



PANZERJÄGER
VS
KV-1

Eastern Front 1941–43

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INTRODUCTION



CHRONOLOGY

1925

February

The Reichswehr develops a requirement for a new 3.7cm antitank gun.

1927

June

Heereswaffenamt prioritizes development of a 3.7cm PaK.

1928

January

Rheinmetall completes first 3.7cm PaK L/45 prototype.

1929

May

Rheinmetall begins low-rate production of 3.7cm PaK L/45 antitank gun.

July

Soviet Ministry of Defense authorizes development of heavy tanks.

1930

August 28

Rheinmetall signs secret deal to provide antitank technology to USSR.

December

Soviets begin work on T-30 heavy tank project.

1931

November

OKMO begins building a T-30 prototype.

1932

February

T-30 abandoned; switch to T-35 development.

September

OKMO tests first T-35 heavy tank prototype.

1933

August

Limited production of T-35 begins.

1934

September

Rheinmetall begins conversion of 3.7cm PaK L/45 to upgraded standard.

The first Soviet heavy tank, the multi-turreted T-35, was introduced in 1933. However, the 45-ton T-35 was not a successful design and its thin armor could be penetrated by the German 3.7cm PaK gun at 400m. (Steven Zaloga)





An artillery assembly hall at Rheinmetall-Borsig's Düsseldorf plant in 1939. Rheinmetall was responsible for designing and manufacturing the bulk of the antitank weapons on the Eastern Front in 1941–43. Like most German industry, Rheinmetall did not gear up for the demands of total war until after the Stalingrad debacle. [Author]

1935

Rheinmetall begins developing a 5cm PaK.

1937

November

ABTU issues requirement for a new heavy tank resistant to 76mm-gun fire and having a diesel engine.

1938

May

Rheinmetall wins contract to deliver 5cm PaK. OKMO and Kotin teams present SMK and T-100 designs to Defense Council. Stalin approves construction of prototypes.

1939

February

Kotin decides to build single-turret heavy tank (KV).

May

T-100 prototype completed.

August

SMK prototype completed; Stalin approves KV as well. First 5cm PaK 38 prototypes built.

September

KV prototype completed. Trials begin on T-100, SMK and KV-1.

Krupp and Rheinmetall begin development of a 75mm PaK gun.

December

SMK, T-100 and KV prototypes see combat in Russo-Finnish War.

December 19

KV-1 approved for production; other two abandoned.

1940

February

Prototypes of KV-2 built.

March

Panzerjäger I with Czech 4.7cm gun on PzKpfw I chassis enters service.

April

KV-1 enters limited production.

May

3.7cm PzGr 40 tungsten-core round enters service.

August

5cm PaK 38 antitank gun enters low-rate production.

1941

May

5cm PzGr 40 round for PaK 38 introduced.

June 27

Special Commission from OKH sent to *Heeresgruppe Nord* to investigate KV tanks.

November

4.2cm PaK 41 prototype completed.

1942

February

Stielgranate 41 introduced for 3.7cm PaK.

7.5cm PaK 40 antitank gun enters service.

7.5cm PaK 97/38 introduced as stopgap solution.

April

Captured Soviet 76.2mm guns converted into 7.62cm PaK 36(r). First *Marder II* with 7.62cm PaK 36(r) built.

June

Hitler bans further use of tungsten in antitank ammunition.

August

KV-1S is introduced.

1943

February

Hornisse heavy self-propelled Panzerjäger with 8.8cm gun begins production.

November

8.8cm PaK 43 enters service.

DESIGN AND DEVELOPMENT





KV-1 MODEL 1940 "EKTRANAMI" (WITH SCREENS)

Combat weight: 47.5 tons

Crew: five (commander, gunner, driver-mechanic, auxiliary driver, radio-operator)

Dimensions

Length with gun: 6.9m

Width: 3.32m

Height: 2.7m

Armor

Hull front: 75+35mm at 60 degrees

Hull sides: 75+35mm at 90 degrees

Hull rear: 60-75mm at 40 degrees

Hull roof: 35mm at 0 degrees

Turret front/mantlet: 75/90mm at 70 degrees/round

Turret sides: 75+35mm at 75 degrees

Turret rear: 75mm at 75 degrees

Turret roof: 35mm at 0 degrees

Armament

Main gun: 1 x 76.2mm F-33 L/42

Secondary: 3 x 7.62mm DT (coaxial, rear, hull)

Main gun rate of fire: 4-8 rds/min

Gunsight: PT4-13 with 26-degree field of view

Ammunition stowage

Main gun: 114 rounds (28 rounds BR-350A APHE, 86 rounds OF-350 HE-FRAG)

Secondary: 2,150 rounds

Communications

71-TK-3 radio; TPU-4-bis intercom

Motive power

Engine: V-2 12-cylinder diesel

Power: 600hp

Transmission: 5 gears forward, 1 reverse

Fuel capacity: 600l diesel

Power-to-weight ratio: 12.63hp/ton

Performance

Ground pressure: 0.84kg/cm²

Maximum road speed: 28km/h (17mph)

Maximum cross-country speed: 16km/h (10mph)

Operational range: 250km (156mi) (road), 180km (112mi) (cross-country)

Fuel consumption: 2.4l/km (road)

Cost: 635,000 Rubles (\$120,000 or 300,000 RM)







GERMAN ANTITANK GUNS

3.7cm PaK 36 L/46.5

Manufacturer: Rheinmetall-Borsig
Crew: 6
Prime mover: Kfz 69 Krupp-Protze
Length: 3.4m
Width: 1.65m
Height: 1.17m
Weight: 440kg
Elevation: +25 degrees/–8 degrees
Traverse: 59 degrees
Rate of fire: 15–18 rds/min
Barrel life: 4,000–5,000 rounds

Gunsight: ZF 1 x 11 (3 x magnification, 11-degree field of view)

Maximum engagement range: 600m

Ammunition: PzGr 39 AP, PzGr 40 APCR, *Stielgranate* 41

Cost: 5,730 RM (\$2,292 or 12,147 Rubles)



5cm PaK 38 L/60

Manufacturer: Rheinmetall-Borsig
Crew: 5
Prime mover: SdKfz 7, 8 or 11
Length: 4.75m
Width: 1.83m
Height: 1.1m
Weight: 986kg
Elevation: +27 degrees/–5 degrees
Traverse: 65 degrees
Rate of fire: 12–14 rds/min
Barrel life: 4,000–5,000 rounds

Gunsight: ZF 3 x 8 (3 x magnification, 8-degree field of view)

Maximum engagement range: 1,500m

Ammunition: PzGr 38 AP, PzGr 40 APCR

Cost: 8,000 RM (\$3,200 or 16,690 Rubles)





7.5cm PaK 40 L/48

Manufacturer: Rheinmetall-Borsig

Crew: 8

Prime mover: SdKfz 7, 8 or 11

Length: 3.45m

Width: 2m

Height: 1.25m

Weight: 1,500kg (1,425kg deployed)

Elevation: +22 degrees/-5 degrees

Traverse: 65 degrees

Rate of fire: 11–14 rds/min

Barrel life: 6,000 rounds

Gunsight: ZF 3 x 8 (3 x magnification, 8-degree field of view)

Maximum engagement range: 1,800m

Ammunition: PzGr 39 AP, PzGr 40 APCR, Gr 38 HI/B HEAT

Cost: 12,000 RM (\$4,800 or 25,440 Rubles)





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