

Armored Amphibians of World War II

Versatility and innovation from beach assault to indirect fire support

by Maj Jason R. Burgan

Beginning in World War II's Pacific Theater, both the U.S. Army and Marine Corps employed tracked armored amphibian vehicles to support amphibious assaults and operations ashore. The primary purpose of these platforms was to conduct beach assaults. Prior to their introduction, the problem was one of access. Specifically, gunboats were unable to cross the coral reefs surrounding many Pacific islands. While the troop and cargo carrying amphibious vehicles could breach the reefs, there was a lack of direct fire support on hand to immediately precede their landings. Therefore, the armored amphibians were "to provide fires on the beach during the interval between the lifting of naval gunfire and the physical assault of the beach by the leading platoons of infantry."¹ Swimming to the beach, armored amphibians would follow in trace of rocket-launching LCI(G) (landing craft, infantry [gunboats]). Once the LCI(G) turned away, the armored amphibians would move in advance of the troop-laden landing craft to the beach, creating a penetration point for follow-on infantry exploitation.² A secondary mission of indirect fire support developed to maximize the capabilities of the main armament of subsequent platform variants. The purpose of this article is to provide a brief overview of the employment concept of Army and Marine Corps armored amphibian battalions in World War II and provoke thought on how their mission may be assumed by other platforms for modern amphibious assaults.

There were two variants of armored amphibians employed during World War II: namely, the LVT(A) (landing

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vehicles, tracked (armored))-1 and the LVT(A)-4. The LVT(A)-1s, termed amphibious *tanks*, were built on an LVT hull with a 37mm gun as the main armament. The LVT(A)-1 was also equipped with .30 caliber machine guns and was described as a 16-ton covered LVT with a light tank turret mounted on the top. Crewed by 6 personnel, the LVT(A)-1 could carry 104 37mm shells and 6,000 .30 caliber rounds.³ The standard armor was described as "generally sufficient to deflect small arms and shell fragments."⁴ The LVT(A)-4 employed a 75mm howitzer as the main arma-

ment and was equipped with both .30 caliber and .50 caliber machine guns. It weighed approximately 19 tons, and the armor was comparable to that of the LVT(A)-1. Upon receiving the new LVT(A)-4s, one Marine battalion conducted an intensive program "to attach 'pin-on' armor to the bow and sides, and built an extension for the front and sides of the mount carrying the 75mm howitzer."⁵

The Marine Corps activated a total of three armored amphibian battalions during World War II: 1st, 2d, and 3d Armored Amphibian Battalions. The Army also activated three battalions that served in the Pacific Theater: 708th, 776th, and 780th Amphibian Tank Battalions. The two Services formed their units differently, however. The Marine Corps built new battalions with Reserve Marines and new recruits,



Okinawa LVT(A)-4. (USMC History Division.)

while the Army re-designated *land tank* battalions to become *amphibious tank* units.⁶ Highlighting the underdevelopment of the amphibian tank concept in August 1943, the battalion commander for 1st Armored Amphibian Battalion, Maj Louis Metzger (later to retire as a lieutenant general), noted,

unfortunately there was no doctrine on the Battalion's employment, no tactics for its use, and no knowledge of its capabilities and limitations.⁷

In addition to the amphibian tank battalions, the Army also integrated armored amphibians into Pacific Theater cavalry units. Armored amphibians could be found in units like the 6th Infantry Division's 6th Cavalry Reconnaissance Troop, the 31st Infantry Division's 31st Cavalry Reconnaissance Squadron, and the 40th Infantry Division's 40th Cavalry Reconnaissance Troop. These units primarily employed the LVT(A)-1 and had significant impacts in a beach assault role in New Guinea; Morotai Island, the Netherlands East Indies; and Luzon, Philippines.⁸

The first employment of armored amphibians was at Kwajalein Atoll in the Marshalls in January 1944.⁹ As noted, the role of the armored amphibians, commonly referred to as "amtanks," was to be the first assault wave ashore to destroy targets of opportunity and "to keep the enemy's head down until the troop-laden amtracs could deposit infantry on the beach in positions of best advantage."¹⁰ On Kwajalein, the Marines' 1st Armored Amphibian Battalion supported the 4th MarDiv, and the Army's 708th Provisional Amphibian Tractor Battalion supported the 7th Infantry Division.¹¹

The employment of the armored amphibians at Kwajalein affirmed the validity of amtanks in the assault. This landing followed the assault on Betio Island, Tarawa Atoll, where the Marine Corps sustained heavy casualties in November 1943. Due to the coral reef, non-tracked landing craft were unable to move ahead of the troop-laden LVTs in the assault, resulting in alarmingly heavy casualties for the seizure of a three-mile island.¹² Therefore, the

LVT(A)-1 proved its value to the amphibious assault in its debut landings by leading troop-laden LVTs ashore.

At Fort Ord, CA, the U.S. Army activated the 18th Armored Group (Amphibious) Training Command in 1943 under COL William S. Triplet, USA.¹³ This command worked closely with Marines to improve amphibious vehicle capabilities and train newly re-designated Army amphibious tank and amphibious tractor battalions. Recognizing the limited direct fire capabilities of the LVT(A)-1's 37mm gun, COL Triplet sought to bolster the firepower of the platform by integrating the 75mm howitzer and turret from the M8 with the LVT.¹⁴ In so doing, Triplet developed the LVT(A)-4 as a means of providing more firepower to forces charged with assaulting Japanese

defensive positions.¹⁵ The LVT(A)-4s were fielded to Army and Marine Corps units beginning in May 1944. Outlining the proposed enhanced capabilities of the LVT(A)-4, COL Triplet stated,

During the approach to the hostile beach the leading waves of tanks could plaster the enemy shore, thickening the supporting fire of the destroyers, cruisers, and battleships. Accuracy would not be required; the only requirement would be to hit the island, and any gunner could do that in a normal sea. Once ashore the prime requirement would be fast and accurate shooting at point targets by the howitzer plus heavy machine-gun fire at anything that moved. Last, when the land-type tanks took over their normal role of infantry support the amphibian tanks would be available to give additional



Just-beached amphibian tractor landing at Eniwetok, January 1944. (DOD photo (USMC) 72411.)

supporting artillery fire, using the howitzers for the high-angle fire for which they were designed.¹⁶

In contrast to the successes on Kwajalein Atoll and adjacent islands, the assault on Saipan in June 1944 highlighted both the lack of training on the new platforms and the flawed concept of employing thin-skinned amphibious vehicles as light tanks. The armored amphibian battalions serving in the assault on Saipan, in addition to having LVT(A)-1s, also employed the new LVT(A)-4s with high-angle fire 75mm howitzers as direct-fire assault guns. The 2d Armored Amphibian Battalion supporting the 2d MarDiv and the 708th Amphibian Tractor Battalion supporting the 4th MarDiv had received the new LVT(A)-4s only one month prior to the assault on Saipan.¹⁷ The lack of training and experience employing the 75mm likely contributed to its ineffectiveness on the beach. Reinforcing this point, the 2d Armored Amphibian Battalion's after-action report noted, "None of the gunners had ever used the M70C sight prior to D-day and few guns were boresighted."¹⁸ In addition to the vulnerability of thin-skinned vehicles to heavy weapons systems, there was confusion with the Marine waves as faster troop carrying LVTs maneuvered in front of the amtanks, thus shutting off their fires. Finally, the terrain of the island was such that maneuver for the

tracked vehicles proved challenging.¹⁹ Victor J. Croizat, who commanded an amphibian tractor battalion during World War II, succinctly stated, "the initial inclination to use the LVT(A)-1 as a light tank proved unwise. The vehicle was too high, too slow, and far too vulnerable to enemy infantry weapons to survive in such a role."²⁰

The Army's experience proved far more inspiring. The Army's 708th Amphibian Tank Battalion upheld the opinion of Victor Croizat and led the revolution in the employment of the amphibious tank. The 708th had noted the flaw in attempting to operate the amtank beyond the beachhead and subsequently proposed that the unit should be employed as a reinforcing artillery asset once the beachhead was secured.²¹ This approach dramatically changed the concept of employment of the armored amphibian in the summer of 1944. Though still hitting the beach as the first wave of an amphibious assault, the amtanks would become reinforcing artillery assets to support infantry attacks on inland objectives past the beachhead.

Still, the Marine Corps was slow to fully embrace the secondary indirect fire support mission. Instead, in addition to the primary method of employment as a beach assault platform, the Marine Corps continued to fight the amtank beyond the beachhead as an infantry-fighting vehicle. For example, on D-day

at Peleliu in September 1944, armored amphibians of 3d Armored Amphibian Battalion were employed fighting Japanese light tanks alongside U.S. Sherman tanks and running mechanized infantry patrols. The battalion was recalled back to the beachhead the same day where they assumed more appropriate missions of executing waterborne operations in support of forces ashore and engaging targets of opportunity with their 75mm howitzers.²²

By all accounts, the first battalion to train for and execute operations as an inland indirect fires asset was the Army's 776th Amphibian Tank Battalion. It began training with LVT(A)-4s in Hawaii in July 1944, focusing on artillery training with 7th Infantry Division's forward observers and artillery liaison officers.²³ This training ensured the battalion could provide controlled fires during the amphibious assault and reinforce division artillery during subsequent operations ashore.²⁴

The 776th Amphibian Tank Battalion's operations during the Leyte Campaign on Leyte Island, Philippines, beginning in October 1944, provides an excellent case study in innovation and versatility. During this campaign, the 776th was initially attached to the 7th Infantry Division and conducted a range of operations that maximized the strengths of the LVT(A)-4 platform. The battalion led a large-scale amphibious assault during the initial landings



LVTs, equipped with rocket launchers, heading toward the beaches during 4th MarDiv assault at Roi-Namur. (DOD (USMC) 70694.)



Army 7th Infantry Division soldiers transfer from landing craft to amphibian tractor. (Photo by DOD (Army) 324729.)

on 20 October 1944, in which the 776th was the “first combat unit to carry out [General Douglas] MacArthur’s pledge to return to the Philippines,” and supported subsequent operations of both the 7th and 77th Infantry Divisions.²⁵

During the initial Leyte landings of 20 October, the 776th executed the assault with three companies abreast, supporting the landings of the 32d and 184th Infantry Regiments. Although there was no significant enemy opposition to the assault, the battalion did receive “mortar fire and light small arms fire” immediately upon landing. The battalion then established firing positions approximately 250 yards inland, set-up its fire direction centers, and was prepared to accept fire missions from forward observers.²⁶

On 5 December, Company C, 776th, supported 7th Infantry Division actions, specifically the 184th Infantry Regiment, at Balogo. The battalion’s operation report of the Leyte Campaign recorded the following:

Company C moved by water from Cabatcan prior to daylight on 5 December and assembled 1000 yards off Balogo. At 0635 the Company, which was in column formation headed north, executed a movement by the right flank and advanced toward the shore in line formation firing howitzer and machine

guns. About 200 yards from shore, on radio command of the Battalion Commander, the Company executed a movement by the left flank and continued to move north in column. Turrets were swung to the right and the shelling of Balogo and Tabgas continued. The Company arrived at the mouth of the Tabgas River at 0700 and made an unsupported landing by maneuvering from column to line formation ... ravines, reverse slopes of Hills 380 and 918, and other likely areas of enemy concentration were taken under howitzer fire with HE and smoke shells. These targets could not be reached by the Division Artillery ... the amtank fire had been very effective.²⁷

Following this action, the company swam north to conduct reconnaissance near Calingatgan before turning back south. At approximately 0945, the company landed south of the Tabgas River and again shelled the reverse slope of Hill 380. These actions facilitated the advance of the 7th Infantry Division.²⁸

Company A, 776th, reinforced with a platoon from Company B, supported the 305th Infantry landings on 7 December at Ormoc Bay, surprising the defending Japanese forces.²⁹ The following day, the amtanks “conducted amphibious reconnaissance ahead of the division’s advance and, the next day,

rolled northward along the beach to protect the flank of advancing infantry.” As a result, at 0900 on 10 December, Company A, 776th, was the first American unit to enter the city of Ormoc.³⁰

The 776th Amphibian Tank Battalion showcased the versatility of the amtank and the innovative approach of leadership during the Leyte Campaign. Yet, the range of operations conducted by the 776th were all well within the capabilities of the platform. From providing reinforcing indirect fires and amphibious gunnery to conducting amphibious reconnaissance and limited raids, all operations performed by the battalion fully exploited the strengths of the amtank platform to great effect.

The Marine Corps finally began formal training with amtanks in indirect fire support on Guadalcanal in late 1944. The 6th MarDiv artillery regimental commander added his support to 1st Armored Amphibian Battalion’s training plan by providing regimental forward observers. The battalion trained to establish firing positions from platoon to battalion level, exercising associated fire direction centers. In addition to indirect fire training, the battalion conducted exercises over the course of two months composed of “direct firing, anti-aircraft firing, waterborne firing, and personal weapons firing.”³¹

During operations on Okinawa, both Army and Marine Corps battalions demonstrated the complete shift to providing reinforcing artillery fires once ashore. Unlike other island assaults, the Japanese did not establish significant defenses on the beaches of Okinawa. Therefore, armored amphibian battalions quickly assumed their secondary role as indirect reinforcing fire support. However, this indirect fire support role did not keep armored amphibians from also being employed in a light tank/infantry fighting vehicle role. Integrated with infantry, amphibious tanks, in addition to a wide range of missions, targeted Japanese infantry in the open, reduced machine-gun nests, and shelled caves.³²

In conclusion, armored amphibians were one answer to filling the dangerous fires void once naval gunfire lifted during Pacific Theater amphibious as-

saults. The Army and Marine Corps' armored amphibian battalions of World War II had distinct employment concepts that evolved with the capabilities of the platform's armament. Yet, upon landing, the amtank remained susceptible to employment as a light tank or infantry-fighting vehicle because of the availability of a mobile, heavier weapon system and a degree of armor protection. While the Army explored a range of employment concepts for the amtank and was faster at integration, the Marine Corps continued to use it beyond the beachhead in a direct-fire role.

The story of the amtank also affirms an innovative American spirit when the need arises. The 75mm howitzers were transitioned to become the main armament of the LVT(A)-4s because of the power in the shell and the fact that inventories were plentiful and readily available. The high-angle fire of the 75mm howitzer allowed for the secondary role of fire support to become a reality. Units that embraced this secondary role became more proficient and lethal.

In summary, the amtank provides an example of how today's Marine Corps can use an old idea to enhance modern capabilities. While writings abound of the anti-access/area denial threat and the high-water speed and over-the-horizon range requirements of the next amphibious vehicle, the value and versatility offered by a fire support platform capable of amphibious landings, in-stride river crossings, and protected mobility must not be overlooked. Accordingly, I submit that a platform like the canceled expeditionary fighting vehicle could become the modern amtank. By purchasing a small number of platforms, mounting the appropriate armament, and limiting the scope of employment to beach assault and subsequent fire support ashore, they could be used as the lead surface elements in an amphibious assault. With the added benefit of enhanced munitions such as non-line-of-sight missiles coupled with advancements in active protection systems, an amphibious platform that is properly resourced and employed can provide a tremendous advantage to the Marine Corps.

Notes

1. F.S. Aldridge, "No Dinosaur Here," *Marine Corps Gazette*, (Online: October 1953), available at <https://www.mca-marines.org>.
2. Harry Yeide, *The Infantry's Armor: The U.S. Army's Separate Tank Battalions in World War II*, (Mechanicsburg, PA: Stackpole Books, 2010). This source explains the procession of the assault on Saipan.
3. Harry Yeide, *Steeds of Steel: A History of American Mechanized Cavalry in World War II*, (Minneapolis, MN: Zenith Press, 2008).
4. Victor J. Croizat, "The Role of the LVT(A)," *Marine Corps Gazette*, (Online: Jun 1949), available at <https://www.mca-marines.org>.
5. Dale L. Barker, ed., *Hitting the Beaches: The First Armored Amphibian Battalion in World War II, 1943-1945: Kwajalein, Guam, Okinawa*, (Atlanta, GA: First Armored Amphibian Battalion Association, 1996).
6. Victor J. Croizat, *Across the Reef: The Amphibious Tracked Vehicle at War*, (Quantico, VA: Marine Corps Association, 1989).
7. *Hitting the Beaches*.
8. *Steeds of Steel*. This list is not all-inclusive. The purpose is to demonstrate the use of amtanks throughout the Pacific Theater.
9. Victor J. Croizat, "Fifty Years of Amphibian Tractors," *Marine Corps Gazette*, (Online: March 1989), available at <https://www.mca-marines.org>.
10. *Hitting the Beaches*.
11. *The Infantry's Armor*.
12. Joseph H. Alexander, *Across the Reef: The Marine Assault of Tarawa*, (Washington, DC: History Division, Headquarters Marine Corps, 1993).
13. Donald W. Boose, Jr., *Over the Beach: US Army Amphibious Operations in the Korean War*, (Fort Leavenworth, KS: CSI Press, 2008).
14. The M8 howitzer motor carriage was an armored half-track with a 75mm howitzer. See *Steeds of Steel* and William S. Triplett, *Colonel in the Armored Divisions: A Memoir, 1941-1945*, (Columbia, MO: University of Missouri Press, 2001).

15. Jon T. Hoffman, ed., *A History of Innovation: U.S. Army Adaptation in War and Peace*, (Washington, DC: Center of Military History, 2009). From *Colonel in the Armored Divisions*, the 75mm "shell was eight times as powerful as the 37-mm. and solid shot would have the mass required to bash in the two-inch armor of the heaviest Japanese tank. Used with full charge for direct fire, the velocity, trajectory, and striking power would be satisfactory and give us a fighting chance."
16. *Colonel in the Armored Divisions*.
17. *Across the Reef*. The battalion received the LVT(A)-4 on 4 May, just prior to sailing for Saipan.
18. 2nd Armored Amphibian Battalion Association, *2nd Armored Amphibian Battalion USMC WWII: Saipan, Tinian, Iwo Jima*, (2nd Armored Amphibian Battalion Association, 1991).
19. Jetek A. Isley and Philip Crowl, *The U.S. Marines and Amphibious War*, (Princeton, NJ: Princeton University Press, 1951).
20. "Fifty Years of Amphibian Tractors."
21. *The Infantry's Armor*.
22. Larry L. Woodard, *Before the First Wave: The 3rd Armored Amphibian Tractor Battalion-Peleliu & Okinawa*, (Manhattan, KS: Sunflower University Press, 1994).
23. John T. Collier, "The Army and the LVT(A)," *Marine Corps Gazette*, (Online: July 1949), available at <https://www.mca-marines.org>.
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28. Ibid.
29. *The Infantry's Armor*.
30. Ibid.
31. *Hitting the Beaches*.
32. *The Infantry's Armor*.

