

= Panzer I =

The Panzer I was a light tank produced in Germany in the 1930s . The name is short for the German Panzerkampfwagen I (" armored fighting vehicle mark I ") , abbreviated PzKpfw I. The tank 's official German ordnance inventory designation was SdKfz 101 (" special purpose vehicle 101 ") .

Design of the Panzer I began in 1932 and mass production began in 1934 . Intended only as a training tank to introduce the concept of armored warfare to the German Army , the Panzer I saw combat in Spain during the Spanish Civil War , in Poland , France , the Soviet Union and North Africa during the Second World War , and in China during the Second Sino-Japanese War . Experiences with the Panzer I during the Spanish Civil War helped shape the German armored corps ' invasion of Poland in 1939 and France in 1940 . By 1941 , the Panzer I chassis design was used as the basis of tank destroyers and assault guns . There were attempts to upgrade the Panzer I throughout its service history , including by foreign nations , to extend the design 's lifespan . It continued to serve in the Spanish Armed Forces until 1954 .

The Panzer I 's performance in combat was limited by its thin armor and light armament of two machine guns . As a design intended for training , the Panzer I was not as capable as other light tanks of the era , such as the Soviet T-26 . Although weak in combat , it formed a large part of Germany 's tank forces and was used in all major campaigns between September 1939 and December 1941 . The small , vulnerable light tank would be surpassed in importance by other German tanks , such as the Panzer IV , Panther , and Tiger ; nevertheless , the Panzer I 's contribution to the early victories of Nazi Germany during World War II was significant . Later in that war the turrets of the then obsolete PzKpfw Is and PzKpfw IIs were repurposed as gun turrets on specially built defensive bunkers , particularly on the Atlantic Wall .

= Development history =

The post-World War I Treaty of Versailles of 1919 prohibited the design , manufacture and deployment of tanks within the Reichswehr . Paragraph Twenty-four of the treaty provided for a 100,000 mark fine and imprisonment of up to six months for anybody who " [manufactured] armoured vehicles , tanks or similar machines , which may be turned to military use " .

Despite the manpower and technical limitations imposed on the German Army by the Treaty of Versailles , several Reichswehr officers established a clandestine General Staff to study World War I and develop future strategies and tactics . Although at first the concept of the tank as a mobile weapon of war met with apathy , German industry was silently encouraged to look into tank design , while quiet cooperation was undertaken with the Soviet Union . There was also minor military cooperation with Sweden , including the extraction of technical data that proved invaluable to early German tank design . As early as 1926 various German companies , including Rheinmetall and Daimler-Benz , produced a single prototype armed with a large 75 millimeter cannon (the Großtraktor , " large tractor " , was so codenamed to veil the true purpose of the vehicle) . Only two years later , German companies produced prototypes of the new Leichttraktor (" light tractor ") , which were armed with 37 millimeter KwK L / 45 guns . The Großtraktor was later put into service for a brief period with the 1 Panzer Division ; the Leichttraktor remained in testing until 1935 .

In the late 1920s and early 1930s , German tank theory was pioneered by two figures : General Oswald Lutz and his chief of staff , Lieutenant Colonel Heinz Guderian . Guderian became the more influential of the two and his ideas were widely publicized . Like his contemporary Sir Percy Hobart , Guderian initially envisioned an armored corps (panzerkorps) composed of several types of tanks . This included a slow infantry tank , armed with a small caliber cannon and several machine guns . The infantry tank , according to Guderian , was to be heavily armored to defend against enemy anti-tank guns and artillery . He also envisioned a fast breakthrough tank , similar to the British cruiser tank , which was to be armored against enemy anti-tank weapons and have

a large 75 @-@ millimeter (2 @. @ 95 in) main gun . Lastly , Germany would need a heavy tank , armed with a massive 150 @-@ millimeter (5 @. @ 9 in) cannon to defeat enemy fortifications , and even stronger armor . Such a tank would require a weight of 70 to 100 tonnes and was completely impractical given the manufacturing capabilities of the day .

Soon after rising to power in Germany , Adolf Hitler approved the creation of Germany 's first panzer divisions . Simplifying his earlier proposal , Guderian suggested the design of a main combat vehicle , which would be developed into the Panzer III , and a breakthrough tank , the Panzer IV . No existing design appealed to Guderian . As a stopgap , the German Army ordered a preliminary vehicle to train German tank crews . This became the Panzer I.

The Panzer I 's design history can be traced to 1932 's Landwirtschaftlicher Schlepper (La S) (Agricultural Tractor) armored fighting vehicle . The La S was intended not just to train Germany 's panzer troops , but to prepare Germany 's industry for the mass production of tanks in the near future ; a difficult engineering feat for the time . In July 1932 , Krupp revealed a prototype of the Landswerk Krupp A , or LKA , with a sloped front glacis plate and large central casemate , a design heavily influenced by the British Carden Loyd tankette . The tank was armed with two obsolescent 7 @. @ 92 @-@ millimeter (.312 in) MG @-@ 13 Dreyse machine guns . Machine guns were known to be largely useless against even the lightest tank armor of the time , restricting the Panzer I to a training and anti @-@ infantry role by design .

A mass @-@ produced version of the LKA was designed by a collaborative team from Daimler @-@ Benz , Henschel , Krupp , MAN , and Rheinmetall , exchanging the casemate for a rotating turret . This version was accepted into service after testing in 1934 . Although these tanks were referred to as the La S and LKA well beyond the start of production , its official designation , assigned in 1938 , was Panzerkampfwagen I Ausführung . A (' model A ' or , more accurately , ' batch A ') . The first 15 tanks , produced between February and March 1934 , did not include the rotating turret and were used for crew training . Following these , production was switched to the combat version of the tank . The Ausf . A was under @-@ armored , with steel plate of only 13 millimeters (0 @. @ 51 in) at its thickest . The tank had several design flaws , including suspension problems , which made the vehicle pitch at high velocities , and engine overheating . The driver was positioned inside the chassis and used conventional steering levers to control the tank , while the commander was positioned in the turret where he also acted as gunner . The two crewmen could communicate by means of a voice tube . Machine gun ammunition was stowed in five bins , containing various numbers of 25 @-@ round magazines . Author Lucas Molina Franco suggests that 833 Panzerkampfwagen I Ausf . A tanks were built in total , while authors Bryan Perrett offers the number of 300 and Terry Gander 818 units .

Many of the problems in the Ausf . A were corrected with the introduction of the Ausf . B. The engine was replaced by the water @-@ cooled , six @-@ cylinder Maybach NL 38 TR , developing 98 horsepower (73 kW) , and the gearbox was changed to a more reliable model . The larger engine required the extension of the vehicle 's chassis by 40 cm (16 in) , and this allowed the improvement of the tank 's suspension , adding another bogie wheel and raising the tensioner . The tank 's weight increased by 0 @. @ 4 tons . Production of the Ausf . B began in August 1935 and finished in early 1937 ? Franco writes 840 were constructed , but notes that only 675 of these were combat models , while Perrett suggests a total number of 1 @, @ 500 (offsetting the low number of Ausf . A he proposes) and Gander a total of 675 .

== = Sister tanks == =

Two more combat versions of the Panzer I were designed and produced between 1939 and 1942 . By this stage , the design concept had been superseded by medium and heavy tanks and neither variant was produced in sufficient numbers to have a real impact on the progress of the war . These new tanks had nothing in common with either the Ausf . A or B except name . One of these , the Panzer I Ausf . C , was designed jointly between Krauss @-@ Maffei and Daimler @-@ Benz in 1939 to provide an amply armored and armed reconnaissance light tank . The Ausf . C boasted a completely new chassis and turret , a modern torsion @-@ bar suspension and five

Schachtellaufwerk @-@ style interleaved roadwheels . It also had a maximum armor thickness of 30 millimeters (1 @.@ 18 in) , over twice that of either the Ausf . A or B , and was armed with an EW 141 semi autocannon , with a 50 round drum , firing 7.92mm anti @-@ tank shells . Forty of these tanks were produced , along with six prototypes . Two tanks were deployed to 1st Panzer Division in 1943 , and the other thirty @-@ eight were deployed to the LVIII Panzer Reserve Corps during the Normandy landings .

The second vehicle , the Ausf . F , was as different from the Ausf . C as it was from the Ausf . A and B. Intended as an infantry support tank , the Panzer I Ausf . F had a maximum armour thickness of 80 millimeters (3 @.@ 15 in) and weighed between 18 and 21 tonnes . The Ausf . F was armed with two 7 @.@ 92 @-@ millimeter MG @-@ 34s . Thirty were produced in 1940 , and a second order of 100 was later canceled . In order to compensate for the increased weight , a new 150 horsepower (110 kW) Maybach HL45 Otto engine was used , allowing a maximum road speed of 25 kilometers per hour (15 @.@ 5 mph) and used five overlapping road wheels per side , dropping the Ausf . C 's interleaved units . Eight of the thirty tanks produced were sent to the 1st Panzer Division in 1943 and saw combat at the Battle of Kursk . The rest were given to several army schools for training and evaluation purposes .

= = Combat history = =

= = = Spanish Civil War = = =

On 18 July 1936 , war broke out on the Iberian peninsula as Spain dissolved into a state of civil war . After the chaos of the initial uprising , two sides coalesced and began to consolidate their position ? the Popular front (the Republicans) and the Spanish Nationalist front . In an early example of a proxy war , both sides quickly received support from other countries , most notably the Soviet Union and Germany , who wanted to test their tactics and equipment . The first shipment of foreign tanks , 50 Soviet T @-@ 26s , arrived on 15 October . The shipment was under the surveillance of Nazi Germany 's Kriegsmarine and Germany immediately responded by sending 41 Panzer I 's to Spain a few days later . This first shipment was followed by four more shipments of Panzer I Ausf . B 's , with a total of 122 vehicles .

The first shipment of Panzer I 's was brought under the command of Lieutenant Colonel Wilhelm Ritter von Thoma in Gruppe Thoma (also referred to as Panzergruppe Drohne) . Gruppe Thoma formed part of Gruppe Imker , the ground formations of the German Condor Legion , who fought on the side of Franco 's Nationalists . Between July and October , a rapid Nationalist advance from Seville to Toledo placed them in position to take the Spanish capital , Madrid . The Nationalist advance and the fall of the town of Illescas to Nationalist armies on 18 October 1936 caused the government of the Popular Front 's Second Republic , including President Manuel Azaña , to flee to Barcelona and Valencia . In an attempt to stem the Nationalist tide and gain crucial time for Madrid 's defence , Soviet armor was deployed south of the city under the command of Colonel Krivoshein before the end of October . At this time , several T @-@ 26 tanks under the command of Captain Paul Arman were thrown into a Republican counterattack directed towards the town of Torrejon de Velasco in an attempt to cut off the Nationalist advance north . This was the first tank battle in the Spanish Civil War . Despite initial success , poor communication between the Soviet Republican armor and Spanish Republican infantry caused the isolation of Captain Arman 's force and the subsequent destruction of a number of tanks . This battle also marked the first use of the molotov cocktail against tanks . Ritter von Thoma 's Panzer Is fought for the Nationalists only days later on 30 October , and immediately experienced problems . As the Nationalist armor advanced , it was engaged by the Commune de Paris battalion , equipped with Soviet BA @-@ 10 armored cars . The 45 @-@ millimeter gun in the BA @-@ 10 was more than sufficient to knock out the poorly armored Panzer I at ranges below 500 meters (550 yd) .

Although the Panzer I would participate in almost every major Nationalist offensive of the war , the Nationalist army began to deploy more and more captured T @-@ 26 tanks to offset their

disadvantage in protection and firepower . At one point , von Thoma offered up to 500 pesetas for each T @-@ 26 captured . Although the Panzer I was initially able to knock out the T @-@ 26 at close range ? 150 meters (165 yd) or less ? using an armor @-@ piercing 7 @.@ 92 millimeter bullet , the Republican tanks began to engage at ranges where they were immune to the machine guns of the Panzer I.

The Panzer I was upgraded in order to increase its lethality . On 8 August 1937 , Major General García Pallasar received a note from Generalísimo Francisco Franco that expressed the need for a Panzer I (or negrilla , as their Spanish crews called them) with a 20 @-@ millimeter gun . Ultimately , the piece chosen was the Breda Model 1935 , due to the simplicity of the design over competitors such as the German Flak 30 . Furthermore , the 20 mm Breda was capable of perforating 40 millimeters of armor at 250 meters (1 @.@ 57 in at 275 yd) , which was more than sufficient to penetrate the frontal armor of the T @-@ 26 . Although originally 40 Italian CV.35 light tanks were ordered with the Breda in place of their original armament , this order was subsequently canceled after it was thought that the adaptation of the same gun to the Panzer I would yield better results . Prototypes were ready by September 1937 and an order was placed after successful results . The mounting of the Breda in the Panzer I required the original turret to be opened at the top and then extended by a vertical supplement . Four of these tanks were finished at the Armament Factory of Seville , but further production was canceled as it was decided sufficient numbers of Republican T @-@ 26 tanks had been captured to fulfill the Nationalist leadership 's request for more lethal tanks . The Breda modification was not particularly liked by German crews , as the unprotected gap in the turret , designed to allow the tank 's commander to aim , was found to be a dangerous weak point .

In late 1938 , another Panzer I was sent to the Armament Factory of Seville in order to mount a 45 mm gun , captured from a Soviet tank (a T @-@ 26 or BT @-@ 5) . A second was sent sometime later in order to exchange the original armament for a 37 @-@ millimeter Maklen anti @-@ tank gun , which had been deployed to Asturias in late 1936 on the Soviet ship A. Andreiev . It remains unknown to what extent these trials and adaptations were completed , although it is safe to assume neither adaptation was successful beyond the drawing board .

== = World War II in China == =

In 1937 , around ten Ausf . As were sold to China during a period of Sino @-@ German cooperation until 1941 , which were used in the Battle of Nanjing by the 3rd Armored Battalion of the Chinese Nationalist Army to fight against the Japanese Imperial Army .

After the fall of Nanking , the Chinese Panzer I Ausf.As were captured by the Japanese and displayed at the Yasukuni Shrine . Because of the relationship between Germany and Japan , the Chinese Panzer I Ausf.As were labelled " Made in the USSR " .

== = World War II in Europe == =

During the initial campaigns of World War II , Germany 's light tanks , including the Panzer I , formed the bulk of its armored strength . In March 1938 , the German Army marched into Austria , experiencing a mechanical breakdown rate of up to thirty percent . However , the experience revealed to Guderian several faults within the German Panzerkorps and he subsequently improved logistical support . In October 1938 , Germany occupied Czechoslovakia 's Sudetenland , and the remainder of the country in March 1939 . The capture of Czechoslovakia allowed several Czech tank designs , such as the Panzer 38 (t) , and their subsequent variants and production , to be incorporated into the German Army 's strength . It also prepared German forces for the invasion of Poland .

== = Poland and the campaign in the west == =

On 1 September 1939 , Germany invaded Poland using seventy @-@ two divisions (including 16

reserve infantry divisions in OKH reserves) , including seven panzer divisions (1 . , 2 . , 3 . , 4 . , 5 . , 10 . , " Kempf ") and four light divisions (1 . , 2 . , 3 . , 4 .) . Three days later , France and Britain declared war on Germany . The seven panzer and four light divisions were arrayed in five armies , forming two army groups . The battalion strength of the 1st Panzer Division included no less than fourteen Panzer Is , while the other six divisions included thirty @-@ four . A total of about 2 @,@ 700 tanks were available for the invasion of Poland , but only 310 of the heavier Panzer III and IV tanks were available . Furthermore , 350 were of Czech design ? the rest were either Panzer Is or Panzer IIs . The invasion was swift and the last Polish pockets of resistance surrendered on 6 October . The entire campaign had lasted five weeks (with help of the Soviet forces , which attacked on 17 September) , and the success of Germany 's tanks in the campaign was summed up in response to Hitler on 5 September : when asked if it had been the dive bombers who destroyed a Polish artillery regiment , Guderian replied , " No , our panzers ! "

Some 832 German tanks (including 320 PzI , 259 PzII , 40 Pz III , 76 PzIV , 77 Pz35 (t) , 13 PzBef III , 7 PzBef 38 (t) , 34 other PzBef and some Pz38 (t)) were lost during the campaign , approximately 341 of which were never to return to service . This represented about a third of Germany 's armor deployed for the Polish campaign . During the campaign , no less than half of Germany 's tanks were unavailable due to maintenance issues or enemy action , and of all tanks , the Panzer I proved the most vulnerable to Polish anti @-@ tank weapons .

Furthermore , it was found that the handling of armored forces during the campaign left much to be desired . During the beginning of Guderian 's attack in northern Poland , his corps was held back to coordinate with infantry for quite a while , preventing a faster advance . It was only after Army Group South had its attention taken from Warsaw at the Battle of Bzura that Guderian 's armor was fully unleashed . There were still lingering tendencies to reserve Germany 's armor , even if in independent divisions , to cover an infantry advance or the flanks of advancing infantry armies . Although tank production was increased to 125 tanks per month after the Polish Campaign , losses forced the Germans to draw further strength from Czech tank designs , and light tanks continued to form the majority of Germany 's armored strength .

Months later , Panzer Is participated in Operation Weserübung ? the invasion of Denmark and Norway .

Despite its obsolescence , the Panzer I was also used in the invasion of France in May 1940 . Of 2 @,@ 574 tanks available for the campaign , no fewer than 523 were Panzer Is , while there were 627 Panzer IIIs and IVs , 955 Panzer II , 106 Czech Panzer 35 (t) , and 228 Panzer 38 (t) . For their defense , the French boasted up to 4 @,@ 000 tanks , including 300 Char B1 , armed with a 47 mm (1 @.@ 7 in) gun in the turret and a larger 75 mm (2 @.@ 95 in) low @-@ velocity gun in the hull . The French also had around 250 Somua S @-@ 35 , widely regarded as one of the best tanks of the period , armed with the same 47 mm main gun and protected by almost 55 mm (2 @.@ 17 in) of armor at its thickest point . Nevertheless , the French also deployed over 3 @,@ 000 light tanks , including about 500 World War I @-@ vintage FT @-@ 17s . The two main advantages that German armor enjoyed were radios allowing them to coordinate faster than their British or French counterparts , and superior tactical doctrine , in addition to markedly faster speed , generally .

= = = North Africa and campaigns in the east = = =

Italian setbacks in Egypt and their colony of Libya caused Hitler to dispatch aircraft to Sicily , and a blocking force to North Africa . This blocking force was put under the command of Lieutenant General Erwin Rommel and included the motorized 5th Light Division and the 15th Panzer Division . This force landed at Tunis on 12 February 1941 . Upon arrival , Rommel had around 150 tanks , about half Panzer III and IV . The rest were Panzer I 's and IIs , although the Panzer I was soon replaced . On 6 April 1941 , Germany attacked both Yugoslavia and Greece , with fourteen divisions invading Greece from neighboring Bulgaria , which by then had joined the Tripartite Pact . The invasion of Yugoslavia included no less than six panzer divisions , which still fielded the Panzer I. Yugoslavia surrendered 17 April 1941 , and Greece fell on 30 April 1941 .

The final major campaign in which the Panzer I formed a large portion of the armored strength was

Operation Barbarossa , 22 June 1941 . The 3 @, @ 300 German tanks included about 410 Panzer I 's . By the end of the month , a large portion of the Red Army found itself trapped in the Minsk pocket , and by 21 September Kiev had fallen , thereby allowing the Germans to concentrate on their ultimate objective , Moscow . Despite the success of Germany 's armor in the Soviet Union , between June and September most German officers were shocked to find their tanks were inferior to newer Soviet models , the T @-@ 34 and KV series . Army Group North quickly realized that none of the tank guns currently in use by German armor could penetrate the thick armor of the KV @-@ 1 . The performance of the Red Army during the Battle of Moscow and the growing numbers of new Soviet tanks made it obvious the Panzer I was not suitable for this front . Some less battle @-@ worthy Panzer Is were tasked with towing lorries through mud to alleviate logistics problems at the front .

= = = Others = = =

After Germany , Spain fielded the largest number of Panzer I tanks . A total of 122 were exported to Spain during the Spanish Civil War , and , as late as 1945 , Spain 's Brunete Armored Division fielded 93 . The Panzer I remained in use in Spain until aid arrived from the United States in 1954 when they were replaced by the relatively modern M47 Patton . Between 1935 and 1936 , an export version of the Panzer I Ausf . B , named the L.K.B. (Leichte Kampfwagen B) , was designed for export to Bulgaria . Modifications included up @-@ gunning to a 20 @-@ millimeter gun and fitting a Krupp M 311 V @-@ 8 gasoline engine . Although three examples were built , none were exported to Bulgaria , although a single Panzer I Ausf . A had previously been sold .

A final order was supplied to Hungary in 1942 , totalling eight Ausf . B 's and six command versions . These were incorporated into the 1st Armored Division and saw combat in late 1942 .

= = Variants = =

Between 1934 and the mid @-@ 1940s , several variants of the Panzer I were designed , especially during the later years of its combat history . Because they were obsolescent from their introduction , incapable of defeating foreign armor , and outclassed by newer German tanks , the Panzer I chassis were increasingly adapted as tank destroyers and other variants . One of the best @-@ known variants was the kleiner Panzerbefehlswagen (" small armored command vehicle ") , built on the Ausf . A and Ausf . B chassis ? 200 of these were manufactured . The Panzer I Ausf . B chassis was also used to build the German Army 's first tracked tank destroyer , the Panzerjäger I. This vehicle was armed with a Czech 47 @-@ millimeter (1 @. @ 85 in) anti @-@ tank gun .