

The M6 Heavy and M26 Pershing

by Robert J. Icks, Colonel AUS-Retired



AFV/Weapons Profiles

Edited by DUNCAN CROW

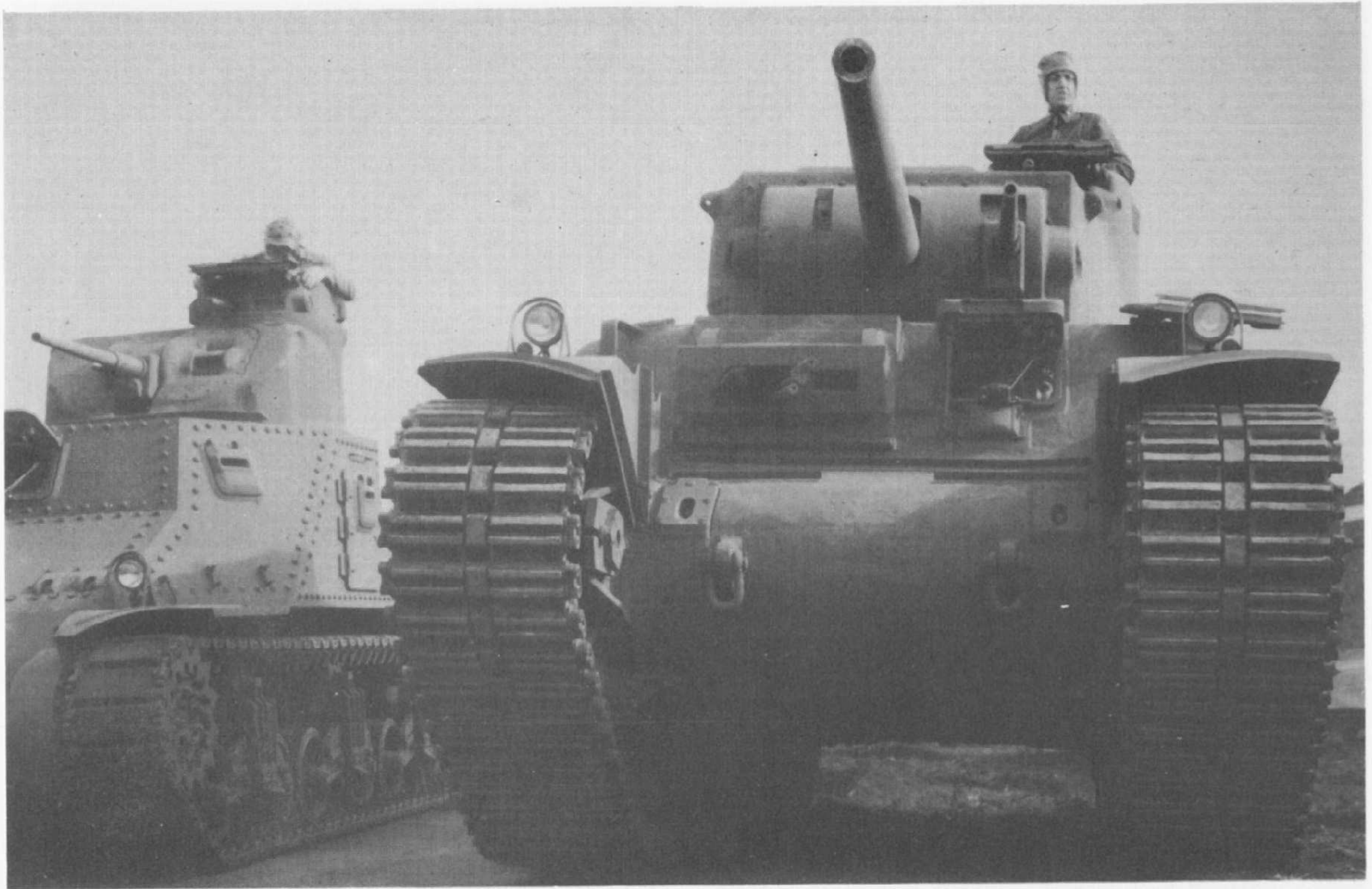
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This view of the T1E2 (M6) beside an M3 Medium (Lee) gives some idea of its size.

(Armored Command)

The M6 Heavy and M26 Pershing

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T1 HEAVY TANK

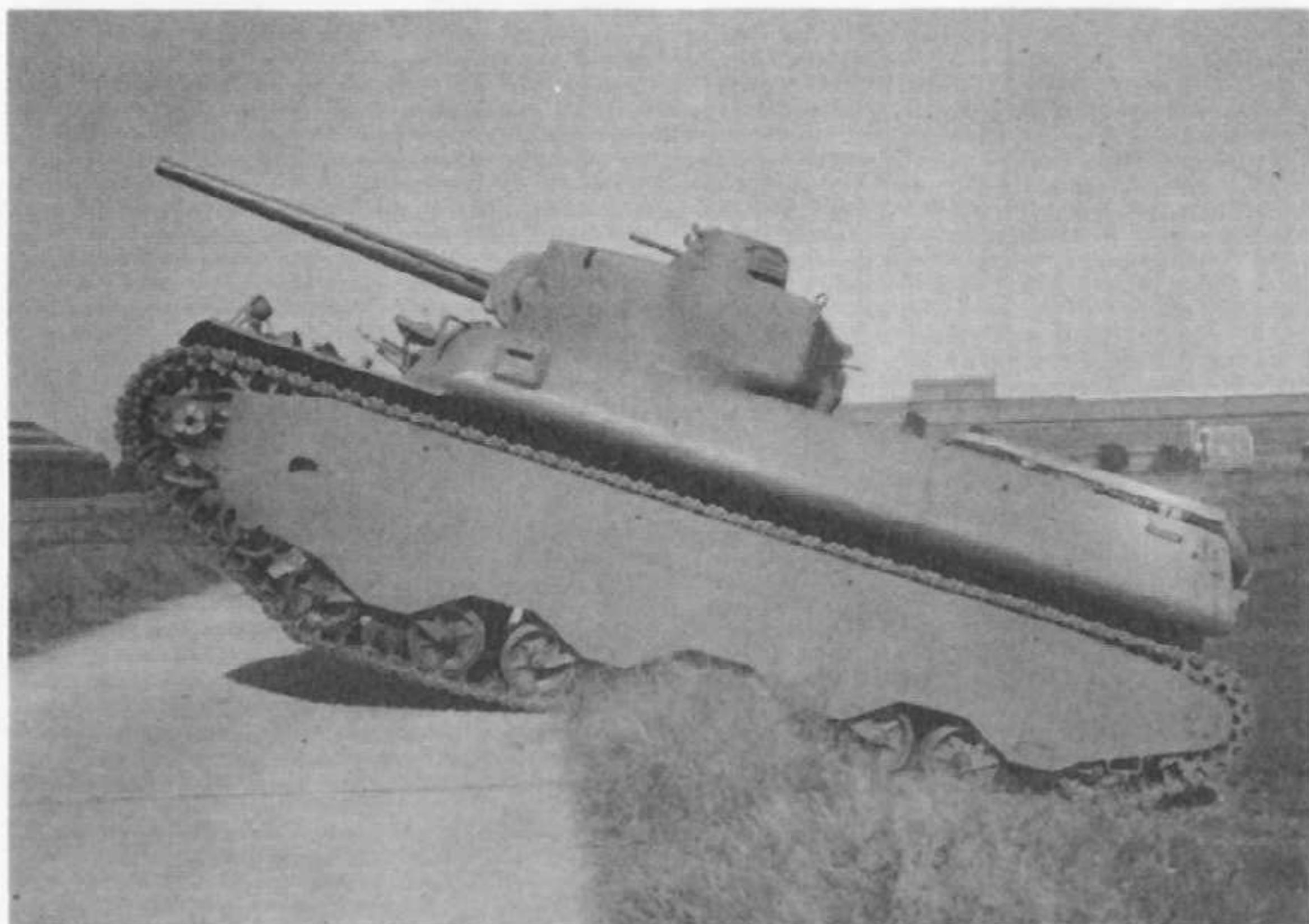
THE GERMAN invasion of Poland caused some misgivings in the United States as to the adequacy of the medium tank program but its principal effect was merely to induce some experimentation in upgunning the M2 Medium Tank. The invasion of the Low Countries and France in May 1940 on the other hand suggested that completely new tanks were needed. The Chief of Infantry requested that two classes of heavy tanks be developed. One of these was to be a tank of the Medium M2 type but with three inch armor, a hull mounted 75-mm gun and a rotating turret mounting a cannon of 37-mm to 50-mm caliber. This demand led to the design of the M3 Medium Tank.

The second type requested was to weigh over twice as much but was not to exceed 80 short tons. It too was to have three inch armor, a hull mounted cannon of over 75-mm but not over 105-mm, a 37-mm to 50-mm cannon in a rotating turret and eight machine-guns. This demand led to the design of what was to become the M6 Heavy Tank.

The military characteristics of such a vehicle were proposed by Ordnance and approved for a 50 ton tank. Originally it was planned to produce one prototype vehicle and to test in it four different types of power trains. But layouts indicated that hull changes would be required to accommodate each of these. Therefore two

prototypes were authorized. One was to have a torque converter with a two speed manual transmission and the other a gasoline-electric transmission. The torque converter was a form of hydraulic transmission which applied the engine horsepower to the final drive in a variable torque speed ratio wherein the required ratio was selected automatically by the load placed on the vehicle. The gasoline-electric transmission involved a direct current generator driven by the tank engine. This furnished the electric current for a motor driving each track. Steering and braking were accomplished by varying the intensity of the current and by current reversal. This transmission was so flexible that one track could be reversed while the other continued forward, causing the vehicle to spin on its own axis. The tank engine in each case was the 9 cylinder Wright G-200 air-cooled aircraft engine of 825 hp.

The design laid out for the heavy tank was innovative in 1940. Both turret and hull were of cast armor, ballistically well shaped and without side doors. The hatches were on top and there were escape hatches in the floor plate in the bottom of the hull. The final drive was in the rear, which provided more room in the interior. Track skirts were provided for the suspension, the first modern U.S. tank to have them. The suspension was of the horizontal volute spring type. Power traverse and power elevation were included, as well as a gyro-stabilizer, the second vehicle to be so equipped, the first being an



The T1 Heavy Tank was considerably in advance of its time in relation to other U.S. vehicles of 1940. (Baldwin Locomotive Works)



Rear view of the T1E1 illustrates its clean lines, rear turret protectoscope, and turret antenna base in the turret, which had no anti-aircraft gun or cupola. (U.S. Ordnance Department)

experimental installation of a gyro-stabilizer in a cavalry combat car.

The prototype T1E1 Heavy Tank with gasoline-electric transmission was completed first but the turret was only a makeshift one and the tank was never armed. The vehicle was used only for testing the transmission. During trials British observers followed the tests closely for comparison with the British TOG tank which had a similar transmission. Speeds of 25 miles per

hour were easily attained but the vehicle had only a 100 mile radius of operation.

It had been intended that the T1 have the torque converter but delays in manufacture caused the substitution of a hydramatic transmission in the prototype. Unlike the T1E1 prototype the T1 was fully armed. The turret carried a modified three inch T9 antiaircraft gun with a coaxial M5E1 37-mm gun. Two 50 caliber machine-guns were mounted in the front plate to be

The T1E1 or M6A2 showing protectoscopes and radio antenna base on right side of hull.

(U.S. Ordnance Department)





The M6A2E1 with its specially designed turret for the 105-mm gun became a somewhat massive vehicle.

(Courtesy G. B. Jarrett)

operated by the assistant driver and originally there also were two 30 caliber fixed machine-guns to be operated by the driver. There was a 30 caliber machine-gun in the turret cupola.

M6 HEAVY TANK

The prototype T1E2 with the torque converter transmission was completed in December 1941 and was standardized as the M6 Heavy Tank in February, 1942. It had a different turret with a 50 caliber antiaircraft

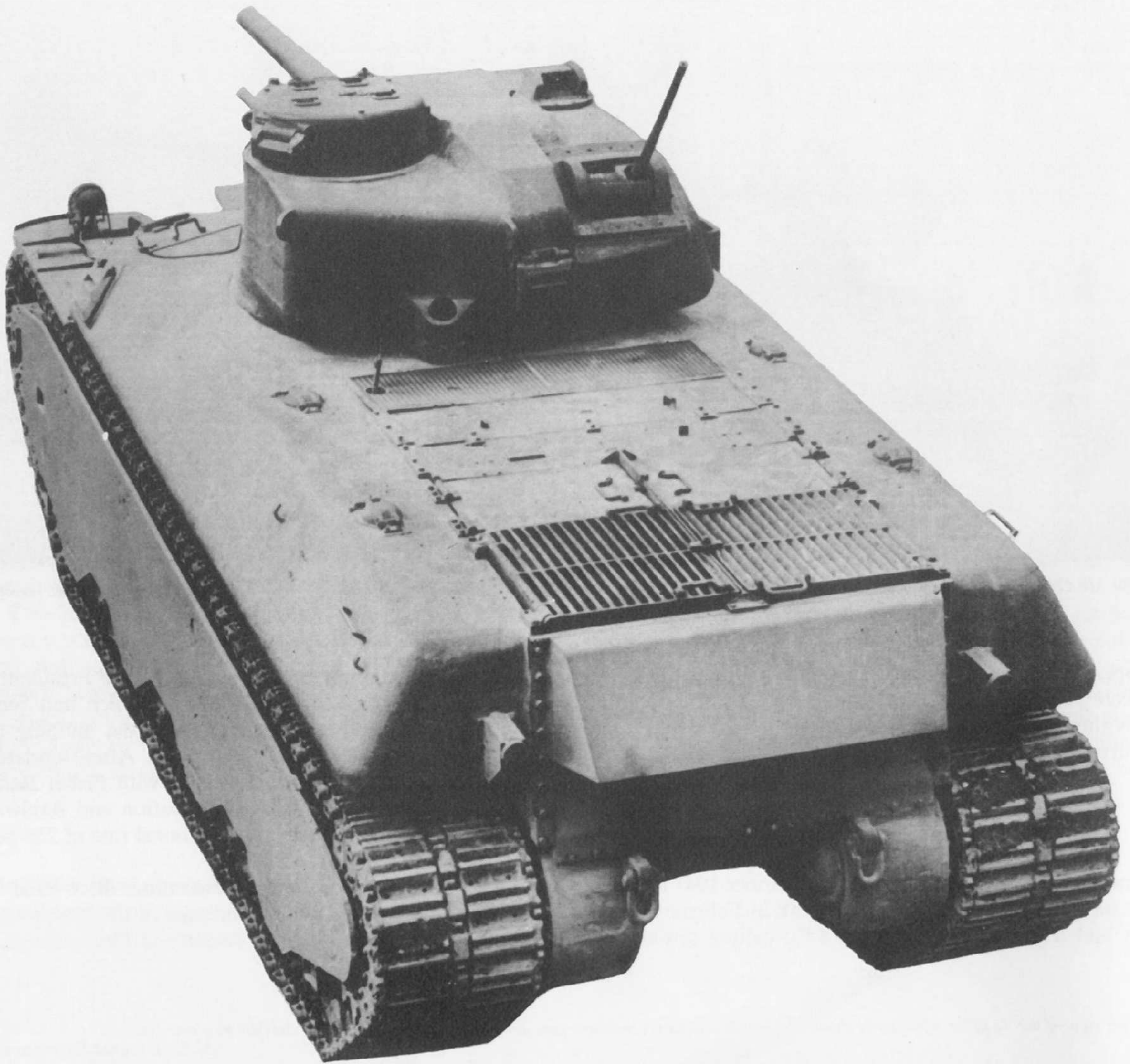
machine-gun in the rear of the turret. The President's program for production of munitions which had been announced in January 1942 called for the building of 500 heavy tanks in 1942 and 5000 in 1943. After standardization of the M6, contracts were let with Fisher Body Division of General Motors Corporation and Baldwin Locomotive to build them at a combined rate of 250 per month.

In April 1942, because of shortcomings discovered in testing, there was a complete redesign of the brakes and the cooling system. Between delivery in December and

This view of the T1E2 or M6 clearly shows the cupola and turret machine-guns and the front plate mount for the bow machine-guns.

(U.S. Ordnance Department)





The driver's hatch matched a similar hatch for the assistant driver and the turret access was had in this T1E2 (M6) through the cupola hatch.
 (U.S. Ordnance Department)

April 1942, the vehicle had covered 3500 miles on the original set of tracks and 1000 more on the second set. The new brakes adopted were of the type which had been developed for railroad trains operating over the mountains in the western part of the United States. They were hydraulically actuated disc type brakes applied to the controlled differential.

In spite of the good showing made by the M6, the Armored Board objected to the letting of contracts and announced that the vehicle was unreliable and overweight and that they did not want it. Although Ordnance repeatedly offered to eliminate the weaknesses, Army Ground Forces concurred with the Armored Force.

The Army Supply Program of September 1942 cut the production requirements to 115, 50 of which were to go to the British. The Fisher Body contract was cancelled and the balance of the order was to be produced by Baldwin Locomotive. Two production pilots of the M6 were delivered in December, but on December 7 the Chief of the Armored Force stated that there was no

longer any requirement and recommended that production be stopped immediately. Army Ground Forces concurred. The British also agreed because they had wanted the M6 for North Africa where there would be no bridge problem and now, at the beginning of 1943, the end of the campaign in North Africa was in sight.

As a result, only the following had been produced by early in 1943 when production ceased:

- 1 T1 with hydramatic transmission, cast hull and turret
- 19 T1E1 (M6A2), gasoline-electric transmission, cast hull and turret, one being the original prototype
- 8 T1E2 (M6), cast hull, cast turret, torque converter
- 12 T1E3 (M6A1), welded hull, cast turret, torque converter

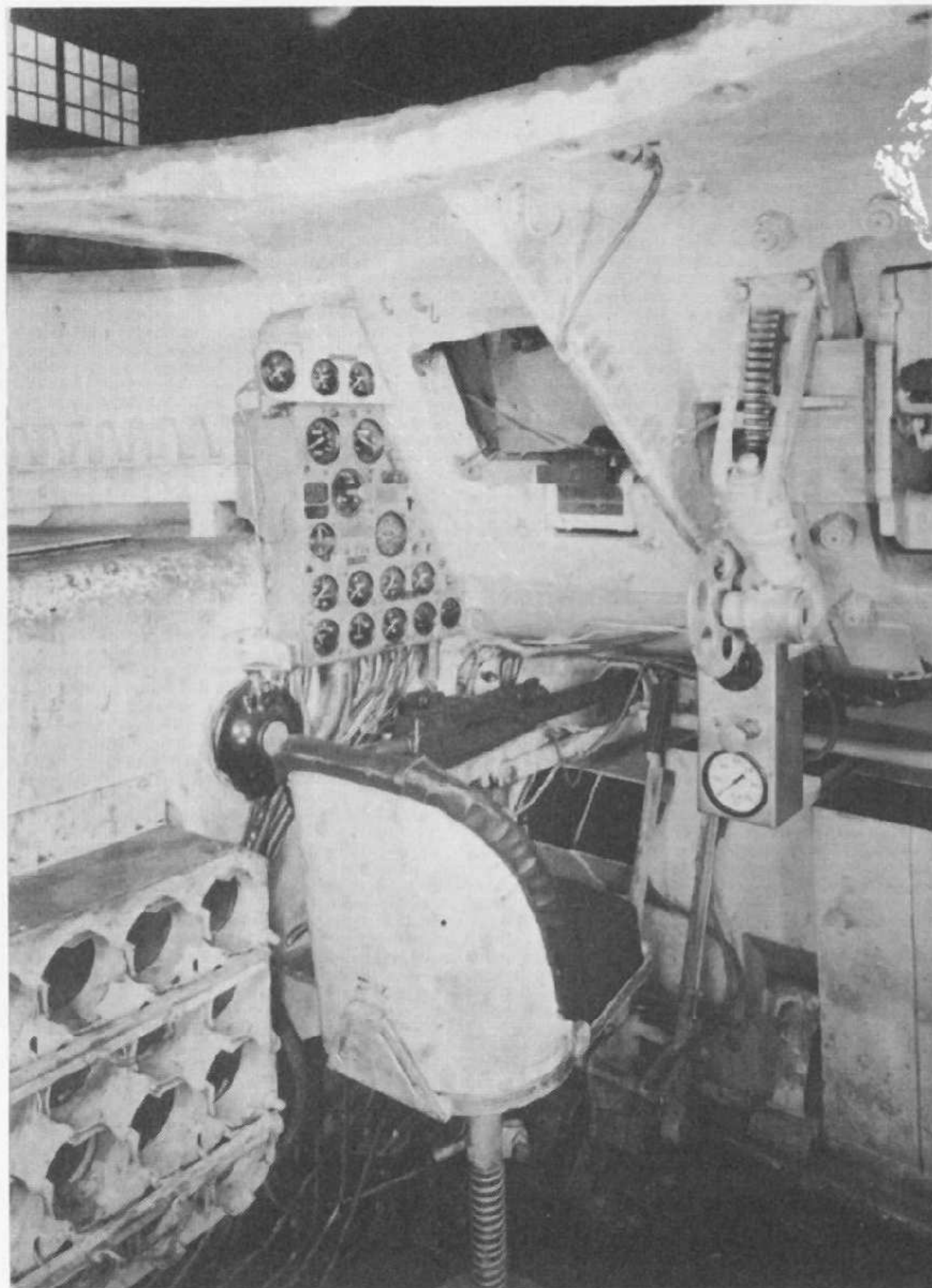
40

Of the 40, only 12 were made by Fisher Body Division and the rest by Baldwin Locomotive. A T1E4 with welded hull, cast turret, four diesel engines and two torquematic transmissions had been contemplated but it never materialized.

Ordnance was criticized in 1943 for continuing to foster a heavier and better armed tank. The Armored Force specifically stated that the M6 was not acceptable because it lacked firepower (which was rather ridiculous in comparison with the Sherman), because the fire control equipment was obsolete, the transmission was poor and the crew compartment was badly arranged. One M6 was tested with the 90-mm gun and turret from a T26E3 heavy tank, which later became the Pershing. In it the hull stowage was rearranged to provide space for the 90-mm ammunition. The Armored Force opposed this also and the project was cancelled in March 1944.

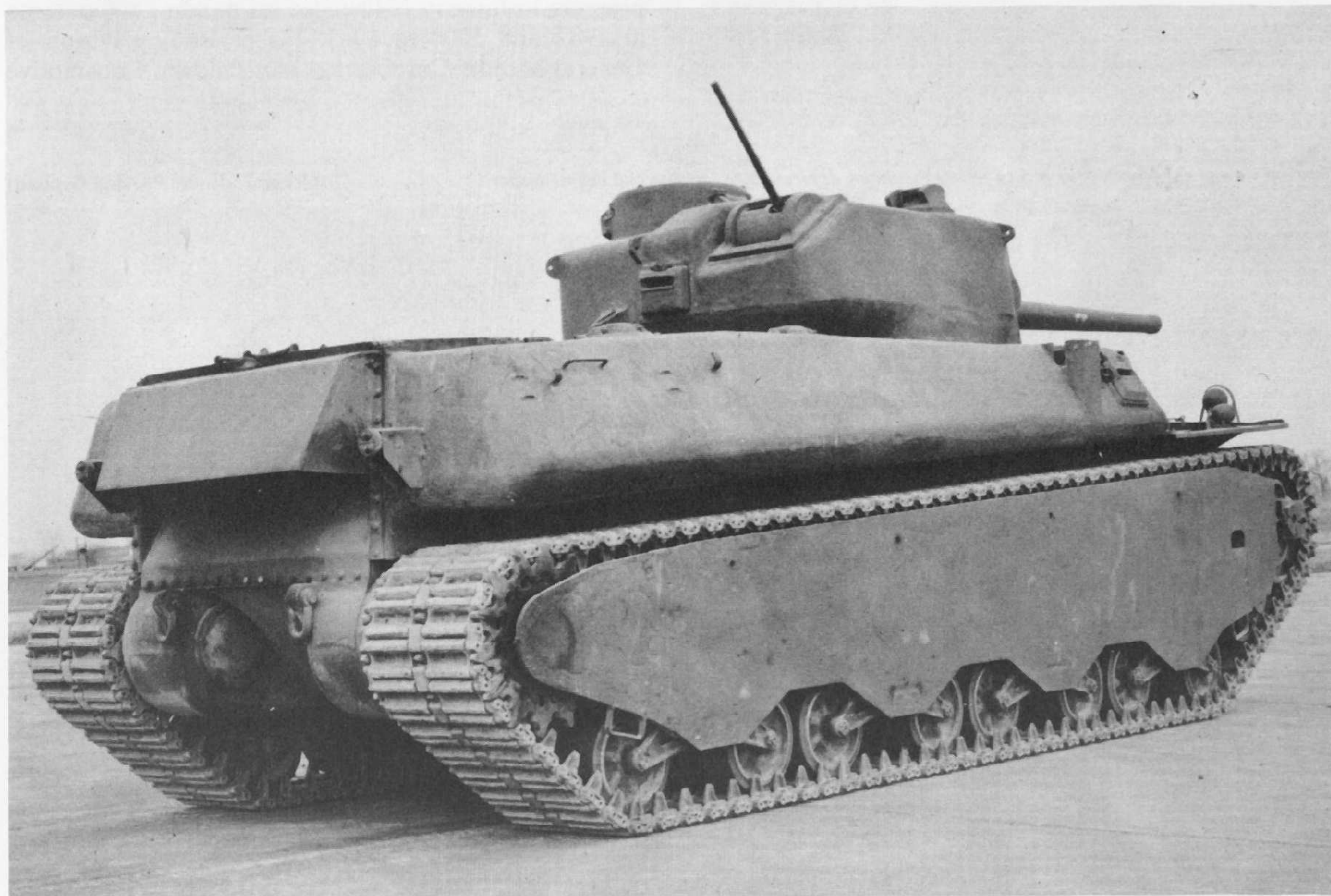
The designation M6A2 was never officially assigned but was generally accepted and used. One of these models was modified early in 1944 by mounting a specially designed turret housing a 105-mm T15E1 gun and became known as the M6A2E1. It was confidently expected that the European Theater would demand such a vehicle in order to meet the problem of the German heavy tanks. Fifteen were ordered modified in July 1944 but the project was terminated in September when the request from the European Theater was not forthcoming.

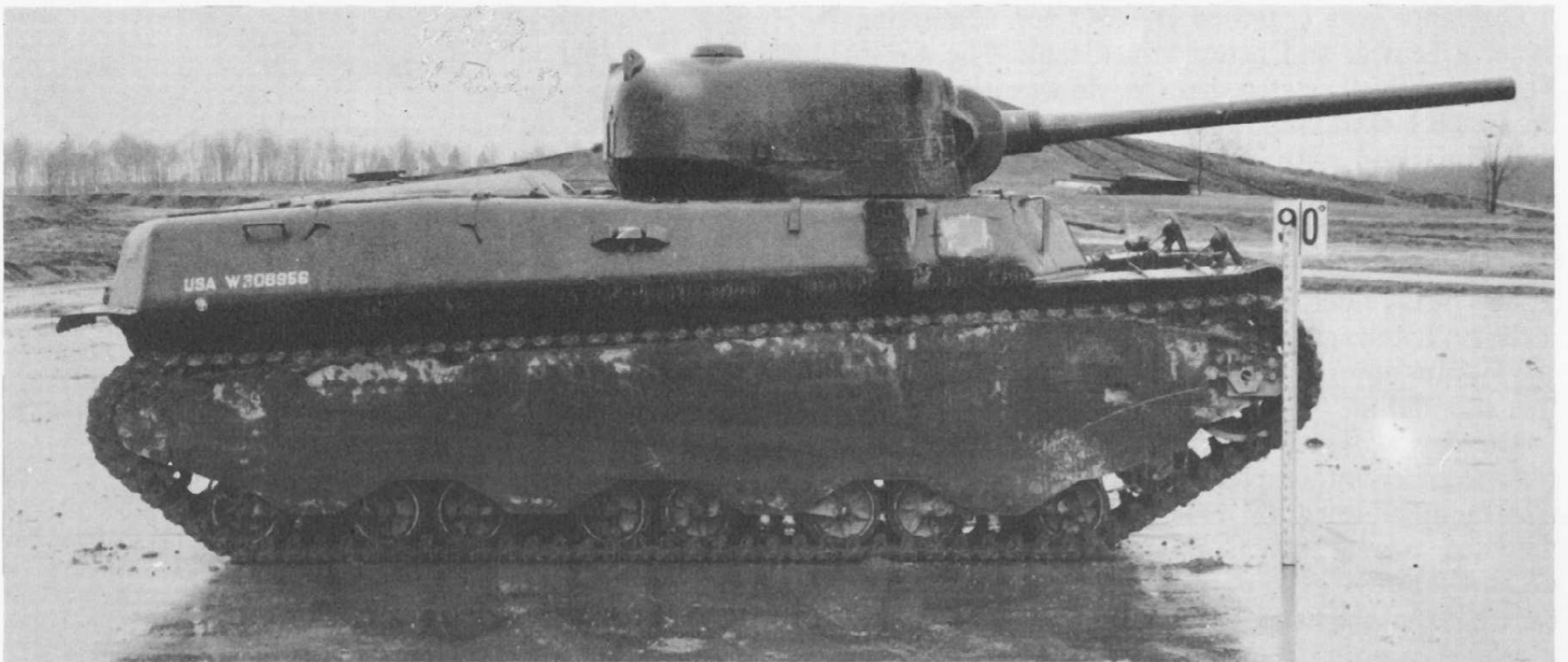
Late in 1944 Ordnance was being blamed for failing to have a heavy tank available when the Armored Force suddenly decided it needed them. But when Ordnance proposed sending Pershings to Europe, the Armored Force objected on the basis that they had not been sufficiently tested. Ordnance had to have the General Staff override Army Ground Forces in order to get them shipped. Once the Pershings were accepted, the tanks in the M6 series were obsolete. The only additional use made of them was in 1945 when two were used



The driver's position included responsibility for firing a fixed machine-gun. (U.S. Ordnance Department)

This three-quarter right rear view of the T1E2 illustrates the differences in turret and rear hull air intake from the T1E1. (U.S. Ordnance Department)





The experimental installation of the T23 turret and 90-mm gun gave a general appearance little different from the standard M6. (U.S. Ordnance Department)

for testing gun mounts for the 105-mm T15E1 gun which was intended for the T29 Heavy Tank.

Although the M6 tanks never saw combat, some of their forward looking features were applied to other tanks. Cast, and later welded, armor was used in the M4 series. The gyro stabilizer and power traverse were used in both the M3 and M4 Medium Tanks. The horizontal volute spring suspension was applied experimentally to several tanks and then to all medium tanks. The gasoline-electric transmission was used in the T23 Medium Tanks, the hydramatic transmission was applied to the M5 Light Tank and the torque converter was used in the M18 Gun Motor Carriage. And the suspension and tracks were used in one of the versions of the British A33 Heavy Tank. Thus it cannot be said that the design of the M6 was a waste.

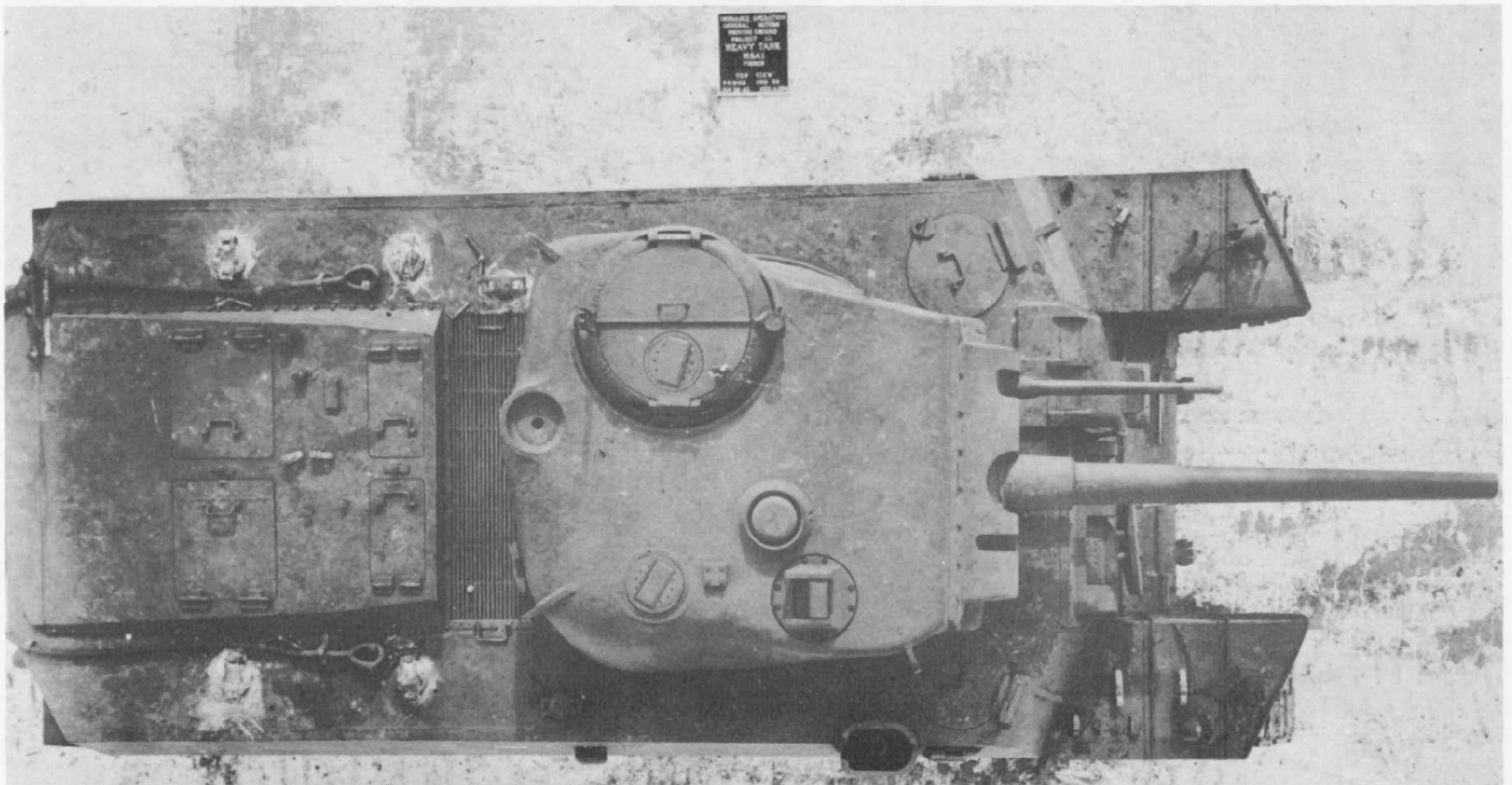
The attitude of the Armored Force initially was due to the feeling that too much shipping space was required for these giants, in that two Shermans could be loaded in the same space. But their continued opposition and later reversal of opinion perhaps can be explained only by the familiar problems of personalities and power politics.

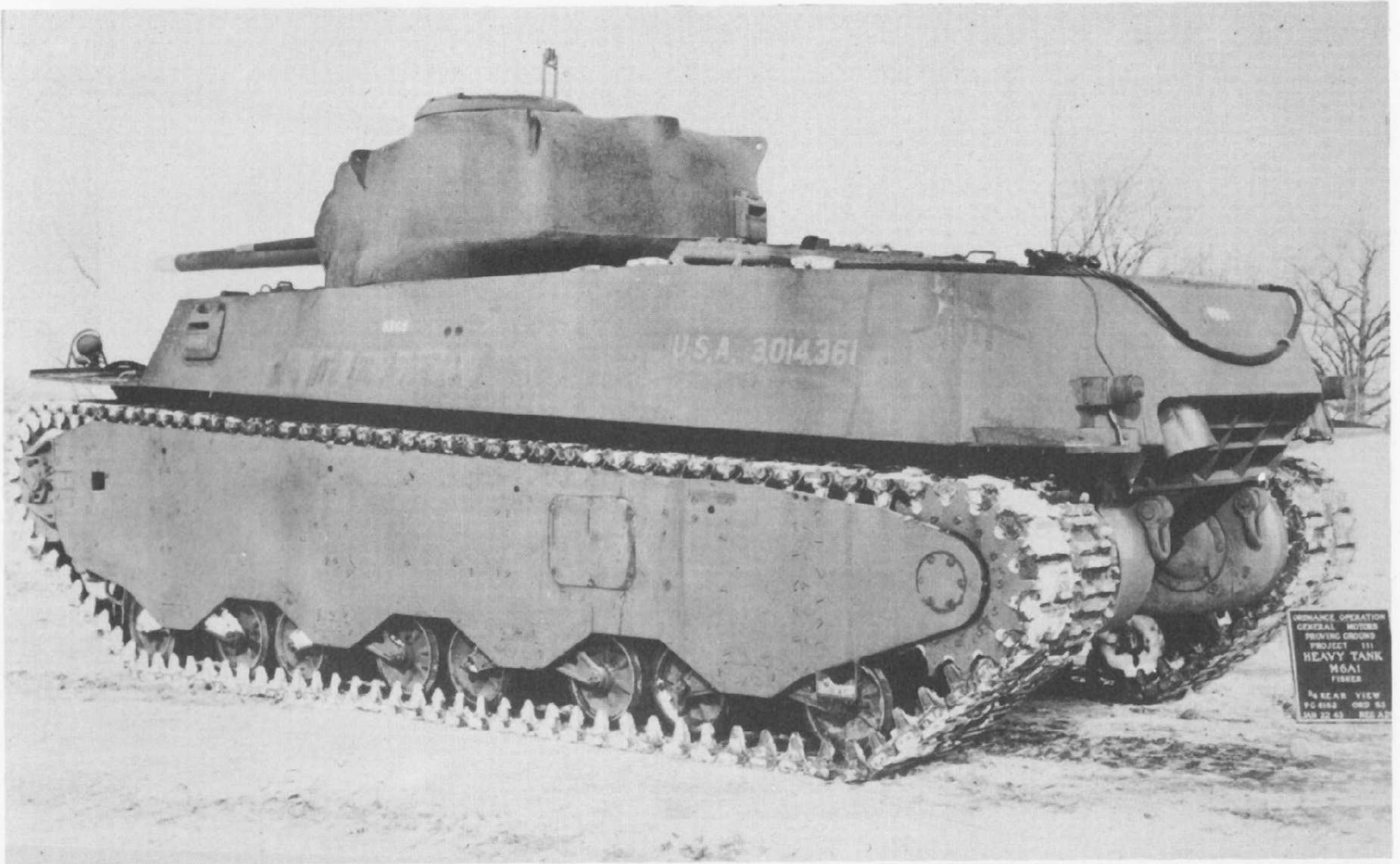
T20 MEDIUM SERIES

To re-cap: No interest in heavy tanks had been shown in the United States until mid-1940. At that time Ordnance was authorized to develop a tank which later was standardized as the M6 Heavy Tank. The President's program in January 1942 called for building 500 of these in 1942 and 5000 in 1943. Fisher Body Division of General Motors Corporation and Baldwin Locomotive

This top view of the welded hull M6A1 shows the major differences in hatches and engine louvers.

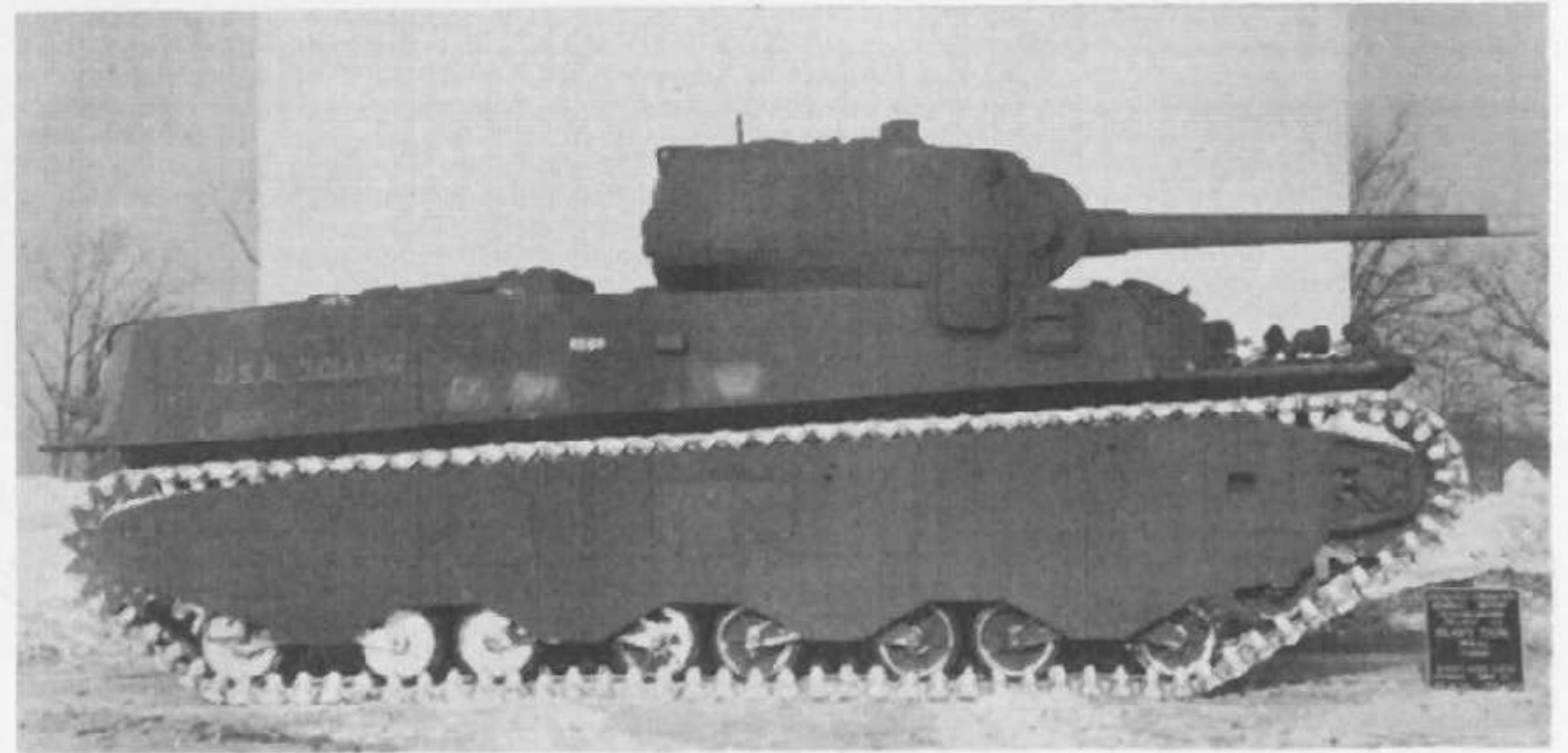
(General Motors Proving Ground)



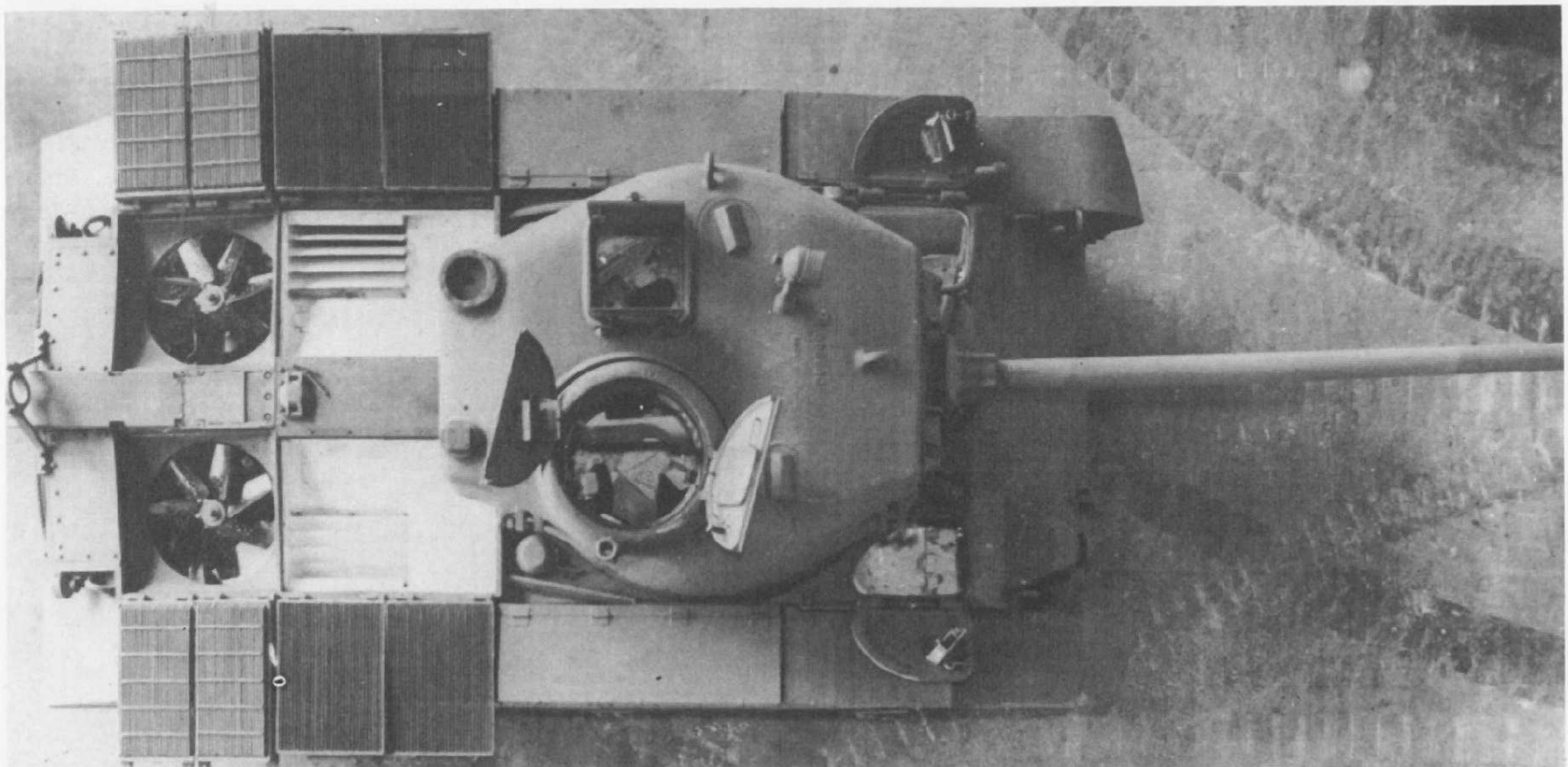


This threequarter left rear view of the T1E3 or M6A1 shows the differences in the construction of the rear end.
 (General Motors Proving Ground)

The welded hull M6A1 differed from the cast hull versions in many respects including location of escape hatches.
 (General Motors Proving Ground)



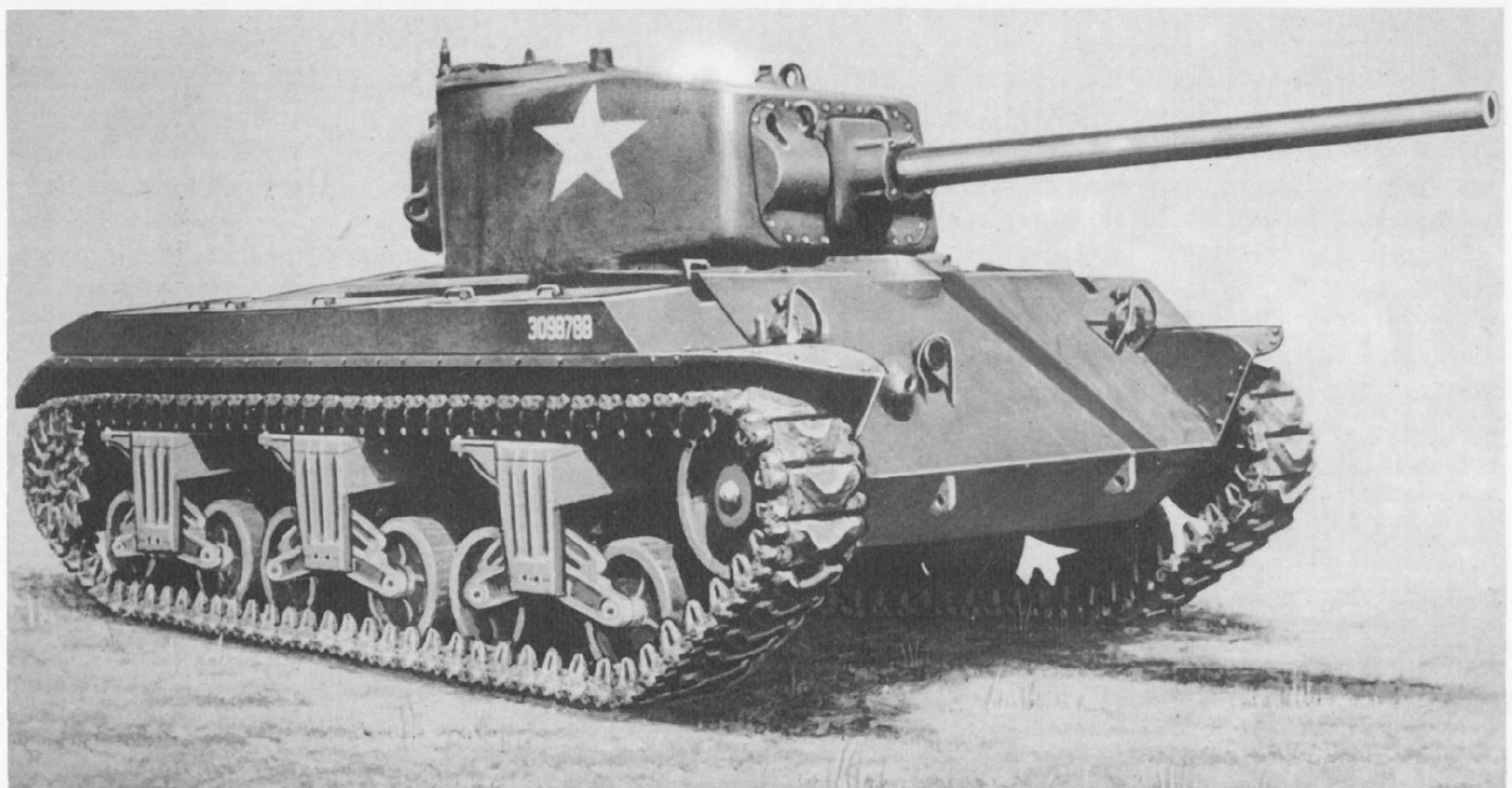
Top view of T20E3 Medium tank with all hatches and louvers opened showing radiator cooling fans.
 (R. P. Hunnicutt)





Medium Tank T22 equipped with early type of horizontal volute spring suspension and rubber chevron tracks.

(J. M. Colby)

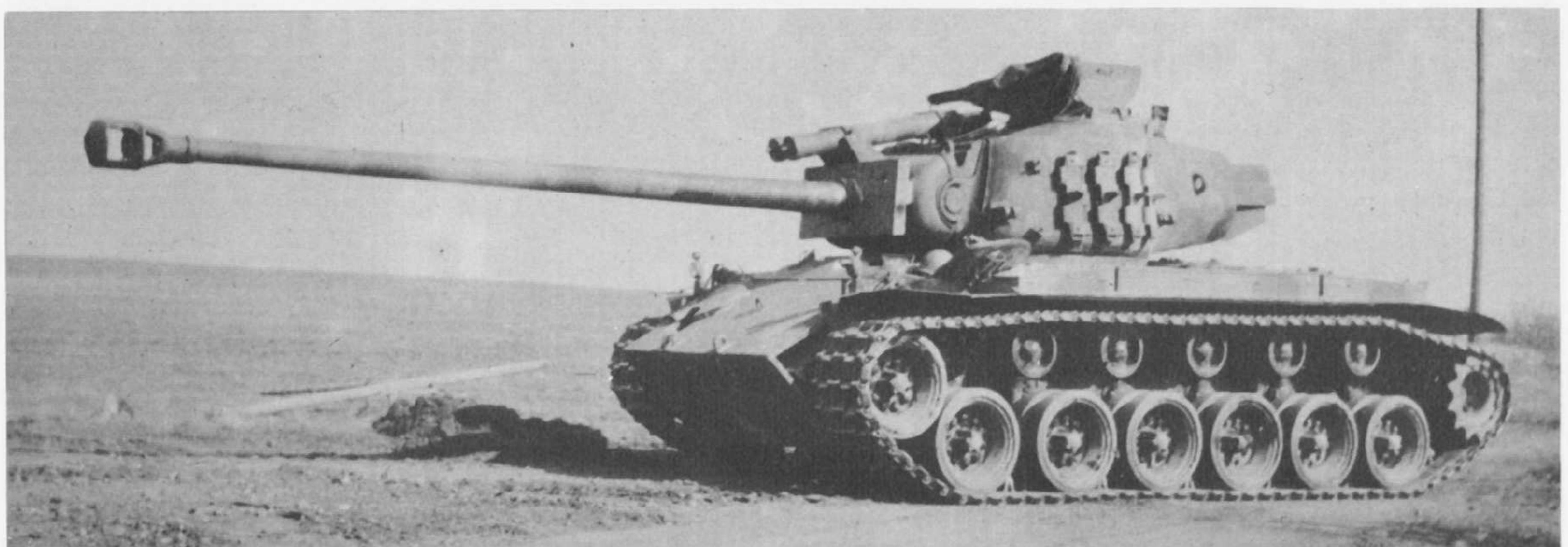


Right three quarter front view of second pilot of T23 Medium tank showing sharp angle of glacis and M4 suspension.

(J. M. Colby)

T26E1-1 with T15E1 gun and supplementary bow armor modifications made by 3rd Armored Division Ordnance maintenance.

(Elmer E. Gray)





A column of Pershing tanks passing through Wesel, Germany, on the way to the crossing of the Rhine, 1945.

(U.S. Army, S.C. 204964)

Company received contracts to build them at a combined rate of 250 a month. In September 1942 the Army Supply Program cut the total to 115 tanks. In December the Armored Force requested that production be stopped because they foresaw no need for the M6. As a result, only 40 were built, none of which saw combat. The U.S. heavy tanks which did see combat, the M26 Pershings, stemmed from medium tank development.

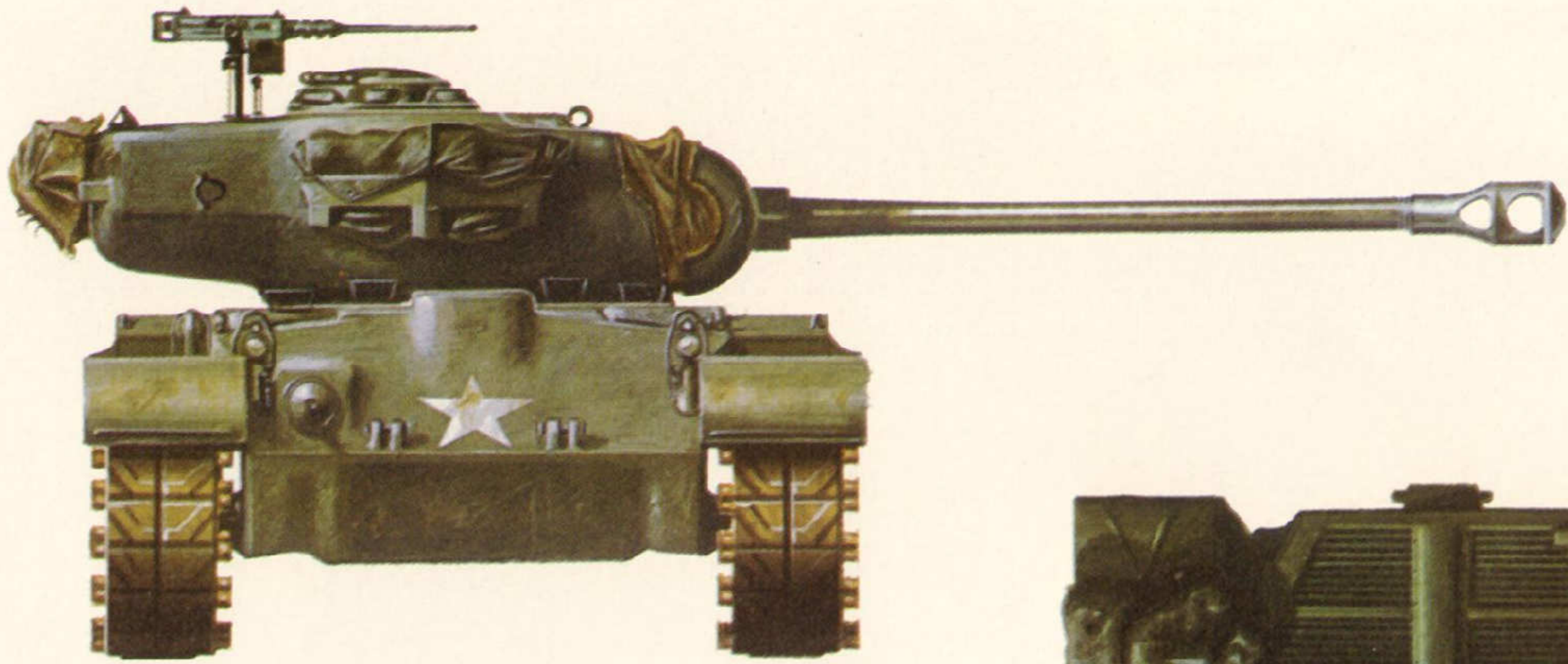
The Armored Force Board wanted 90-mm guns installed in M4A3 medium tanks. Ordnance opposed this because they felt the gun was too heavy for the tank. Army Ground Forces also opposed the Board's request and, of course, were in a position to reject it. Over the objections of Army Ground Forces, Ordnance then took the lead in mounting a 90-mm gun on a gun motor carriage in order to determine jump characteristics. The result of this was the M36. Although it used the M4 chassis, the thinner armor did not present the weight problem which would exist if the same weapon were mounted on the M4.

Ordnance did succeed in getting the Services of Supply (later Army Service Forces) to approve in May 1942 the building of pilot vehicles of some new designs referred to as the T20 series. These were designs having potentially better characteristics than the M4 series and were intended to provide, in addition, a means of testing various combinations of transmissions, suspensions and larger guns. After a wooden mockup was made by Fisher, a contract was let in September 1942.

The pilots were to have interchangeable turrets, one to be the T20 with a 76-mm gun, one the T20E1 with a 75-mm automatic gun, and one the T20E2 with a 3-inch gun. Later this plan was changed and only a T20E1 and a T20E3 were completed, the former in June 1943.

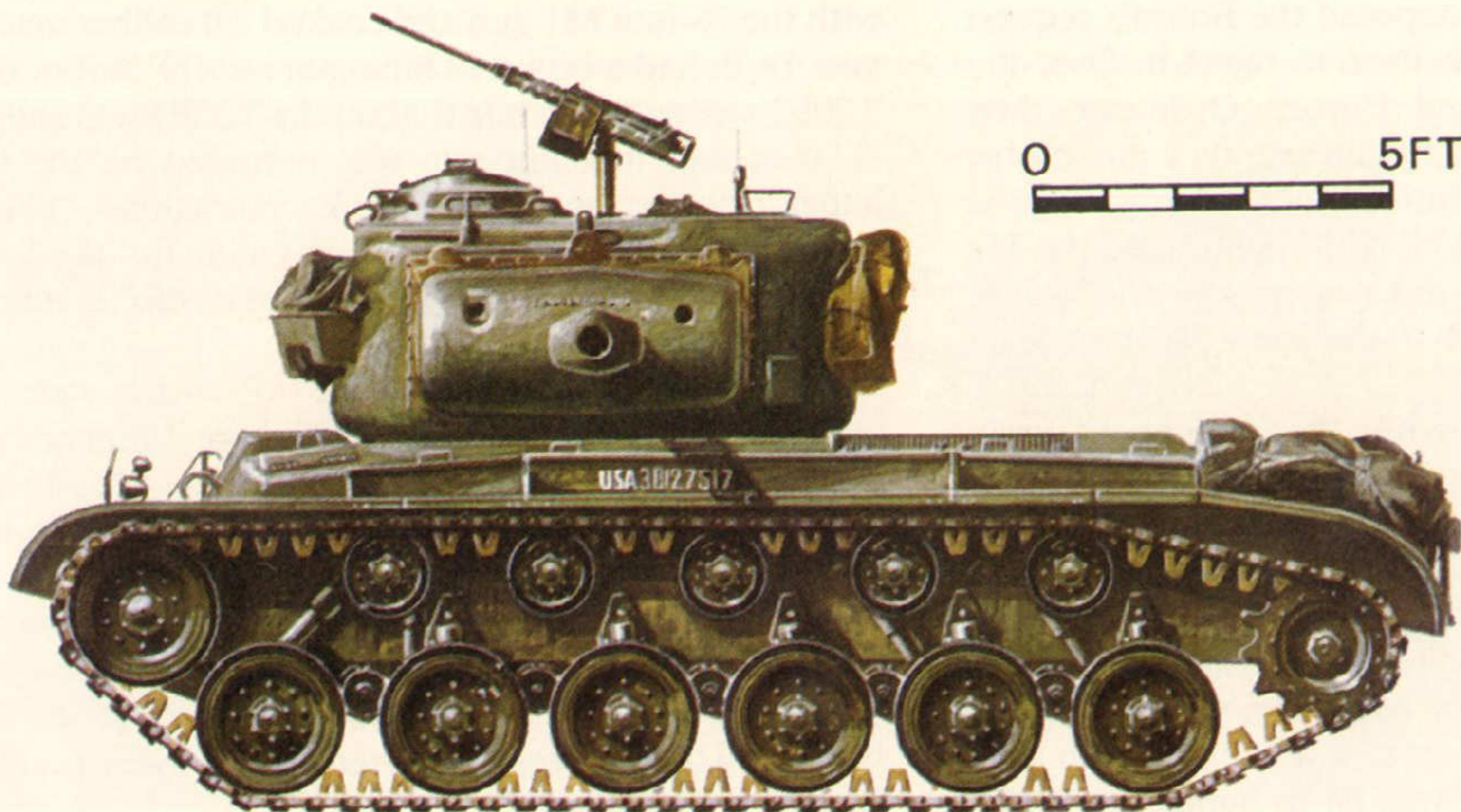
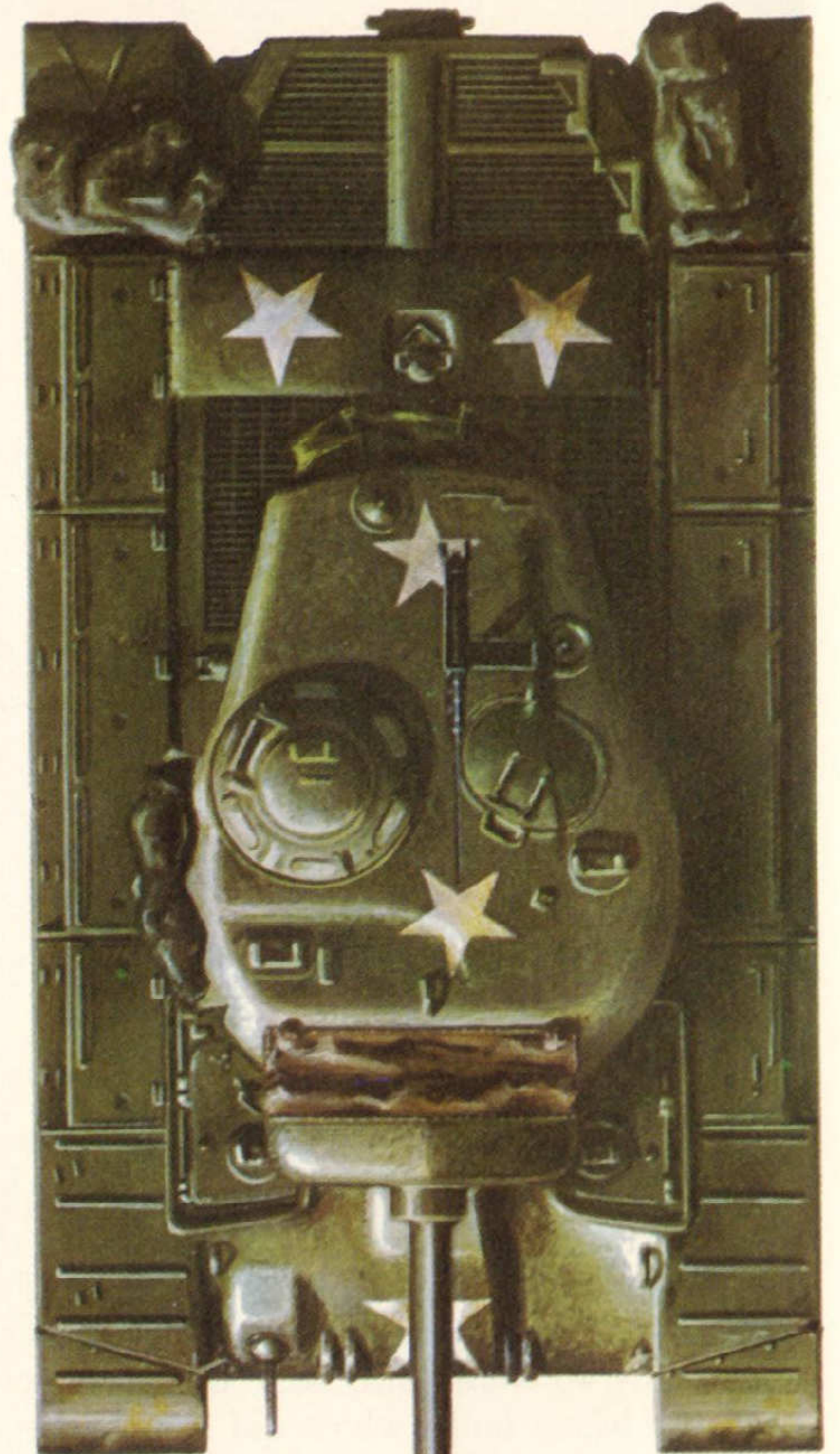
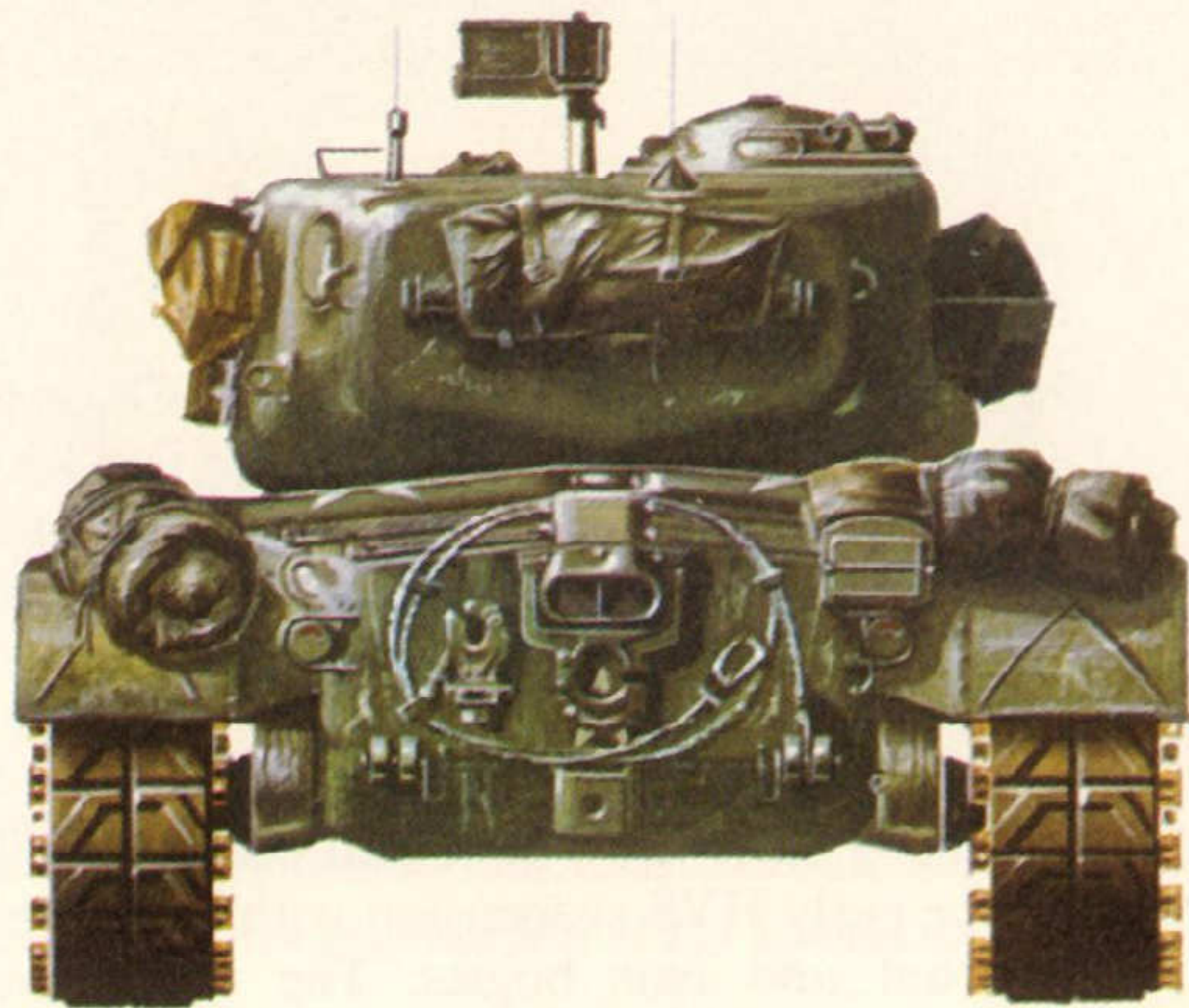
These tanks were to possess the mobility of the M4 but with greater fire power and protection. The T20E1 had the early HVS suspension with shock absorbers on the front and rear bogies. The second vehicle, the T20E3, used torsion bar suspension. Both were armed with the 76-mm M1 gun and coaxial .30 caliber machine-gun. Both had a bow machine-gun but the mount on the T20E1 was square while that on the T20E3 was rounded. A .50 caliber machine-gun was mounted on the turret hatch ring for use by the tank commander. The cast turret had a rectangular double hatch for the loader. Armor was $3\frac{1}{2}$ inches on the turret front and $2\frac{1}{2}$ inches at 47° on the upper front hull.

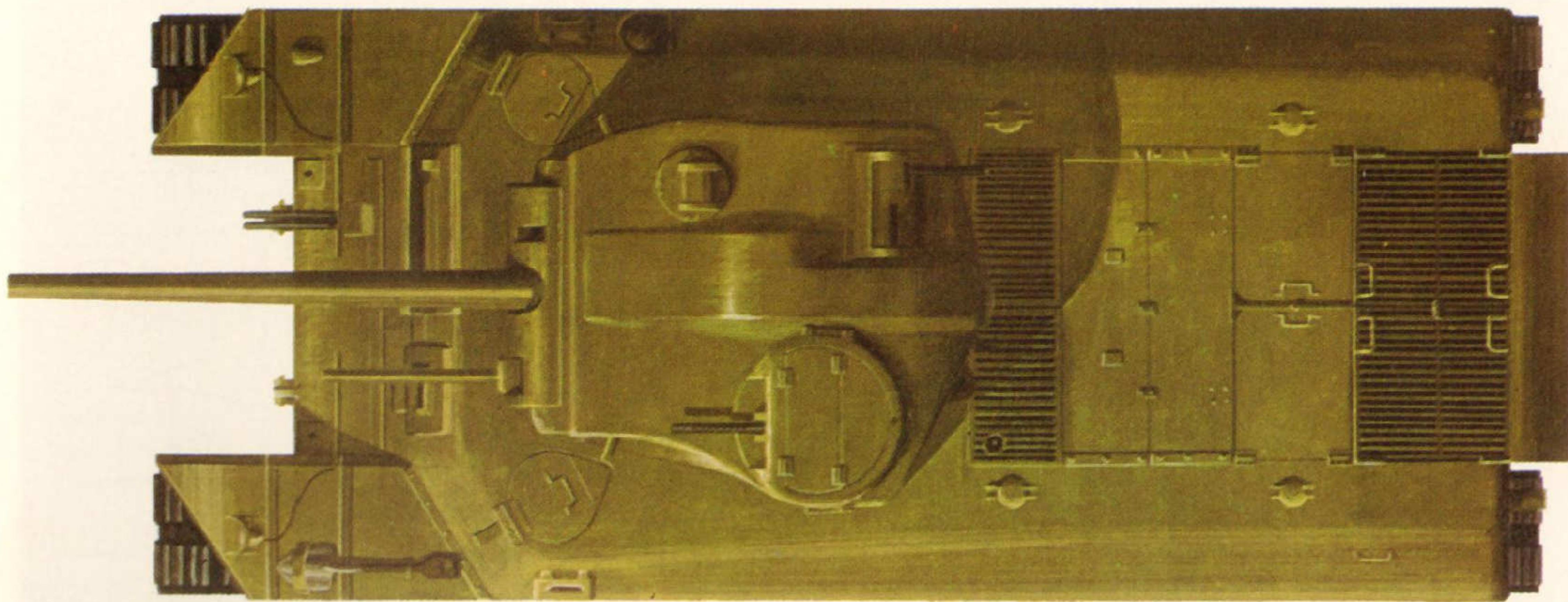
The tracks for the T20E1 were $16\frac{9}{16}$ inches wide as on the M4 while those on the T20E3 were 16 inches wide. Both vehicles were powered by the Ford GAN 500 hp V8 engine with torquematic transmission. This transmission had been developed by General Motors. It was a combination of the commercial hydramatic transmission (automatic inertial planetary) with a torque converter. The controlled differential continued to be used for steering. The engines overheated and oil leaks developed in the transmissions.



M26 Pershing in Korea

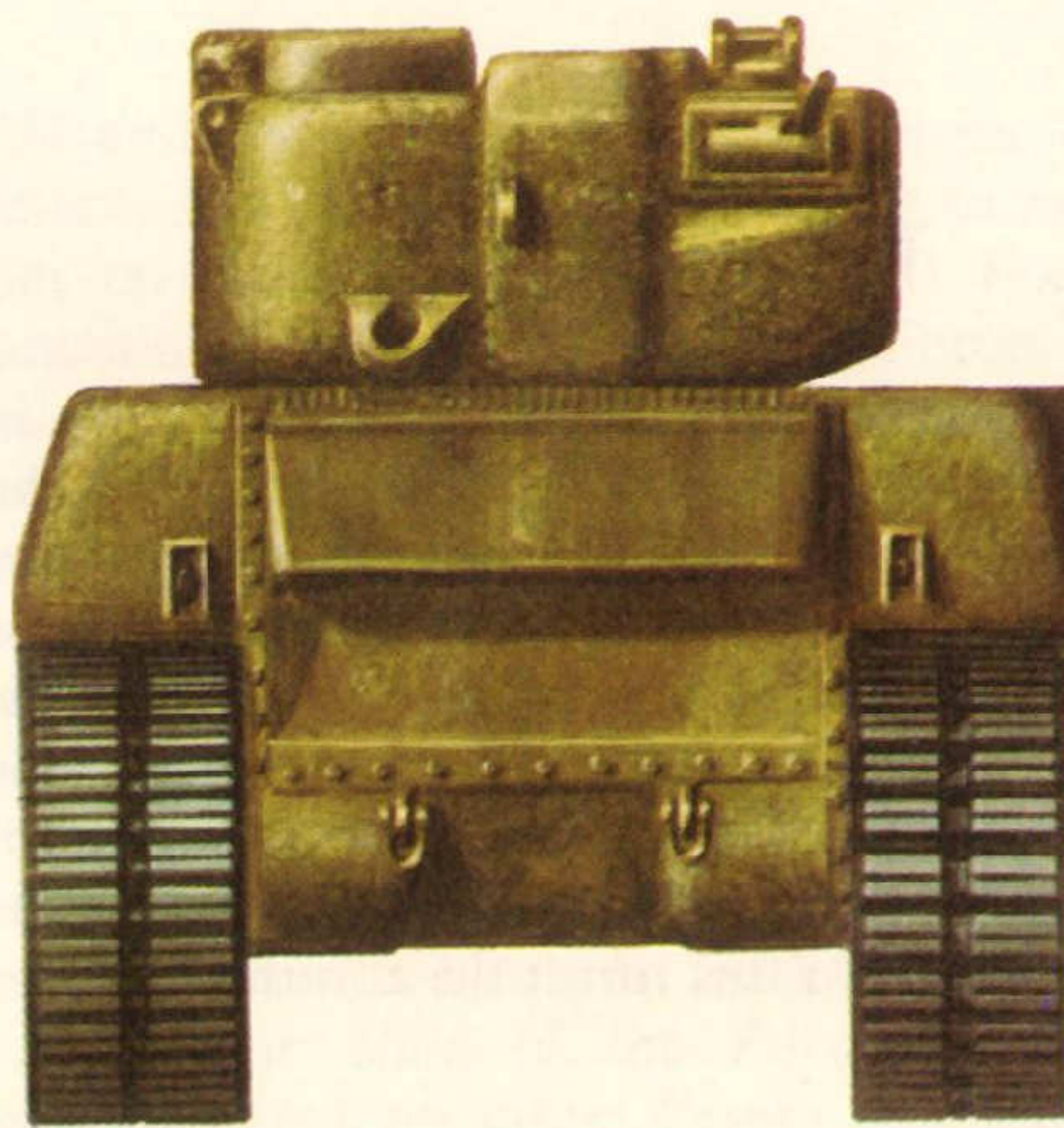
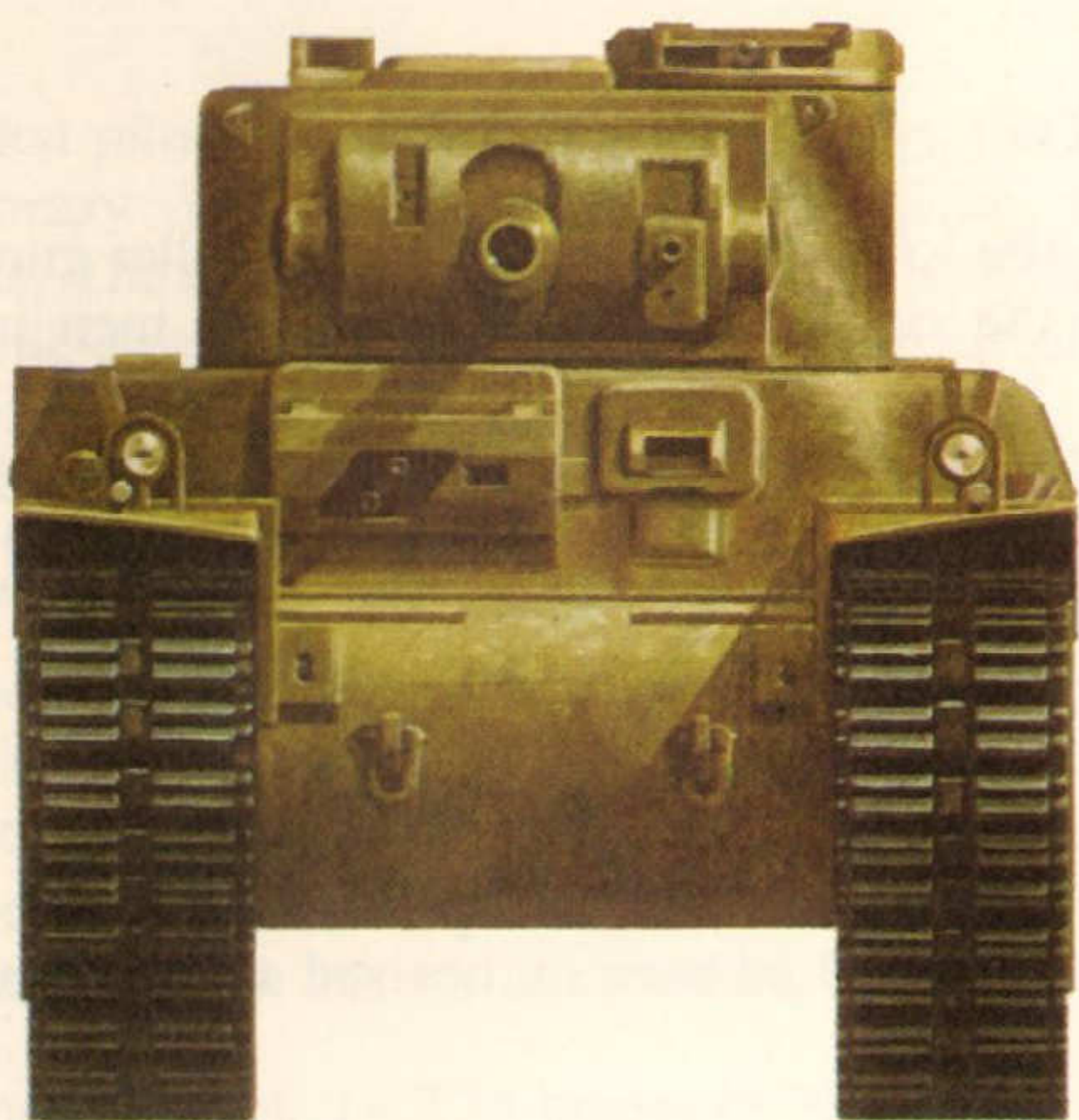
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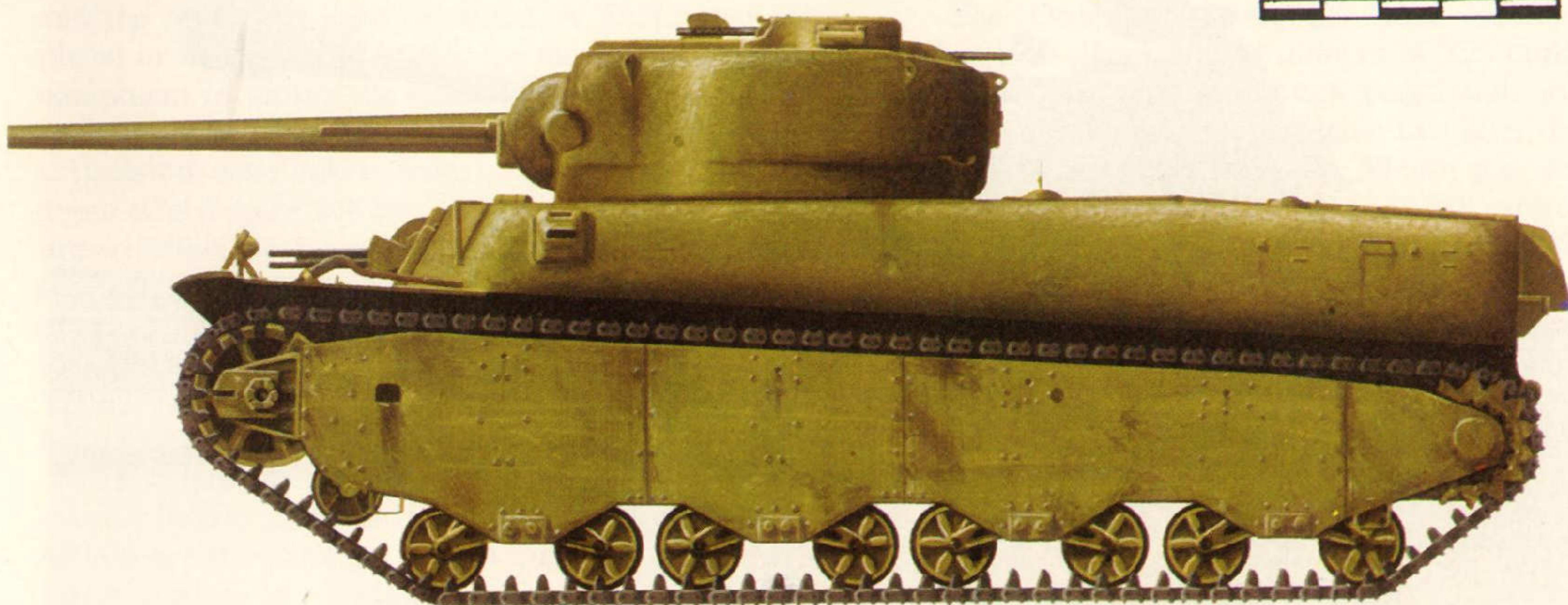


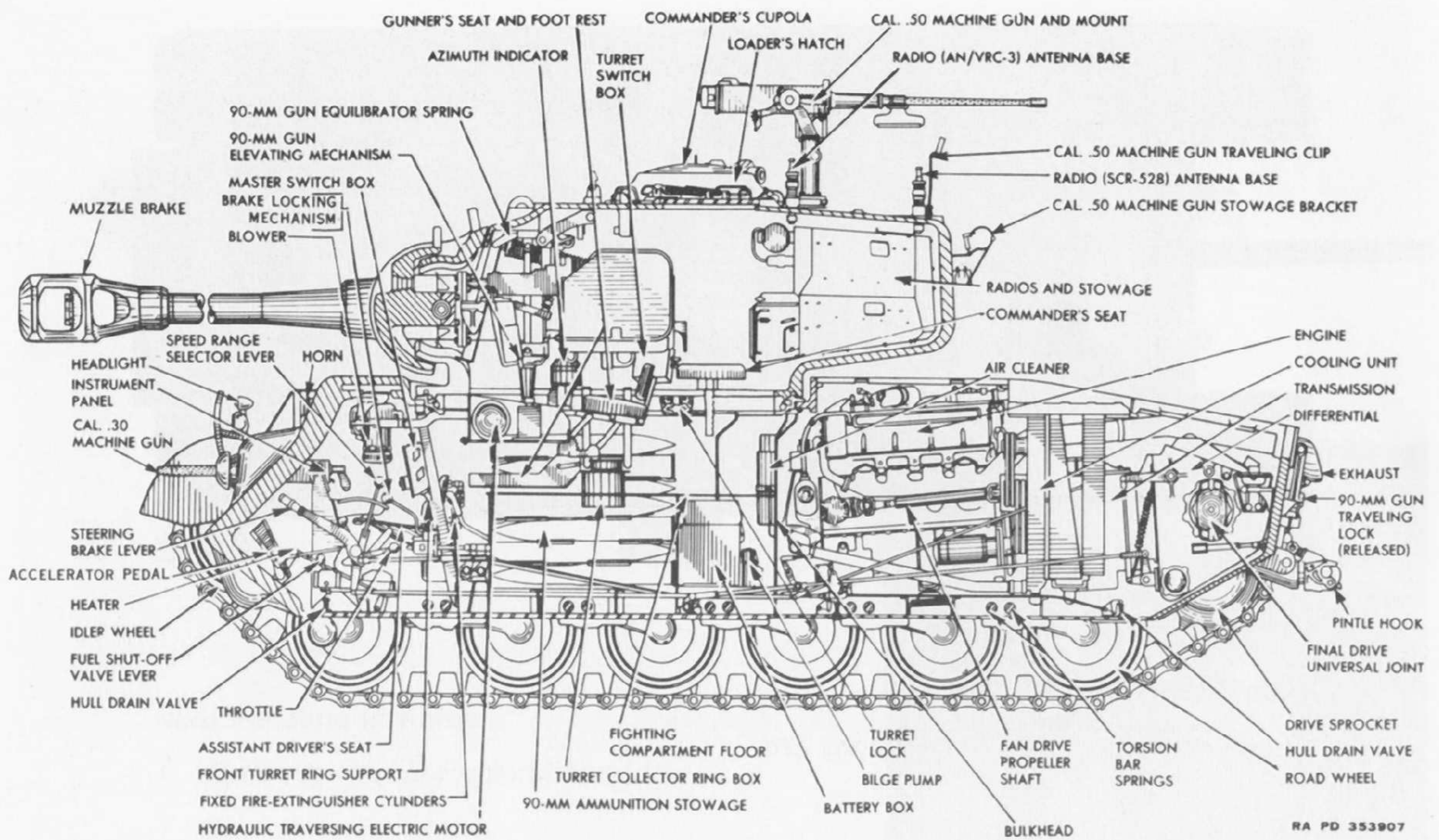
Heavy Tank M6 (T1E2)

D. Johnson © Profile Publications Ltd.



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Cross section drawing of M26 Medium tank.

(Courtesy Robert W. Forsythe)

T22 SERIES

A similar vehicle, the T22, was authorized late in 1942. Pilots numbers 1 and 2 were completed by the Chrysler Corporation in June 1943. These resembled the T20 but had the M4 five speed transmission. The hulls were similar to the T20E1 and both vehicles had the early type HVS suspension. Pilot No. 1 later became the T22E1 by the installation of a new turret with an automatic loader for the 75-mm gun made by United Shoe Machinery Company. In this turret the commander was

moved to the left side and there was a smaller gunner's hatch on the right, there being only two men in the turret.

The automatic loader was found to be unreliable and no further development took place. A T22E2 armed with a 3-inch gun was designed but not built. Again transmission troubles plagued the designers.

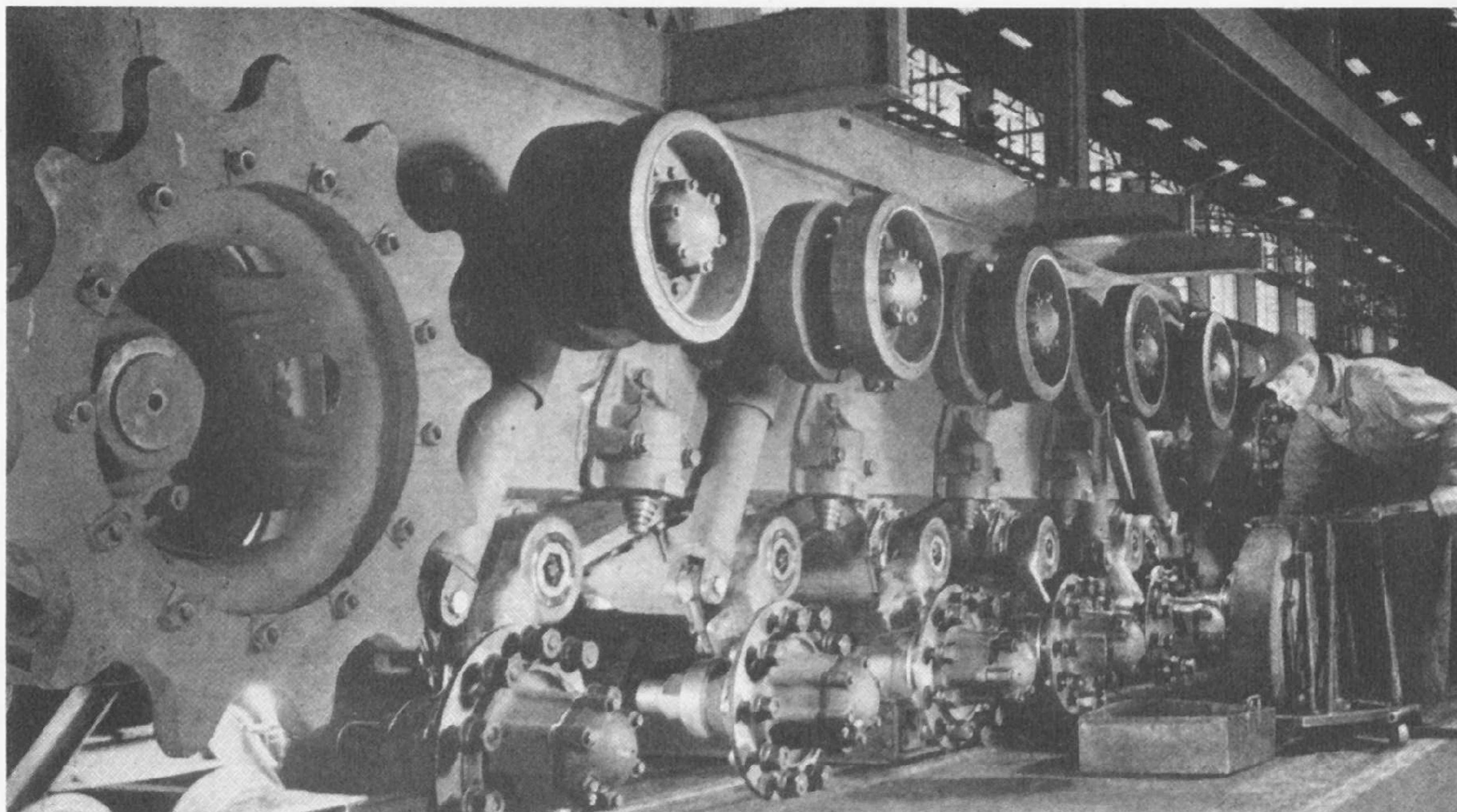
T23 SERIES

Curiously, the T23 was completed before the T22 although the latter had been authorized a month earlier.

Three quarter right front view of T26E3 Medium tank showing canvas covers and tarpaulin and with T80E1 steel track.

(U.S. Ordnance Department)





Factory view of M26 tank showing details of suspension prior to installation of bogie wheels and tracks.

(General Motors Corporation)

The first pilot came off the line in January 1943. It had a temporary welded turret. Later vehicles had cast turrets. The major difference in the T23 was the use of a gasoline-electric transmission and the use of the M4 suspension with the $16\frac{9}{16}$ inch track.

In the production vehicles, of which 250 were ordered, the gun mount became the T80 (M62) as used on the M4 tanks which were armed with the 76-mm gun, but the gun was the M1A1 instead of the M1 gun of the pilot vehicle. The gun ring hatch was moved to the loader's side on the left and the tank commander now was provided with a vision cupola. This was the turret which was also applied to current production of M4 tanks.

Production of the T23 began in November 1943 and all were completed by January 1945. Several variations were planned. The T23E2 was to have a 3-inch gun and torsion bar suspension. The T23E4 was intended to have fitted to it the HVS suspension, but it was never built and the other two were cancelled. A T23E3 was completed in August 1944. In this the turret and most of its equipment including the transmission were taken from an early T23 while the 19 inch track and torsion bar suspension were taken from a medium T25E1 tank, about which more will be said later. Both three and five upper rollers were seen on this version. By eliminating the turret basket, the 76-mm ammunition stowage was increased from 64 to 84 rounds. A proposal by Ordnance to standardize the T23E3 as the Medium M27 and the T20E3 as the M27B1 was made in July 1943, a year before the former actually was produced; it was denied.

The weight of the T23 was badly distributed. It was overly heavy and had excessive ground pressure. Although the vehicle performed quite well the Armored Force doubted the reliability of the electric drive under combat conditions.

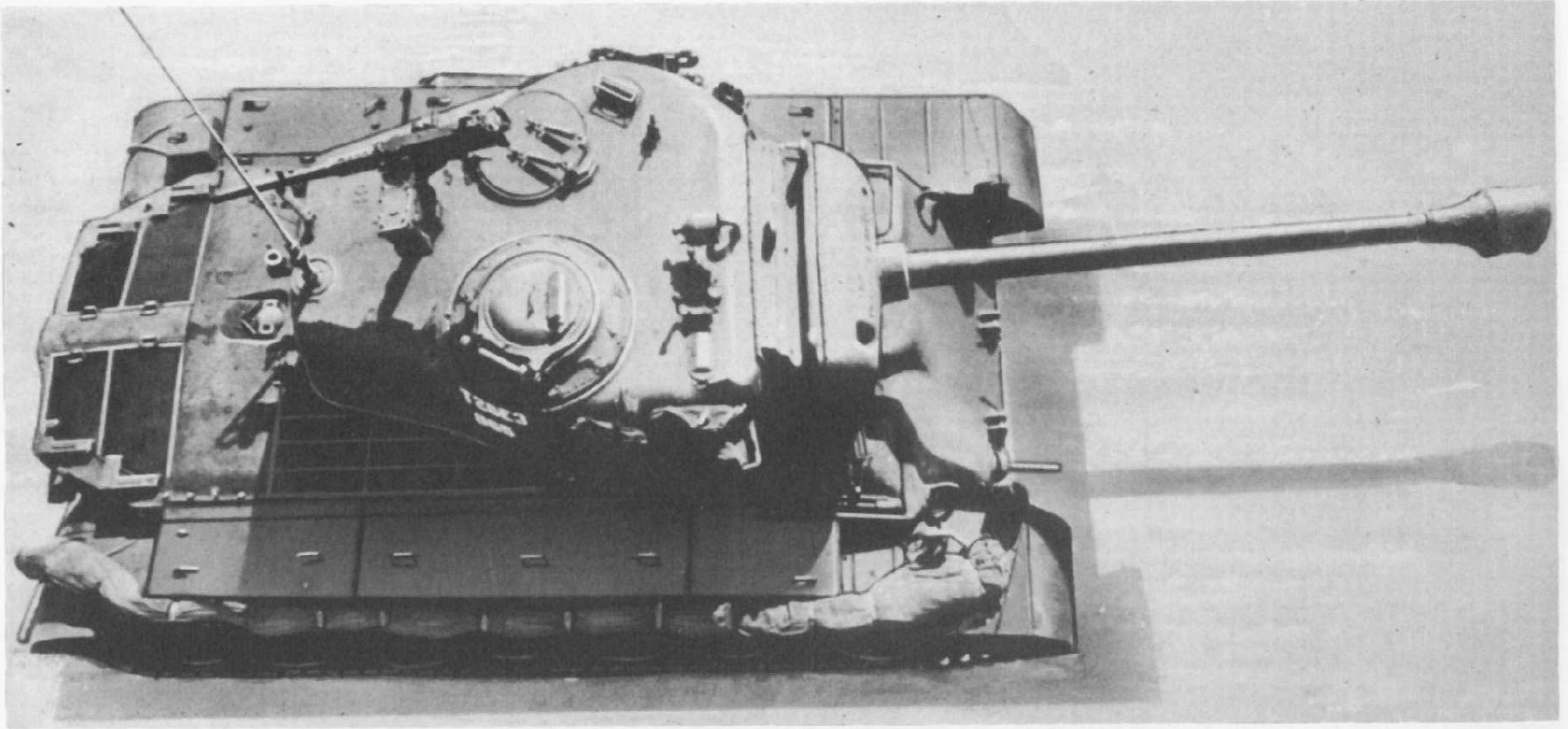
Through tests made of the 90-mm gun mounted on the

T54 and T54E1 Gun Motor Carriages, Ordnance had determined that it would be feasible to mount a 90-mm gun on the T23 but the Armored Force refused to sanction it and Army Ground Forces continued to favor the M4. The M4 was easy to handle, easy to ship and fitted in with the doctrine that exploitation was the proper role for armor. The role of combatting tanks was held to be that of the Tank Destroyer Force so it was felt that tanks should not engage in tank versus tank combat. In addition, the Armored Force wanted development to continue in the form of still later designs, the T25 and T26, with a 75-mm gun in the former and a 76-mm gun in the latter. And this view was held in spite of the European Theater having requested that no more 75-mm gun tanks be shipped there after 1944.

T25 AND T26

The Ordnance Committee had recommended in May 1943 that a limited number of T23 tanks be tested with 90-mm guns. Although permission was refused, approval was given to build the two later designs. The T25 was to be armed with a 90-mm gun and the T26 was to be similarly armed but with armor an inch thicker and tracks four inches wider. It was hoped that the T26 would be an answer to the German Tiger. An order was authorized, forty to be T25 and ten to be T26.

The T25 was an outgrowth of the T23 with the principal differences being in the turret and suspension. A larger turret was needed in order to handle the 90-mm T7 (M3) gun in a T99 mount. The suspension and 23 inch tracks were those used in the later M4 tanks. The hull resembled that of the T23 but it had longer narrower hatches and the roof was ribbed in order to carry the heavier turret. This also permitted removal of a rear hull brace, thus providing additional ammunition



Overhead view of M26 Heavy tank showing commander's cupola and loader's hatch and shape of cast turret.

(General Motors Corporation)

stowage space. The electric drive of the T23 was to be used.

In August 1943, after the rejection of the electric transmission by Army Ground Forces, Ordnance decided to convert to the torquematic transmission, most of the "bugs" of which by now had been eliminated. These were to be the T25E1 and T26E1. In the following month, Ordnance urged authorization immediately of 500 T25 and 500 T26 in order to assure delivery in 1944, but the Army Service Forces would not concur.

The T25E1 used torsion bar suspension with a 19 inch center guide track. Forty were completed by Fisher between January and May 1944. The pilot T26E1 with 24 inch track was completed in January 1944 and 250 were authorized. Ten vehicles were delivered between February and May 1944. One of these had an experimental installation of a T15E1 high velocity gun which had been modified to use fixed ammunition. This was the T26E1-1.

T26 SERIES

The shortcomings of the 76-mm gun in the M4 tank had been recognized by users in Europe following the Normandy landing in June 1944. The Armored Force immediately requested high priority for the T26E1. Ordnance recommended that an order for 1500 be placed. The Armored Force recommended 500 but Army Ground Forces refused to approve either request; later 250 were ordered.

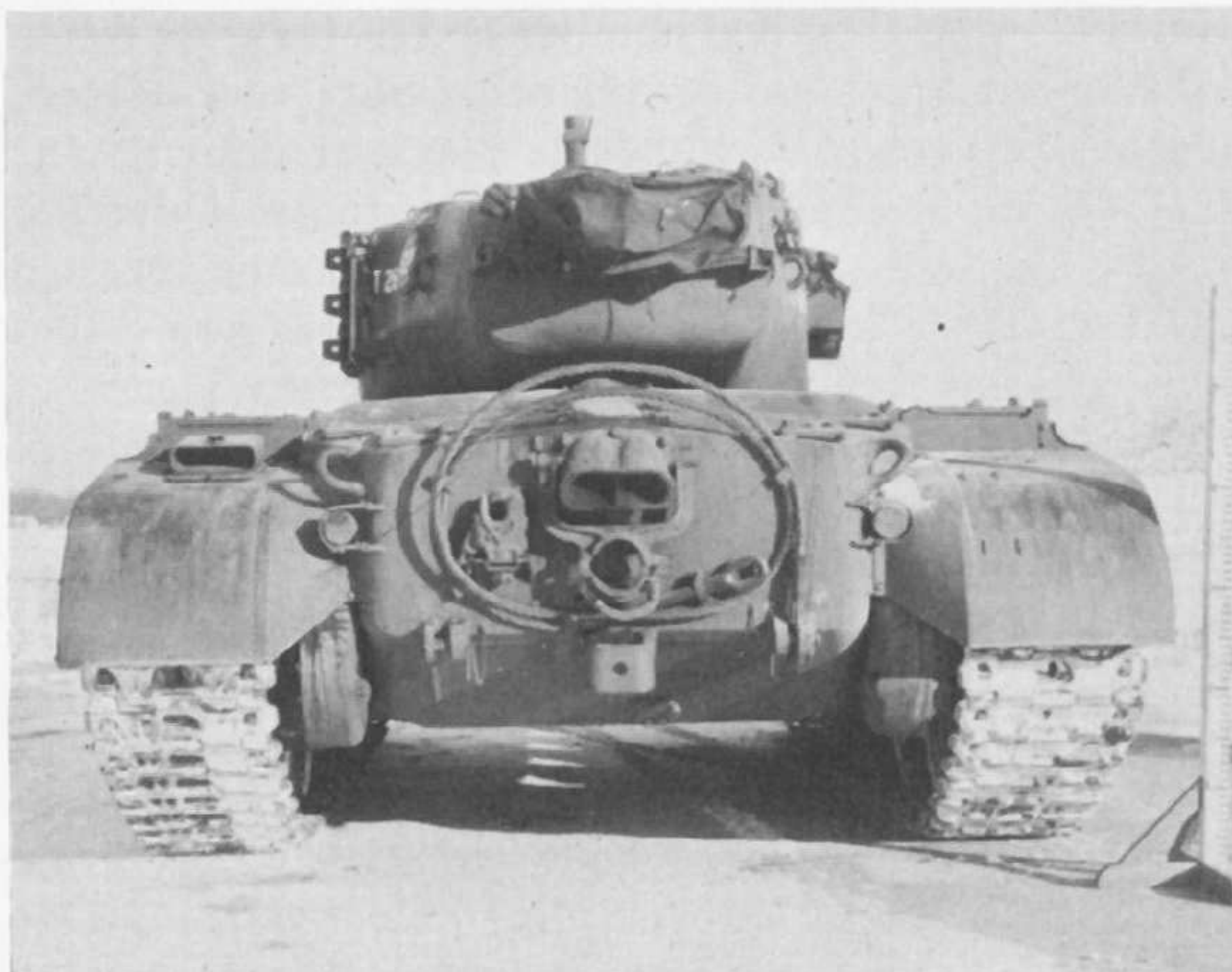
After the production of the first ten T26E1's, the need for more ammunition stowage was recognized and design changes were made to provide it in the T26E3. The T26E2 was the T26E1 with a 105-mm L/25 M4 howitzer in an M52 mount. Because the gun was lighter, the armor on the turret front and the shield were increased for proper balance. After demonstration it was standardized as the M45. Gyro-stabilization was added and production began in July 1944.

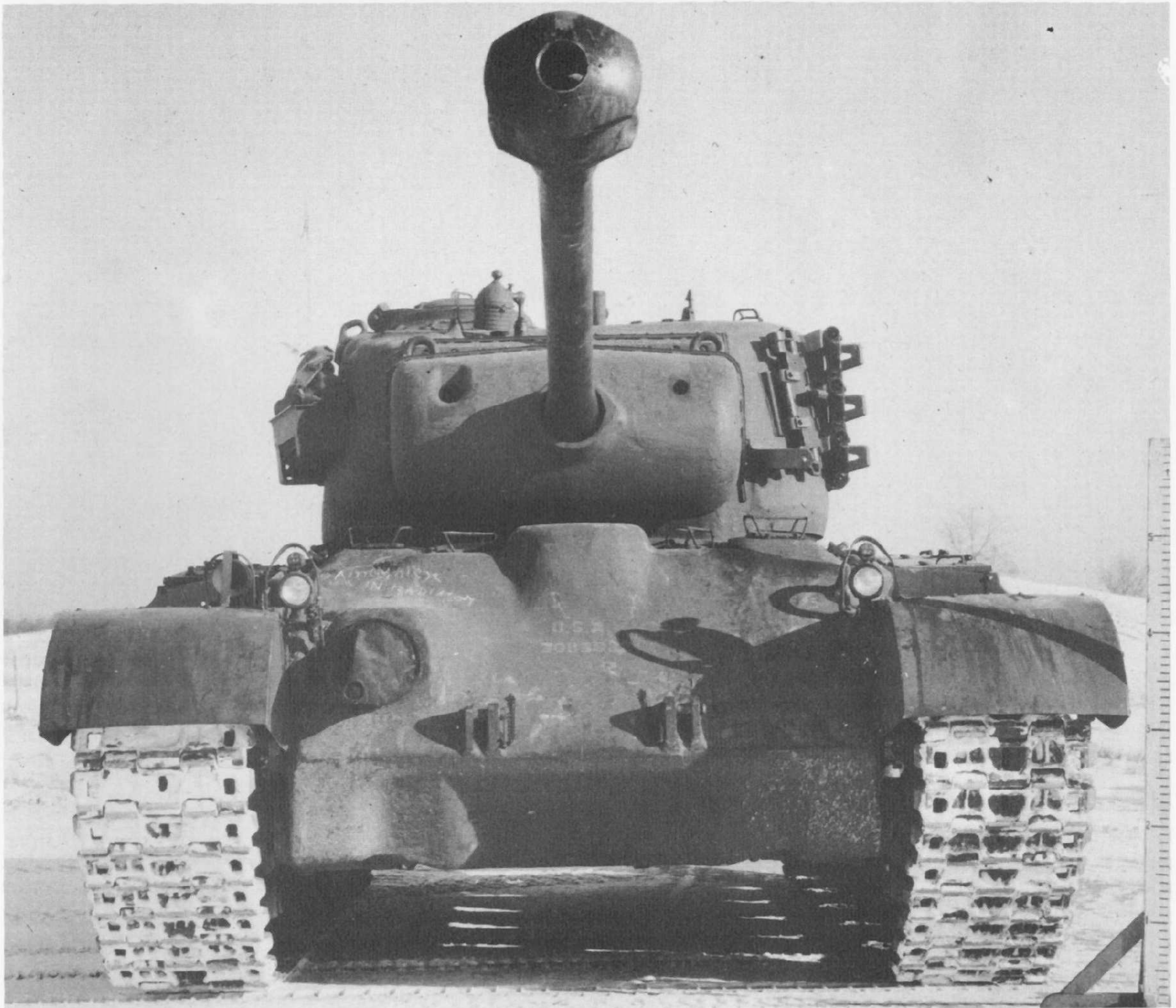
The T26E3 was a T26E1 modified after test to add a muzzle brake to the gun as well as to increase ammunition stowage as already mentioned. Ordnance proposed that the T26E3 be standardized but Army Ground Forces did not concur because the Armored Force did not consider it had been tested enough to be considered battle-worthy.

In June 1944, after a demonstration at Aberdeen Proving Ground, Ordnance was authorized to reclassify the T26E1 and T26E3 as heavy rather than medium tanks. Shipment of the first twenty T26E3 tanks to the European Theater was proposed but Army Ground Forces demanded that the first 20 be held for test by the Armored Force. Over the opposition of the Armored Force, Ordnance succeeded in getting General Staff backing to ship 20 of the first 40. These reached Europe before the end of January 1945 and in that month Army Ground Forces declared the T26E3 to be battle-worthy.

The T26E4 was an M26 with a long 90-mm T15E2 gun with special equilibrators. It had been necessary in the T26E1-1 tank to mount the equilibrators outside the turret and the redesign into the T15E2 made possible the placing of the equilibrators on the inside. This L/73

Rear view of T26E3 Medium tank under test showing folded-down travelling lock and towing pintle. (U.S. Ordnance Department)





Front view of T26E3 Medium tank undergoing test prior to standardization as M26 Heavy tank.

(U.S. Ordnance Department)

M26 Medium tank with experimentally mounted T99 Multiple Rocket Launcher.

(U.S. Ordnance Department)





Three quarter left front view of M45 (T26E2) Medium tank which proved to be very useful in the Korean War. (U.S. Ordnance Department)

gun in a T119 mount used separate loading ammunition. The T26E5 had considerably thicker armor in the bow and on the front of the turret. As a result its weight increased to 51 tons, but the ground pressure was decreased by adding 5 inch extended end connectors to the 23 inch track. Five of this model were made.

M26 PERSHING

After conferences in Europe, the T26E3 tanks now known as General Pershings, were assigned to the 12th Army Group where they were in turn assigned to the First U.S. Army, being divided equally between the 3rd and the 9th Armored Divisions. Training was initiated, organized around the team of civilian and military experts sent over to introduce the Pershing. The enthusiasm produced by this greatly improved tank led to demands that more be shipped. In March 1945 the T26E3 was standardized as the M26 and as of March 23, 210 had arrived or were on their way. By the time

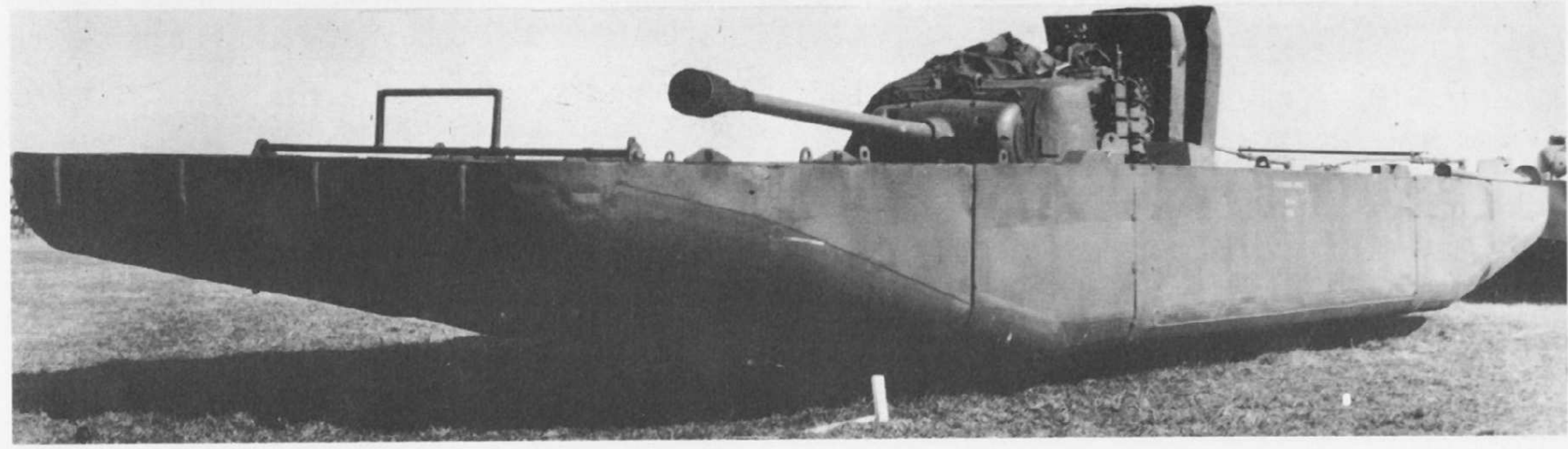
they arrived, however, the armies were moving so rapidly that few were able to catch up. On VE-Day there were 310 in Europe, 200 of them issued to troops; but only the first 20 saw any action. Among these were the ones involved when a unit of the 9th Armored Division reached the Remagen Bridge on March 7, 1945.

One 90-mm T15E1 L/73 "needle gun" reached Europe. This was on the T26E1-1 which was further modified in Europe to add supplementary armor plate to the vehicle.

In the Pacific Theater the Okinawa landing took place on April 1, 1945. By early May the tank users were demanding something better than the M4. In mid-May twelve M26 tanks were requested from the United States. They were shipped but not received until August and saw no combat.

Production of the M26 Heavy Tank took place at the Detroit Tank Arsenal (Chrysler operated) and the Grand Blanc Tank Arsenal (Fisher Body Division of General Motors Corporation operated). Between

M26 Medium tank fitted with T8 swimming device and ventilation stack kit. (U.S. Ordnance Department)





Canadian Iroquois flame gun in T35 Flame tank, a de-turreted M26 tank with special turret and T84E1 rubber tracks.

(W. R. Bradley)

November 1944 and June 1945 the latter produced 1190. Between March and May 1945 the former produced 246. An additional 992 were produced by the Detroit Tank Arsenal in the last months of 1945. The unit cost was \$81,324 including armament, spares and radios. The designation Heavy Tank M26 was changed to Medium Tank M26 in May 1946.

VARIANTS AND HYBRIDS

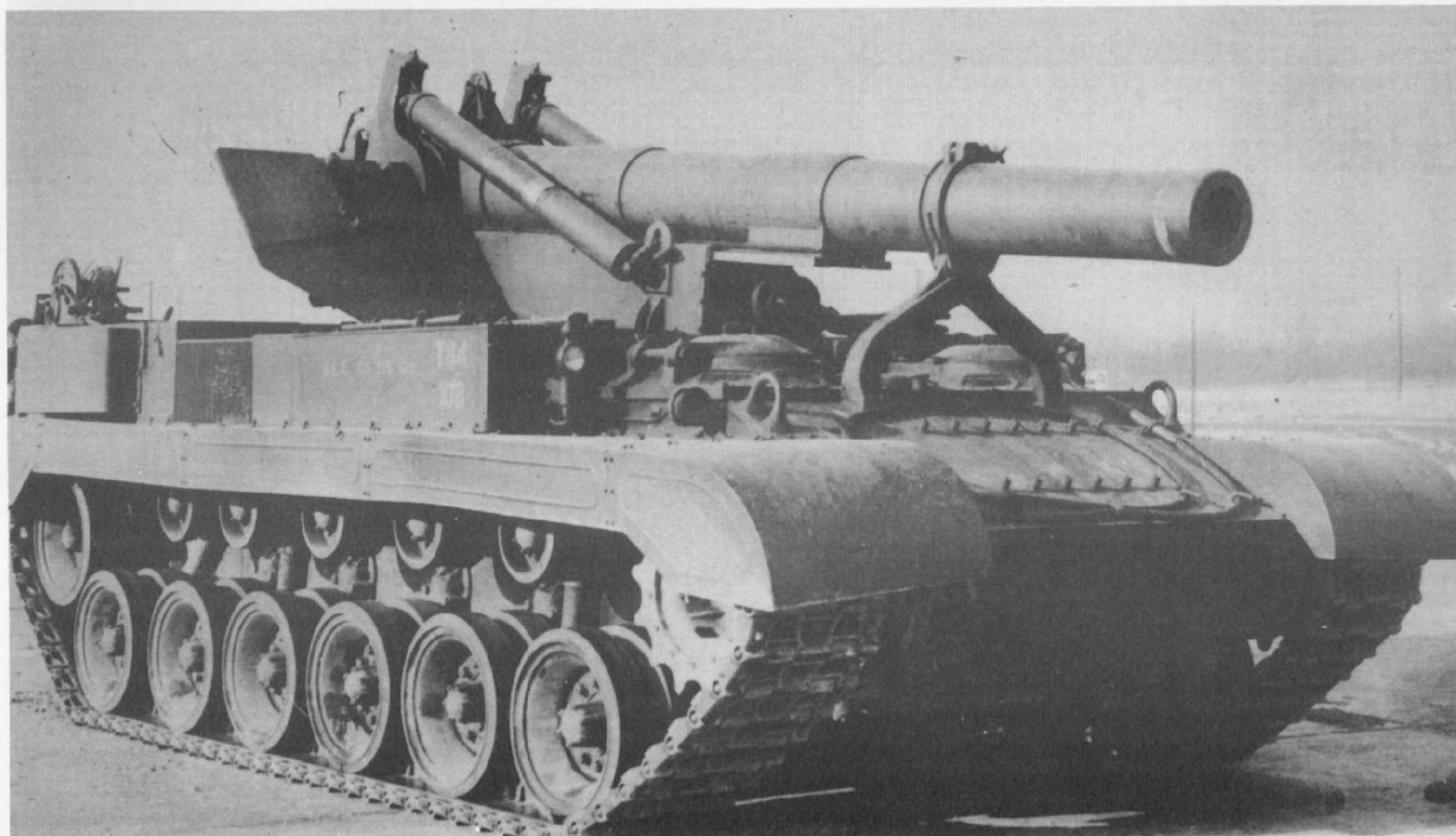
There were variations and hybrids resulting from the T20 series development other than those already mentioned. Among these was the 155-mm T83 Gun Motor Carriage of which 311 were produced by Pressed

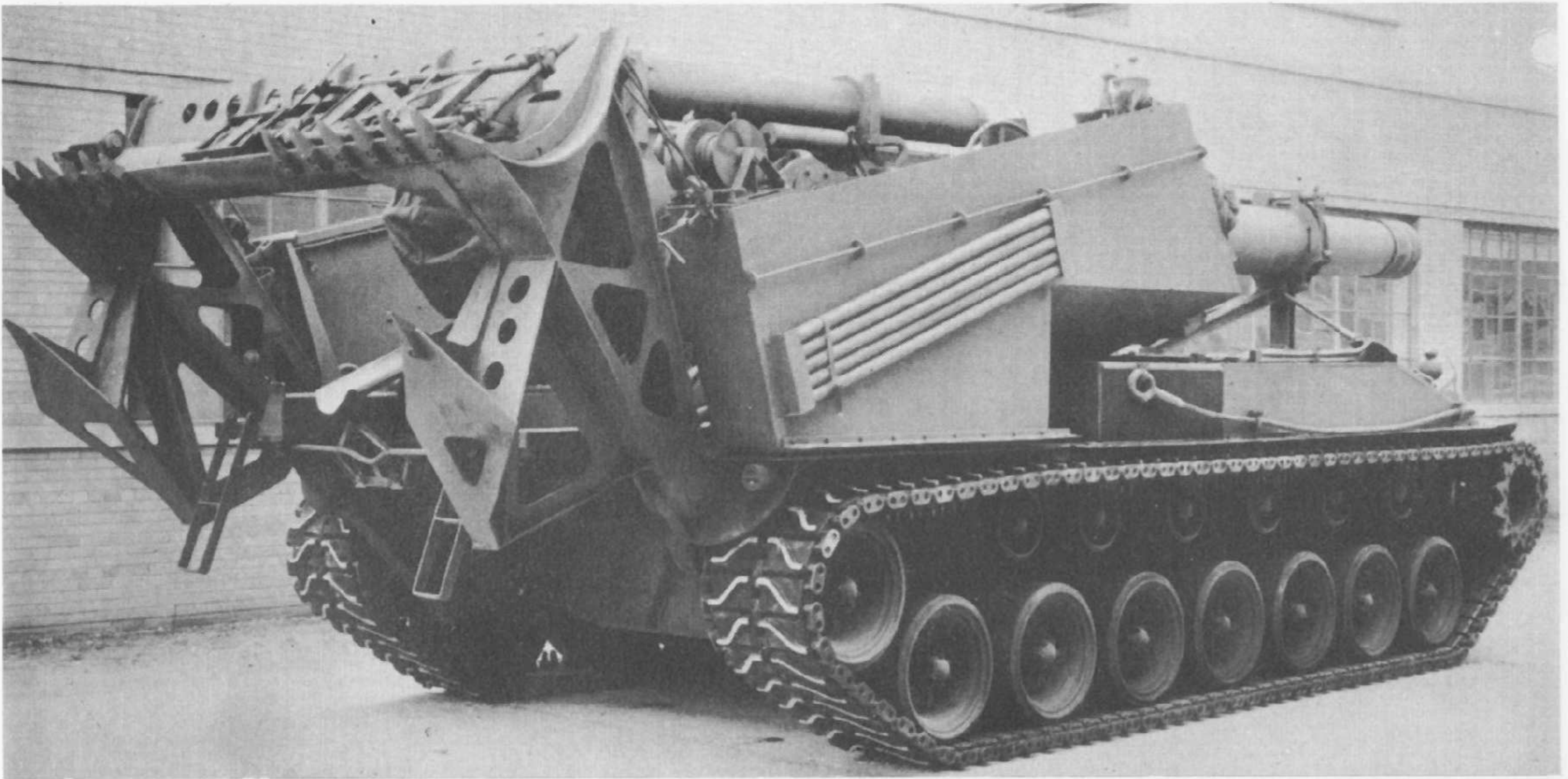
Steel Car Company between February and May 1945. A T25 Cargo Carrier was to be the accompanying vehicle but the T30 was adopted instead. An 8-inch T84 Howitzer Motor Carriage was also authorized, together with a T31 Cargo Carrier, but a shortage of T26E1 components caused M4 components to be substituted. The T83 was used interchangeably with the T84 which was later standardized as the M43. The T92 240-mm Howitzer Motor Carriage and the T93 8-inch Gun Motor Carriage actually used all T26E3 components. Five T92 and two T93 were built before the war was over.

A T94 10-inch Mortar Motor Carriage was to use the

8-inch Howitzer Motor Carriage T84 with howitzer tube locked in travelling lock.

(U.S. Ordnance Department)





Three quarter rear view of 8-inch Gun Motor Carriage T93 built on M26 Medium tank chassis showing hydraulically operated trail spade.
(U.S. Ordnance Department)



T95 Gun Motor Carriage which utilized many M26 tank components with track skirts and outer track sets removable for rail shipment. The T95 GMC was originally designated T28 Heavy Tank.
(U.S. Ordnance Department)

Experimental remote controlled machine-gun fender kit and experimental T121 remote controlled machine-gun cupola mounted on M26 Medium tank with T81 tracks.
(U.S. Ordnance Department)





Pershing tank of 9th Infantry Regiment, 2nd Infantry Division, in defense position at the Maktong River in Korea, September 1950.

(U.S. Army: 347857)

T83 chassis but the project ended with the war. The T12 Armored Recovery Vehicle was an M26 with a lighter turret and with a winch and boom. The T15E3 Mine Resistant Vehicle was to use the hull of a T26E1 but it never materialized. The T28 Heavy Tank which was changed to the T95 Gun Motor Carriage because it lacked a turret also was based on M26 components.

The M26E1 was an M26 with a 90-mm T54 gun using fixed ammunition. Two pilot vehicles were made. One T25E1 was fitted experimentally with a T26E1 turret and another T25E1 was modified to T25E1 (Integrated Fighting Compartment) which had a built-in range-finder and lead computer. Contemplated but never realized were a 90-mm T15 gun on an open T23 chassis with the gun mounted forward both with and without a shield. A project to mount a 105-mm gun on an M26 remained a project.

An M26A1 was also standardized. It had a 90-mm gun with bore evacuator and single baffle muzzle brake as mounted on the M46 tank. Some of these were fitted with elevation stabilizers.

In the search for a turret cupola and machine-gun arrangement for a tank commander, an M26 was fitted with an experimental twin machine-gun mount on the turret. Another experiment involved a T121 remote control cupola together with a right fender mounted remote control gun beside the co-driver's hatch. A T99 Rocket Launcher also was mounted experimentally and, of course, fording kits and swimming devices were tested. One M26 was made into the T35 Flame Tank. In this the turret was replaced by a special low welded turret mounting a Canadian Iroquois flame gun. An Armored Engineer Vehicle T39 also existed.

Pershings of the M26 variety were furnished to Belgium, Britain, France and Italy. The Belgians received one M26A1.

The M26 was used in Korea together with the M46

which was the same vehicle with a better gun, a new engine and a cross drive transmission. The cross drive was a development of the torquematic which included also the function of steering, replacing the controlled differential. In this form it became known as the Patton.

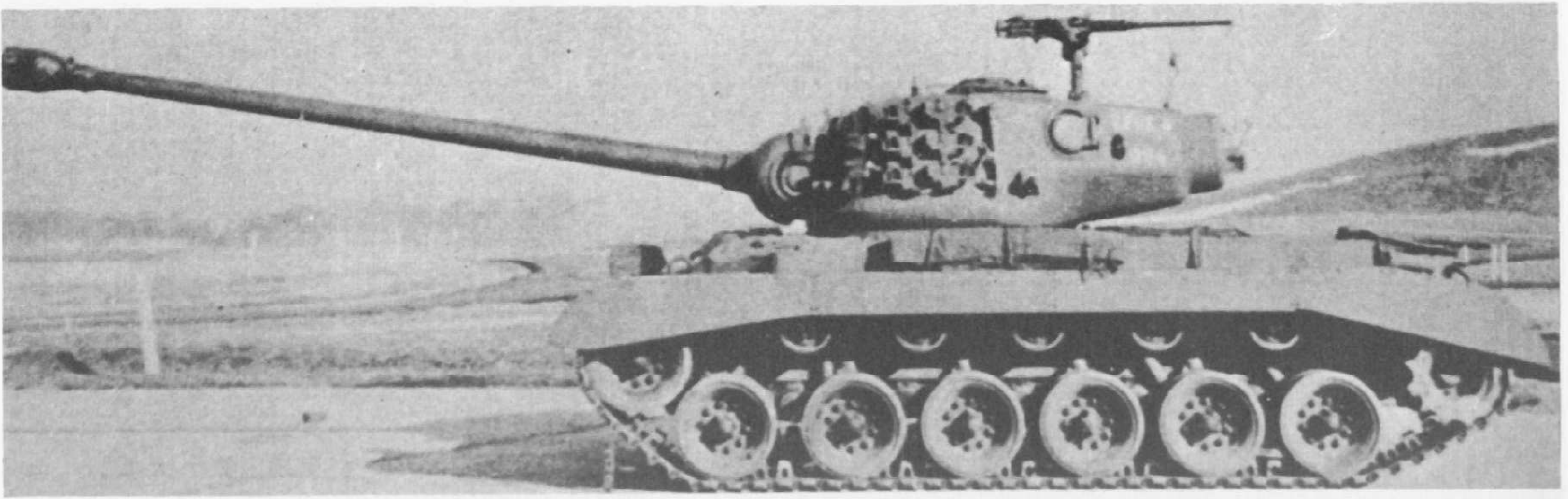
A.F.V. Series Editor: DUNCAN CROW

SPECIFICATION

T1 (M6) Heavy Tank Series

Although there were slight differences between the several models, the general data are as follows:

Weight:	T1 was 120,000 pounds, T1E1 (M6A2) was 127,000 pounds, T1E2 (M6) was 126,500 pounds and T1E3 (M6A1) was 126,300 pounds. About 10% of the total weight was in the tracks
Length:	23'10"
Width:	10'3"
Height:	9'11" without cupola; with cupola 10'6"
Clearance:	20 1/2"
Armor:	3" vertical front, 2 1/2" sides and rear, 1" top and bottom
Armament:	Modified 3" T9 AA gun 2400 f/s coaxial with 37-mm M5E1 tank gun, -10° +30° Dual 50 caliber bow machine-guns -10° +60° 15°R 15°L Dual (later single) 30 caliber bow-machine gun +30° only Cupola 30 caliber machine-gun Rear of turret 50 caliber AA gun -5° +60°
Ammunition:	3" 75 rounds 37-mm 202 rounds 50 caliber 5700 rounds 30 caliber 7500 rounds
Speed:	22 mph for T1E2, T1E3 24 mph
Slope:	55%
Trench:	13'2"
Vertical:	3'6"
Ford:	4'
Turn:	8'6" for all except T1E1 which was capable of pivot turn
Radius:	100 miles for T1, 120 for T1E1, 116 for T1E2 and T1E3.
Track:	Steel rubber bushed 25 1/4" wide, 6" pitch, road wheels 18 x 6"
Crew:	Commander, driver, assistant driver, gunner, loader, ammunition passer
Engine:	Wright G-200 825 hp 9 cylinder air-cooled
Fuel:	464 U.S. gallons in five tanks
Transmission:	T1 hydramatic, T1E1 gasoline-electric, T1E2 and T1E3 torque converter plus two speed manual transmission
Radio:	In turret; space for a second radio at right front of hull with antenna base on outside of hull at that point
Miscellaneous:	Automatic fire extinguisher in engine compartment, portable fire extinguisher, protectoscopes for driver, assistant driver, commander, gunner and loader; pistol port in rear of turret



T26E4 with T15E2 gun. Equilibrators are inside turret—compare with picture of the T26E1-1 mounting T15E1 gun. (U.S. Ordnance Department)

SPECIFICATION

Medium (Formerly Heavy) M26 90-mm Gun Tank, Pershing

General

Crew:	5—Driver, Co-Driver, Gunner, Loader, Commander
Battle Weight:	46 Short Tons
Power Weight Ratio:	10.81
Ground Pressure:	12.7 lbs./sq. in.

Dimensions (when equipped with T81 steel tracks)

Length Overall, Gun Front:	27' 11"
Gun Rear:	22' 4"
Hull Length:	20' 9"
Height without Machine-Gun:	9' 1"
Height to Top of Pintle:	9' 3"
Width Overall:	11' 6"
Clearance:	17 ¹¹ / ₁₆ "
Track Centers:	9' 2"
Track Base:	12' 4"
Track Width:	24"
Track Pitch:	6"

Armament

Main:	Turret mounted 90-mm L/53 M3 gun with muzzle brake in T99E2 (M67) mount. (M26A1 is equipped with M3A1 gun in combination mount M67A1).
Auxiliary:	Coaxial .30 caliber Browning M1919A4. .50 caliber Browning M2 pintle mounted top of turret. .30 caliber Browning M1919A4 ball mounted at right front of hull.

Fire Control

Manual and hydraulic turret-traverse, gun stabilized in elevation.

Ammunition

70 rounds 90-mm; 5000 rounds caliber .30; 550 rounds caliber .50; 12 hand grenades.

Sighting and Vision

Vision periscopes M13, M13B1 or M6; vision periscopes M15, M13, M13B1 or M6; gunner's periscope M16, M10F or M4A1 with telescope M77F or M77H; M9 elevation quadrant; M1 gunner's quadrant; M83C, M71N or M71C sighting telescope; M20 azimuth indicator.

Communications

Voice radio SCR-508, 608 or 528 with RC-298 interphone extension kit or SCR-508 or 528 with RC-298 interphone extension kit or short range voice radio AN/VRC-3 with RC-99 interphone and RC-298 interphone extension kit.

Armor

Homogeneous welded castings and homogeneous turret castings.

Thicknesses in mm and degrees inclination are:

Hull:	Upper front	101.6 mm at 46°
	Lower front	76.2 mm at 53°
	Sides	76.2 mm vertical
	Rear	50.8 mm at 10°
Turret:	Front	101.6 mm plus shield
	Sides	76.2 mm
	Top	50.8 mm
	Rear	76.2 mm

Engine

Ford Model GAF 4 cycle valve in head 60° V-8; 1000 cu. in. displacement; 5.4" x 6"; 7.5 to 1 compression ratio; governed speed 2600 rpm; 500 brake horsepower; 191 US gallons 80 octane fuel beside engine compartment.

Transmission

900-F2 Torquematic 3 speeds forward 1 reverse.

Suspension

Torsion bar; 6 rubber tired bogie wheels; 5 support rollers each side. T81 steel track rubber bushed 78 links per track. The T80E1 rubber backed steel track and rubber track T84E1 could be used but required changed sprockets and final drive assemblies.

Electrical System

24 volt, 2 cylinder Waukesha G-TGU auxiliary engine, magneto ignition.

Performance

30 mph Maximum Governed Speed
60% Slope
3' 10" Vertical Obstacle
8' 6" Trench
4' Wading Depth
60-110 Miles Range
63' Turning Circle

Special Features

Equipped with towing pintle; could be fitted with dozer blade.

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AFV/Weapons Profiles

Edited by DUNCAN CROW

Starting with AFV/WEAPONS PROFILE 24 the Publishers intend to step up the frequency of publication. This departure, taken in order to meet the great demand for coverage of more AFVs more quickly than in the programme that has been running for the past two years, has necessitated some further re-arrangement in the list of titles.

33 German Armoured Cars

As light tanks became popular in the 1930s the importance of armoured cars declined . . . except in Germany and France; Germany attached great importance to them and they were the basic vehicles of the Panzer divisions' reconnaissance units in World War II, achieving great success as this Profile shows: BY MAJOR-GENERAL N. W. DUNCAN, whose distinguished military career in armour has included service in armoured cars in the *Royal Tank Corps*, and command of the *30th Armoured Brigade* in *79th Armoured Division*. General Duncan has been Representative Colonel Commandant of the *Royal Tank Regiment*, Governor of the *Royal Hospital Chelsea*, and Curator of the *Royal Armoured Corps Tank Museum*. He is the author of *AFV Profiles 5, 9, 12, 15*.

34 Scorpion

Britain's new aluminium light tank, weighing eight tons, powered by a conventional Jaguar XK 6-cylinder engine of 4,200 c.c., and mounting a 76-mm. gun, is the first all-aluminium armoured vehicle in the world: BY R. M. OGORKIEWICZ, author of *AFV/Weapons Profile 28*, who is the first non-American and only the tenth person in its 85-year history to be made an honorary life member of the *U.S. Army Armor Association*.

35 Wheels, Tracks and Transporters British Armoured Recovery Vehicles

The problems of getting tanks to the battle and recovering them when they have been disabled are the subject of this Profile, in which MAJOR-GENERAL DUNCAN (author of *AFV Profiles 5, 9, 12, 15*, and *AFV/Weapons Profile 33*) traces the development in Britain of machines—some like "skyscrapers on roller skates"—to overcome the track wear bugbear until the adoption of wheeled transporters proved a better solution, and Peter Chamberlain describes the armoured recovery vehicles used by British and Commonwealth units in World War II.

36 French H35, H39 and S35

The Hotchkiss and Somua tanks equipped the *brigades de combat* of the French mechanised cavalry's *divisions légères mécaniques*, two of which had been formed before the outbreak of war in 1939, and there was a *demi-brigade* of Hotchkisses in the *divisions cuirassées*; the Hotchkiss was the second most numerous type of French tank, while the Somua was considered by many to be one of the finest AFVs of its day: BY MAJOR JAMES BINGHAM, RTR, who fought in France in 1940 when these tanks were in action.

37 Russian BT

This series of Russian tanks was based on the American Christie design and its final variant was the forerunner of the famous T-34: BY JOHN MILSOM, author of *Russian Tanks 1900-1970* and *AFV/Weapons Profile 22*.

38 Conqueror Heavy Gun Tank

Changes between conception and production are not infrequent in the development of military equipment, yet the history of Conqueror is probably more bizarre than most. Intended originally for the support of infantry it was then adapted to become the so-called Universal tank—only to be superseded by the design it was meant to replace—and finally emerged into service for a short time as a highly specialized tank killer: BY MAJOR MICHAEL NORMAN, Royal Tank Regiment, author of *AFV/Weapons Profiles 17, 18, 19, 23 and 27*.

39 Panhard Armoured Cars

This Profile covers the remarkable eight-wheeled EBR and the compact AML, now used by more than a dozen different countries and both built by Panhards who have a longer connection with armoured car development than any other company in the world still in this field: BY R. M. OGORKIEWICZ, of the Imperial College of Science and Technology, one of the world's leading experts in the design of combat vehicles, author of *AFV/Weapons Profiles 28 and 34*.

40 U.S. Armoured Cars

Although armoured cars, a familiar sight in many countries, have never been popular in the United States, more varieties have existed there than is generally realised. This Profile recounts the whole story of U.S. armoured cars from the Davidson car of 1898 to the XM808 on the Lockheed Twister chassis of today: BY COLONEL ROBERT J. ICKS, the famous American armoured expert, author of *AFV/Weapons Profiles 16, 24, 26 and 32*, and *Profile Book AFV/Weapons Series No. 1 Modern U.S. Armored Support Vehicles*.

41 M103 Heavy + M41 Light (Walker Bulldog)

The Berlin airlift and the beginning of the so-called Cold War placed new emphasis on the U.S. post-World War II tank programme. The result was the emergence of three basic designs, the T41 Light Tank, the T42 Medium Tank, and the T43 Heavy Tank. This Profile deals with the first and third of these—the T41 which was standardized as the M41 and named the Walker Bulldog, and the T43 which became the M103 Heavy Tank: BY COLONEL ROBERT J. ICKS, author of *AFV/Weapons Profiles 16, 24, 26, 32 and 40*, and *Profile Book AFV/Weapons Series No. 1 Modern U.S. Armored Support Vehicles*.

42 Swedish Light Armoured Vehicles

Included in this Profile are the Pbv 302 armoured personnel carrier and its derivatives—the Bgbv 82 recovery vehicle, the ingenious Brobv 941 bridgelayer and the IKV 91 infantry gun intended for operation in the north of Sweden, the Norrland: BY R. M. OGORKIEWICZ, author of *Design and Development of Fighting Vehicles and Armoured Forces*, and of *AFV/Weapons Profiles 28, 34 and 39*.

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- 12. IJN Kongo**
Battleship. This ship, the world's largest warship of the time, saw continuous action until she was finally sunk in April 1945: by a Japanese author yet to be commissioned.
- 13. HMS Exeter**
8-inch-gun Cruiser, 1928–1942. Her life includes the *Battle of the River Plate* against *Admiral Graf Spee* (*Warship Profile No. 4*) and the *Battle of the Java Sea*: by Robin Tonks, M.A., Assistant Director of Studies and Head of History Department, Britannia Royal Naval College, Dartmouth.

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