3-inch Anti-tank Gun M5

on Carriage M6 *by David Doyle*

The ubiquitous 37mm Antitank Gun M3 had been standardized by the U.S. Army in December 1938, but production did not get underway until late 1940. By that time, war in Europe was well underway, and the U.S. Army observed with interest the increasing level of armor protection being seen in the conflict. It was rightly determined that the 37mm weapon was inadequate for the modern battlefield.

Ordnance launched efforts to quickly develop a more powerful antitank weapon, first turning to an expedient 75mm weapon based on the M1897 before setting forth on 3-inch project. Utilizing the gun tube from the developmental 3-inch anti-aircraft gun T9, the antitank gun T10 was created. The antiaircraft barrel was combined with the breech, recoil mechanism, gun carriage, and shield of the 105mm howitzer M2.

Testing of the new weapon began at Aberdeen Proving Ground in September 1941, and immediately the weapon proved superior to the concurrently developed expedient 75mm antitank gun. The positive test results lead to an urgent initial order for 100 of the new 3-inch guns. At this point the decision was made to send an example to the Field Artillery Board for further testing. This Board recommended numerous detail changes in the design. Further, and worse, the intended using arm – the Tank Destroyer Branch – soundly rejected the gun, instead preferring self-propelled antitank guns (which, incidentally, they were already using). Infantry panned the weapon because of its substantial (4,870 pound) weight and 23-foot, 4-inch length. Both the Tank Destroyers and Infantry asked that further procurement of the 3-inch guns be cancelled.

Chief of Ordnance General Levin H. Campbell was aghast, stating that this would be "…a definite mistake in view of recent executions of the 88mm in Libya."

Enter General Lesly McNair, head of Army Ground Forces, a former redleg [nickname for a U.S. artilleryman because of the red piping that ran down the pant leg of their early uniforms] who held that self-propelled antitank guns were a waste. Overruling his subordinates, which included head of the Tank Destroyer Center, General A.D.Bruce, in August 1942 he ordered the procurement of 1,000 of the 3-inch guns. The weapons were designated M5 on Carriage M1 and McNair also ordered them to be restudied by the Tank Destroyer Board, basing his argument in part on the fact that the gun could be unloaded at ports that lacked the facilities to lift armored vehicles.

Despite General Bruce's objections, which included pointing out that a towed battalion required 300 more men, plus additional shipboard transport space for the prime movers, a 3-inch gun was sent to Fort Hood for further testing. The Tank Destroyer Board made several recommendations for improvement, which were almost universally ignored.

Production began in December 1942, with 250 of the weapons being delivered that month. These were following by 200 in January 1943, 190 in February, 100 each in March through May and the final 60 in June.

On New Year's Day 1943 McNair ordered that a self-propelled battalion be converted to towed in order to test the new weapon in the field. The 801st Tank Destroyer Battalion was converted 24 May 1943 from the M3 Gun Motor Carriage to operate instead under new (as of 7 May 1943) Table of Organization and Equipment 18-35 to test McNair's theory. One-week later McNair ordered that half of all tank destroyer battalions be converted from self-propelled to towed battalions. Each Battalion included 36 of the guns, divided into three companies of 12 each, with associated prime movers.

In November 1943 an improved gun carriage was introduced, which included a new sloping gun shield design. The new carriage was designated M6, and as a result, in November 1943 the weapon was standardized as the 3-inch Antitank gun M5 on Carriage M6. With the exception of a few of the early guns sent to Italy in 1943 all the guns sent to Europe used carriages of the latter type. Five hundred additional weapons of the new design were ordered, which were delivered in November (98) and December (402) 1943.

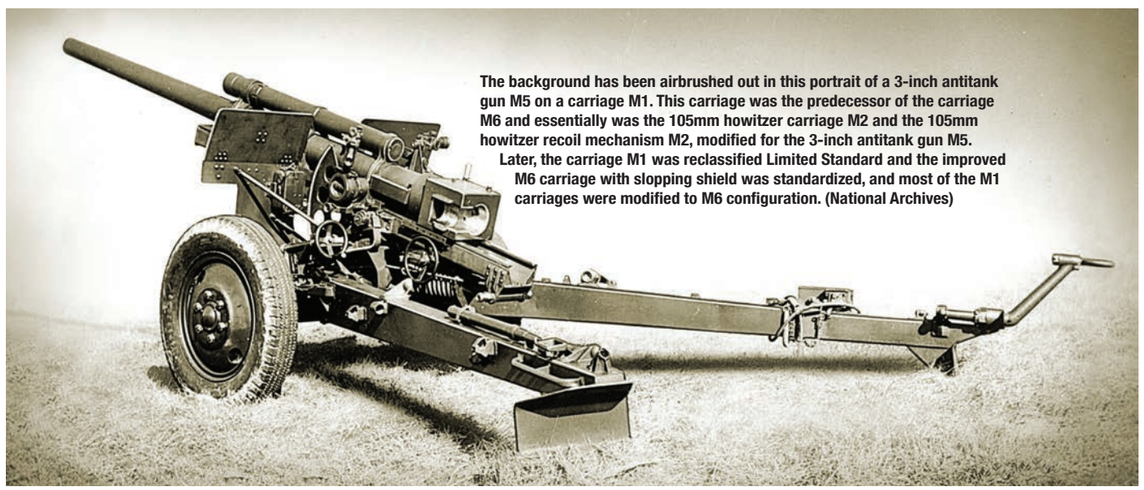
Beginning in April 1944, the final group of 1,000 weapons began production. Deliveries of these were as follows: April 160; May 200; Jane 200; July 175; August 137; and September 128.

The initial prime mover used with the 3-inch gun was the M3 halftrack, but that was far from ideal, and accordingly in September 1944 the M39 armored utility vehicle was deemed to be the prime mover of choice. Ultimately, the shortcomings of the towed antitank gun resulted in units converting back to self-propelled, and only few units actually used the M39.

The M5 first saw combat in Italy, with the 805th Tank Destroyer Battalion arriving in October 1943. The 3-inch battalions were first used in the Volturno-Cassino area, then later in Anzio during the Rome campaign. The using troops were no more enthusiastic about the weapon than had been General Bruce. A

General Statistics of the 3-inch Gun M5

MUZZLE VELOCITY
2,600 ft/sec
MAXIMUM RANGE
10,000 ft
PRACTICAL RATE OF FIRE
12 rounds/min
WEIGHT
2.4 tons
TRAVERSE
45 degrees
ELEVATION
-5 to +30 degrees

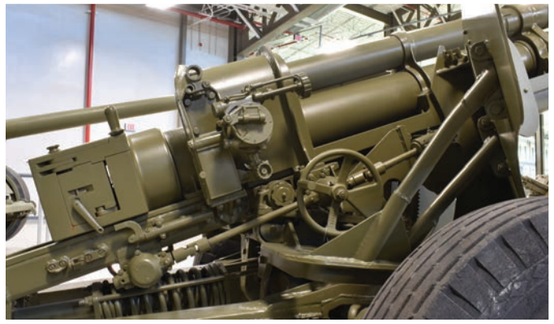


The background has been airbrushed out in this portrait of a 3-inch antitank gun M5 on a carriage M1. This carriage was the predecessor of the carriage M6 and essentially was the 105mm howitzer carriage M2 and the 105mm howitzer recoil mechanism M2, modified for the 3-inch antitank gun M5. Later, the carriage M1 was reclassified Limited Standard and the improved M6 carriage with slopping shield was standardized, and most of the M1 carriages were modified to M6 configuration. (National Archives)

BELOW
A combat photographer captured this image of the crew of a 3-inch antitank gun M5 on an M6 carriage as it fired at a target down a side street. A spent casing is lying on the pavement between the trails, and a cannoneer is pulling a fresh round out of a packing tube on the sidewalk. Three of the men are carrying M1 carbines for personal protection. (National Archives)

BOTTOM LEFT
A solid structure like this brick barn could give a 3-inch antitank gun crew an advantage in concealment and protection. The number-one cannoneer holds the breech-operating handle while a cannoneer prepares to load a round into the open breech. The crossed sticks toward the front of the gun probably were a camouflage measure. (National Archives)

BOTTOM RIGHT
A 3-inch antitank gun M5 on carriage M6 was photographed at a tense moment as a crew expectantly awaits the appearance of a target down the street. To the left, the gunner scans through his telescopic sight. To his right, the number-one cannoneer stands ready to pull the firing lanyard. Behind them, another cannoneer is ready to reload the gun. (National Archives)



Fifth Army tank destroyer conference held in Florence in November 1944 wrote to Washington: "The conference is unanimous in the opinion that the towed battalion was unsatisfactory and grossly inferior to the SP-gun. It cannot be manned effectively in the forward combat area. Men cannot and will not stay with towed guns as they will with the M10 or M18."

The 805th itself had converted to the M18 Hellcat in July 1944 following the Anzio campaign.

After the invasion at Normandy, it was quickly determined that the piece was difficult to maneuver in the hedgerow area, with crews struggling to place the gun, in part due to its weight, which now approached three tons, and in part due to the height of the hedgerows. Because of the size, the M5 was difficult to conceal, and crews were met with mortar and small arms fire. Units also quickly learned that the 3-inch gun was scarcely adequate against the Panther.

TOP
On the right side of the 3-inch antitank gun is another elevation wheel. It is linked to the left elevating hand wheel by a drive shaft routed to the round crossover gear box mounted on the carriage below the breech of the gun. The left side of the sliding breech block is visible on the breech. Adjacent to the elevating wheel is the elevating gear, with a large lightening hole through it. (Author)

LEFT
The left side of the front of the shield of a 3-inch antitank gun M5 on a carriage M6 owned and restored by Don Winegardner is shown, illustrating the shapes of the cutout to give clearance to the wheel, the cutout for the gunner's sight, and the apron, the sloping piece of armor at the bottom. The tube on top of the gun barrel is the recuperator cylinder, which returned the gun to position after being fired. A nomenclature plate is faintly visible on the side of the cradle. On the side of the trail are brackets and retainer straps for the three-section barrel-cleaning staff. (Rick Forys)

LEFT BELOW
A crewman of a 3-inch antitank gun M5 scans the terrain through binoculars for signs of enemy activity. Good details are visible of the two right-hand shield braces and the door covering the opening for the telescope, fitted with a locking handle. On the top of the left shield is handwritten lettering. Next to the right tire is the raised wheel segment. (National Archives)

BOTTOM
During a lull in the action at Le Bourg St-Leonard in northern France 19 August 1944, the crew of a Company C, 607th Tank Destroyer Battalion 3-inch antitank gun M5 await the appearance of a fresh target. They have camouflaged their gun behind a mix of stone blocks, louvered doors, local foliage, and wooden slats in an attempt to make the gun blend in with the war-torn surroundings. (National Archives)

By September Omar Bradley's HQ had become disenchanted with all towed antitank battalions, and wrote to Eisenhower, protesting the Army Ground Forces plan of deploying 50 percent of the Tank Destroyer force in towed configuration. Bradley wanted no more than 12 of 52 Tank Destroyer Battalions in the ETO to be towed units, and then only if they were reequipped with the new T5E1 90mm gun.

The Battle of the Bulge put towed antitank artillery to the test, particularly the M5. In the first few days of the German advance, the 820th Tank Destroyer Battalion lost 31 of its 36 guns, while the adjacent 801st lost 15 of the weapons.

One antitank company commander noted "…I want the self-propelled guns rather than the towed 3in guns because the towed guns are too heavy and sluggish. You can't get them up to the front. My orders have been in almost every case to get the guns up to the front-line troops. I just couldn't do it in the daytime with the 3in towed gun."

This view pretty well summed up the view of troops in the field, and in January 1945 efforts were underway to convert all of the 12th Army Group's 3-inch battalions to self-propelled battalions. The war in Europe ended in May with only four battalions remaining to convert.

TOP RIGHT
Throwing their weight and strength into the task, a 772nd Tank Destroyer Battalion 3-inch antitank gun crew clean the barrel of their piece. The unit is supporting the 75th Infantry Division near Odrimont, Belgium on 13 January 1945. The cleaning rod was assembled by screwing together several sections. Regular cleaning of the barrel was essential during combat when the bore could rapidly become fouled. In the foreground is the lunette on the rear of the right trail. (National Archives)

CENTER RIGHT
Crewmen run a bore-cleaning brush through the barrel of a 3-inch antitank gun M5 on a carriage M6. The piece has been emplaced in a prepared entrenchment with a commanding view of the surrounding terrain. The barrel of the gun could be depressed a little over 5 degrees when firing at a lower target. (National Archives)

BOTTOM
The crew of a 3-inch antitank gun M5 on an M6 carriage wrestle their piece into position. They were members of the 801st Tank Destroyer Battalion, and the scene was near Hofen, Germany, on 2 February 1945. The gun and carriage weighed 5,850 pounds, and it took all hands to drag the piece over snowy, rutted ground. (National Archives)