Thomas Anderson

THE HISTORY OF THE PANZERJÄGER

VOLUME 2: FROM STALINGRAD TO BERLIN 1943–45

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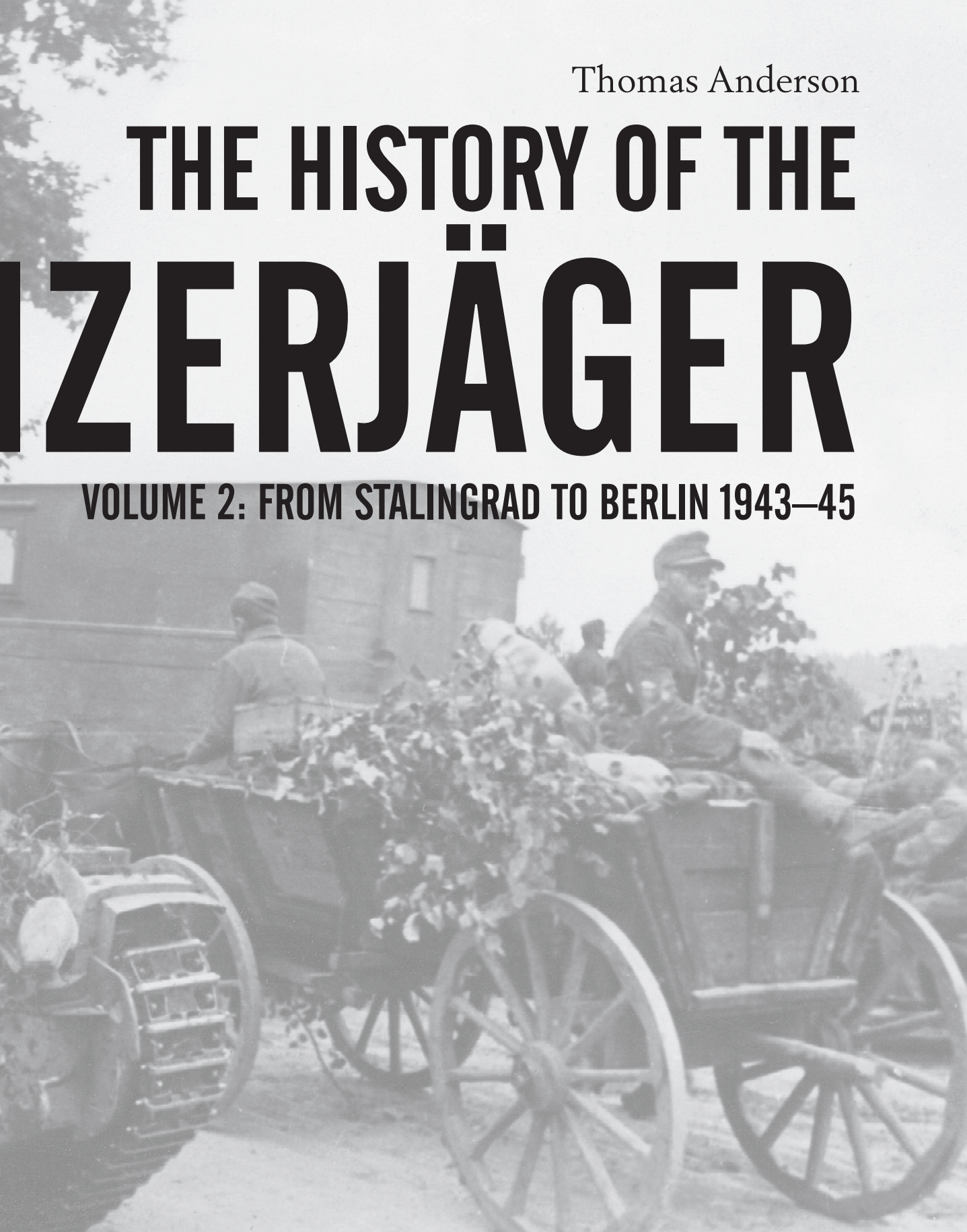

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Front cover upper image: a 5cm PaK in service with 14.*Waffen-Grenadier-Division* (see page 276) (Getty); lower image: a Tiger in action on the Eastern Front.

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Wilkowischken

Introduction

In the 1920s, the concept of mechanized (mobile) warfare was born and the light tank became an essential item in the inventory of many armies around the world. Many deployed the tank as armoured cavalry – parades and manoeuvres looked impressive – but by the late 1930s the concept of a mass charge by armoured cavalry was outmoded. However, military commanders in Germany had thoroughly appraised the capabilities of the tank and began to assemble a well-organized, well-trained and effective armoured force. The result of their forward thinking and planning was seen in the *Blitzkrieg* (lightning war) on Poland in 1939, the advance through The Low Countries and the conquest of France in 1940.

After the first tanks were deployed on the battlefield in World War I, the military was faced with finding a method of halting these dangerous war machines. This resulted in military planners contracting armaments manufacturers to design and develop effective anti-tank guns and ammunition that could penetrate armour.

Many nations, including Poland, France, Great Britain and Russia placed reliance on artillery units equipped with light field guns. These weapons had a low trajectory and a relatively high muzzle velocity, which made it quite feasible for the type to be used against armoured targets.

After the end of World War I, German military planners decided that the light field gun was obsolete and ordered the production of more howitzers. Although the type had a low muzzle velocity (reducing ballistic performance) it was an essential support weapon for an advancing army, but was never effective as an anti-tank gun.

For this reason, the German armaments industry was ordered to design and develop anti-tank guns and also anti-tank weapons specifically for the infantry. In 1939, the *Wehrmacht* had in their inventory a considerable number of 3.7cm TaK (PaK), and also *Panzerbüchse* 39.

A *Panzerschreck* team waiting to ambush Soviet armour at Willkowischken (Vilkaviškis, Lithuania); the town was among the first to be overrun by advancing Russian forces in 1944.

1942 The Eastern Front 1

By January 1941, the *Chef Heeresrüstung und Befehlshaber der Ersatzarmee* (Chef Hrüst und BdE – Chief of Army Ordnance and Commander of the Replacement Army) had registered a number of complaints with regard to the poor performance of divisional weapons:

Anti-tank weapons:

a) The 7.92mm *Panzerbüchse* [PzB] 39: Armour penetration is regarded to be seriously insufficient. A new type of anti-tank rifle has to be developed urgently.
b) 2.8cm s PzB 41: The mechanical design is still impractical. It is not intended to integrate this weapon into the *InfanteriePanzerjägerKompanie* [InfPzJgKp – infantry anti-tank company], since the 5cm *Panzerabwehrkanone* [PaK – anti-tank gun] has a superior performance. Also, the high-explosive (HE) ammunition lacks power.
c) The 3.7cm PaK is outdated as an anti-tank gun, but it is considered to be essential as an infantry support weapon.
d) The 5cm PaK is in the process of being issued to all InfPzJgKp at a rate of 12 guns per company.
e) The development of the Gerät 2472 must be continued, but the delivery date remains unconfirmed.

Two months later in March 1941, this expert opinion was corroborated by the *Oberkommando des Heeres* (ObdH – Commander-in-Chief of the Army):

A column of self-propelled PzJg 38(t) mounting the Russian-built M1936 (F-22) divisional gun, which was designated as the 7.62cm PaK 36(r) in German service. The gun (large numbers had been captured in the first months of *Unternehmen* (Operation) Barbarossa was re-chambered to fire the more effective German 7.5cm PaK 40 ammunition.

The German war machine became more reliant on captured equipment as the war progressed. A *Panzerjäger* team from an unknown unit has been equipped with a French-built 4.7cm PaK 181(f) towed by a Morris Commercial CS8 (Ersatz-Kfz 15), possibly one of the many abandoned by British forces at Dunkirk.

a) The *Schützenkompanie* [rifle companies] must be provided with an effective anti-tank weapon. This must have a calibre of 12–15mm, be operated by a two-man crew and be capable of penetrating 40mm armour at a range of 300m.
b) The present 3.7cm PaK must be improved without increasing the weight of the gun and its effective flat-trajectory fire.
c) The 5cm PaK 38 is too heavy and so weight must be considerably reduced. Also, if possible, the explosive power of both armour-piercing and high-explosive ammunition needs to be increased.
d) Development of the Gerät 2472 must be continued, but the weapon does require effective high-explosive ammunition.

[Note: The Gerät 2472 later became the 4.2cm PaK 41 and had a conical-type barrel (tapering from 42 to 27mm). Only a small number entered service due to a severe lack of tungsten carbide.]

Both reports were written before the invasion of the Soviet Union and indicate that senior military officials considered any fundamental changes to be unnecessary. Possibly they were aware of the production difficulties being experienced in the German armaments industry; a situation that continued until 1945.

When *Unternehmen* (Operation) Barbarossa was launched on 22 June 1941, the majority of *Panzerjäger* units were equipped with the 3.7cm PaK 36; some 14,500 were in service. Deliveries of the more powerful 5cm PaK 38 had begun in mid-1940, but only around 1,000 had been delivered by June 1941. Also available to anti-tank units were 500 Czech-built 4.7cm PaK.

The effectiveness of German anti-tank defences was drastically reduced when the Soviet T-34 medium and KV heavy tanks entered the battlefield; effective combat against these new types was no longer a certainty. The troops had to improvise and were forced to use light and heavy field artillery, including the formidable 8.8cm *Flugzeugabwehrkanone* (FlaK – anti-aircraft [AA] gun). But a courageous anti-tank mission by a close-combat team was often the last way of halting a heavily-armoured Soviet tank.

While design and development work continued on current weapons as planned, the *Waffenamt* (ordnance department) had already issued contracts for the development of heavier anti-tank guns, ignorant of the existence of the T-34 and KV. One contract was for the 8.8cm FlaK 36 to be developed as

The 7.5cm PaK 97/38 was the result of a search for an effective anti-tank weapon capable of defeating the latest well-armoured Russian tanks. The gun was an amalgamation of parts; the gun assembly was taken from a French-built 75mm *Canon de 75 modele* 1897 and mounted on the same split-trail carriage being produced for the 5cm PaK 38. The gun was fitted with a muzzle brake to improve performance.

an anti-tank weapon. Other technically more complex weapons, including a 7.5cm weapon taper-bore gun, were to be developed.

Despite the new threat posed by heavier and more mobile Soviet tanks the situation on the *Ostfront* (East Front) was stabilized, and the advance to Moscow continued apace.

Finally, the *Heereswaffenamt* (HWA – army ordnance department) had become aware – supported by a vast number of complaints from front-line commanders – of the true realities on the battlefront. As a result, the programme to develop a *schwere Panzerabwehrkanone* (s PaK – heavy anti-tank gun) was initiated.

Anti-tank Weapons – 1942

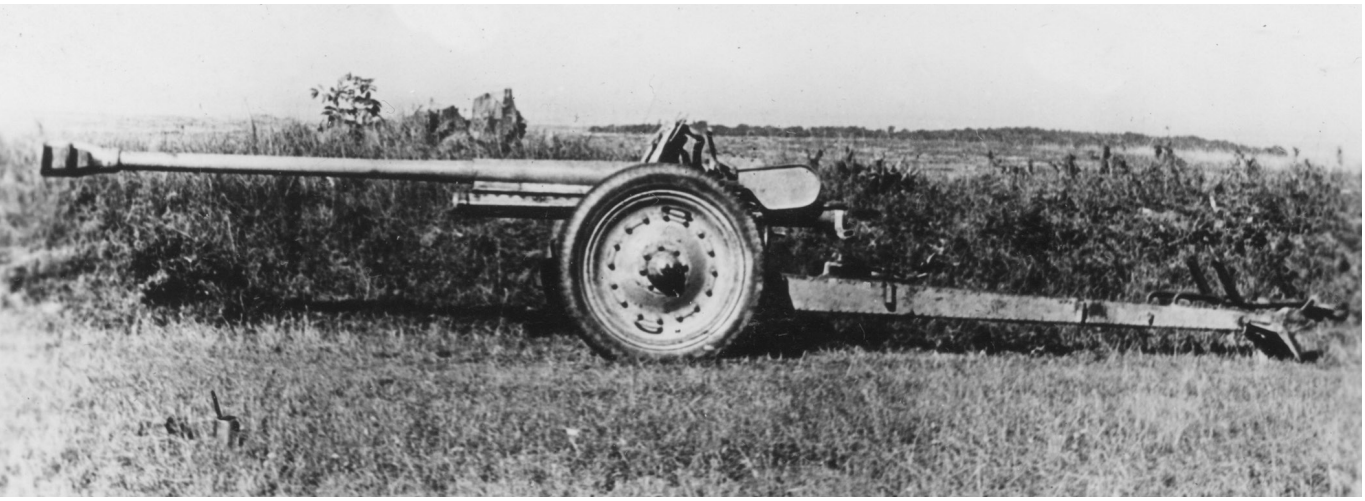
In early 1942, just six months after the sudden invasion of the Soviet Union, a number of newly developed weapons were deemed ready for production.

Conventional Weapons: German

7.5cm PaK 40

In February 1942, Rheinmetall-Borsig began delivering the 7.5cm PaK 40: the first truly 'modern' German anti-tank gun. The weapon was to become the

The 7.5cm PaK 40 was the first German high-velocity anti-tank gun capable of defeating the T-34 medium and the KV-1 heavy tank at long range. The marking stencilled on the gun shield indicates that it is in service with 168.InfDiv. The weapon is attached to a French-built Renault UE *Chenillette* (small tracked vehicle).



The Russian 76.2mm divisional gun M1936 (F-22) was one of the most versatile weapons in service during World War II. German military planners, impressed by its ballistic performance, immediately initiated modifications so that German ammunition could be fired. Designated 7.62cm PaK 36(r) it was issued in large numbers to front-line units.

standard ordnance for anti-tank units, and was also mounted in the PzKpfw IV medium tank and the *Sturmgeschütz* (StuG – assault gun).

Conventional Weapons: Foreign

The lack of materials and capacity in the German armaments industry restricted any planned increase in the production of 7.5cm PaK 40. Furthermore, a number of guns were destined to be installed in tanks and assault guns. To compensate, the HWA ordered all captured equipment to be modified to use German ammunition.

7.62cm PaK 36

The Soviet 76mm M1936 (F-22) divisional gun is considered to be one of the best weapons used in World War II. During the initial phase of *Unternehmen* Barbarossa, German forces captured large numbers of the type in undamaged condition. Designated as the 7.62cm *Feldkanone* (FK – field cannon) 296(r), a significant number were used – firing Soviet ammunition – by German units. In June 1942, it was reported that 129 of the type were in service.

To optimize the FK 296(r) as an anti-tank weapon, it was modified by re-boring the breech chamber to fire superior German PaK 40 ammunition and fitted with a muzzle brake, and also a gun shield. The gun was designated 7.62cm PaK 36. Wartime documents note that the modifications were carried out by front-line workshop units; only the muzzle brake was delivered by the *Waffenamt*.

By 1 June 1942, some 229 guns had been modified and delivered. A significant number – possibly 698 – were diverted for usage on *Selbstfahrlafette* (Sfl – self-propelled [SP]) guns.

A 7.5cm PaK 97/38 in service with an anti-tank unit attached to *Heeresgruppe Nord*. A well-prepared gun position could only be constructed when sufficient time and materials were available.

7.5cm PaK 97/38

In 1939, France had large numbers of the 75mm C*anon de* 75 mle 1897, quick-firing (QF) light field gun, despite it having entered service in 1898. By the time France capitulated in 1940, the *Wehrmacht* had captured large numbers of the type and issued them to units as the 7.5cm FK M 97(f). The critical situation with the supply and production of weapons, from 1941 to 1942, caused the *Waffenamt* to order the type to be modified for use as an anti-tank gun. This was made feasible because hollow-charge armour-piercing ammunition was beginning to be produced, which would compensate for the gun having a relatively low muzzle velocity. To improve mobility, the gun barrel and cradle were mounted on the split-trail-type carriage of the 5cm PaK 38. To improve performance the gun was fitted with a muzzle brake. By October 1942, the number of 7.5cm PaK 97/38(f) produced reached some 2,000.

Taper-bore Weapon

Adolf Hitler would often take an interest in and influence the development of military equipment. He appeared to be fascinated with modern technology;

in his eyes heavier and more sophisticated weapons would revitalize German industry and, ultimately, save the Reich. One such weapon was the taper-bore gun which, due to the shape of the barrel, fired projectiles at a high muzzle velocity. When compared to a similar anti-tank round, the (sub-calibre) type had a superior penetration capability.

To use this weapon effectively, tungsten carbide armour-piercing ammunition was required, but this was classified as *Mangelmaterial* (material in short supply). High-explosive ammunition was ineffective due to the small size of the shell.

Three types of taper-bore gun entered front-line service:

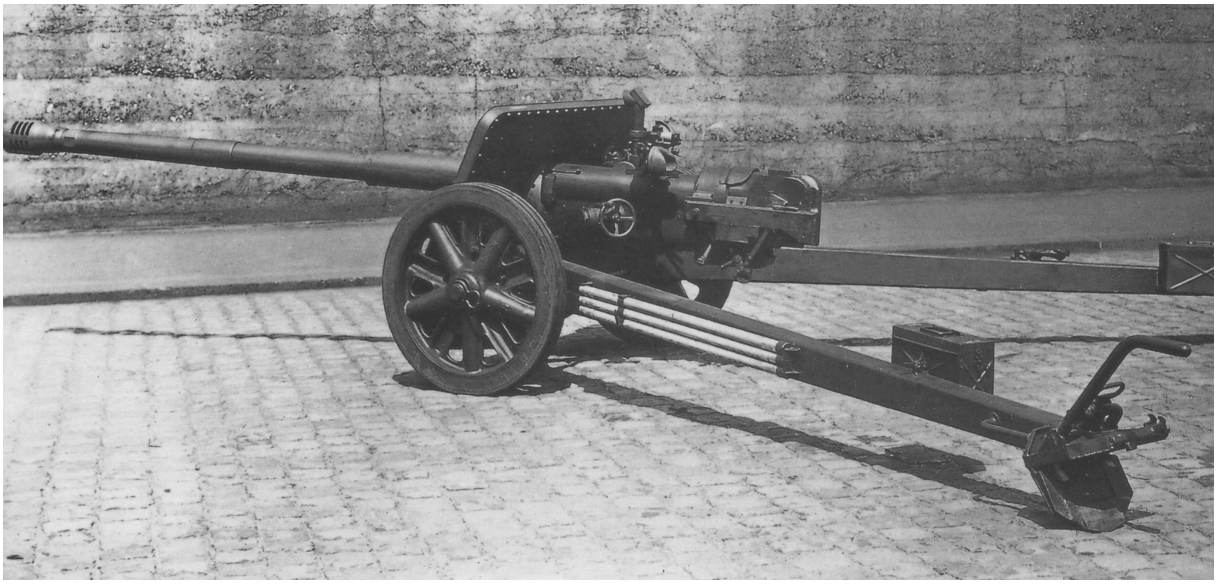
2.8cm s PzB 41

This anti-tank weapon was introduced primarily for *leichte Infanteriedivsionen* (le InfDiv – light infantry divisions) and *Gebirgsdivisionen* (GebDiv – mountain divisions). Field units of the *Luftwaffe* were also supplied with the weapon. A total of 150 were manufactured.

7.5cm PaK 41

Manufactured by Krupp, this anti-tank gun was the type of weapon desired by front-line troops. Armour 140mm thick could be penetrated at a range of 1,000m, so that now every type of Soviet tank could be defeated. Deliveries began on 1 June 1942, and production ended after 150 had been manufactured; more would have been built had it not been for the shortage of tungsten carbide.

Throughout World War II, engineers working in the German armaments industry sought innovative ideas when developing more powerful weapons. One development, the 7.5cm PaK 41, was designed using tape-bore technology. The high-performance gun entered service in summer 1942, but the constant shortage of tungsten-carbide ammunition affected its deployment.



The 7.5cm PaK 97/38 fired mainly German ammunition: the *Kopfgranate-Panzer* (KGrPz), an armour-piercing round which had been developed for the 7.5cm KwK L/24, and the *Panzer-Granate-Patrone* (PzGrPatr) 38 HL/B, a hollow-charge round. The standard high-explosive round was the 7.5cm Granate M15(f) captured French ammunition. The term *Patrone* indicates that it is a cartridge-type round.

The 7.5cm PaK 40 not only had a good ballistic performance, but its low profile made it easy to conceal on the battlefront. Note the double-layer gun shield which provided some protection for the crew against armour-piercing ammunition fired by enemy infantry and shrapnel.

4.2cm PaK 41

This taper-bore weapon was intended to supplement the 3.7cm PaK. It utilized the same carriage and gun shield, keeping it within required weight limits to ease transportation. Most were supplied to light infantry divisions and mountain divisions as initially planned. In February 1942, it was decided to issue the type to *Luftwaffe* field units. However, 1.GebDiv and 4.GebDiv and 97.le InfDiv and 100.le InfDiv were the only units to receive this weapon. The vast majority of tank destroyer units remained equipped with the 3.7cm PaK 36.

The 4.2cm PaK 41 programme also suffered from the ever-present shortage of tungsten carbide ammunition. By the end of the war some 151 guns had been produced.

Units: Organizational Issues

While waiting for the delivery of sufficient numbers of new weapons, front-line troops were again forced to improvise.

In December 1941, it was reported that the number of 3.7cm PaK operational (on all fronts) was some 12,288; six months earlier it had been 14,459. The total number of 5cm PaK 38 operational was 1,821; an increase of some 800 since June 1941.

A good example for this period is the following order of *Heeresgruppe Mitte* (Army Group Centre) dated 10 December 1941:

> *Geheime Kommandosache* (classified message)
>
> The 216.InfDiv will be transported via rail to *Heeresgruppe* [HG – Army Group] *Mitte* [Centre]. Upon arrival it will be attached to HG *Mitte*. *Oberkommando* [supreme command] will instruct *Feldtransport-Abteilung* [transport battalion] that each 5cm PaK is to be hauled by tractor to the division to reinforce its PzJgAbt. Each company will receive sufficient 5cm PaK to equip one platoon.

In January 1941, the normal provision of 3.7cm PaK for a *Panzerjäger-Abteilung* (PzJgAbt – anti-tank battalion) was 36 in three companies. Furthermore, the three infantry regiments each had an anti-tank company equipped with 12 of the type; a total of 72 guns. These companies were organized according to *Kriegstärkenachweisung* (KStN – table of organization) 184(c) or (d).

Since production of 5cm PaK 38 was not sufficient to re-equip all units, a number of *Teileinheit* (subunit) structures were created. This allowed a small number of the guns to be issued to reinforce the tank destroyer companies equipped with the 3.7cm PaK.

The first table of organization, KStN 188c, for the *Infanterie-Panzerjager-Zug Geschütz* 5cm (mot Z) (TE) (InfPzJgZg – infantry anti-tank gun platoon two 5cm guns motor traction) was published in January 1941. A month later the structure was complemented or replaced by KStN 215.

InfPzJgZg 2

This replaced the 4./*Zug* (platoon) of a regular 3.7cm PaK-armed InfPzJgKp. The first to be affected were those in Panzer divisions and motorized infantry divisions; standard infantry divisions were treated less favourably.

For newly established units a further structure, KStN 1142, was introduced which referred to a PzJgKp 'C' equipped with eight 3.7cm PaK and three 5cm PaK 38.

Although the introduction of the 5cm PaK 38 gave more fire power, weapon mobility was a problem. Whereas the 3.7cm PaK (435kg) could be handled by the four-man crew over most terrain, the heavier (900kg) PaK

38 – despite being fitted with castor wheels – was almost impossible for the crew to manoeuvre. Subsequently, motor vehicles or half-track tractors were an absolute requirement. However, since the availability of a suitable tractor was never a certainty, particularly in the mud season or winter, a team of heavy horses would be used.

Mobility would be a constant problem for all towed anti-tank units up until end of the war in 1945.

A document dated April 1942, distributed by *Armeeoberkommando* (AOK – Army High Command) 18 reveals:

Oberkommando des Heeres, (OKH – army high command) has confirmed the reinforcement of tank destroyer units with heavy armour-piercing weapons as stated in the order dated 9 March 1942.

II. Provision with 7.62cm PaK (mot Z)

1) It is expected that the army will receive 7.62cm PaK (mot Z) at the beginning of May, and two guns will be issued to platoons in each to PzJgAbt in an InfDiv and InfDiv (mot). The first target is to re-equip one platoon which has four 3.7cm PaK with two 7.62cm PaK.
2) The army has determined the sequence:
21.InfDiv, 96.InfDiv, 269.InfDiv, 11.InfDiv, 121.InfDiv, 254.InfDiv, 291.InfDiv, 1.InfDiv, 227.InfDiv, 61.InfDiv, 215.InfDiv, 58.InfDiv, 126. InfDiv, 217.InfDiv, 212.InfDiv and 224.InfDiv. Also 20.InfDiv (mot) and SS-Polizei-Division.
3) KStN are not yet available, but will be provided later. OKH is urgently proceeding with the procurement of suitable foreign-built [captured] towing tractors. If this is not possible, all divisions will have to improvise by using any available vehicle. As a final resort, teams of horses will have to be utilized.
4) ...
5) After the first units have been supplied, it is planned for the gradual re-equipment to continue.

III. Target for the supply of 5cm PaK 38

As more PaK 38 become available, the next target will be the gradual re-equipping of PzJg and InfPzJg units:

1. Infantry divisions

a) PzJgKp in InfRgt	Two Zug: four PaK 38
	Two Zug: six 3.7cm PaK

Far left: The terrain and weather condition caused many anti-tank units in Russia to mount a weapon on a half-track tractor. Here men from PzJgAbt 13 (13.PzDiv) have mounted a gun and stabilized it with some wooden beams. Field engineers have fitted armour plates on the front of the vehicle to protect the engine radiator and fabricated a small travel rest to prevent the 5cm PaK 38 from being damaged.

b) PzJgKp in PzJgAbt	One Zug: two heavy PaK Two Zug: eight 3.7cm PaK
2. Panzer divisions	
SchtzRgt and KradSchtzBtl	All Zug: one PaK 38 each Later the PzJgZg of the SchtzBtl will also replace the three 3.7cm PaK with three PaK 38
3. Infantry divisions (mot)	
a) PzJgZg in InfRgt and KradSchtzBtl	All Zug: three PaK 38
b) PzJgZg in InfBtl	All Zug: will retain 3.7cm PaK
c) Kp in PzJgAbt	Two Zug: six PaK 38 or One Zug: three PaK 38 and One Zug: two 7.62cm PaK 36

On 10 May, AOK 18 reported that the delivery of 90 7.62cm PaK 36 were expected by the end of July. All remaining 7.62cm FK(r), without a re-bored breech chamber, were to be returned to AOK 18.

The supply of suitable tractor units remained a great problem. Item 3 in the above document refers to 60 French-built Somua half-track tractors, but the vehicle was unsuitable for towing heavy anti-tank guns. Consequently, all units were ordered to use them very carefully.

Advanced SP Anti-tank Weapons

Before the outbreak World War II, the HWA had demanded the design and development of *Selbstfahrlafette* (Sfl – self-propelled [SP]) guns for the artillery and self-propelled tank destroyers. But due to financial constraints, the shortage of materials and lack of production facilities, these demands went unheeded.

Self-propelled guns were in principle an effective method of rapidly deploying firepower. However, there were a number of disadvantages; most types lacked armour protection for the crew and were fitted with a conspicuous superstructure. This made the type a prime target for enemy gunners. Once again, the German army could not be supplied with the best possible equipment: it was not even possible to develop a dedicated chassis and running gear for a self-propelled gun; instead those of obsolete types had to be modified and utilized.

The first type of self-propelled anti-tank gun, a 4.7cm PaK(t) mounted on the chassis of PzKpfw I light tank, entered service in 1940. A total of 202

vehicles were produced, but the type was underpowered and mechanically unreliable and could only defeat a tank with thin armour.

In preparation for the forthcoming *Unternehmen* Barbarossa, military planners decided to produce 200 self-propelled anti-tank guns by mounting a 4.7cm PaK(t) on the chassis of captured French R-35 light tanks. The vehicles were delivered to three independent PzJgAbt, but after devastating losses all were transported to France and delivered to garrison units.

One of the many Universal Carriers abandoned, in working order, by British forces as they retreated to Dunkirk. German engineers have mounted an Austrian-built 47mm Böhler to realize a somewhat rudimentary self-propelled anti-tank gun.

The 7.5cm PaK 97/98 was mounted on the chassis of a number of T-26 tanks captured from Russian forces. In September 1943, 3.Kp in PzJgAbt 563, an independent (army group), was reported as having five of these self-propelled guns in its inventory.

It soon became obvious that a more powerful self-propelled anti-tank gun would be required to defeat the Soviet-built T-34 and KV tank. Surprisingly, the first gun available was the 7.62cm PaK 36(r) which had been captured in substantial numbers as the Red Army retreated.

Military planners had become aware of the fact that the tank production would never be sufficient to fulfil the needs of Panzer and other front-line forces and ordered the development of self-propelled guns to be expedited. But again, due to the prevailing conditions in the Reich, they were forced to use the chassis of outdated types.

PzSfl 1 for 7.62cm PaK 36

Some years before the war, MAN had developed a tank for the light divisions. The PzKpfw II Ausf D was capable of travelling at 55kph; higher than the speed of a standard PzKpfw II. For several reasons the type was cancelled, but it was developed as a special infantry support tank; the PzKpfw II *Flammpanzer* (Fl – flame-thrower tank). On 7 December 1941, the *Organisationsabteilung* (OrgAbt – organization battalion) decreed that the planned second batch of *Flammpanzer* tanks was to be cancelled and the chassis used as the basis for

an armoured self-propelled *Panzerjäger*. The conversion would be reasonably simple: After removing the turret, a T-shaped G*rundplatte* (base plate) was bolted to the strengthened superstructure before mounting the upper gun carriage. To offer some protection for the crew, a simple armoured (14.5mm [front] and 10mm [side]) superstructure was fitted. Designated PzSfl 1 für 7.62cm PaK 36(r), production ended after 150 had been converted.

PzSfl 2 for 7.62cm PaK 36

A second self-propelled *Panzerjäger* was being developed at the same time as the above type. At the end of 1941, the Czech-built PzKpfw 38(t) was still in service with some Panzer divisions despite being outdated, However, the type had proven to be a mechanically rugged and reliable performer on the battlefield. Military planners decided that it was the obvious choice for conversion.

Firstly, a percentage of complete PzKpfw 38(t) chassis were diverted from the running production lines for alterations. A base plate, on which the PaK 36 was mounted, was produced and fitted over the fighting compartment. The simple superstructure, to protect the crew, was fabricated from thin

When France capitulated a large number of Lorraine 37L supply tractors were captured. German engineers soon identified the versatile vehicle as being suitable for conversion as a self-propelled gun carrier. One such vehicle was the 7.5cm PaK 40/1 *auf Geschutzwagen-Lorraine-Schlepper* (f), known as the Marder I. Production of the 37L continued in Vichy-controlled France until 1945.

The extra weight of the gun mounting and protective armour was acknowledged as being the cause of the Marder I being mechanically unreliable. In April 1943, German military officials decided to send any surviving vehicles to units in France and replaced it with the Marder III.

armour plate: A small gun shield he was also fitted. The self-propelled gun was designated PzSfl 2 für 7.62cm PaK 36 and between April and October 1942, some 344 were produced.

With availability of 7.5cm PaK 40, planners decided that this was the gun to be mounted on all future conversions..

PzJg Lorraine for 7.5cm PaK 40/1: Marder I

The German military also examined various types of captured vehicles to evaluate if any were suitable for conversion to an SP gun. During the rapid invasion of France in 1940, a significant number of abandoned but serviceable British and French tanks and other vehicles were captured. One was the fully-tracked Lorraine 37L, *Tracteur de Revitaillement pour Chars* 1937L (supply tractor 1937L), which was thought to be suitable and under the supervision of Major Becker – a capable engineer who had established a command in France and went on to produce a number of SP guns on a captured chassis. Becker obtained a 37L chassis, which had a a centre-mounted engine, and began conversion work having already decided to arm the type with a 7.5cm PaK 40. By late June, the prototype had been completed and then sent to Germany for appraisal by Adolf Hitler. He was impressed and gave his approval for the

type to go into production. Fabrication of parts for the superstructure was carried by Alkett; these were then shipped to *Heeres-Kraftfahrpark* (HKP – army vehicle park) in Paris (and Bielitz) where facilities had been established to assemble the SP guns. A sensible move given the prevailing state of the German armaments industry.

The *Marder* (Marten) I entered service between July and August 1942 and a total of 170 were completed.

PzJg II for 7.5cm PaK 40/2: Marder II

In May 1942, studies revealed that the hull of a PzKpfw II was suitable for conversion as a 7.5cm *Panzerjäger*, since it required little modification. Alkett was selected to carry out the work and managed to deliver a prototype by June. After a series of trials, the type was accepted and ordered into mass production using refurbished PzKpfw chassis. Since supply of these guns could not match the demand, orders were given for complete PzKpfw II to be diverted from the production line and converted. Such was the demand that vehicle manufacturers Ursus and Famo were also contracted.

By 1942 the *Panzerjäger* I had long been considered as obsolete; many of the type had been in service since the mid-1930s and despite receiving regular maintenance had become mechanically unreliable. Although the Czech-built 4.7cm PaK(t) lacked performance, against the latest enemy armour a number of PzJg I remained in service with German forces in North Africa and Russia until 1943.

By early 1943, a total of 533 Marder II had been delivered when production ended. The type was replaced in service by the Marder 38 built using a PzKpfw 38(t) chassis. At the same time, Ursus and Famo were contracted to build the *Wespe* (wasp) self-propelled artillery gun.

PzJg 38 for 7.5cm PaK 40/3: Marder 38

In mid-1942, military planners decided that all Panzer divisions operating the Czech-built PzKpfw 38(t) would be re-equipped with German-built tanks to increase the number of chassis for conversion. This is confirmed by an entry in the *Kriegstagebuch* (KTB – war diary) of the OKH which notes that all production capacity at Bömisch-Märische-Maschinenfabrik (BMM) was to be utilized to build the type.

When PzSfl 2 production ended, work had begun on the design and development of an improved SP gun, mounting a 7.5cm PaK 40/3. The design was straightforward, since it utilized an almost unchanged PzKpfw 38(t) hull and running gear. The fighting compartment was plated over and a *Trägerplatte* (carrier plate) was fitted to mount the slightly modified gun.

As more 7.5cm PaK 40 guns became available, military planners decided that the PzKpfw II chassis should be utilized for the production of a self-propelled gun. The Bosch headlamp identifies this as a late production vehicle.