanks disembarked from the LSDs just off the outer edge of the reef. This time, the tanks were outfitted with fording kits, which waterproofed the tanks and allowed them to ford waters well above the 40-inch limit without significant flooding or electrical issues as seen on Tarawa a year earlier. Planning for the landing of the tanks was particularly detailed and coordination between infantry and tank units well-established.¹³⁸

¹³⁷ Gailey, *Peleliu 1944*, 69.

¹³⁸ Gilbert, *Marine Tank Battles*, 211.

Lieutenant Colonel Arthur “Jeb” Stuart, Battalion Commander of the 1st Tank Battalion, instituted a change in the tactical employment of his tanks. Common practice for a tank company was to support a rifle regiment exclusively throughout a battle. On Peleliu, tank companies continued to support regiments, but Stuart delegated authority to his company commanders to assign individual tank platoons as needed to support other units. For the assault, companies A, B, and C, now outfitted with the M4A2 medium, would support the 1st, 5th, and 7th Regiments respectively. Sergeant Quinlan, now a tank commander with A Company, supported the 1st Regiment, commanded by Colonel Chesty Puller, at the far left on WHITE Beach 1. Fighting on WHITE Beach would be the worst of the day, specifically on what became known as The Point.¹³⁹

After the tanks entered the water some 700 yards from the shore, they formed six columns of five. Each column followed behind an amphibious tractor, tasked with guiding the tanks across the reef, avoiding unseen craters and potholes. The tanks would follow the tractor unless it started to float, which signaled to the tank crews the water was too deep. When the tractor found the bottom, the tanks would follow its path once again. As the columns of tanks progressed across the reef, they quickly became targets and were singled out for special attention by the Japanese. Most dangerous was the heavy mortar fire that rained down on the tanks. So accurate and fierce was the fire that all 30 tanks received hits during the 10-minute trek across the reef. Only three tanks were disabled

¹³⁹ Gilbert, *Marine Tank Battles*, 210-211.

before reaching shore, their vulnerable engine compartments hit directly by the mortars.¹⁴⁰

The tanks reached the beach at approximately 0900, only 30 minutes after the first wave landed. The beaches were filled with burning LVTs, bodies, and wounded Marines scattered in all directions. Corporal Bill Meyers, assigned to A Company, landed on WHITE Beach 1 and had been lucky to make it ashore. On the way to the beach, a mortar round impacted the turret ring and barely missed Myers, who had been standing in the open hatch. Arriving on the beach, the tank half in the sand and half in the water, Myers waited for something to happen. Looking through the pistol port, he spotted a Marine lying behind a stump. Meyers recounts: “‘Hey Mac!’ He yelled at the riflemen. ‘Where’s the front lines?’ ‘Hell,’ retorted the Marine, ‘You’re twenty feet in front of them.’”¹⁴¹ The Marines had advanced little in 30 minutes time and Japanese opposition continued to grow.

Fighting was intense: by 0930 a narrow beachhead was established amidst the chaos and confusion and units started moving forward in loosely-coordinated groups. At the far left, on WHITE Beach 1, the Japanese wreaked havoc on the beach from a point approximately 130 feet high. The position, composed of pillboxes carved out of the coral, jutted out over the ocean like a cliff. “The Point,” as it was called, brought down enfilading fire on almost all of WHITE Beach. Colonel Chesty Puller ordered K Company of his 3rd Battalion to eliminate the position. Quinlan, and a platoon of tanks

¹⁴⁰ Ibid.

¹⁴¹ Hallas, *The Devil’s Anvil*, 58.

from A Company, supported the attack. After two hours of fighting, The Point was taken, but at great cost, leaving K Company with only 34 capable fighting men. However, K Company had killed over 100 Japanese and destroyed the pillbox that overlooked the beach and secured the entire division's left flank.¹⁴² (see figure 21)



Figure 21. A Company Tank and Infantry from 1st Marine Regiment fight near the Point

Source: Oscar E. Gilbert, *Marine Tank Battles in the Pacific* (Boston, MA: Da Capo Press, 2001), 232.

By mid-morning, Marine units began to reach the airfield only a few hundred yards from the beach; progress was excruciatingly slow. The most serious problems were

¹⁴² Moran and Rottman, *Peleliu 1944*, 40-41.

communications and the lack of water. The tanks also started running short on ammunition, specifically 75mm rounds. The tankers had to scavenge from disabled tanks and even used 75mm howitzer rounds from the artillery units, although they rattled in the breach when fired.¹⁴³ The problem of water was less so for the tankers as they could carry enough with them inside. However, with temperatures exceeding 100 degrees Fahrenheit, the heat inside the tank was overbearing. Combined with the heat of the engines and the cumulative effect of hot shell casings, temperatures averaged between 110 to 120 degrees inside the tank. Luckily, there were more crews than tanks, which allowed crews to swap while the tank rearmed in the rear. However, this would only occur after D+1 when the rest of the battalion was able to come ashore. The tankers on D-Day had to suffer the heat and the enemy's resolve to defeat them at all costs.¹⁴⁴

At about 1650, while the Marines strengthened their perimeter on the outskirts of the airfield, Colonel Kakagawa launched a counterattack. (see figure 22) This attack originated across the northern portion of the airfield and included numerous tanks supported by infantry. A Navy air observer plane spotted the enemy tanks and infantry massing east of the ridges above the airfield with some of the infantry riding on top. Accounts vary, but approximately 13 tanks, Type 95 Ha-Go light tanks, accompanied by infantry, advanced across the airfield. At first, the infantry kept pace with the tanks, but about halfway across the airfield, in open terrain, the tanks opened their throttles and raced toward the Marine lines, leaving the infantry unprotected. It is unknown if this was

¹⁴³ Gilbert, *Marine Tank Battles*.

¹⁴⁴ *Ibid.*, 209.

intentional or by accident, but had the tanks slowed to allow the infantry to keep up, the tanks would have never reached the Marine lines. They would have been more easily destroyed at a slower pace. Additionally, the Marine units were expecting a counterattack and had been dug in for hours.¹⁴⁵

¹⁴⁵ Hallas, *The Devil's Anvil*, 83-84.

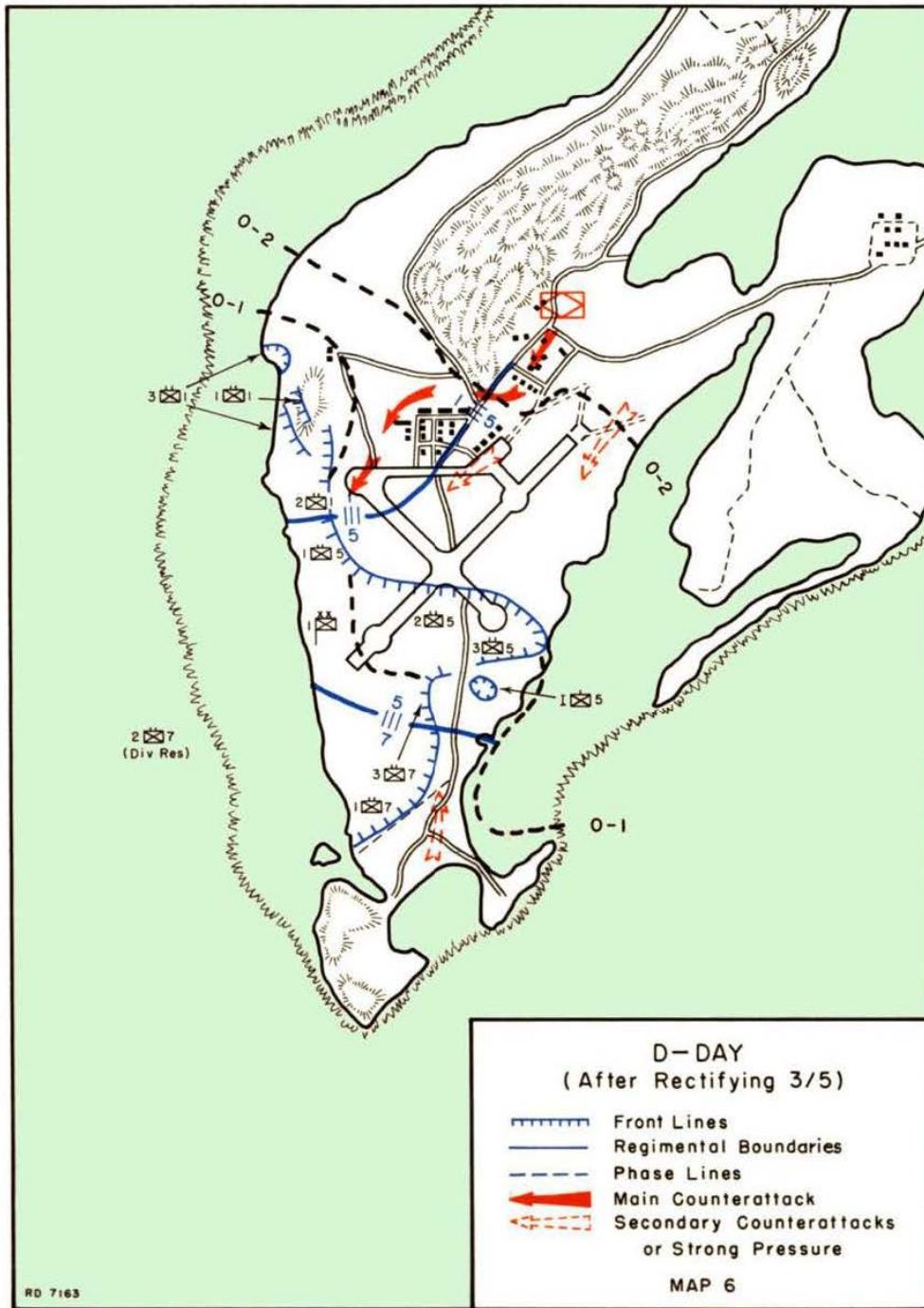


Figure 22. Direction of Japanese Counterattack

Source: Frank O. Hough, *The Assault on Peleliu* (Washington, DC: Historical Branch, G-3 Division, Headquarters, U.S Marine Corps, 1950), 57.

The Japanese tanks, largely insufficient, were lightweight, had little frontal armor, and a small caliber weapon. The tank was equipped with a 110-horsepower Mitsubishi Diesel engine and could only reach speeds of 28 miles per hour, 1 mph slower than the 30-ton medium, which outweighed the Type 95 by over 25 tons. However, attacking in force increased the odds that they would reach the Marine lines, but it would be this single effort that had any chance to drive them back to the sea.¹⁴⁶ However, the attack came too late, since the Marines had consolidated their forces on the edge of the airfield in well-prepared positions. As for the Marine tanks, three from B Company were lying in hull defilade behind the lines, four more to the south could easily provide flanking fire, and the remainder of the tanks were refitting 50 yards away, including Quinlan's.

As the Japanese tanks approached, the Marine units on the perimeter opened fire with small arms, .30 caliber machine guns, 37mm antitank weapons and the 75mm from the mediums. The only operating artillery unit, Battery E fired as well, sustaining a maximum rate of fire before the Japanese tanks cleared the runway. Additionally, a Navy dive-bomber dropped a 500-pound bomb on the advancing Japanese. The hail of fire from the defending Marines exacted revenge for the carnage experienced at the beach, just a few hours earlier. Private Eugene Sledge, of 3rd Battalion, 5th Marines located to the right of the attack observed: "Shell bursts appeared among the enemy tanks. Some of our Sherman tanks had arrived at the edge of the airfield on our left and opened fire.

¹⁴⁶ Hallas, *The Devil's Anvil*, 84.

Because of the clouds of dust and shell fire, I couldn't see much and didn't see any enemy infantry, but the fire on own left was heavy.”¹⁴⁷

The fire on the left described by Sledge came from tanks that moved up from the beach. These were tanks from A Company, Quinlan's outfit, who supported the 1st Marines on WHITE Beach, and later K Company on The Point, where fighting was fiercest. Quinlan maneuvered his tank to the edge of the line and began opening fire on the advancing tanks, directing his gunner on targets as they appeared. From his vantage point, Quinlan could see the entirety of the Japanese counterattack as they advanced across his field of view toward the center of the Marine line. The Marine tanks on the left fired directly into the side of the thin-skinned armor of the Japanese tanks. Ironically, the armor-piercing 75mm round from the Marine medium tanks passed directly through the Japanese tanks without detonating. When the Marine loaders switched to delayed action high-explosive rounds, they observed the rounds again pass through the tank, only to explode in the air on the other side. They then quickly switched to quick-fused high-explosive rounds “which shredded the light tanks, blasting them apart and flinging the turrets high into the air.”¹⁴⁸ Although in a position to see the Japanese advance and direct his tank, Quinlan was also vulnerable to enemy fire high in the commander's hatch.

Up to this point, Quinlan had been directing fire on the Japanese tanks as they advanced diagonally across the airfield in a southwesterly direction. Japanese tanks continued to emerge through the dust and smoke of destroyed tanks, reaching the Marine

¹⁴⁷ Gailey, *Peleliu 1944*, 84.

¹⁴⁸ Gilbert, *Marine Tank Battles*, 214.

lines at the center. At some point in the battle, a Japanese tank targeted Quinlan's tank and fired its 37mm main gun, missing high. Unfortunately, the round hit Quinlan in the head, killing him instantly. Bill Finley recounts the circumstances surrounding Quinlan's death:

I knew one of the guys, he was a professional wrestler, who was a tank commander of one of the tanks. Of course those Japanese tanks were no match at all for the Sherman tanks. This guy was named Quinlan. 'Beast' Quinlan was what we called him. He was riding about from his waist up out of the turret. One of those [rounds], what would be comparable to our 37, one of those took the whole top of his head off. That was the only casualty in A Company that I know of in that deal.¹⁴⁹

The loss of Sergeant Quinlan and many other veteran Marines who had served with the division since Guadalcanal could never be fully restored, especially to the families they left behind. Gunnery Sergeant Fred Adams, who received the Navy Cross on Cape Gloucester, visited the Quinlan family at their home in South Hadley, Massachusetts shortly after Quinlan's death. Adams was of those who had rotated back to the States after Cape Gloucester. He shared with the Quinlan family the many exploits of their son, who himself would never tell in his letters home. Adams told them of his legendary good-luck that always seemed to carry him through the fighting. His skill as a tanker and member of the famed A Company, requested by General MacArthur himself, reveals the character of a man willing to fight no matter how dangerous and regardless of the cost.

Most revealing, Adams described the bond Quinlan shared with his fellow Marines, an affection that comforted the wounded and eased their suffering. In one

¹⁴⁹ Gilbert, *Marine Tank Battles*, 215.

instance, Adams told “of the gentleness with which he saw Quinlan minister to a buddy whose leg had been mangled by a Jap shell.”¹⁵⁰ Selflessly, he chose to stay on in the Pacific, while many returned home, to train the new tankers and lead them into battle, ultimately giving his life for his country. His family never knew the true nature of his death and his body remained on Peleliu in the battlefield cemetery until 1947, when his father, Thomas Quinlan, requested his remains be brought home.

Ultimately, the Japanese counter-attack failed. (see figure 23, 24, and 25) All but two tanks were destroyed in the ill-fated attack. Although two tanks did penetrate the Marine lines and reached the beach, they were quickly destroyed by antitank weapons and Marine tanks. The two Japanese tanks that were not destroyed in the counterattack were knocked out later in the day during a second attempt, much less forceful than the first. Although futile, these attacks were well-coordinated and disciplined, not the frenzied *banzai* charge that the Marines previously experienced. The Japanese defense tactics had changed significantly; much more would be in store in the days and weeks to come.¹⁵¹

On D+1, the Marines had taken the airfield and the southern extent of the island. Now they looked to push north into the mountainous terrain of the Umurbrogol range. A complex cave network awaited them with well-concealed pillboxes, supported by mortar and artillery fire. The Marines advanced slowly as there were no roads and hardly any trails. The tanks supported where they could since the terrain was so severe. The Marines

¹⁵⁰ Local article, “Irish Danno; Tank Driver,” *Daily Hampshire Gazette*, 1944.

¹⁵¹ Moran and Rottman, *Peleliu 1944*, 48-49.

were dangerously exposed in the now barren landscape. They could not dig into the jagged coral rock and Japanese machine gun fire seemed to come from all sides.

Casualties continued to rise due to the enemy and terrain, but also due to the elements as the temperature on Peleliu continued to rise. The exhausted Marines continued to fight on, but by D+7 (21 September), the 1st Marines, Colonel Puller's Regiment, had suffered 56 percent casualties and was largely combat ineffective. Puller's regiment was relieved by the Army's 321st Regimental Combat Team. Fighting would continue for six more weeks.¹⁵²

By D+14, the northern portion of the island had been secured, but the Umurbrogol Mountain, known as "The Pocket" where Japanese resistance was strongest, held out. Slowly, the remaining regiments of the 1st Marine Division were relieved by Army units from the 81st Infantry Division, officially on D+30 (15 October). The island would not be declared secure until 27 November, 74 days after the initial assault. In total, the Marines lost 1,050 KIA, 250 died of wounds, 5,450 wounded, and 36 missing. The Army lost 208 KIA, 260 died of wounds, and 1,393 wounded. Japanese losses on Peleliu estimate at 10,900 killed and 19 taken prisoner.¹⁵³ The aftermath of the battle revealed significant changes in Japanese defense tactics: coordinated counterattacks, well-defended beaches, and a deadly determination to fight to the death. Peleliu was a precursor to the epic battles of 1945, where the Japanese made American servicemen pay in blood for every inch of their advance toward the homeland.

¹⁵² Wright, *To The Far Side of Hell*, 94-95.

¹⁵³ Hallas, *The Devil's Anvil*, 279-280.



Figure 23. A Company Tank on the Airfield after the failed Japanese Counterattack

Source: Oscar E. Gilbert, *Marine Tank Battles in the Pacific* (Boston, MA: Da Capo Press, 2001), 333.



Figure 24. Destroyed Japanese Type 95 *Ha-Go* Light Tanks
after the failed Counterattack

Source: Oscar E. Gilbert, *Marine Tank Battles in the Pacific* (Boston, MA: Da Capo Press, 2001), 333



Figure 25. Dead Japanese Soldiers killed during the Counterattack on 15 September

Source: Frank O. Hough, *The Assault on Peleliu* (Washington, DC: Historical Branch, G-3 Division, Headquarters, U.S Marine Corps, 1950), 52.

CHAPTER 5
CONCLUSION

The enemy's power lies in its tanks.

— Lieutenant General Mitsuru Ushijima,
Commander, Japanese 32nd Army,
Okinawa, *Marine Tank Battles*

If anyone supporting arm can be singled out as having contributed more than any others during the progress of the campaign, the tank would certainly be selected.

— Major General Lemuel C. Shepherd Jr.,
Marines Under Armor

By 1945, the Allies looked to the seizure of the Philippines and pushed north to capture the Islands of Iwo Jima and Okinawa. The fight for Iwo Jima and Okinawa would be some of the bloodiest fighting of the war. As the Allies inched closer to their homeland, the Japanese would become more desperate to delay them by implementing extreme defense tactics to hold all remaining territories. The Marines tasked with capturing these islands would meet heavy resistance that often required the use of unconventional force. For the Marines, their prewar preparations seemed a distant example of what they now faced. The United States did anticipate a potential war with Japan as early as the turn of the century. Planners developed War Plan Orange, a plan that would defeat Japan in a decisive naval campaign, supported by advanced bases scattered throughout the Pacific.

The Marines prepared for War Plan Orange in the years leading to war in 1941. The concept of holding advanced bases in the Pacific was critical to Orange. The U.S. Navy needed logistical bases in order to refuel and resupply far from home. The Marine

Corps became the advanced base force enabler, conducting landing exercises and experimenting with amphibious operations throughout the 1920s and 1930s. The Marine Corps quickly adopted the amphibious role, amongst competing pressures, and focused their training and development of equipment toward that task. The Corps experimented with the concept of armor, starting with the armored car, and then the tank, to support an amphibious infantry assault. However, the role of the tank was unclear and ill-defined at a time when tank tactics were still being developed.

By the 1930s, the Marine Corps commissioned the development of the Combat Tank Light as its own unique amphibious armored vehicle. However, the CTL failed to meet the performance parameters directed by the acquisition council. As tensions with Japan increased and the war in Europe progressed, the Marine Corps felt pressure to field a capable tank. When the Japanese attacked Pearl Harbor on 7 December 1941, resulting in a declaration of war, the Marine Corps quickly adopted the Army light tank, the M2. The light tank saw initial combat on Guadalcanal, and although superior to the CTL, it still lacked the firepower needed to defeat Japanese defenses. By 1943, the Marine Corps had adopted its first medium tank, the M4, which boasted a 75mm main gun and exceeded the M2 in almost every way. The M4 first saw combat on Tarawa, but suffered significant losses due to shortfalls in planning and the development of tactics.

The 1st Tank Battalion on Cape Gloucester improved the employment of the M4. The Marines worked closely with the infantry and developed tactics that provided mutual protection for all. The tank-infantry team concept reduced tank losses significantly and allowed the Marines to destroy heavy defenses while protecting against suicide attacks. By 1944, the Japanese defense tactics had matured significantly: defending the beach and

conducting coordinated counterattacks, not the frenzied *banzai* charges that resulted in significant casualties. On Peleliu, the 1st Tank Battalion experienced all of these, but relied on the lessons learned, spanning almost three years.

For the tankers themselves, the story of Sergeant Daniel Quinlan represents many things. First, it shows the willingness of a generation to serve in a time of war and to take on the most difficult of tasks, even the ones never before done. The Marine Corps tank program was still in its infancy in 1941 and quickly adopted a tank they had not developed or trained with. Quinlan, and the Marines of the 1st Tank Battalion, had little experience operating the tank in the weeks and days before Guadalcanal. Second, Quinlan's story follows the progression of tank development in the Marine Corps. Quinlan assaulted Guadalcanal in the M2 and experienced the challenges of using the light tank, with all its limitations against the enemy and terrain. Quinlan also operated the M4, the first medium tank employed in the Pacific, let alone the Marine Corps. His experience on Cape Gloucester and the tactics that came out of that campaign, changed the way tanks were employed for the rest of the war. It is from this point that tank losses start to decline because of the close coordination between the tankers and the infantry.

The loss of Sergeant Quinlan and many other Marines represents the sacrifice made by a willing generation to defend freedom. Historian Gilbert Oscar describes the contribution of the Marine tanker:

The tankers suffered alongside the infantrymen they protected. They were sprayed with red-hot fragments when antitank rounds went in one armored flank and out the other. They were torn and burned when the enemy struck with explosive charges and grenades. They died without leaving a body for burial when huge mines lifted their 35-ton tanks high into the air, gutted them, and tossed them aside like empty cans. They shivered with malaria and baked inside sealed tanks in 110 degree heat, drowned in flooded tanks, and were crushed when tanks broke

loose and slide about in holds of storm-tossed ships. But in the end, they triumphed. . . . They were United States Marines.

— Oscar E. Gilbert, *Marine Tank Battles*

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