

~~CONFIDENTIAL—Modified Handling Authorized~~
DEPARTMENT OF THE ARMY PAMPHLET NO. **30-4-4**

FOREIGN MILITARY WEAPONS AND EQUIPMENT (U)

Vol. I
ARTILLERY (U)

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DEPARTMENT OF THE ARMY

WASHINGTON, D. C.

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PAMPHLET }
No. 30-4-4 }

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 29 August, 1955

FOREIGN MILITARY WEAPONS AND EQUIPMENT (U)

VOL I. ARTILLERY (U)

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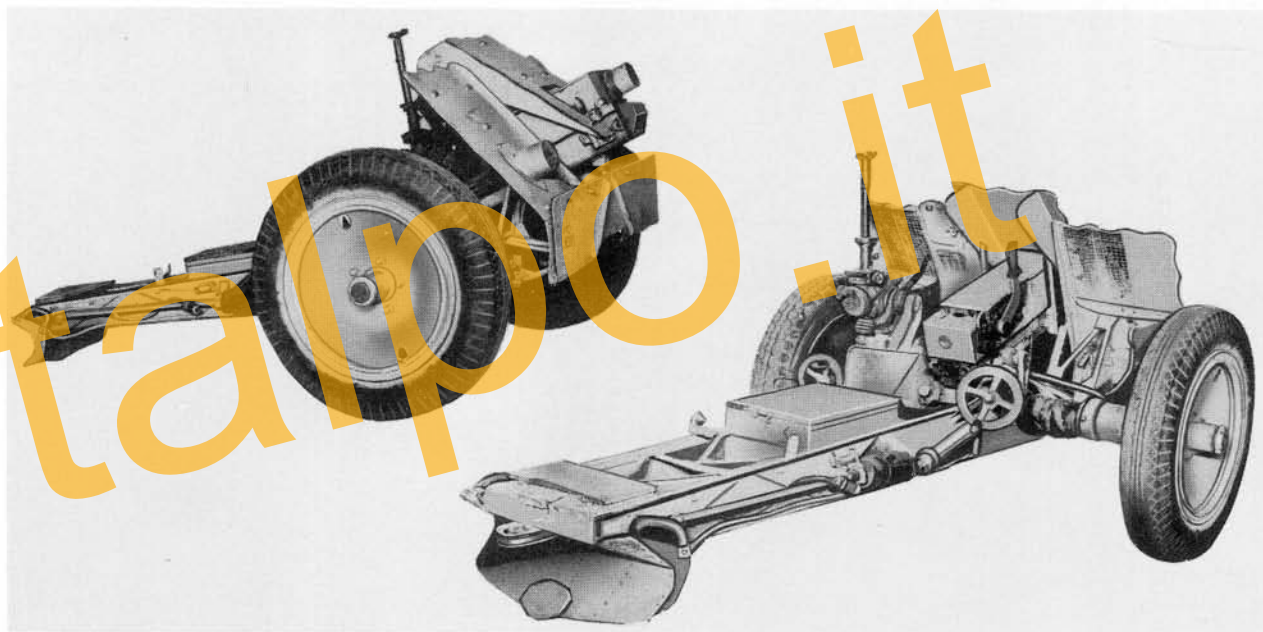
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75-mm Light Infantry Gun M18

(7.5 cm Leichtes Infantry Geschütz 18 (7.5 cm Le. I. G. 18))



This weapon was developed by Rheinmetall-Borsig in 1927 and was the first of a series of new infantry support pieces. It is of a rather novel design, the tube being totally enclosed in a square housing having a fixed breech block. To load the weapon, the tube is tilted up clear of the breech block by the operation of a lever.

The gun is mounted on a light box trail carriage and is equipped with either wooden spoked wheels in the horse-drawn version, or with disc wheels and pneumatic tires in the motorized version.

A variant, also designed by Rheinmetall-Borsig, was introduced into the German service for

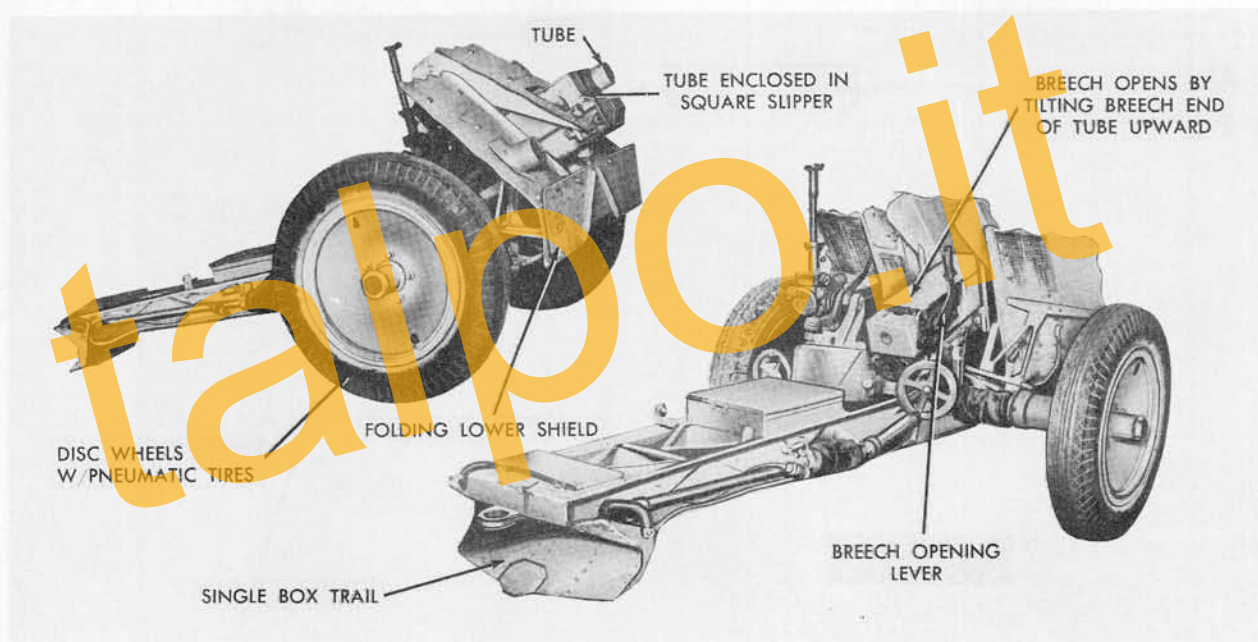
mountain troops in 1937 as the "7.5 cm Le Geb. I. G. 18." The gun is the same as for the standard model, but a split trail carriage is used, the trail legs being jointed to allow either "short" or "long" trail legs to be used. The trails have detachable spades. This equipment breaks down into 6 pack or 10 man-loads.

HE, HEAT, and Smoke rounds are fired from both equipments; charges I to V are used with the HE and smoke, and Charge V and a special charge with the HEAT shell.

It is believed to be held in reserve stocks in Bulgaria and East Germany.

75-mm Light Infantry Gun M18

RECOGNITION FEATURES



CHARACTERISTICS

I. PHYSICAL DATA:

Caliber.....	75-mm (2.95 in.)
Weight (Motor-drawn version):	
In firing position.....	510 kg (1,124 lbs)
In traveling position.....	515 kg (1,235 lbs)
Length of tube (calibers):	
Without muzzle brake.....	11.8
Elevation limits.....	-10° to +73.5°

II. AMMUNITION (main types and projectile weight):

HE.....	5.45 kg (12.02 lbs)
HEAT (Model 38 B).....	3.5 kg (7.72 lbs)

III. PERFORMANCE:

Maximum horizontal range:	
With supercharge.....	4,600 m (5,032 yds)
With normal charge.....	3,550 m (3,884 yds)

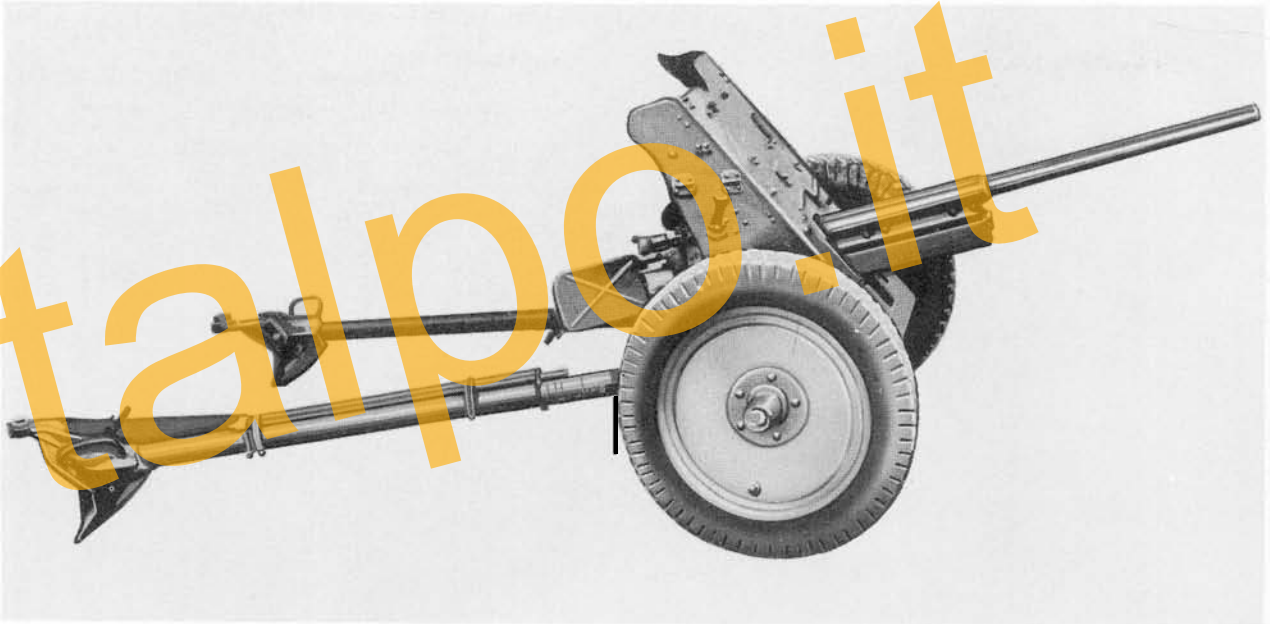
III. PERFORMANCE—Continued

Muzzle velocities:	
HE (Supercharge).....	260 m/s (853 fps)
HE (normal).....	221 m/s (725 fps)
Rate of fire.....	8-12 rpm
Armor penetration:	

Round	Angle of attack	Range	Penetration
HEAT M38 A.....	30°	Any	75-mm (2.95 in.)
HEAT M38 B.....	30°	Any	90-mm (3.54 in.)

37-mm Antitank Gun

(3.7 cm Panzerabwehr Kanone (3.7 cm Pak))



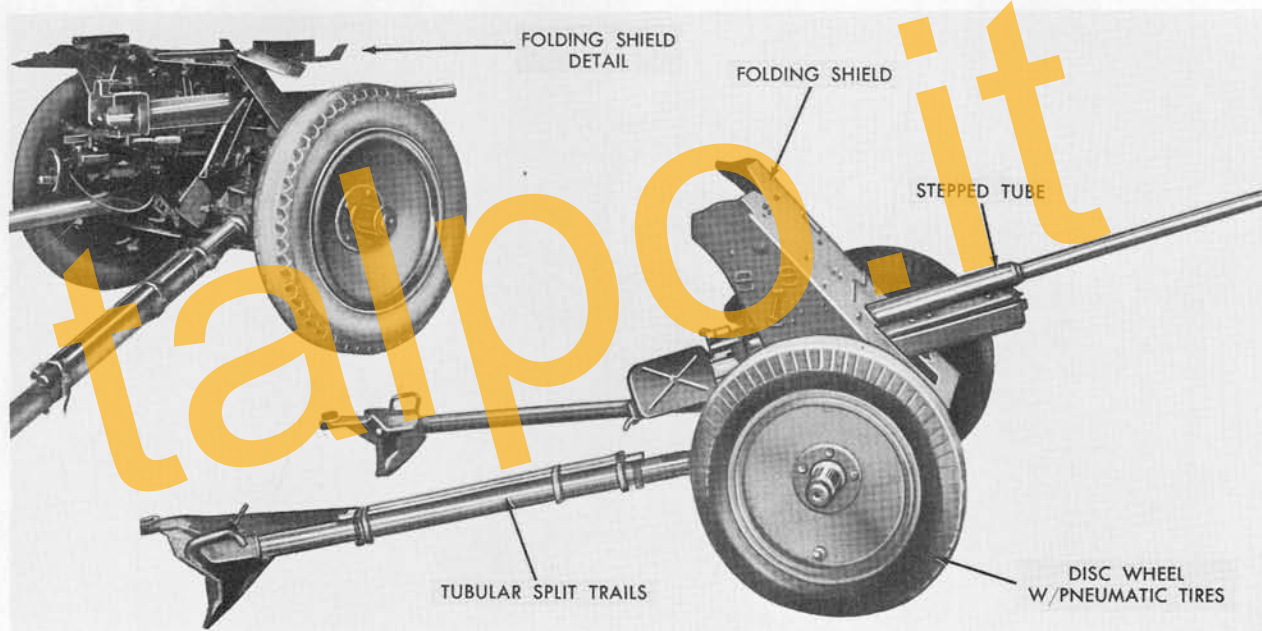
This was Germany's standard infantry antitank gun at the outbreak of World War II. In 1939 it was undoubtedly as good as any antitank gun in use by the armies of the major powers; however, it was not an outstanding weapon and the penetration performance at angles of attack other than normal was, even then, considered disappointing. It is a highly mobile weapon, normally towed on two-wheeled carriage but also capable of being carried in a light motor vehicle. Because of its light weight it was well suited for airborne use. It was introduced into the German service in 1936.

The Soviet 37-mm and later 45-mm antitank guns, as well as the United States 37-mm early World War II antitank gun, were all close copies of this gun. Beginning in the latter part of 1940 it was gradually replaced as standard by the 50-mm Pak 38, although the introduction of a HEAT grenade launched from the muzzle kept it in service throughout the war in areas of lesser importance.

It is believed to be held in reserve in Bulgaria and Czechoslovakia.

37-mm Antitank Gun

RECOGNITION FEATURES



CHARACTERISTICS

I. PHYSICAL DATA:

Caliber.....	37-mm (1.46 in.)
Weight:	
In firing position.....	440 kg (970 lbs)
In traveling position.....	450 kg (992 lbs)
Length of tube (calibers):	
Without muzzle brake.....	45
Elevation limits.....	-142 to +445 (-8° to +25°) mils
Total traverse.....	1,066 mils (60°)

II. AMMUNITION (main types and projectile weight):

AP.....	0.685 kg (1.5 lbs)
HVAP.....	0.368 kg (0.8 lbs)
HEAT Stick Grenade.....	8.5 kg (18.74 lbs)

III. PERFORMANCE:

Maximum horizontal range (w/HE).....	6,800 m (7,439 yds)
Muzzle velocity:	
HE.....	745 m/s (2,444 fps)
HVAP.....	1,020 m/s (3,347 fps)
HEAT Stick Grenade.....	110 m/s (361 fps)

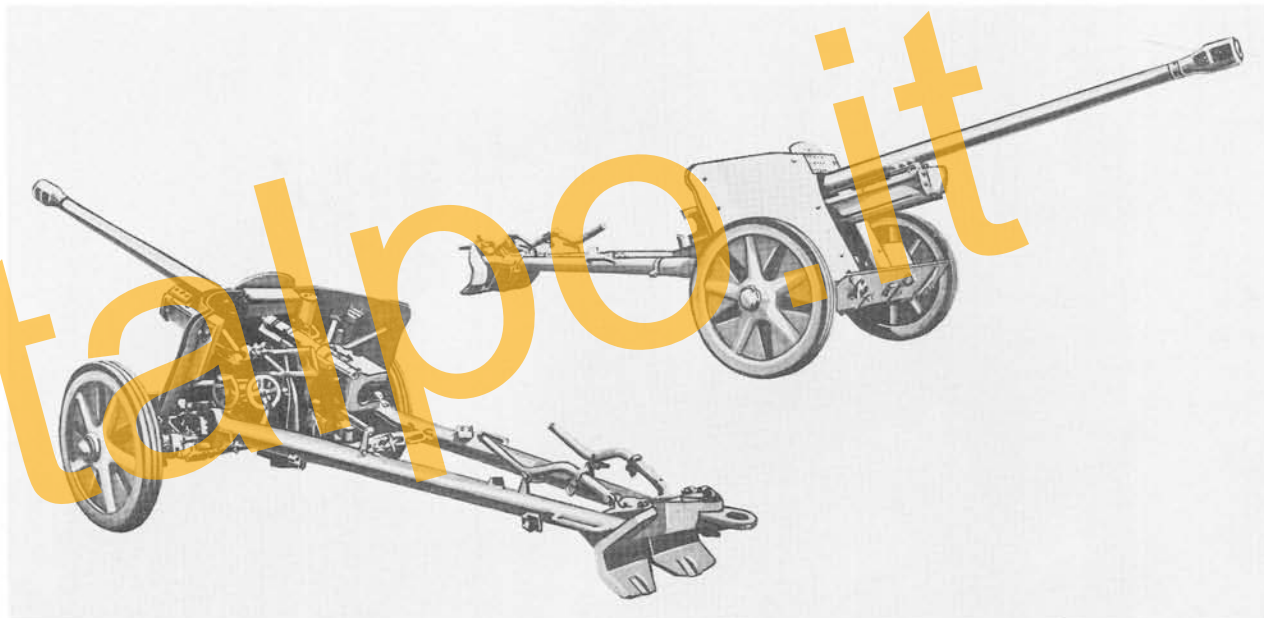
III. PERFORMANCE—Continued

Rate of fire.....	12-15 rpm
Armor penetration:	

Round	Angle of attack	Range		
		100 m (109 yds)	600 m (656 yds)	Any range
AP.....	30°	34-mm (1.34 in.)	27-mm (1.06 in.)	
HVAP.....	30°	64-mm (2.52 in.)	22.5 (0.89 in.)	
HEAT Stick Grenade.....	30°			180-mm (7.09 in.) (150 yds is effective range against moving targets)

50-mm Antitank Gun M38

(5 cm Panzerabwehr Kanone 30 (5 cm Pak 38))



Design of the 5 cm Pak 39 commenced in 1938 and late in 1940 it began to replace the 3.7 cm Pak in the German Army.

Its design incorporated a muzzle brake and torsion bar suspension. These two features were employed in the design of all subsequent German single axle field and antitank weapons. They contribute materially in keeping down the overall weight of equipment since they permit the use of a lighter recoil system and carriage.

By 1941 standards the 5 cm Pak 38 was a good antitank gun. The German air force mounted the gun in some ground attack aircraft such as the JU-88.

The 5 cm Pak 38 was supplanted but never com-

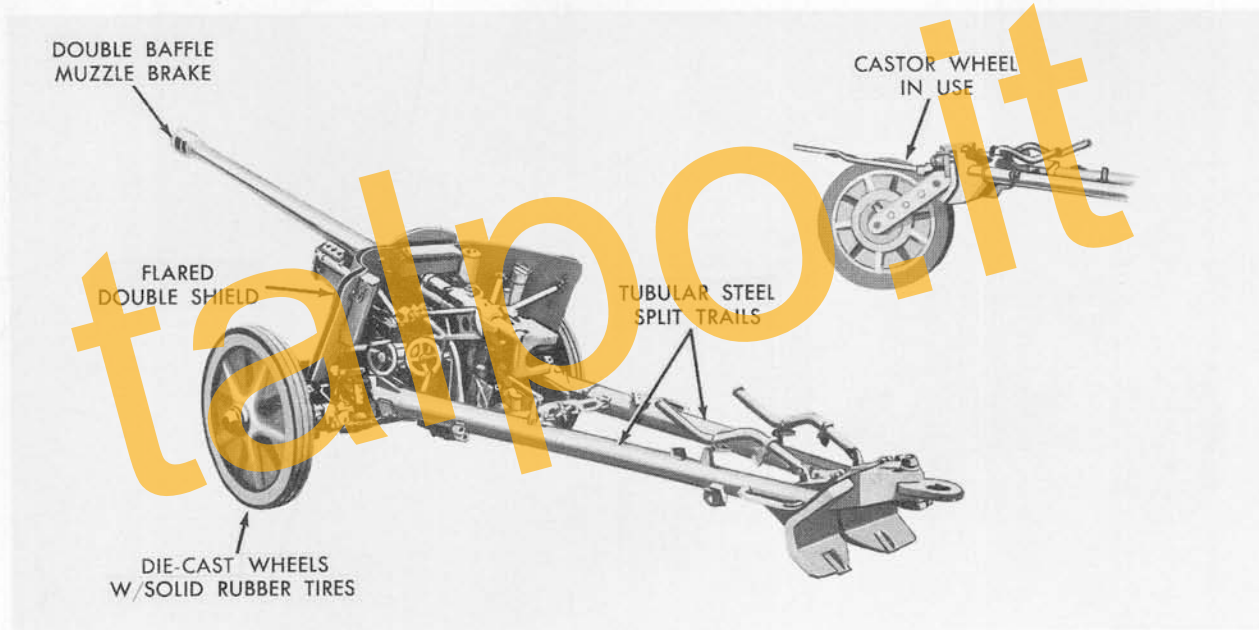
pletely replaced by the 7.5 cm Pak 40. In mid-World War II it was provided with a HEAT stick grenade which was effective only at quite close range, but had a considerable (7-inch) penetration.

The only easily perceptible differences, except for the caliber, between this gun and its successor the 75-mm Pak 40, are in the overall dimensions.

Gun	50-mm Pak 38	75-mm Pak 40
Overall length.....	15 ft. 7 in.	20 ft. 4 in.
Overall height.....	3 ft. 8 in.	4 ft. 1 in.
Overall width.....	6 ft.	6 ft. 10 in.

50-mm Antitank Gun M38

RECOGNITION FEATURES



CHARACTERISTICS

I. PHYSICAL DATA:

Caliber.....	50-mm (1.97 in.)
Weight:	
In firing position.....	1,000 kg (2,205 lbs)
In traveling position.....	1,062 kg (2,341 lbs)
Length of tube (calibers):	
Without muzzle brake.....	60
Elevation limits.....	-142 to +480 mils (-8° to +27°)
Total traverse.....	1,155 mils (65°)

II. AMMUNITION (main types and projectile weight):

HE.....	1.82 kg (4.01 lbs)
AP.....	2.06 kg (4.54 lbs)
HVAP.....	0.925 kg (2.04 lbs)

III. PERFORMANCE:

Maximum horizontal range:	
AP.....	1,500 m (1,640 yds)
HE.....	2,400 m (2,626 yds)

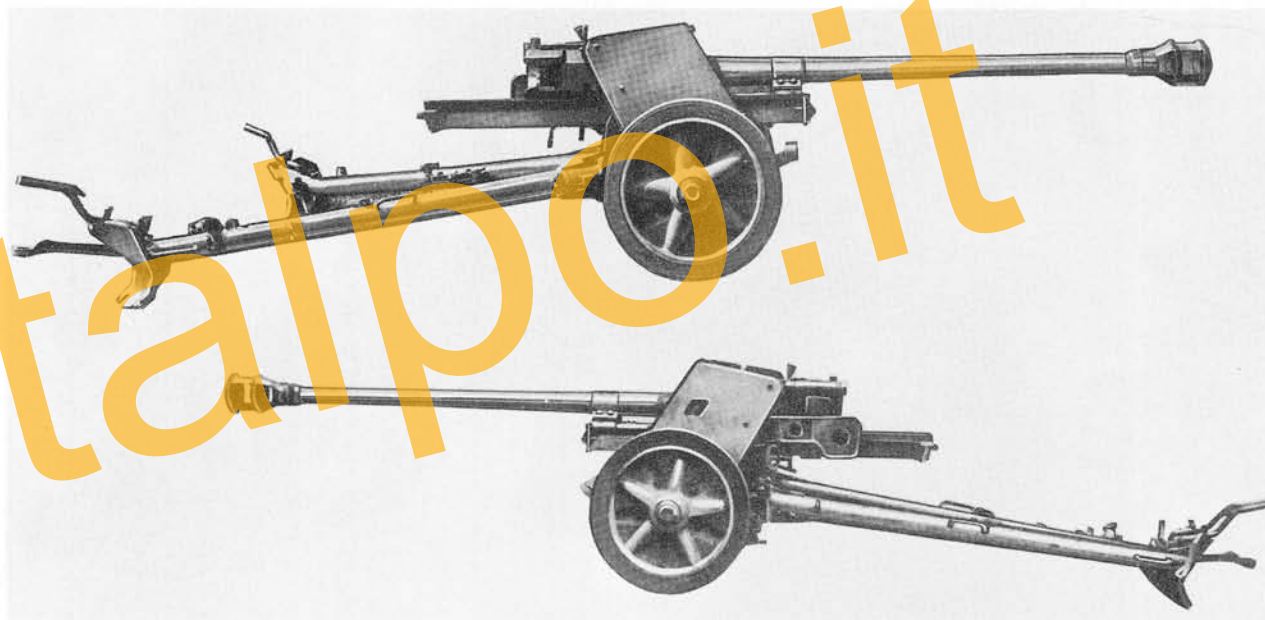
III. PERFORMANCE—Continued

Muzzle velocity:	
HE.....	549 m/s (1,801 fps)
AP.....	835 m/s (2,739 fps)
HVAP.....	1,180 m/s (3,870 fps)
Rate of fire.....	12-15 rpm
Armor penetration:	

Round	Angle of attack	Range		
		100 m (109 yds)	1,000 m (1,094 yds)	Any
AP.....	30°	69-mm (2.72 in.)	48-mm (1.89 in.)	
HVAP.....	30°	130-mm (5.12 in.)	38-mm (1.5 in.)	
HEAT Stick Grenade.....	30°			180-mm (7.09 in.) (Effective range 150 yds)

75-mm Antitank Gun M40

(7.5 cm Panzerabwehr Kanone 40 (7.5 cm Pak 40))



This weapon was introduced into service in the German Army in 1941 and was adopted as the standard infantry antitank gun. The design is identical to that of its predecessor, the 5 cm Pak 38, employing a muzzle brake, tubular steel trails, and solid rubber tires. Although its penetration performance was considered very satisfactory, the weight was judged to be excessive. However, it was the best towed antitank gun, of a weight that could be manhandled, available to the Germans during World War II.

The principal recognition features are the combination of double baffle muzzle brake, the hinged lower shield below the main shield, and between the wheels, the die-cast wheels with solid rubber tires, and the castor wheel (for manhandling).

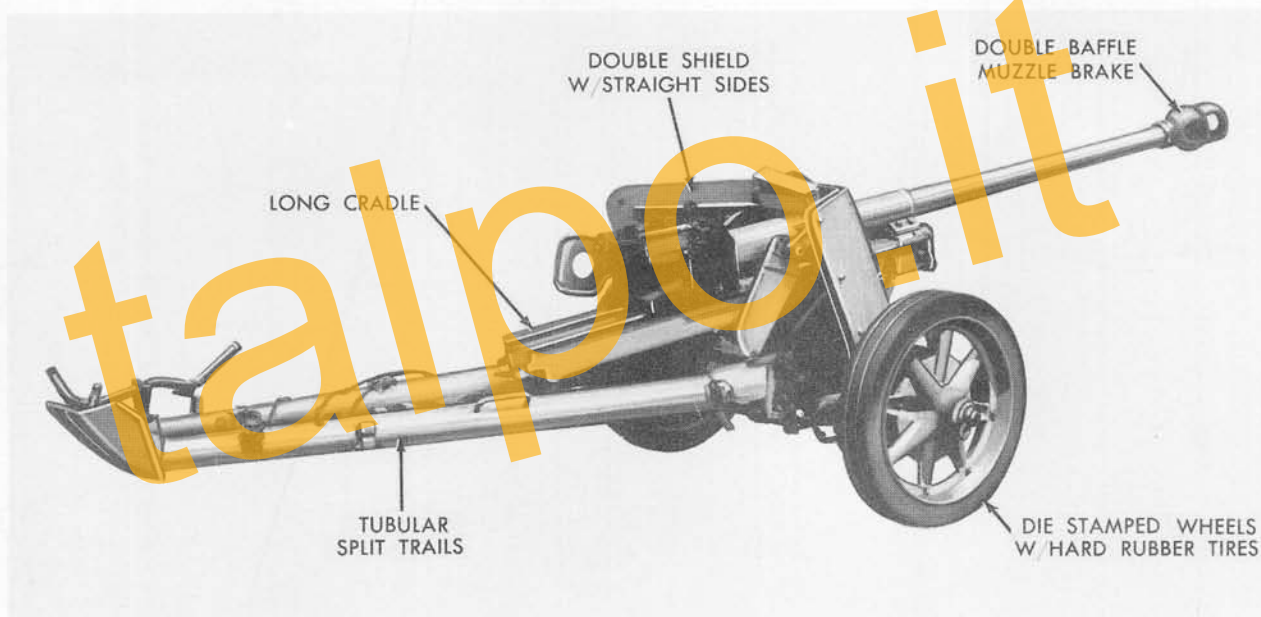
The only easily perceptible differences except for the caliber between this gun and its predecessor, the 50-mm Pak 38, are in the overall dimensions.

Gun	75-mm Pak 40	50-mm Pak 38
Overall length.....	20 ft. 4 in.	15 ft. 7 in.
Overall height.....	4 ft. 1 in.	3 ft. 8 in.
Overall width.....	6 ft. 10 in.	6 ft.

This piece is still in service or held in reserve in Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, and Rumania.

75-mm Antitank Gun M40

RECOGNITION FEATURES



CHARACTERISTICS

I. PHYSICAL DATA:

Caliber.....	75-mm (2.95 in.)
Weight:	
In firing position.....	1,425 kg (3,031 lbs)
In traveling position.....	1,500 kg (3,307 lbs)
Length of tube (calibers):	
With muzzle brake.....	49.3
Elevation limits.....	-107 to +392 mils (-6° to +22°)
Total traverse.....	1,157 mils (65°)

II. AMMUNITION (main types and projectile weight):

HE.....	5.74 kg (12.65 lbs)
AP.....	6.8 kg (15 lbs)
HVAP.....	4.1 kg (9.04 lbs)

III. PERFORMANCE:

Maximum horizontal range (w/HE).....	8,100 m (8,861 yds)
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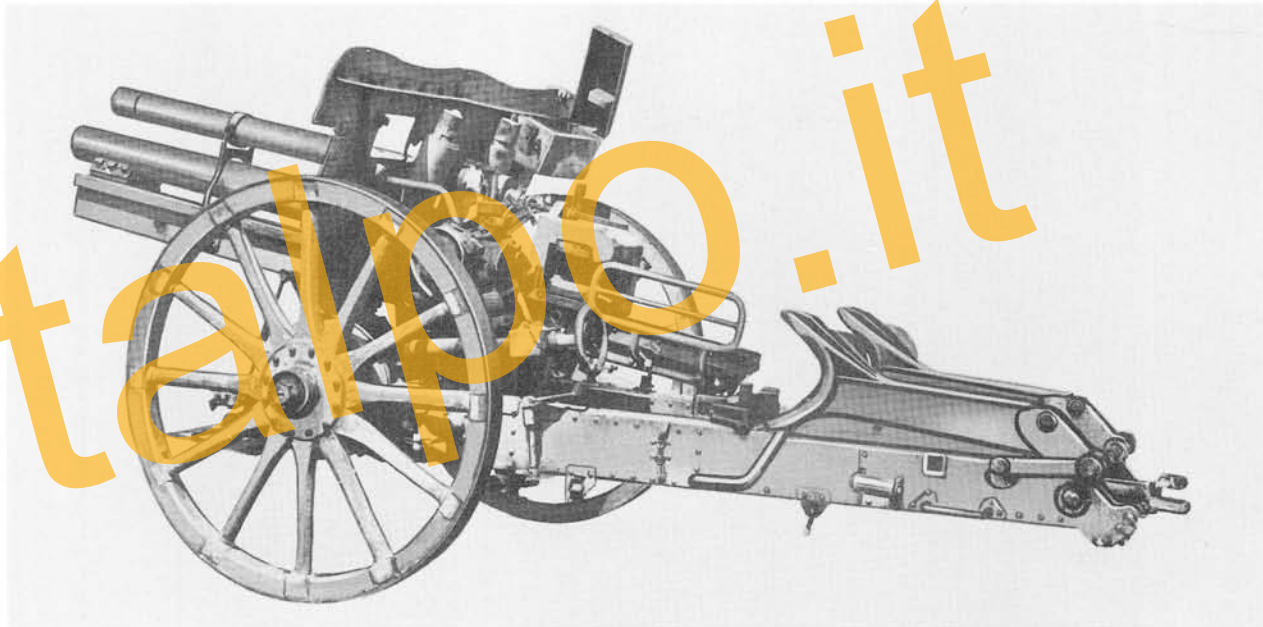
III. PERFORMANCE—Continued

Muzzle velocity:	
HE.....	550 m/s (1,804 fps)
AP.....	750 m/s (2,461 fps)
HVAP.....	930 m/s (3,051 fps)
Rate of fire.....	12-15 rpm
Armor penetration:	

Round	Angle of attack	Range	
		100 m (109 yds)	1,000 m (1,094 yds)
AP.....	30°	98-mm (3.86 in.)	82-mm (3.23 in.)
HVAP.....	30°	126-mm (4.96 in.)	87-mm (3.43 in.)

75-mm Light Field Gun M18

(7.5 cm Leichtes Feld Kanone 18 (7.5 cm Le. F. K. 18))



This gun was developed during the period 1930-31 before the light howitzer had replaced the light field gun in the armies of most major powers. Both Krupp and Rheinmetall produced prototype models with that of the former company being adopted for production in 1938. This was a light cavalry weapon which was replaced by the 7.5 cm Le. F. K. 38, which in turn gave way to the 105-mm Le. F. H. 18 howitzer as the standard German Divisional field artillery piece.

The carriage is of the split trail type with

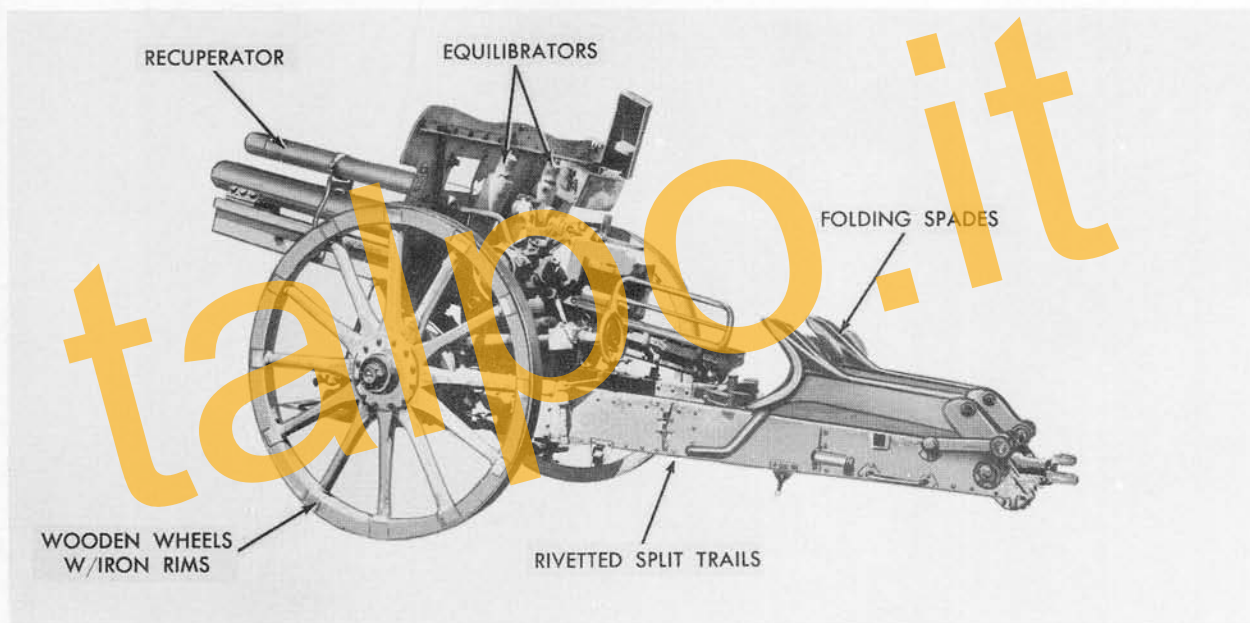
folding spades. The spring carriage suspension is automatically locked when the trail legs are opened out to the firing position. Wooden artillery wheels are fitted.

The gun employs a hydraulic recoil system and a hydropneumatic type recuperator. The former is housed within the cradle below the gun tube, while the latter is supported above the tube. Spring equilibrators are used.

There are believed to be some held in reserve stocks in Bulgaria and Czechoslovakia.

75-mm Light Field Gun M18

RECOGNITION FEATURES



CHARACTERISTICS

I. PHYSICAL DATA:

Caliber.....	75-mm (2.95 in.)
Weight:	
In firing position.....	1,120 kg (2,469 lbs)
In traveling position.....	2,010 kg (4,430 lbs)
Length of tube (calibers):	
Without muzzle brake.....	26
With muzzle brake.....	Not applicable
Elevation limits.....	-89 to +801 mils (-5° to +45°)
Total traverse.....	1,068 mils (60°)

II. AMMUNITION (main types and projectile weight):

HE.....	5 kg (11.02 lbs)
AP.....	6.8 kg (14.99 lbs)
HEAT.....	5.83 kg (12.9 lbs)

III. PERFORMANCE:

Maximum horizontal range.....	9,425 m (10,311 yds)
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III. PERFORMANCE—Continued

Muzzle velocity:	
HE.....	485 m/s (1,591 fps)
AP-T.....	444 m/s (1,457 fps)
HEAT.....	440 m/s (1,444 fps)
Rate of fire.....	8-10 rpm

Armor penetration:

Round	Angle of attack	Range		
		100-mm (109 yds)	1000-mm (1,094 yds)	Any
AP-T.....	30°	45-mm (1.85 in.)	38-mm (1.5 in.)	
HEAT.....	30°			90-mm (3.54 in.)