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Without a doubt, the history of the Sherman tank is written in the sheer quantity of its production in such a short time in response to an imminent world crisis. Only the Soviet T-34 can claim production rates of a similar level.

But was the M4 Sherman a great tank? Even with the perspective provided by the Sherman's more than a half-century of active duty in the service of many countries, that remains a great debate among armor enthusiasts.

Some 49,234 Sherman tanks and variants were produced. Its first use in combat was in 1942 by the British at the Battle of El Alamein in Egypt. Its last operational use, although unconfirmed, is thought to have been in Chile in 2002, which would give it an active service life of 60 years. It was deployed by 46 countries and served on every continent except Antarctica! These numbers alone guarantee it a special place in history.

Built from a blank sheet. But to truly understand the Sherman, one must also understand why it was developed and why certain design choices were made. It is easy to forget that when development of the Sherman began around 1940, the United States had little experience with armored warfare. In fact, not too many years earlier, many in the U.S. military leadership did not even believe in armored warfare. Even George Patton himself rejoined the Cavalry after World War I.

Oddly, the western allies (U.S., Britain, France) for the most part lost interest in armored warfare and tanks after WWI. France maintained a large tank force but spent little effort developing battle tactics to employ them properly. So it was a tremendous shock when the German armored forces sliced through French and British troops.

Seemingly overnight, the Blitzkrieg established that tanks were a fundamental part of modern ground warfare. But what capabilities should a new American tank have? It's hard to comprehend in this day of the Internet, Youtube, and 24-hour television that in 1940, it was hard to get timely combat reports and photographs on which to base planning for modern tank warfare. With the United States being thousands of miles and an ocean away

from the battles, getting good information about what was needed was a major obstacle.

So the U.S. military had to use what information it had to formulate a battle plan for armored warfare, and this would have a profound effect on the design of the Sherman tank, both good and bad.

One of the most significant aspects of U.S. armored warfare doctrine was that tanks would be primarily employed to support the infantry, and tank destroyers would handle enemy tanks. So the Sherman was primarily designed for infantry support with a secondary role of engaging enemy tanks. The United States intended to use the M10 and M18 tank destroyers to combat enemy tanks.

The upside of this decision was that the Sherman was equipped with a 75mm gun so that it could fire an effective high explosive round to support the infantry. But the downside was that the Sherman had been fitted with a short barrel because of concerns that a long barrel would make it harder to maneuver the tank in close quarters.

The realities of combat would quickly show that the idea of using tank destroyers for fighting enemy tanks had a major flaw. Namely, Allied troops didn't get to choose when they would encounter enemy tanks. When they did, if sufficient tank destroyers weren't available, Shermans had to fight tank-on-tank battles with ever-evolving German armor.

Anywhere, everywhere. Another key aspect of the Sherman design was that planners knew U.S. tanks would have to be transported all over the world to reach the battlefield. Elements like the lifting capability of dock cranes, width of railroad cars, and most importantly the weight limits of bridges were factored into the design of the tank. Although none of these factors was very important to a tank crew in the middle of a battle, they all were very important to the commanding generals who needed to get a lot of tanks to the fight. In fact, the Sherman's incredible ability to operate without a lot of specialized support equipment was a prime factor in the ability of the United States and Britain to exploit the Normandy breakthrough and chase the German army across France.



Bookends—the T6 prototype in 1941 and the Chilean M60 HMVS in 2002.

By comparison, the feared German Tiger tank needed a second set of special tracks just to be loaded on most rail cars. It was badly underpowered, so its engine didn't withstand the demands of high-speed running. Also, it was extremely heavy, so many of the bridges in western Europe couldn't support its weight, greatly reducing the options for bringing these tanks to and from a battle.

Head-to-head. So how did the Sherman actually stack up in the more traditional measure of a tank, namely armor, armament, and mobility? At the time of its development, the Sherman's counterparts were the German Panzer IV and the Soviet T-34. The Sherman compared reasonably well to both. The Sherman and Panzer IV had 75mm guns, and the T-34 had a 76mm gun. Initially, none had particularly long barrels, though the Panzer IV would later get one. But all three guns, coupled with the ammunition they could fire, were similar.

So too was the overall armor level. The T-34 made the best use of sloped armor; the Sherman's armor sloped effectively on the front but not on the sides. The Panzer IV was mostly slab sided. The general armor thickness levels were similar too, and all three tanks had weak spots.

In terms of mobility, the Sherman was a little worse in soft terrain because it used narrower tracks that resulted in higher ground pressure that caused it to bog down more easily than the other two. But in most other mobility factors, the Sherman was at least as good as the other tanks. So when the Sherman first saw action in 1942, it was an effective tank. Of course it would be no match in one-on-one combat with the much heavier German Tiger and Panther tanks that came along later. Then again, it wasn't designed to fight them, and rarely did the Germans face just one Sherman.

But the story of the Sherman isn't complete without considering many of the

other aspects that would have a big impact on the Sherman's effectiveness. In today's terms these are called "force multipliers."

Field fixable. One big factor was that the Sherman was both reliable and maintainable. The tanks didn't break often and when they did, repairs were usually easy and in many cases, could be completed in the field. The result was a higher percentage of Shermans were available for combat. By comparison, the big German tanks were often plagued with engine and transmission failures, road wheels jamming, and a host of other problems that would leave them disabled in combat. There are many reports of German tanks abandoned and even destroyed by their own crews because they had broken down. So the Sherman's reliability and maintainability played a huge role in World War II where sheer numbers were a deciding factor.

Another important factor was that the Sherman's turret rotated quickly. Often this allowed the Sherman to get off the first shot, and in many cases that was the difference between life and death.

So how did the Sherman get a bad image among so many armor buffs? Well, it had its flaws too. One very bad design oversight was unprotected ammunition, so that a shot that penetrated the tank often caused a catastrophic explosion. This would later be corrected by introducing a "wet" stowage system in which the ammo was stowed in glycol-filled bins. But for much of World War II, the tank crews lived in fear of the tank exploding.

Compounding this was the fact that the Sherman would often have to fight more heavily armed and armored German tanks. At longer ranges, these tanks had cannons that could penetrate the Sherman's armor, while the Sherman's cannon could not. So tankers were confronted with the fearful prospect of being picked off with no way to retaliate. Worse was that the United States had no other armored vehicles it could employ to rectify this situation until the introduction of the M36 Jackson tank destroyer in the winter of 1944.

So in retrospect, it's probably a fair statement that the Sherman had many great features and a few flaws. But the Sherman also proved highly adaptable, and this factor would most certainly be the driving factor in its extraordinarily long service life. Even during the few years of its World War II service, significant design changes to the Sherman were introduced.

Evolution of the Sherman. One such major change was the introduction of a larger turret and the same 76mm gun used on the U.S. tank destroyers. While this gun was not a great anti-tank weapon, it was a big step up from the 75mm gun, and the U.S. manufactured a specialized anti-tank round, which added even more effectiveness. While this was being introduced to the production line, the British simply fitted their 17 pounder (76.2mm) anti-tank gun into their 75mm Shermans, creating the Firefly, which was an outstanding anti-tank variant.

As previously mentioned, the problem with exploding stowed ammunition was corrected. The introduction of extended

track end connectors (duckbills) could be field retrofitted and helped overcome the problems caused by narrow track. Later a whole new suspension, called HVSS, would be introduced to offer a more-permanent solution. Also, the Sherman's hull design would undergo a significant change to incorporate larger hatches allowing the crew to escape quicker.

So the later production M4A3(76) HVSS Shermans being produced in the summer of 1945 looked radically different than the M4A1 DV Shermans first used at El Alamein only three years earlier.

Soldiering on. After World War II, this tremendous adaptability would be exploited to the maximum. The United States' use of the Sherman would see a resurgence during the Korean War, where it and the M26 Pershing formed the backbone of the U.S. armored fighting force. As in World War II, the Sherman's reliability would endear it to its crews and commanding officers alike.

But the vast majority of the Sherman fleet was withdrawn from service after World War II by the U.S. and Britain. Many were given to allied armies, which often made the enhancements that had been developed during World War II. For example, engineers in Patton's army had realized that it was possible to retrofit the 75mm-equipped Shermans with the 76mm gun and would have done so had the new-production 76mm Sherman not arrived in large quantities. So after World War II, many Shermans were re-gunned in this manner by the allied forces. Similarly, it was determined that by adding spacers to the narrow track suspension, an inner row of duckbills could be added, reducing the ground pressure to about that of the HVSS equipped Shermans. So these two affordable and effective modifications enabled the basic Sherman to remain effective for some years to come.

As a result, many emerging nations procured sizeable numbers of Shermans, notable among them India and Pakistan. In fact, both countries would deploy their Shermans in their conflicts and while there is no record of Sherman-vs.-Sherman battles, both countries would end up recovering each other's Shermans, repairing them, and returning them to battle, thus writing an unusual chapter in the Sherman's history.

The ultimate Sherman. But the most significant use of the Sherman after WWII was by Israel. The Israelis started using the Shermans almost immediately after their declaration of independence when they were able to employ a small number to support the initial fighting. They would procure more through highly creative means such as buying them as scrap from Italian junkyards.

Eventually the Israelis would procure them in more conventional ways, particularly from France, which was providing direct military assistance. The Israeli-French relationship would also be used to create the two most-significant upgrades of the Sherman in the post-war era, the M50 and M51.

By the mid-1950s, it was becoming clear to the Israelis that their 75mm-equipped Shermans were not going to be effective against the much newer Soviet T-54/55 tanks being supplied to their adversaries. While the Israel military was able to procure some British Centurions, they realized the need to upgrade their Sherman fleet.

Working with the French, the Israelis were able to fit a new French 75mm gun with a much longer barrel into a modified Sherman turret. In a strange twist of history, the French gun itself was derived from the German gun used on the Panther, which had been the Sherman's nemesis! And so was born the M50.

Initially, that was the only modification, but shortly thereafter, the Israelis replaced the narrow-track VVSS with the wide-track HVSS and also replaced the World War II-era engines with a new diesel engine, thus creating the M50 configuration most commonly seen in photos.

In yet another odd twist of history, Egypt, Israel's enemy, also operated a sizable number of Shermans that it too wished to update. Like Israel, Egypt turned to the French for assistance. Again like Israel, Egypt decided to update its Shermans with the same French 75mm, long-barrel gun! But this time, the French completely replaced the Sherman's turret with one from its AMX-13 light tank, which already used the same gun. If nothing else, the "AMX Sherman," as it was nicknamed, showed the tremendous adaptability of the basic Sherman configuration. But it was only in service for a short time with many being lost to the Israelis during the fighting in the 1950s and '60s.



The iconic Sherman in the flesh. Here's an M4A3E8 last used by the U.S. Air Force as an observation tank. It's now found in the American Military Museum in South El Monte, Calif. (www.tankland.com). As an observation tank, it had no barrel, so the museum had a replica barrel made to represent how the real one would look. This tank was featured in the TV series, "Tank Overhaul" on The Military Channel in which it was going through an engine change.

For Israel, the M50 was a big success, extending the Sherman's life at a fraction of the cost of new tanks. So when Israel needed to update its fleet of M1 Super Shermans [the U.S. designation would have been M4A1(76) HVSS], the military planners embarked on a similar program. But this time they went big. Really big. With French help, the Israelis replaced the WWII-era 76mm cannon with a huge 105mm French cannon. In order to keep the recoil manageable, they had to slightly reduce the barrel length and develop a large and unique muzzle brake that would be the most recognizable feature of what would be named the M51.

For most students of armor, this is the ultimate Sherman. The M51 was more than capable of defeating the newer Soviet tanks and played a pivotal role in both the 1967 Six-Day War and the 1973 Yom Kippur War. Some would remain in reserve service with Israel into the 1990s.

The last battle. But some M50s and M51s would find new homes and thus continue to remain in active service. In particular, a sig-

nificant number of both versions would be sold to Chile. There, both variants would get yet another engine change, and the M50s would have their 75mm gun replaced with a 60mm hyper-velocity gun that had anti-tank penetration capabilities equal to the 105mm guns on most tanks of the time! Coupled with the Sherman's relatively small size, this configuration proved quite effective in the mountainous terrain of the Chilean-Argentine border, and it is this variant that is believed to be the last one used in active duty, being retired sometime around 2002.

So as the Sherman ended its roughly 60-year active service life, it's worth noting that some of the tanks in the final configuration in service with Chile can barely be recognized from the original configuration to which they were manufactured.

Consider, then, that some Shermans started out as the long-hull M4A4 version

with the 75mm gun and Chrysler multi-bank engine. They were manufactured in the United States and operated by the British in WWII. After the war, they were procured by France where the engine was changed to the radial engine used in the M4 and M4A1 variant. Later, they would be sold to Israel where they would get the new long-barrel 75mm gun, a new diesel engine, and the HVSS suspension. Still later, they would be sold to Chile where they would get yet another new diesel engine and a 60mm gun.

If you're keeping count, that's two suspensions, three guns, and four engines on the same tank! No wonder that it was in service for 60 years.

So is the Sherman a great tank? I'll leave that for you to decide. But one thing I know for sure is that it is definitely a great tank to model.

3

MAXIMUM DETAILS, improved groundwork

U.S. Marine Corps M4A2 in the Pacific

The Pacific island-hopping campaigns were brutal, inch-by-inch battles that were as much a test of wills as anything else. Names like Guadalcanal, Tarawa, Saipan, Iwo Jima, and Okinawa still evoke strong memories and emotions. In the few tank-on-tank battles, the Sherman was more than a match for Japanese armor. Its role was more typically infantry support, often under attack by Japanese infantry and well-concealed anti-tank guns.



Dragon's Tarawa kit makes a great starting point to pile on the detail. And various detail sets such as wooden anti-magnetic mine boards, wading kit, hatches, and photoetched details make a Pacific M4A2 that looks like a Marine's best friend.



This project puts the Sherman to work in a more-detailed mini-diorama supporting infantry.



1 Tiger Models idler cam lets you set track tension even after the track is in place. There's a new rear hull plate too.



2 It's easy to correct a too-thin driver's hood. Shave off the existing welds, add a sheet styrene hood, and build a new weld line.



3 The Tiger Models transmission cover, left, is better detailed than the kit item and is an easy swap.

In the early campaigns, the battles started before the Marines even made it to shore. Thus, the Marines soon started to add homemade deep wading gear so the tanks wouldn't get swamped driving ashore, and they added wood plank armor to protect against magnetic charges. Some units even started to camouflage their tanks since the factory-painted olive drab didn't blend well with the jungle foliage. Tanks of the Pacific Theater took on a look of their own.

Build-up number three is a Marine M4A2 Sherman being used in the Pacific island-hopping campaigns. From a modeling perspective, Marine Shermans make a great subject. Dragon recently released a great new model of the M4A2s used on Tarawa. With a new kit available, the aftermarket companies quickly came out with

a number of well done add-ons like the wading gear and the wood armor. So this subject allows a modeler to create different versions easily and with great details. Also, the subject is excellent for expanding the groundwork to a completely new terrain and even to make a vignette depicting the battles in the Pacific.

Getting started. Dragon's M4A2 Tarawa is an excellent kit that features most of Dragon's new molding techniques. But rather than simply build it with only a few improvements as I did the Tasca M4A1 in the first chapter, I'm going to load this one with aftermarket items to try to maximize the details. Is this necessary? Probably not. But sometimes it is really fun to totally trick out a model with easy-to-use add-ons and simply enjoy the build.

Construction. The first steps for this kit are to attach the parts necessary to assemble the hull body parts. Tiger Models came out with a replacement rear hull plate for the M4A2, **1**. The biggest change is that this includes a set of cams for the idlers so they can swing and be used for track tension adjustment. Dragon also provides cams, but their design is more for you to position and glue them in place. The Tiger Models design has a longer pin, so you can swing the idlers once the tracks are installed.

This is now the third build in a row where I've used adjustable idlers, so I'm sure by now you get the idea that I strongly recommend doing this for all Sherman models. It really is the easiest way to get the right track tension.

1

Sherman T6 Prototype

U.S. Army
United States, 1941

- Initial prototype for the Sherman
- Short barrel required counter weights
- No co-driver's hatch
- Side hull hatches carried over from M3 Lee design



2

M4A1 Initial Production

British Army
Great Britain, 1942



- "Michael" was the first Sherman sent to Great Britain
- This tank was personally inspected by Prime Minister Winston Churchill
- Hull-mounted, fixed .30 caliber MGs later deleted
- "Pepper pot" exhausts unique to the early variants

