

WHEELS OF DEMOCRACY

The Development of the M4 Sherman

By Jeff Petraska

PATTON'S BEST offers the opportunity for players to command a vehicle that is the epitome of Allied tanks in World War II: the U.S. M4 Medium tank, better known as the Sherman. Indeed, the Sherman tank is the star of the game, the focus of all that transpires. Given 18 Sherman variants to choose from, players enjoy gaining simulated firsthand experience in how these vehicles operated, learn what their advantages and disadvantages were, and appreciate the situations that faced our fathers and grandfathers as they drove and fought these vehicles through western Europe.

The Sherman models included in the game are a very good sample of the various design changes that this vehicle underwent from its appearance in 1942 to the ultimate designs that were reaching the front of 1945. This article fleshes out the design history of the Sherman tank that *PATTON'S BEST* illustrates so well. So take *THE GENERAL* in one hand, your stack of *PATTON'S BEST* tank cards in the other, and read on.

Sherman Prehistory

In the summer of 1939, the Rock Island Arsenal began producing America's first medium tank, the M2. Constructed from a multitude of face-hardened steel plates and mounting a 37mm gun in a turret, it was a development of indigenous pre-war designs going back to the early 1930s. Nonetheless, this tank had features that would be used in later U.S. tanks throughout World War II. First, it was powered by a 350-horsepower Wright air-cooled radial engine, giving it a tall silhouette. Also, its suspension consisted of a front drive sprocket, three bogie assemblies per side, and a rear idler wheel. The bogies consisted of two spoked road wheels, each having a vertical volute spring suspension. At the top center of the each bogie assembly was a return roller to support the track on its way to the drive sprocket. The track had two rows of steel guides that passed on either side of the road wheels. Until the development of horizontal volute spring suspension, this system was to set the pattern for all American medium tanks.

Only 18 M2 medium tanks were built, for by 1940 it was apparent that the worsening world situation and rapid design improvements had already made the M2 a tank without a future. The latest news about European tanks indicated that the 37mm gun was obsolete and the M2's thin armor would be no match for its contemporaries. In order to keep pace with potential adversaries, it was decided that the next U.S. medium tank would have to be armed with at least a 75mm gun.

A new medium tank design was standardized in July 1940 as the M3, later known to the public and military as the "General Lee." Soon thereafter an international buyer appeared. Britain desperately needed tanks to make up its losses in France and contracted with U.S. manufacturers for 685 M3 tanks with a modified turret and fighting compartment. The British model was known as the "General Grant."

The Lee/Grant bore considerable similarities to the M2. It had the same type of suspension as the M2, was powered by a Wright radial engine (400 HP), and had a very tall silhouette. The hull was of riveted construction and roughly the same shape as that of the M2, but this new tank had a 75mm gun in a right front hull sponson. In addition, a new cast turret armed with a 37mm gun sat atop the angular hull.

The obvious drawback of the M3 was the sponson-mounted 75mm gun, which was limited to only 30 degrees of traverse in azimuth and 29 degrees in elevation. A turret-mounted 75mm was far more desirable, but a turret large enough to contain the weapon had yet to be designed. Given the choice of waiting another year or two and producing nothing or of putting the M3 into production while a larger turret was designed, the latter choice was selected. Considering Britain's urgent need for large numbers of tanks in north Africa and the desire to get some kind of modern tank into U.S. Army service soon, there was really very little choice at all.

The M3 medium tank production began in March 1941 and was terminated in August 1942. A total of 4924 tanks were produced during this period. During production a number of M3 variants having different suspensions, hulls and/or engines were tested. A number of these variations would have direct application to the design and construction of the next U.S. medium tank.

The Original Shermans

In September 1941 the first prototype of America's next medium tank, the T6, was completed at Aberdeen Proving Ground. The T6 had the new cast turret with a 75mm gun and a cast-hull with three .30 caliber machine guns, one in a flexible mount. The track, suspension and powertrain were straight from the M3 Lee. Like the M3, it also had doors in the hull on each side and provision for a commander's machinegun cupola. The Rock Island Arsenal was building a second T6 prototype, this one with an angular, welded-hull. After inspection, a number of modifications were suggested, including the elimination of the hull side doors and the cupola. The design of the modified T6 was approved (both cast- and welded-hull versions) in October as the M4 Medium tank. The welded-hull version was designated the M4 and the cast-hull version the M4A1. The "Sherman" was born.

For modern armored vehicles it is usually the case that variants are produced sequentially, with the latest models containing improvements over those with earlier designations. The current M1/M1A1/future-M1A2 is such an example. This was not the case with the Sherman. By the end of 1942 there would be five M4 variants in production simultaneously in American factories. The diversity was driven by one central need, the need to produce a battleworthy medium tank in massive quantities for U.S. and allied service. The main stumbling block in meeting tank production quotas was the lack of suitable engines for the vehicles. The difference between most of the Sherman variants put into production was the powerplant, as no one engine was available in sufficient quantity to be used in all of the production vehicles. The only exception was the M4A1, whose production was limited by many manufacturers' inability to produce the large, one-piece hull casting. These manufacturers produced welded-hull versions instead.

The first Sherman to roll off the production lines was the M4A1, based upon the cast-hull version of the T6. Powered by the same Wright (later Continental) R-975 air-cooled radial engine as the M3, the M4A1 was the only Sherman variant to have a fully cast-hull. As the first production vehicle, the earliest versions had features that were soon abolished from the design. The fixed pair of .30 caliber forward firing machineguns were eliminated in March 1942, and the new, longer-barrelled 75mm

gun replaced the original short-barrelled gun. The 75mm M4A1 was produced from February 1942 through January 1944, for a total of 6281 units.

The next Sherman variant to enter production was the M4A2, in April 1942. This welded-hull variant was powered by a General Motors 6046 diesel engine which had also been used in the M3A3 and M3A5 variants of the Lee. Like the M4A1, it also had its predecessor's track and suspension. As the first welded-hull Sherman to be produced, it helped to pioneer the fabrication techniques that would later be applied to all the other angular versions. Although produced in quantity (8053 units with the 75mm gun) until May 1944, it served little part in the U.S. war effort. The U.S. Army decreed in March 1942 that only gasoline powered tanks would be used overseas by our troops, condemning the M4A2 to use as a training tank. It was, however, supplied in quantity to Britain and the Soviet Union.

The third Sherman variant produced was the M4A3, starting in May 1942. Outwardly it was very similar to the M4 and M4A2, except for the rear hull and engine deck. The M4A3 was powered by a Ford GAA V-8 gasoline engine, which had been developed from an experimental V-12 airplane engine and tested in an M3 in February. This engine proved to be compact and have an excellent power-to-weight ratio, making it the engine of choice for the U.S. Army. Had sufficient quantities of this engine been available, other Sherman variants would have been cancelled. The original Ford production run of 1690 75mm-armed M4A3 tanks ended in September 1943. After this a modernized M4A3 was produced by other manufacturers, as will be described later.

Although the first Sherman variant to be approved, the M4 did not enter production until July 1942. The M4 was identical to the M4A1 except for having the welded-hull. Because the welded-hull offered slightly more interior space, the ammunition load of the M4 was 97 rounds (compared the 91 for the M4A1). Production of the M4 with the 75mm gun ended in January 1944, with 6748 such tanks being built. Some of the late M4 tanks produced by the Detroit Arsenal had a composite hull with a cast front similar to that of the M4A1 welded to standard M4 angular sides and rear.

The M4A4 Sherman also entered production in July 1942. The unique feature of this vehicle was its increased length, required for the installation of the Chrysler A57 multi-bank 30-cylinder engine. The rear hull was lengthened 11 inches and the bogies were spaced farther apart than on the other Sherman versions. The A57 engine was difficult to maintain due to its size, so much so that an intensive training program was offered to maintenance personnel to familiarize them with the problems unique to this engine. Rejected by the U.S. Army for overseas duty, the M4A4 was used for training in this country. Of the 7499 M4A4's produced by September 1943, the majority were delivered to Britain under Lend-Lease. They performed excellently in British service, bearing the designation Sherman V.

The last of the original Sherman variants to enter production was the M4A6, in October 1943. This vehicle used the M4A4 hull but with a cast front, similar to the late Chrysler-built M4. It was powered by a Caterpillar D200A radial diesel engine that was capable of operating on a variety of fuels. However, by this time the decision has been made to concentrate on production of the M4A3, and M4A6

production was cancelled in February 1944 after production of only 75 units. Tests held at Fort Knox the next month showed that the M4A6 had superior fuel economy and cruising range than any other Sherman variant. Nonetheless, the vehicles were used exclusively by the U.S. Army for training purposes.

All of the Sherman variants in production before 1943 had early design features that were later modified. First, the original tanks had a bolted, three-piece differential housing (lower front hull). This was first replaced by a single piece cast housing having the same large curvature shape. Later, a second cast housing design with a flatter surface and sharper curvature was adopted, offering improved ballistic protection.

The early vehicles also had direct view vision slots with armored shutters in the front hull for the drivers. These were soon replaced by rotating periscopes installed in the hull hatches and fixed auxiliary periscopes mounted just in front of the hatches. The periscopes provided the drivers with protection from small arms fire and shell fragments,

plus gave them a wider field of view when buttoned up.

Another early design feature was the narrow M34 gun mount, which covered only the gunshield immediately around the cannon. A second, smaller shield was attached to the coaxial machinegun to provide protection for its opening in the gunshield. On tanks with the M34 mount, the gunner sighted the main gun through a periscope in the turret roof that was aligned with the gun. However, this sighting system was difficult to keep in alignment and was replaced by a coaxial telescopic sight added to the gunshield to the right of the main gun. Since this required a new opening in the gunshield, a new combination gun mount M34A1 was standardized in October 1942. This new mount covered the entire width of the gunshield, protecting the main gun, coaxial machinegun, and gunner's sight openings from small arms fire.

Another significant modification was the replacement of the original M3 bogies with a new, heavy-duty bogie in the summer of 1942. The new bogies had larger springs, a rounded track support skid on

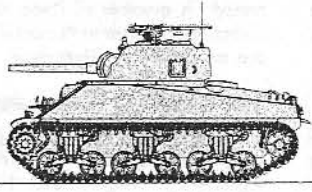
top, and a support roller that was displaced rearward. The new bogies reduced the number of suspension spring failures being experienced on the heavier Sherman variants.

Ballistic tests showed that the frontal protection of the Sherman tanks was very uneven, especially for the models with the welded-hulls. The front armor of these models consisted of several separate armor plates welded together, and the weld joints proved to be weak spots compared to a solid plate or casting. Also, the inside of the right front turret wall was machined down to provide space for the main gun controls, creating an armor weakness in that area as well. Finally, the drivers' hoods protruded out of the 57° sloped front hull, resulting in vertical surfaces that were prone to penetration.

The problem of the drivers' hoods and the turret front was solved by the addition of applique armor welded over these areas. The turret problem was later permanently corrected by thickening the casting. The weakness of the hull weld joints, however, was not corrected until the later Sherman models were designed. If you examine the Sherman penetra-

1

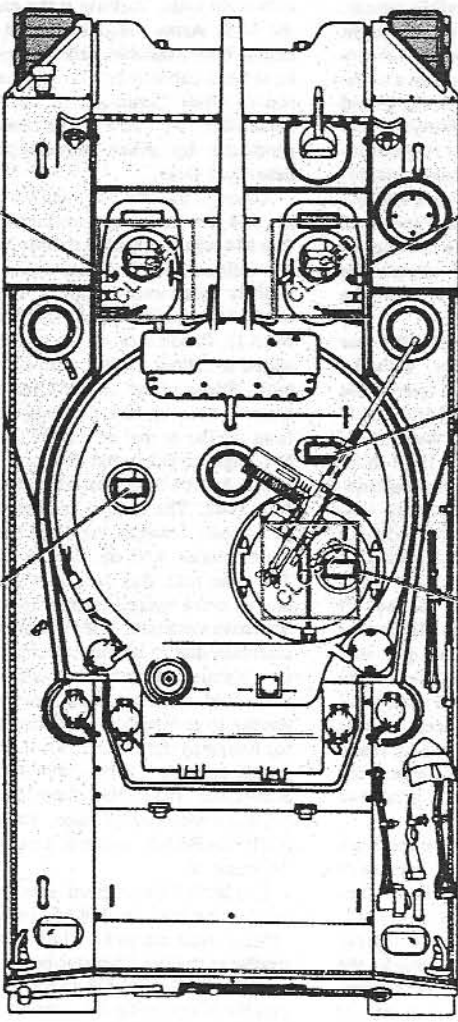
M4



M4

Characteristics

Chassis: M4
 Turret: A
 Gun: 75
 Armor Class: I
 Main Gun Rounds: 97
 Rate of Fire #: 30
 Special:
 No Loader Hatch



Driver Hatch
ACTION:

D

Assistant Driver Hatch
ACTION:

A

Gunner Hatch
ACTION:

G

Commander Hatch
ACTION:

C

Loader Hatch
ACTION:

L

	HE	AP	WP	HCBI
Gun Load				

Ready Rack Load: 8

	0	1	2	3	4	5	6	7	8
H E	0	1	2	3	4	5	6	7	8
A P	0	1	2	3	4	5	6	7	8
W P	0	1	2	3	4	5	6	7	8
H C B I	0	1	2	3	4	5	6	7	8

Spotting Restrictions		
Crew Member	Buttoned Up	Open Hatch
D & A	Tank Front only	All Sectors except Rear
G	Turret Front only	-----
L	Any one Sector	-----
C	Any one Sector	All Sectors

tion table in *PATTON'S BEST*, you'll see that this weakness in the front hull armor is the only difference between armor class I and II, and explains why the M4 and early M4A3 versions have armor class I while their contemporary, the M4A1, has armor class II.

In addition to applying applique armor to the front, additional one-inch armor plates were welded to the hull sides over the sponson ammunition storage areas. This ammo storage layout proved to be a considerable design defect in combat, and was corrected in the later Sherman variants.

In June 1943, the Army Ordnance Committee recommended the installation of a British 2" bomb thrower into the Sherman's turret. This device (called a smoke mortar in *PATTON'S BEST*) resembled a flare gun and was mounted to the left front turret roof. Although the mortar mounting was not flexible, its range could be adjusted from 35 to 150 yards through the use of a propellant gas regulator.

A turret roof hatch was installed over the loader's position starting in December 1943. Combat experience had shown that the single commander's hatch made it difficult for the loader to escape in an emergency, since he was forced to wait for both the commander and gunner to exit first, plus having to duck under the gun breech. For those tanks already produced, a loader's hatch installation kit was available.

Tank cards 1-9 are examples of these early Sherman designs. The drawings all show them having the latest model differential housing, the heavy duty VVSS suspension, and the M34A1 gun mount. Cards #1, #4 and #7 are the earliest variants, each having the original (type A) turret. These tanks would have been produced sometime between October 1942 and the summer of 1943. The next oldest are the B turret models, #2, #5 and #8. Having both the smoke mortar and loader's hatch, these models would have left the assembly lines in late 1943 or early 1944. Note that all of the type A and B turrets have applique armor to the right of the gun mount, although none of these drawings show applique armor anywhere on the hull. Tank cards #3, #6 and #9 have the type C turret with the commander's vision cupola (discussed later), making them probably some of the very last of these models produced. They could also represent B turret models with the commander's split hatch replaced by the vision cupola in the field.

Although the 17-pounder was a later modification, the Sherman VC Firefly pictured on tank card #18 is an example of the many M4A4s sent to Britain. Compare the length of the rear hull and the spacing between bogies to any of the American variants, and the lengthened hull will be obvious. Also note the rectangular loader's hatch and the stowage box attached to the turret rear. Both of these items are British modifications.

The oldest Sherman variant in *PATTON'S BEST* isn't found on a tank card, but on the box cover. This vehicle is an early M4A1 with the original M34 gun mount and the rounded, one-piece differential housing. If, as the picture suggests, this vehicle was serving with the 4th Armored Division in December 1944, it would have been one tired old warrior indeed.

Improving the Armament

The design of the Sherman's turret made allowances for the possible installation of three types of gun: the standard 75mm gun, a high velocity three-inch (76.2mm) gun, or a 105mm howitzer. All three of these weapons eventually saw service on the Sherman tank, made possible through the use of a 69" turret ring. This was three inches larger than that of its contemporary, the Panzerkampfwagen IV.

Work on mounting the three-inch gun and 105mm howitzer got underway soon after the Sherman went into production. This work ended up involving the

redesign of these guns to make their size, weight, and balance suitable for turret installation. The 105mm howitzer mount was standardized by the end of 1943, using the same production turret as the 75mm Shermans. Since vehicles carrying the howitzer armament are not represented in *PATTON'S BEST*, the details of its development will not be described here.

Of greater interest to *PATTON'S BEST* players is the development of the 76mm gun. Interest in this gun as an alternate Sherman tank armament was due to its higher muzzle velocity and, therefore, greater armor piercing capability. It should be noted, however, that the Sherman tank was not designed as a tank killer. According to U.S. Army doctrine, the Sherman tank was to provide infantry support, create breakthroughs, and rapidly penetrate into the enemy rear areas. This mission did not include getting involved in face-to-face gunnery duels with enemy tanks. It was the job of the tank destroyers to eliminate enemy armor.

This doctrine is important to remember because the 76mm gun sacrificed high explosive effectiveness (compared to the 75mm gun) for the sake of a one-inch increase in armor penetration. A 76mm HE round weighed 12.9 pounds and carried an explosive charge of .86 pounds, compared to the 1.47 pound charge of the 14.7 pound 75mm HE round. Given the Sherman's envisioned role, there was no perceived urgency for the installation of the more powerful gun.

Testing of the newly-modified 76mm gun began in the latter half of 1942 installed in the turret of an M4A1. Minor design changes were recommended, and in February 1943 the revised versions were tested again. The Ordnance Committee approved the design for production but the Armored Force Board disagreed, citing inadequate turret space for the crew and pointing out that the design was simply a "quick fix" to get the vehicles into production using current components. So it was that the 76mm Sherman, which could have been produced in quantity before the end of 1942, was sent back to the drawing board.

In July 1943 the next prototype 76mm Sherman was produced. Given the designation M4E6, this tank borrowed a preproduction turret from the T23 medium tank to mount the 76mm gun. The vehicle also contained several other design changes that would appear on the next generation of Sherman tanks. The combination of the 76mm gun and the larger T23 turret proved to be a winner, and the design was recommended for immediate production with minor modifications in August 1943. In fact, the Army Ground Forces requested 1000 M4E6s and ordered that the production of 75mm-armed Shermans be discontinued. This idea was again harpooned by the Armored Force Board due to the 76mm gun's poorer HE round. Objections about the smoke and dust produced by the gun's muzzle blast were also raised. The former problem was solved by redesigned ammunition and the latter was reduced by fitting a muzzle brake on later 76mm guns that deflected the blast to the sides.

The first Sherman tank variant produced with the 76mm gun appeared in January 1944, and many were available by late spring. However, their initial reception by combat forces was lukewarm at best, since armored commanders were reluctant to issue the new tanks to their units so close of *D-Day*, without adequate time for crew training. Even as late as June 12, at a demonstration for U.S. armored division commanders (in attendance were Generals Grow, Oliver and Patton), the attendees were impressed with the gun's performance but did not want it to replace most of their 75mm Shermans.

It would not be until after bludgeoning through the bocage country of Normandy, when Sherman tanks found themselves forced to battle German Panthers and Tigers in spite of the Army's doctrine, that the 76mm gun would be in high demand. Even

it would not penetrate the frontal armor of these enemy tanks, however, leading to demands for an even larger gun. A conversation between an irritated General Eisenhower and General Bradley is reported to have gone something like this:

Eisenhower: "You mean our 76 won't knock these Panthers out? I thought it was going to be the wonder gun of the war."

Bradley: "Oh, it's better than the 75, but the new charge is much too small. She just hasn't got the kick to carry her through the German armor."

Eisenhower: "(expletive deleted)! Why is it that I am always the last to hear about this stuff? Ordnance told me this 76 would take care of anything the Germans had. Now I find you can't knock out a damn thing with it."

The gunnery tables in *PATTON'S BEST* clearly show the differences between the 75mm and 76mm guns. The 76mm gun has better long range accuracy and higher kill probabilities against armored vehicles, but a lower rate of fire and poorer HE effectiveness. It also clearly shows that the 76mm gun will not offer you any more killing opportunities against German AFVs when firing standard AP rounds, but will give you a higher kill probability when such an opportunity arises.

The Later Shermans

The mid-1943 the list of design change recommendations for the M4 series medium tank had become considerable. These changes included production of the 76mm and 105mm armaments and rearrangement of the ammunition stowage for better protection. Combat experience in Africa and Italy had shown the Sherman to be highly prone to burn when penetrated, the fires caused primarily by ignited ammunition. The new design moved the ammunition stowage from the sponsons to the hull floor, in new racks that were surrounded with water and antifreeze to suppress ammunition fires. This design was called "wet stowage," and was to be used on all redesigned 75mm and 76mm Shermans. A "W" was appended to the vehicle's designation to indicate this feature.

Another important design change for the welded-hull variants was a new front hull. By changing the front armor slope from 57° to 47°, the entire front could consist of a single sheet of armor. By eliminating the weld joints around the driver's hatches the hull protection was increased, and the thickness of the front hull was increased from two inches to two-and-a-half inches to compensate for the decreased slope. The new hull would also have larger drivers' hatches, a feature that was applied to the cast hull as well.

A late development that would be applied to these variants was horizontal volute spring suspension (HVSS). Early designs were tested in April 1943, but it was not until a year later that the final version was tested and approved for use. The HVSS suspension offered a smoother ride and a wider track (23") for reduced ground pressure. The new track had a single set of guide teeth in the center that passed between split bogie wheels, rather than solid bogie wheels and twin track guides of the VVSS design.

The new production plans called for the following armament for the redesigned Sherman variants:

- M4: 76mm gun, 105mm howitzer
- M4A1: 76mm gun
- M4A2: 76mm gun
- M4A3: 75mm gun, 76mm gun, 105mm howitzer

Production of the M4A4 and M4A6 was to be cancelled. Since the M4A3 was the preferred model for the U.S. Army, it was the only one that would still be produced with all three types of guns. Vehicle armament was appended to the vehicle's designation in parentheses.

The first of the new variants to begin production was the M4A1(76)W, in January 1944. As with all 76mm Shermans, it used the T23 turret and had a commander's vision cupola. The vision cupola consisted of a raised circular hatch surrounded by six glass vision blocks which gave the commander a 360° field of view while buttoned up. The early vehicles moved the old split commander's hatch and machinegun mount to the loader's position. Because the split hatch interfered with the view from the vision cupola (especially when open), it was later replaced by the oval loader's hatch. The guns of early vehicles did not have a muzzle brake. The late production models were equipped with HVSS suspension. In total, 3426 M4A1(76)W Shermans were produced before the end of the war.

The M4(105) was produced from February 1944 through March 1945. Of the 1641 vehicles, the last 841 had HVSS suspension. Like all 105mm Shermans, these vehicles had armored ammunition boxes instead of wet stowage. Plans called for the production of an M4(76)W tank beginning in the summer of 1945, but these were cancelled as the war in Europe drew to an end.

The M4A2(76)W entered production in May 1944, and a total of 2915 vehicles were produced. Except for the welded-hull, this vehicle had all the new design features of the M4A1(76)W. Because it retained the diesel engine, most of these Shermans were shipped to the Soviet Union.

The modified M4A3 variants were produced in the largest quantity. Some 3071 M4A3(75)W variants were produced from February 1944 through March 1945. All had the new hull and wet stowage, but an apparent shortage of vision cupolas (the 76mm turret had priority) meant that many of the early vehicles left the factories with the original split commander's hatch. However, replacement of these hatches with the vision cupola was easily done in the field because they were both designed to fit in the same sized opening in the turret roof. Late production vehicles had HVSS.

The M4A3(76)W was produced from March 1944 through September 1945, for a total of 4542 units. Like the M4A1(76)W, early versions had a split loader's hatch and main gun without a muzzle brake. The last 2617 were equipped with HVSS.

The M4A3(105) variant was produced from May 1944 through June 1945. Of the 3039 produced, the 2539 built from September 1944 onward had HVSS. Its features were virtually identical to the M4(105).

There was one additional M4A3 variant produced for a short time, the M4A3E2 assault tank. Only 254 "Jumbos" were built during its production run of May through July 1944, and all were armed with the 75mm gun. The purpose of this vehicle was to provide direct fire support against enemy defensive positions, which was why the 75mm gun with its good HE round was selected over the 76mm. The vehicle's hull was the same as the other M4A3 models, but armor thickness was increased to four inches on the front hull and three inches on the sides by welding additional plates to the exterior. The turret was specially designed for this vehicle and had an armor thickness of six inches all around, seven inches on the gun mount. All of these vehicles had HVSS suspension, although they were produced with extended edge connectors (or "duckbills") to effectively widen the track and offset its considerably higher weight.

The M4A3E2 was highly successful in combat, and requests were made to produce a 76mm version. Plans were made, but later dropped in favor of a modified M26 Pershing. However, the M4A3E2 could be modified to carry the 76mm gun in field depots fairly easily, since the gun mount used on the tank was originally the same version used on the 76mm Shermans. The U.S. Army gave its authorization for such conversions in March 1945, and some Jumbos were rearmed in this manner.

In the summer of 1943, when it became apparent that the Challenger tank would not be available in quantity before *D-Day*, the British decided to mount their 17-pounder in Sherman tank turrets. Although the new gun reduced crew space in the turret, it was not as serious as the U.S. experience with 76mm gun because the 17-pounder had a shorter breech and required less space. The assistant driver's position was sacrificed to provide ammo stowage, however. With a muzzle velocity of 2980 feet/second with its standard AP round, the 17-pounder proved to be the excellent anti-tank weapon that the 76mm gun had failed to be.

Tank cards #10-#18 are samples of these late production vehicles. With the exception of the Sherman VC (tank card #18, mentioned earlier), there are a pair of cards for each vehicle type. In each case, the card with the smaller number represents an early production vehicle and the larger represents a late production vehicle.

For example, tank cards #10 and #11 represent the M4A3(75)W. Card #10 represents an early vehicle without HVSS or a vision cupola, such as would have been produced through most of 1944. The card also indicates that it does not have wet stowage, but after researching this topic I'm convinced that this is an error. All late model Shermans (except the 105mm versions) had wet stowage, as the designation indicates. Tank card #11 shows the vehicle as produced in late 1944, with a vision cupola and possibly HVSS.

Tank cards #12 and #13 are probably the best known in *PATTON'S BEST* for they represent the M4A3E2 "Jumbo" assault tanks. Card #12 shows the vehicle as originally produced, and card #13 shows the tank refitted with the 76mm gun. I am at a loss to explain the possibility of HVSS suspension listed on the cards, for it is certain that the M4A3E2 was never produced with it.

Tank cards #14-#17 all represent the production 76mm versions of the Sherman tank. Cards #14 and #16 represent an early M4A1(76)W and M4A3(76)W, respectively. Both these vehicles have the split loader's hatch with the anti-aircraft machinegun mount. Cards #15 and #17 show the later versions of these two vehicles with the oval loader's hatch and muzzle brake. HVSS is available on all four of these vehicles.

On to Posterity

As I said at the beginning of this article, the Sherman tank is the epitome of Allied tanks in World War II. Produced in massive quantities and supplied to both Britain and the Soviet Union, the Sherman tank saw action in almost every combat theater of World War II. Although best remembered for its contribution in the European theater, the Sherman also performed yeoman service in the Pacific doing the job it was designed to do, provide direct fire support for friendly troops. A slogan going around in 1942 was, "We'll win the war with the M4." It turned out to be quite true.

The strange thing about the Sherman tank is that its fame was not gained from its combat strength. Throughout most of its lifetime the Sherman was both undergunned and underarmored, facts to which any veteran *PATTON'S BEST* player will attest. However, it did have very good mobility so that, when deployed in numbers, they were able to maneuver into flanking positions and defeat their stronger opponents. Captured German tank crews used to tell their U.S. captors, "One of our tanks is better than ten of yours . . . but you always have eleven!"

The Sherman did have a few combat capabilities superior to their German counterparts. All Sherman tanks had an elevation gyrostabilizer for the main gun and a power turret traverse. The latter gave Sherman crews an edge in getting off the first shot, or at least being able to train the gun onto a target

quickly once fired upon. For example, the following incident occurred on April 22, 1945, and is recounted in the history of the 5th Armored Division:

Corporal James E. Mathies, tank gunner of A Company, 34th Tank Battalion, was all set for anything as his tank rounded a corner and he saw an unfamiliar vehicle 400 yards away, its gun pointed straight at Mathies' tank. Mathies' 76 roared twice in rapid succession and the rear of the strange vehicle disappeared. It was a British scout car. The British soldiers manning it piled out and were recognized before further damage was done.

The British commander of the car afterwards came up looking for Mathies. "That was fast shooting, old chap," he told the 34th Tank Battalion gunner. "We had been there an hour, waiting to shoot anything that moved around that corner, and when you came around it you hit me twice before I could lay my hand on the trigger." With that he patted the startled Mathies on the back and went to see what he could salvage out of his scout car.

Perhaps the Sherman's greatest strong points were its mobility, reliability and versatility. The M4 chassis was adapted for an almost innumerable variety of tank destroyers, engineering vehicles, self-propelled guns, and other specialty vehicles. The tanks themselves were sometimes armed with various types of flamethrowers, rocket launchers or other special devices that are simply too numerous to be mentioned. The M4 chassis was mechanically sound, dependable, easy to maintain, and could do just about any job required of it.

The Sherman tank must be considered one of the great tanks of history. Designed in 1941, it served throughout World War II and the Korean conflict (where it comprised over half of the U.S. tank force). It was not until 1957 that the last U.S. Army Sherman tanks were declared obsolete and relegated to the scrap yards. Modified versions soldiered on in Israeli service even longer, and Shermans can still be found in the military inventories of minor countries. Few are the tanks that can surpass the Sherman's longevity, which stands as the ultimate testimony to the quality of its design.

Bibliography

One way I can tell if a game is good is if it inspires me to look further into its subject matter. If *PATTON'S BEST* has piqued your interest in the Sherman tank as much as it has mine, I can recommend the three books that I used to write this article.

The most detailed and informative source of the Sherman tank's design history I've seen is *Sherman: A History of the American Medium Tank* by R.P. Hunnicutt (Taurus Enterprises, 1978). This book also appears in the *PATTON'S BEST* bibliography. The bulk of the information used in this article is from this source, including the "quick shooting" anecdote.

Another good source of design information is *M4 Sherman* by George Forty (Blandford Press, 1987). This book provides a good history of the Sherman tank, but is not quite as detailed as the previous source. It does contain numerous firsthand accounts of Sherman tank crewmembers however, and is the source of the Eisenhower-Bradley conversation and the German tankers' joke.

Finally, *Sherman in Action* by Bruce Culver (Squadron/Signal Publications, 1977) provides a short but well-illustrated description of the Sherman tank variants that saw service in World War II.

