= M2 light tank =

The Light Tank M2 was an American pre @-@ World War II light tank which saw limited use during World War II . The most common model , the M2A4 , was equipped with one 37 mm (1 @.@ 5 in) M5 gun , one .50 M2 Browning machine gun , and five .30 cal M1919 Browning machine guns .

It was originally developed from the prototype T2 tank built by Rock Island Arsenal , which had a Vickers @-@ type leaf spring suspension . The suspension was replaced by the superior vertical volute system in the T2E1 series of 1935 . This was put into production with minor modifications as the M2A1 in 1936 , with ten produced . The main pre @-@ war version was the M2A2 , with 239 produced , becoming the main tank in the US Army infantry units in the pre @-@ world @-@ war @-@ II period . The Spanish Civil War showed that tanks armed only with machine guns were ineffective . This led to the M2A4 with a 37 mm gun as the main armament . 375 were delivered , the last ten as late as April 1942 .

Its only combat use in American units was with the US Marine Corps 1st Tank Battalion during the Pacific War in 1942 . However , it is believed that M2A4s served in Burma and India with the British 7th Hussars and 2nd Royal Tank Regiment during their engagements with the Imperial Japanese Army 's 14th Tank Regiment . The M2A4 light tank led to the M3 Stuart light tank , the M2 Medium Tank and M4 Tractor artillery tower . The M3 Stuart saw widespread use throughout the war , the M2 Medium Tank , though another unsuccessful design , led to the M3 Lee and thence the M4 Sherman medium tanks .

= = Development history = =

US Army infantry tank design started with the Light Tank , T1 during the 1920s , which developed into a series of experimental designs which didn 't enter production . The T2 concept , starting five years later , incorporated several design lessons from the T1 , but used a new suspension system copied from the British Vickers 6 @-@ Ton tank . The first prototype was delivered in 1933 .

The Defense Act of 1920 had defined tanks to be used in support of the infantry . Through the 1920s a number of theorists outlined an independent role for the tank that required it to move at high speed into the rear areas , a modern version of the cavalry . The British referred to these designs as cruiser tanks , but similar high @-@ speed designs were developed under a variety of names . As the Defense Act limited tank development to the infantry , the United States Cavalry began tank development under the name " combat car " . In keeping with the high @-@ speed role , the new T5 Combat Car introduced the new vertical volute spring suspension (VVSS) system , which proved clearly superior to the Vickers leaf spring system .

This led to a second prototype of the T2 , the T2E1 in April 1934 , adopting VVSS from the T5 . The T2E1 was armed with one .30 cal (7 @.@ 62 mm) and one .50 inch (12 @.@ 7 mm) Browning machine gun mounted in a fixed turret ; another .30 cal Browning was mounted on the hull front . The T2E1 was selected for production in 1935 as the M2 , which mounted only the M2 Browning in a small one @-@ man turret , and the .30 cal in the hull .

After only 10 units were delivered , the Infantry Branch decided to switch to a twin turret configuration in the M2E2 , with a .30 @-@ caliber (7 @.@ 62 mm) machine gun in a second turret . These early twin @-@ turret tanks were given the nickname " Mae West " by the troops , after the popular busty movie star . The twin @-@ turret layout was inefficient , but was a common feature of 1930s light tanks derived from the Vickers , such as the Soviet T @-@ 26 and Polish 7TP . Further refinements to the M2A2 produced the A3 model , which incorporated a modified suspension system that reduced the tank 's ground pressure . The weight increased to 10 tons .

Following the Spanish Civil War , most armies , including the U.S. Army , realized that they needed tanks armed with cannon and not merely with machine guns . The Cavalry had already opted for a single , larger turret on its nearly identical M1 Combat Car . In December 1938 , OCM # 14844 directed that a single M2A3 be removed from the assembly line and modified with heavier armor and weapons , to meet the standards of the U.S. Infantry . This vehicle , after conversion , was re @-@ designated as the M2A4 . It was equipped with an M5 37 mm main gun , 1 inch (25 mm) thick

armor , and a seven @-@ cylinder gasoline engine . Other upgrades included improved suspension , improved transmission , and better engine cooling . Production of the M2A4 began in May 1940 at the American Car and Foundry Company , and continued through March 1941 ; an additional ten M2A4s were assembled in April 1942 , for a total production run of 375 M2A4 light tanks . The US Army sent out press photos still showing the M2A4 being assembled in July 1941 after the assembly line had been changed over to the M3 .

= = = Successor vehicles = = =

The M2 Light Tank led to the US M3 @-@ series and M5 @-@ series light tanks . The Ordnance Department viewed the M2A4 as a stopgap tank ; work to improve it further began in June 1940 . The first M3 Stuart tanks began to be produced in March 1941 ; the original riveted M3s closely resembled the M2A4 , and the two types occasionally served in the same units ; the easiest recognition feature is the aft (rear) idler wheel . On the M2A4 , the idler is raised ; on the M3 it trails on the ground , increasing the flotation of the heavier vehicle . The M3 retained the same Continental W @-@ 670 engine , but incorporated ½ -inch thicker (1 ½ inch total thickness) armor ; weight increased to 14 tons . The tank initially kept the same 37 mm gun and the forward firing hull machine guns , but the turret incorporated improvements . Eventually over 4 @,@ 500 examples of all variants were produced .

= = Operational use = =

By December 1941 , the M2A1 , M2A2 and M2A3 were used for training only . The majority of M2A4s , which went to the US Army , were also used only for training between 1940 and 1942 . The U.S. Marine Corps ordered M3 Stuart tanks to outfit its armored units in 1940 , but as the new tank was not yet in production , it received 36 M2A4s , after which point production of the M3 had come on line . Many of these tanks were deployed during the Battle of Guadalcanal while assigned to A Company , 1st Tank Battalion , where they and M3 Stuarts were typically spread out among infantry units . Their use was generally limited to providing mobile fire support to the Marines , either in disabling Japanese bunkers or using canister shot against Japanese attacks . In defensive engagements , the M2A4s and Stuarts would deploy in pairs , so they could cover each other with machine gun fire against Japanese soldiers armed with satchel charges .

Ultimately , the Marine Corps determined that the 37 mm gun of the M2s and M3s was not powerful enough to defeat Japanese bunkers , and so they would be replaced with tanks armed with 75 mm guns . Following the end of the Guadalcanal campaign , A Company returned to Australia , where the M2A4s were replaced with the new M4 Shermans in preparation for the Battle of Cape Gloucester in December 1943 . They remained in service in some areas of the Pacific Theater until 1943 . After they served in the Pacific , they were used for training .

Britain ordered 100 M2A4s in early 1941 . After 36 of them were delivered , the order was canceled in favor of an improved M3 Stuart . The fate of these vehicles is unclear . There is evidence that indicates those 36 M2A4s were shipped off from North Africa as part of the British Army 's 7th Hussars and 2nd Royal Tank Regiment , fighting in the India and Burma campaigns against the Japanese 14th Tank Regiment . However , according to historian Mike Green , the tanks were never issued to combat units .

= = Design = =

Besides the machine gun mounted coaxially to the main gun , there were three .30 cal. machine guns on the front hull of the M2 . One was mounted in a ball mount in front of the bow gunner . The other two were mounted in a fixed orientation in the upper hull near the sides of the tank . The machine guns were fired by the driver with the triggers on his steering levers . Troops could also mount another .30 cal machine gun on the top of the turret for anti @-@ aircraft defense .

The 37 mm M5 gun had a manually operated breechblock . The tank commander doubled as

loader , like many other tanks of the time . There was no turret basket in the M2A4 light tank ; the commander stood on the right side , while the gunner stood on the left side . The commander turned the turret onto the general direction of target . The gunner would then bring the target into the M5 telescopic sight . The M20 combination mount had 20 ° of traverse ; this could either be by a handwheel driving the rack and pinion traverse gear mechanism or pressure on the gunners shoulder rest overcoming the friction in the mechanism . Depression and elevation of the gun was either through a geared mechanism or , with the gears disengaged , free through movement of the gunner 's shoulder rest .

= = Variants = =

M2A1 (1935) .
Initial production type with single fixed turret containing one .50 cal machine gun . 17 units were produced .
M2A2 (1935) .
Twin turrets with single .50 machine gun in each ; the turrets partly obstructed each other limiting fields of fire . Dubbed " Mae West " . 239 units produced from 1936 ? 37 .
M2A3 (1938) .
Twin turrets with two machine guns , thicker armor , slightly lengthened hull , improved engine access , increased gear ratios , better engine cooling , improved suspension , and other minor detail changes . 72 units produced .
M2A4 (1939) .
Single turret with 37mm gun . Thicker armor . 375 units produced . Orders went to the American Car & Foundry in October 1939 upon request by the Ordnance Department . Used in the early Pacific campaigns and training . Only service was in Guadalcanal . Used for training after December 1941 .

= = Specifications = =

The M2A4 was 14 ft 6 in (4 @.@ 42 m) long , 8 ft 1 in (2 @.@ 46 m) wide , 8 ft 8 in (2 @.@ 64 m) high , and weighed 11 @.@ 6 t (26 @,@ 000 lb) . It had a vertical volute spring suspension and had a speed of 36 mph (58 km / h) , and had a range of 200 mi (320 km) . It had one M5 37 mm gun (with 103 rounds) , one .50 cal (12 @.@ 7 mm) M2 Browning heavy machine guns (with 1800 rounds) and five .30 cal M1919 Browning machine guns (with 8 @,@ 470 rounds) with 6 to 25 mm of armor . It had an 250 hp (190 kW) Continental W @-@ 670 9A seven @-@ cylinder radial engine . The vehicle was operated by a crew of four (commander / loader , gunner , driver , and co @-@ driver) .