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suspensions and tracks. The suspension is of the horizontal volute spring type, with three bogies on each side. The tracks are 23 inches wide and have center guides.

Power is supplied by a Continental R-975-C4 engine through a constant mesh synchronized transmission that provides five speeds forward and one reverse.

The vehicle has stowage for 20 rounds of 155 mm ammunition, including propelling charges, primers and fuzes, and for small arms ammunition and grenades.

The differential and final drive housing used is the same as for M4 Series tanks, varying from 4 inches to 2½ inches in thickness. Side armor below the fender line is 1-inch and other armor is ½-inch. It has, in addition, gun shields of ½-inch armor plate.

The 155 mm Gun Motor Carriage M40 (T82) has a maximum speed of 24 m.p.h. and a cruising range of approximately 150 miles.

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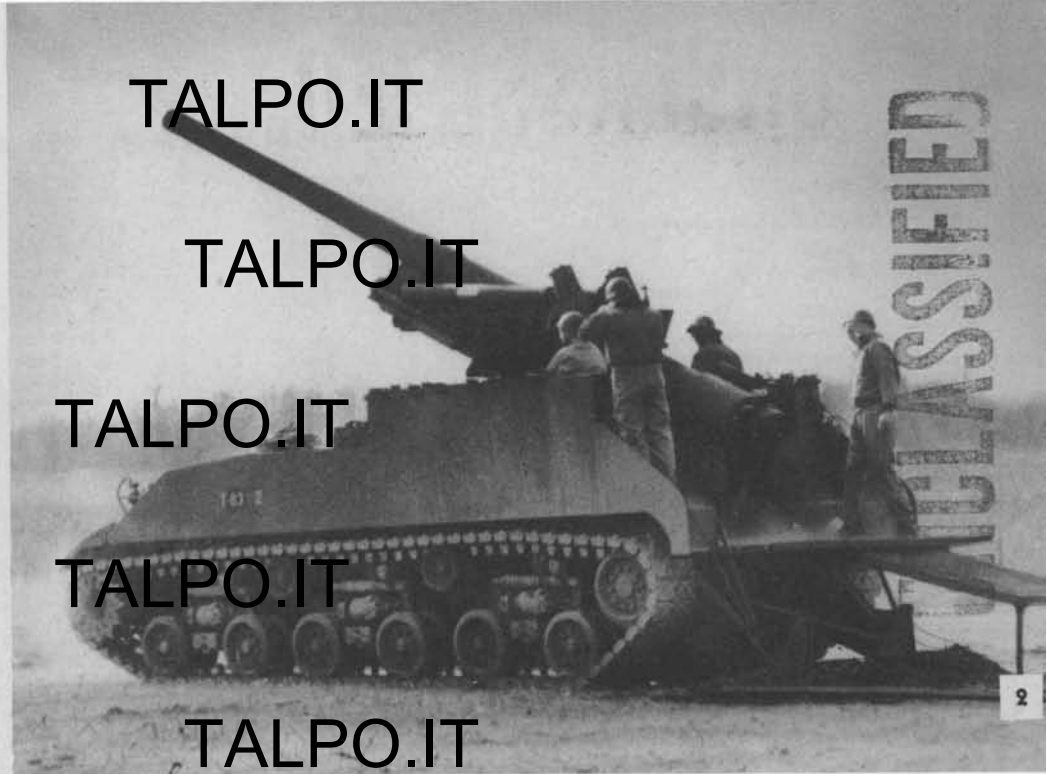
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CARRIAGE, GUN MOTOR, 155 mm, M40 (T83)—CHARACTERISTICS

Crew 8

Physical Characteristics:

Weight (gross) 83,000 lb.
Length, Hull 21 ft., 9 in.
Over-all, with armament 30 ft.
Width 10 ft., 4 in.
Height (center line of bore) 8 ft., 6 in.
Ground Clearance 17 in.
Tread (center to center of tracks) 101 in.
Ground contact length 173 in.
Ground pressure 10.4 lb./sq. in.

Armament:

155 mm Gun M1A1 or M2 in Mount M13 (T14)
Elevation -5° to +55°
Traverse 18° right and 18° left
Provision for:
Cal. .30 carbines 8
Grenade Launcher M8 1

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Ammunition: Stowage:

155 mm (HE, M101 or M101B) 20 rounds
Cal. .30 960 rounds
Grenades, Hand 12
Grenades, Rifle, M9A1 10

Armor:

	Actual	Basis
Hull, Front, Upper	1/2 in.	1 1/4 in.
Lower	4 in.-2 1/2 in.	4 in.
Sides, Below sponson	1 in.	1 in.
Above sponson	1/2 in.	1/2 in.
Rear	1/2 in.	1/2 in.
Top	1/2 in.	1/2 in.
Bottom, First 36 inches	1 in.	1 in.
Remainder	1/2 in.	1/2 in.
Gun Shield	1/2 in.	3/4 in.

Performance:

Maximum speed on level 24 m.p.h.
Maximum grade ability 60%

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Trench crossing ability.....	7 ft., 8 in.
Vertical obstacle ability.....	34 in.
Fording depth (slowest forward speed).....	36 in.
Fuel capacity.....	200 gal.
Cruising Range (approx.).....	150 miles

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Vision and Fire Control:

Periscope M6.....	2
Panoramic Telescope M12, w/Instrument Light M19, on Telescope Mt. M75 (T122).....	1
Telescope M69F w/Instrument Light M36, on Telescope Mt. M75 (T122).....	1
Elbow Telescope M16A1F (T135) w/Instrument Light M36, on Telescope Mt. M71 (T124).....	1
Quadrant Mount M1, w/Instrument Light M19.....	1
Gunner's Quadrant M1.....	1

TALPO.IT

Engine, Make and Model:

Engine, Make and Model.....	Continental R-975-C4
Type.....	Radial, A.C.
No. of cylinders.....	9
Fuel (gasoline).....	80 octane

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Gross hp.....	460 at 2,400 r.p.m.
Max. torque.....	1,025 lb.-ft. at 1,800 r.p.m.

Transmission: Type..... Constant mesh, synchronized

Communications:

Radio.....	SCR-608, 610, 619, or British No. 19
Interphone stations.....	4

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Battery: Voltage, total..... 24

Fire Protection and Decontamination:

Fire Extinguisher, CO ₂ , 10 lb. (fixed).....	2
CO ₂ , 4 lb. (hand).....	2

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Suspension: Type..... Horizontal volute spring

Track: Type..... T66 or T80 Steel

Width.....	23 in.
Pitch.....	6 in.
No. of shoes per vehicle.....	176

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TALPO.IT

Trench crossing ability	7 ft., 8 in.
Vertical obstacle ability	34 in.
Fording depth (slowest forward speed)	36 in.
Fuel capacity	200 gal.
Cruising Range (approx.)	150 miles

TALPO.IT

Vision and Fire Control:

Periscope M6	2
Panoramic Telescope M12, w/Instrument Light M19, on Telescope Mt. M75 (T122)	1
Telescope M69F w/Instrument Light M36, on Telescope Mt. M75 (T122)	1
Elbow Telescope M16A1F (T135) w/Instrument Light M36, on Telescope Mt. M71 (T124)	1
Quadrant Mount M1, w/Instrument Light M2	1
Gunner's Quadrant M1	1

TALPO.IT

Engine, Make and Model

Type	Continental R-975-C4
No. of cylinders	Radial, A.C.
Fuel (gasoline)	9
	80 octane

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Gross hp	460 at 2,400 r.p.m.
Max. torque	1,025 lb.-ft. at 1,800 r.p.m.

Transmission: Type

Constant mesh, synchronized

Communication:

Radio	SCR-608, 610, 619, or British No. 19
Interphone stations	4

TALPO.IT

Battery: Voltage, total

24

Fire Protection and Decontamination:

Fire Extinguisher, CO ₂ -10 lb. (fixed)	2
CO ₂ -4 lb. (hand)	2

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Suspension: Type

Horizontal volute spring

Track: Type

T66 or T80 Steel

Width	23 in.
Pitch	6 in.
No. of shoes per vehicle	176

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**TANK,
HEAVY M26
(T26E3)**

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This vehicle was designed to provide a tank with mobility comparable to the Medium Tank, M4 Series, but with considerably more firepower and armor protection. The heavy armor allows this vehicle to be employed close to the targets being engaged.

Compact in design, it is lower and wider than Heavy Tanks M6 and M6A1, and is not as heavy. It has greater firepower and heavier armor, and has better mobility and maneuverability.

Weighing 46 tons, the vehicle has a ground pressure of only 12.7 lb./sq. in. and can be operated at speeds up to 25 m.p.h. The unit ground pressure can be reduced to 10.9 lb./sq. in. by using the T80E1 type track with extended end connectors. It will climb a 60% grade and will cross a trench 7 feet 11 inches wide.

Principal armament is a 90 mm Gun M3, mounted coaxially with a Cal. .30 Machine Gun M1919A in the turret. These guns can be depressed to -10° and elevated to +20° and can be traversed through 360°, either

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manually or by power. The 90 mm Gun is equipped with a muzzle brake.

The suspension is of the individually sprung torsion bar type, with bumper springs and double-acting shock absorbers to give additional protection. This type of suspension provides a more stable firing platform. A center guided track, 23 or 24 inches wide, is used.

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Power is supplied by a Ford GAF gasoline engine through a torqueomatic transmission and a controlled differential, the tracks being driven by sprockets at the rear.

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**CARRIAGE,
MOTOR, 90 mm
GUN, M36**

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This is a modification of the 3-inch Gun Motor Carriage, M10A1, designed to provide a more powerful self-propelled antitank gun. This weapon may be advantageously utilized for direct fire against reinforced concrete or log and/or earth bunkers or caves.

TALPO.IT

Principal weapon is the 90 mm Gun, M3 in 90 mm Gun Mount, M4A1, in a turret with 360° power traverse. The gun has a muzzle brake.

Essentially the same hull and chassis of the 3-inch Gun Motor Carriage, M10A1, have been used. A new turret with a partial turret basket has been added. Seats, traveling with the turret, are provided for the gunner, loader, and commander.

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To provide for the stowage of 47 rounds of 90 mm ammunition, the sponson stiffener brackets have been moved forward.

Power is supplied by a Ford 6AA gasoline engine. It has a maximum speed of 26 m.p.h. on level road and a cruising range of 150 miles.

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CARRIAGE, GUN MOTOR, 90 mm, M36—CHARACTERISTICS

Crew 5

Physical Characteristics:

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Weight (gross) 62,000 lb.
 Length 20 ft., 2 in.
 Width 10 ft.
 Height—pedestal A.A. gun folded 8 ft., 11 in.
 Ground clearance 17 1/8 in.
 Tread (center to center of tracks) 83 in.
 Ground contact length 147 in.
 Ground pressure 12.7 lb./sq. in.

Armament:

90 mm Gun, M3, in Mount, M4A1 In turret
 Elevation -10° to +20°
 Traverse 360°
 Cal. .50 Machine Gun, M2, HB (flexible) On pedestal mount
 1 Tripod Mount, Cal. .50, M3
 Provision for:
 5 cal. .30 Carbines

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Ammunition: Stowage:

90 mm (H.E., M71, A.P.C., M89) 47 rounds
 Cal. .50 1,000 rounds
 Cal. .30 Carbine 450 rounds
 Grenades, Hand (Fragmentation, Mk II, 6, Smoke, M15, 6) 12
 Smoke Pots, H.C., M1 4

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Armor:

	Actual	Basis
Hull, Front, Upper	1 1/2 in.	3 1/4 in.
Lower	4 in.-2 1/2 in.	4 in.
Sides, Upper	3/4 in.	1 3/8 in.
Lower	1 in.	
Rear, Upper	3/4 in.	1 in.
Lower	1 in.	
Sides, Lower	1 in.	
Top, Forward	3/4 in.	
Rear	3/8 in.	
Bottom	1/2 in.	

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Turret, Front.....	3 in.
Sides.....	1 1/4 in.
Top.....	1 1/8 in.
Rear.....	4 in.

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Performance:

Maximum speed on level.....	26 m.p.h.
Maximum grade ability.....	60%
Trench crossing ability.....	7 ft., 5 in.
Vertical obstacle ability.....	24 in.
Fording depth (slowest forward speed).....	36 in.
Fuel capacity.....	192 gal.
Cruising range.....	150 miles

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Vision and Fire Control:

Periscope, M6.....	4
Telescope, M70P, or M76D or M76F, w/Instrument Light, M33.....	1
Telescope Mount, M64 (T92).....	1
Elevation Quadrant, M9, w/Instrument Light, M30.....	1
Gunner's Quadrant, M1.....	1
Panoramic Telescope M12, with Telescope Mount M69 and Instrument Light M31.....	1

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Communications:

Radio.....	SCR-510 or 610 (with Reel Assembly, RL-106/VI) or British No. 19
Interphone stations.....	5
Flag Set, M238.....	1

Fire Protection and Decontamination:

Fire Extinguisher-10 lb.-CO ₂ (fixed).....	2
4 lb.-CO ₂ (hand).....	2
Decontaminating Apparatus, M2, 1 1/2 qts.....	2

Engine: Make and Model.....

Type.....	Ford, GAA
Number of cylinders.....	V8 W.C.
Fuel (gasoline).....	80 octane
Maximum governed speed.....	2,600 r.p.m.
Gross hp.....	500 at 2,600 r.p.m.
Maximum torque.....	1,040 lb.-ft. at 2,200 r.p.m.

Transmission: Type.....

.....	Constant mesh, synchronized
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Suspension: Type.....

.....	Vertical volute spring
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Track: Type.....

.....	Rubber or steel block
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Width.....	16 9/16 in.
Pitch.....	6 in.
No. of shoes per vehicle.....	158

Track: Type.....

.....	Rubber or steel block
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Width.....	16 9/16 in.
Pitch.....	6 in.
No. of shoes per vehicle.....	158

Track: Type.....

.....	Rubber or steel block
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Width.....	16 9/16 in.
Pitch.....	6 in.
No. of shoes per vehicle.....	158

Track: Type.....

.....	Rubber or steel block
-------	-----------------------

Width.....	16 9/16 in.
Pitch.....	6 in.
No. of shoes per vehicle.....	158

Track: Type.....

.....	Rubber or steel block
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Track: Type.....

.....	Rubber or steel block
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Track: Type.....

.....	Rubber or steel block
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Track: Type.....

.....	Rubber or steel block
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Track: Type.....

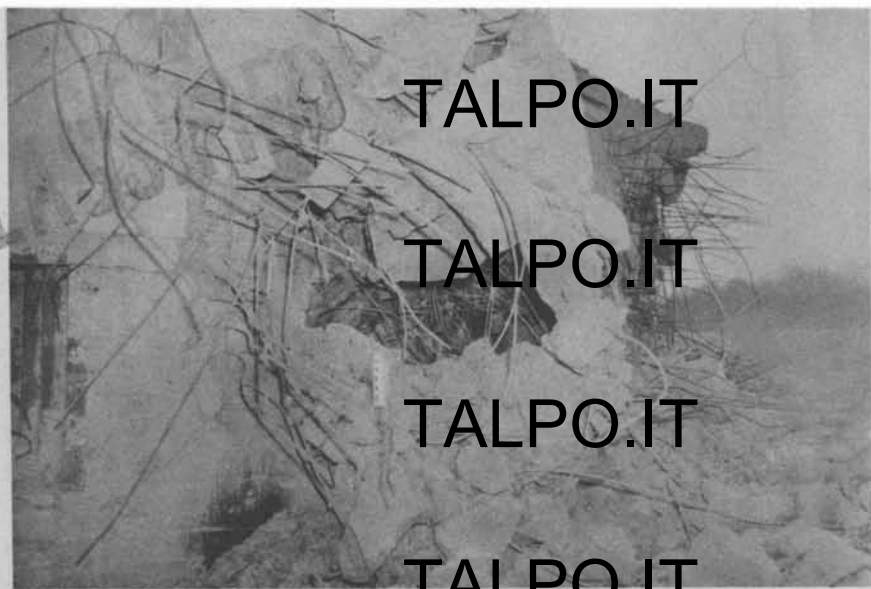
.....	Rubber or steel block
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Track: Type.....

.....	Rubber or steel block
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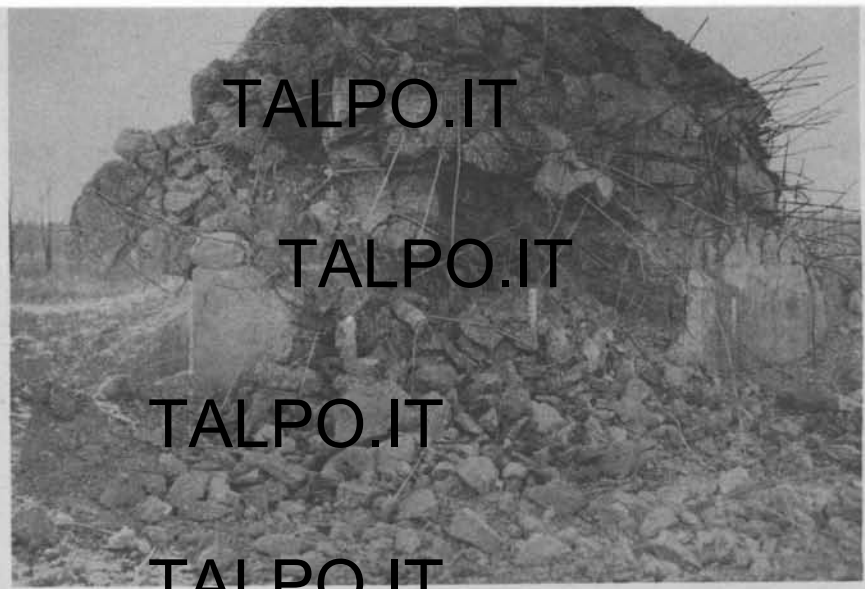
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Gun, 155 mm, M1A1 firing Shell, H.E., 155 mm, M101 with Fuze, CP, M78. Range 2,400 yd. using supercharge. Crater 84 in. deep, 148 cu. ft. of reinforced concrete removed. Wall completely perforated. This is an exceptional round, results consistent with this can not be expected with all rounds fired, as results at this range gave less penetration.

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Gun, 155 mm, M1A1, firing Shell, H.E., 155 mm, M101, with Fuze, CP, M78. Range using normal charge point blank range. View of damage to German-type reinforced concrete pillbox resulting from two rounds of shell.

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~~R-7604~~

ALL COMMUNICATIONS SHOULD BE ACCOMPANIED BY CARBON COPY AND ADDRESSED TO

TO INSURE PROMPT ATTENTION
IN REPLYING REFER TO:

120. No. 350.05
ATTENTION OF 13074

WAR DEPARTMENT
OFFICE OF THE CHIEF OF ORDNANCE
WASHINGTON, D. C.

28 MAY 1945

SUBJECT: Mobile Artillery vs. Jap Fortifications

TO: The Commandant
Command and General Staff School
Fort Leavenworth, Kansas

ATTENTION: Archives

1. Transmitted herewith are copies of the booklet, "Mobile Artillery vs. Jap Fortifications." This booklet describes weapons, vehicles and ammunition especially adapted to the attack of fortifications likely to be encountered in the war with Japan. Types of fortifications covered are concrete pillboxes, log and/or earth bunkers and caves.

2. The mounting of heavy field pieces and powerful tank and anti-tank guns on motor carriages and tanks provides great mobility and protection to the gun crews for close-in fighting.

3. The booklet, "Recoilless Weapons," dated February 1945, previously sent you, was prepared prior to the above booklet and may be used in connection with the same problem.

4. Additional copies of either may be supplied by Air upon request.

L. H. Campbell, Jr.

L. H. CAMPBELL, Jr.
Lieutenant General, Chief of Ordnance

- 2 Incls
- 1. Booklet (4)
- 2. Receipt



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