

= Panzer 35 ( t ) =

The Panzerkampfwagen 35 ( t ) , commonly shortened to Panzer 35 ( t ) or abbreviated as Pz.Kpfw. 35 ( t ) , was a Czechoslovak @-@ designed light tank used mainly by Nazi Germany during World War II . The letter ( t ) stood for tschechisch ( German : " Czech " ) . In Czechoslovak service , it had the formal designation Lehký tank vzor 35 ( Light Tank Model 35 ) , but was commonly referred to as the LT vz . 35 or LT @-@ 35 . A total of 434 were built ; of these , the Germans seized 244 when they occupied Bohemia @-@ Moravia in March 1939 and the Slovaks acquired 52 when they declared independence from Czechoslovakia at the same time . Others were exported to Bulgaria and Romania . In German service , it saw combat during the early years of World War II , notably the Invasion of Poland , the Battle of France and the invasion of the Soviet Union before being retired or sold off in 1942 . It was used for the remainder of the war by other countries and as a training tank in Bulgaria into the 1950s .

= = Description = =

The Panzerkampfwagen 35 ( t ) was assembled from a framework of steel " angle iron " beams to which the armor plates were riveted . A 4 mm ( 0 @. @ 16 in ) firewall separated the engine compartment from the crew . It had several mesh @-@ covered openings to allow access to the engine and improve ventilation by drawing air in through the commander 's hatch . This had the advantage of rapidly dispersing gun combustion gases when firing , but several disadvantages . The constant draft generated by the engine greatly affected the crew during cold weather , the danger of an engine fire reaching the crew compartment was increased and the engine noise and heat increased crew fatigue .

The driver sat on the right side of the tank using a 390 by 90 millimetres ( 15 @. @ 4 in × 3 @. @ 5 in ) observation port protected by 50 millimetres ( 2 @. @ 0 in ) of bulletproof glass and an armored shutter 28 millimetres ( 1 @. @ 1 in ) thick . To his right was a vision slit 120 by 3 millimetres ( 4 @. @ 72 in × 0 @. @ 12 in ) with a similar thickness of bulletproof glass . The Germans replaced the original three colored lights used by the Czechs to communicate with the driver with an intercom system . The radio operator sat on the left and had his own 150 by 75 millimetres ( 5 @. @ 9 in × 3 @. @ 0 in ) observation port with the same protection as the driver 's . His radios were mounted on the left wall of the hull . The hull machine gun was between the driver and radio operator in a ball mount capable of 30 ° of traverse , 25 ° of elevation and depressing up to 10 ° . Most of the machine gun 's barrel protruded from the mount and was protected by an armored trough . The mount had a spotting telescope , but open sights could be used if the plug at the top of the ball mount was removed . If necessary , the driver could lock the mount into position and fire it himself using a Bowden cable . The driver 's hatch was exposed to direct fire and could be damaged from the front .

The turret ring had a diameter of 1 @. @ 267 metres ( 49 @. @ 9 in ) . The turret had a flat face in the center of which was mounted the 3 @. @ 72 centimetres ( 1 @. @ 46 in ) main armament . On the right side was another 7 @. @ 92 millimetres ( 0 @. @ 312 in ) machine gun in a ball mount . The commander had four episcopes in his cupola and a monocular mirror , 1 @. @ 3 x 30 ° periscope which he could extend , once he had removed its armored cover in his hatch , to give vision while " buttoned @-@ up " . As the sole occupant of the turret , the commander was responsible for loading , aiming and firing the main gun and the turret machine gun while simultaneously commanding the tank . The Germans added an extra crewman on the right side of the turret to load the main gun and to operate the turret machine gun . Some ammunition had to be removed to accommodate him .

The 8 @. @ 62 @-@ litre ( 526 cu in ) ?koda T @-@ 11 / 0 four @-@ cylinder , water @-@ cooled engine produced 120 horsepower ( 89 kW ) at 1 @, @ 800 rpm . Two fuel tanks were fitted , the main tank with a capacity of 124 litres ( 33 US gal ) was on the left side of the engine and the 29 litres ( 7 @. @ 7 US gal ) auxiliary tank was on the other side . The engine could run on gasoline , an alcohol @-@ gasoline mixture , and " Dynalkohol " ( an alcohol @-@ benzole mixture ) . It was mounted in the rear along with the six @-@ speed transmission which drove rear @-@ mounted

drive sprockets . The suspension was derived from the Vickers 6 @-@ Ton tank ; eight small pairs of road wheels on four bogies per side , each pair of bogies sprung by a single leaf spring , a front idler wheel , and four track return wheels . An unsprung road wheel was located directly underneath the idler wheel to improve obstacle crossing . The transmission , brakes and steering were mechanically assisted with compressed air , reducing driver fatigue . This last feature proved problematic in the extreme conditions of the Eastern Front .

The main armament was a Škoda ÚV vz . 34 ( German designation " KwK 34 ( t ) " ) gun with a pepperpot muzzle brake and a prominent armored recoil cylinder above the barrel . Škoda called it the A3 . It fired a .815 kilograms ( 1 @. @ 80 lb ) armor @-@ piercing shell at 690 metres per second ( 2 @, @ 300 ft / s ) . It was credited with penetrating a plate inclined at 30 ° from the vertical 37 millimetres ( 1 @. @ 5 in ) thick at 100 metres ( 110 yd ) , 31 millimetres ( 1 @. @ 2 in ) thick at 500 metres ( 550 yd ) , 26 millimetres ( 1 @. @ 0 in ) thick at 1 @, @ 000 metres ( 1 @, @ 100 yd ) , and 22 millimetres ( 0 @. @ 87 in ) thick at 1 @, @ 500 metres ( 1 @, @ 600 yd ) . Kliment and Francev quote penetration of a vertical plate 45 millimetres ( 1 @. @ 8 in ) thick at 500 metres ( 550 yd ) . The machine gun 's ball mount could be coupled to the main gun or used independently . Both weapons could elevate 25 ° and depress 10 ° . They both used 2.6x power sights with a 25 ° field of view . Initially the tank used Zbrojovka Brno ZB vz . 35 machine guns , but these were exchanged for ZB vz . 37s during 1938 . This was adopted by the Germans as the MG 37 ( t ) .

In German use , 72 rounds of 37 mm ammunition were carried . These were stored in 6 @-@ round boxes : three on the hull side wall , eight in the turret overhang and one ready box above the gun on the turret roof . For the machine gun , 1 @, @ 800 rounds of belted 7 @. @ 92 mm ammunition were carried . The machine gun ammunition was in 100 @-@ round belts , stored three to a box . In Czech service , the LT vz . 35 carried 78 rounds ( 24 AP and 54 HE ) and 2 @, @ 700 rounds of machine gun ammunition , the difference being removed to make room for the fourth crewmember in German service . The German command tank version ( Panzerbefehlswagen 35 ( t ) ) exchanged some ammunition - exactly how much isn 't known - for another radio set and a gyrocompass . It could be recognized by the prominent " clothesline " radio antenna mounted on the rear deck .

== = Armor == =

The gun mantlet was 25 mm ( 0 @. @ 98 in ) thick . The rest of the armor was as follows :

== Development ==

The Czech Army formulated a requirement in the II @-@ a category of light cavalry tanks by the end of 1934 . Šeskomoravská Kolben @-@ Dan?k proposed an improved version of its P @-@ II light tank already in service as the LT vz . 34 , but Škoda offered a new design that used the pneumatic system and engine earlier proved by its unsuccessful SU or S @-@ II light tank prototype . One prototype was ordered from each company for delivery during the summer of 1935 . Both tanks had the same armament and three @-@ man crew , but ŠKD 's P @-@ II @-@ a was much smaller at 8 @. @ 5 tonnes ( 8 @. @ 4 long tons ; 9 @. @ 4 short tons ) and had only a maximum 16 millimetres ( 0 @. @ 63 in ) of armor while Škoda 's S @-@ II @-@ a weighed 10 @. @ 5 tonnes ( 10 @. @ 3 long tons ; 11 @. @ 6 short tons ) and had 25 millimetres ( 0 @. @ 98 in ) of armor . The army thought that P @-@ II @-@ a was at the limit of its development while the S @-@ II @-@ a could be improved as needed .

The first production order for 160 LT vz . 35s , as the S @-@ II @-@ a was designated in Army service , was placed on 30 October 1935 and deliveries began in December 1936 . An additional order for 35 was made on 12 May 1936 and a follow @-@ on order placed for 103 more a month later . The total order for 298 tanks was split equally by Škoda Works and ŠKD according to their cartel agreement .

Development was rushed and there were many defects in the LT vz . 35s . Many tanks had to be returned to the factories to be repaired . Most of these repairs involved the electrical system , not the complicated pneumatic system .

= = = Foreign interest = = =

In August 1936 , Romania placed an order for 126 ; the bulk of these were delivered from the end of 1938 by Skoda . Afghanistan ordered ten in 1940 ; but , these were sold instead to Bulgaria . Total production was 434 , including 298 for the Czechoslovak Army , 126 for Romania ( under the designation Skoda R 2 ) and ten for Bulgaria . The Wehrmacht used 218 vehicles captured from the Czechoslovak Army in March 1939 . Britain 's Alvis Stausler negotiated for a production license from September 1938 until March 1939 when the Nazi occupation made an agreement impossible . The Soviets were also interested so Skoda shipped the S II a prototype and one production LT vz . 35 to the proving grounds at Kubinka for evaluation . The Soviets were only interested in buying the prototype , but Skoda refused to sell unless a license was purchased as well , believing that the Soviets would simply copy the design and build it without paying any royalties .

= = Variants = =

S IIa

Prototype tank built by Skoda for the Czechoslovakian Army S II light tank requirement

Lehký tank vzor 35

( Light Tank Model 35 ) Abbreviated as LT vz.35 or LT 35 , production tanks for the Czechoslovakian Army

Panzerkampfwagen 35 ( t )

Czechoslovakian Army LT vz.35 tanks inducted into the Wehrmacht after annexation .

PanzerBefehlsWagen 35 ( t )

( Pz.Bef.Wg. ) Command tanks with radios .

Artillerie Schlepper 35 ( t )

Artillery tractor conversions of Pz.Kpfw. 35 ( t )

Mörser Zugmittel 35 ( t )

Alternative designation for the Artillerie Schlepper 35 ( t )

T 11

Ten Pz.Kpfw. 35 ( t ) tanks ordered for the Afghan Army in 1940 , diverted to Bulgaria .

R 2

Designation used by Romania for LT vz.35 tanks supplied to the Romanian Army .

TACAM R 2

( Tun Anticar pe Afet Mobil - Self propelled Anti tank Gun ) Romanian Tank destroyer conversions of R 2 tanks , mounting captured Soviet weapons .

The chassis was used for both a command tank ( Panzerbefehlswagen 35 ( t ) ) which featured extra radios ( 20 built ) and also as an artillery tractor ( Artillerie Schlepper 35 ( t ) ) by removing the turret and upper hull and covering the gap with canvas ( 49 converted from March 42 onwards ) .

The T 11 was built to an Afghan order placed in 1940 and differed mainly in that it used an improved Skoda A 8 gun . Ten were built , but were sold to Bulgaria and delivered in the third quarter of 1940 .

The TACAM R 2 was a tank destroyer built by removing the turret and substituting a captured Soviet 76 . 2 mm ( 3 . 00 in ) USV field gun in its place . The gun and crew was protected by a thin , fixed , three sided , partially roofed casemate that used armor plate salvaged from captured Soviet tanks . The prototype was completed by September 1943 , although it used the older 76 . 2 mm M 1936 F 22 field gun , and proved reasonably successful . Conversion of an additional twenty was completed by the end of June 1944 when the project was stopped because of concerns that its gun was inadequate against the heavily armored Soviet Isif Stalin tanks . Proposals were made to up gun the vehicle with either the Romanian built 75 mm ( 3 . 0 in ) Re?i?a Model 1943 anti tank gun or the German 88 mm ( 3 . 5 in )

gun , but nothing was done before Romania changed sides in August 1944 .

= = Operational history = =

= = = Czechoslovakia = = =

The 298 LT vz . 35 tanks were assigned to the armored regiments belonging to the four Mobile ( Rychlá ) Divisions between 1936 ? 39 . Each regiment was supposed to detach three @-@ tank platoons to support the infantry divisions and border areas in times of crisis . These platoons were heavily used suppressing the protests and violence instigated by Konrad Henlein 's Sudeten German Party ( Sudetendeutsche Partei - SdP ) and the Sudetendeutsche Freikorps ( paramilitary groups trained in Germany by SS @-@ instructors ) between May and October 1938 .

After the Munich Agreement , two tank battalions were sent to reinforce the 3rd Mobile Division in Slovakia . They were used to repel Hungarian and Polish border @-@ crossers , sometimes up to a battalion in strength . They screened the infantry when they had to evacuate southern Slovakia after the First Vienna Award on 2 November 1938 .

A company of nine LT vz . 35s was in Michalovce when Carpatho @-@ Ukraine declared independence and Hungary invaded on 14 March 1939 . They bolstered the Czech defenses in front of Svaliava before being forced to retreat into Slovakia by 17 March . They were turned over to Slovakia the next day . The S @-@ II @-@ a prototype and one LT vz . 35 tank were returning from testing in the Soviet Union when the fighting began . They detrained in Sevljus and participated in a counterattack at Fan?íkovo , but the LT vz . 35 was damaged and captured by the Hungarians . The prototype was forced to retreat into Romania by 17 March , along with most of the other Czech troops in eastern Ruthenia . The Romanians returned it to ?koda six months later .

= = = Germany = = =

In 1939 , following the German occupation of Czechoslovakia in March 1939 , 244 vehicles of the Czechoslovak Army were seized by the Germans where they were known as the L.T.M.35 until January 1940 . In German service , they were used as substitutes for the Panzerkampfwagen III medium tank . They were assigned to the Panzer Battalion ( Panzerabteilung ) 65 ( 39 ) of the 1st Light ( leichte ) Division and the independent Panzer @-@ Regiment 11 ( 81 ) where they participated in the Invasion of Poland . 77 of these were lost during the campaign , mostly due to mechanical breakdowns , but only 7 of these were irreparable . From 1940 on , there had not been any spare parts available and tanks had to be completely rebuilt to remain operational .

The 1st Light Division absorbed the 11th Panzer @-@ Regiment and was redesignated as the 6th Panzer Division on 18 October 1939 . It took 132 Pz.Kpfw. 35 ( t ) s into the Battle of France where it was assigned to XXXXI Corps ( mot . ) for Panzergruppe von Kleist 's attack through the Ardennes 44 of these had been lost by the end of May . 35 replacements were issued on 3 June in preparation for Fall Rot , the attack on the remnants of the French Army that began the following day . A total of 62 Pz.Kpfw. 35 ( t ) s were either total write @-@ offs or were damaged beyond the ability of the field maintenance workshops to repair during the campaign .

For the invasion of the Soviet Union , 6th Panzer Division had 160 Pz.Kpfw. 35 ( t ) s. to support 4th Panzer Group 's drive on Leningrad . By 10 September 1941 , the division had only 102 operational Pz.Kpfw. 35 ( t ) , despite having received two replacements from Germany . Eight tanks were repairable , but 47 were total losses . By 31 October , only 34 were operational with another 41 requiring repair . On 30 November , all Pz.Kpfw. 35 ( t ) s were reported non @-@ operational .

The average distance driven is 12 @,@ 500 kilometres ( 7 @,@ 800 mi ) for the Pz.Kpfw. 35 ( t ) . The special situation in regard to repair the Pz.Kpfw. 35 ( t ) is well known . It is indeed deemed necessary to point out that repairs can only be accomplished by cannibalizing other Panzers because there are no longer any spare parts for the Pz.Kpfw. 35 ( t ) . This means that after retrieval of the Panzers that are scattered around the terrain , a maximum of 10 can actually be repaired out

of the 41 Pz.Kpfw. 35 ( t ) reported as needing repair . The Pz.Kpfw. 35 ( t ) can no longer be rebuilt . All of the components are worn out . To be practical , maybe the armored hulls are still useable .

Due to the cessation of production of these tanks , and the absence of spare parts being made , it was decided that the summer campaign of 1941 was to be their last . The fighting in Russia exposed the vehicle 's unsuitability for cold weather operations and general unreliability . This weakness , in addition to their thin armor and inadequate firepower , resulted in the 6th Panzer Division being reequipped with German tanks on its withdrawal from Russia in April 1942 . All 26 remaining Panzer 35 ( t ) s still in working condition in 1942 were sold to Romania . Some vehicles had their turrets and hull machine guns removed so that the chassis could serve as a munition carrier or an artillery tractor , the Artillerie Schlepper and the Mörserzugmittel 35 ( t ) . These had a towing capacity of 12 tonnes ( 12 long tons ; 13 short tons ) .

= = = Romania = = =

Romania ordered 126 of the tanks on 14 August 1936 as the R @-@ 2 and received the first 15 , which had been diverted from the Czech order , in April ? May 1937 to display in a parade . They suffered from numerous teething problems and the Romanians put a hold on production until these issues were resolved . The constantly changing Romanian demands didn 't help the situation , but they refused to accept any vehicles until trials were conducted in Romania . Three R @-@ 2s were shipped to Romania on 12 July 1938 for the trials , but Skoda knew which one would be chosen and prepared the vehicle well and it passed all tests . After disassembly and checks of the trial tank were completed , the Romanian commission approved the design on 23 August . In the meantime , the initial batch was returned to Skoda to be upgraded to current standards on 28 July . Shipments to Romania began on 1 September with 27 shipped before the Munich Crisis forced the Czechs to hold all remaining tanks in case they were needed . 5 finished tanks and 6 almost @-@ finished tanks were appropriated and shipped to Slovakia although they were quickly returned after the Munich Agreement was signed . The last shipment departed on 22 February 1939 .

The R @-@ 2s were assigned to the 1st Armored Regiment of the 1st Armored Division where they participated in Operation Barbarossa . The division was withdrawn from combat after the Battle of Odessa in 1941 . It returned to the front on 29 August 1942 with 109 R @-@ 2s . By the eve of the Soviet Stalingrad Counter @-@ offensive on 19 November the division could only muster 84 serviceable R @-@ 2s with as many as 37 unserviceable tanks stationed in the rear . The division was on the outer edges of the Stalingrad Pocket , but managed to breakthrough the western wing of the encirclement , although 77 R @-@ 2s were lost in the process . Only about a third of these were destroyed by the Soviets , the rest were either abandoned or broke down and couldn 't be recovered . One R @-@ 2 arrived from Romania during December as a reinforcement . The 1st Armored Division was ordered home in early January 1943 .

Despite the delivery of 26 Pz.Kpfw. 35 ( t ) s during 1942 , Romania could only muster 59 R @-@ 2 / Pz.Kpfw. 35 ( t ) s on 1 April and 30 August 1943 , but raised this to 63 by 25 March 1944 . There were 44 on hand on 19 July 1944 . By this time they were relegated to training duties with the 1st Training Armored Division . A company of R @-@ 2s was sent to Transnistria with the ad @-@ hoc Cantemir Mixed Tank Group on 24 February 1944 , but it did not see combat before being withdrawn on 28 March 1944 .

A company of R @-@ 2s was assigned to the Popescu Armored Detachment after King Michael 's Coup and Romanian 's defection from the Axis at the end of August 1944 . The Detachment was tasked with preventing the German units stationed around Ploie?ti from breaking out to the north and finding refuge in Hungary . They accomplished their task and the R @-@ 2s were withdrawn from combat operations until the following year . Romania had concentrated all of its remaining tanks and armored fighting vehicles in the 2nd Armored Regiment in early 1945 as the unofficial Soviet arms embargo began to have effect . It had five R @-@ 2s on hand in early February 1945 when it was sent to the front , but the Soviets confiscated most of them when it arrived . Both R @-@ 2s were serviceable when the regiment entered Bratislava on 4 April 1945 , but these were probably destroyed when the regiment was virtually surrounded in Austria on 10 April because they

are no longer listed among the regiment 's vehicles afterwards .

Twenty @-@ one tanks were rebuilt as TACAM R @-@ 2 tank destroyers with an ex @-@ Soviet 76 @.@ 2 mm gun in 1943 ? 44 .

= = = Slovakia = = =

The Slovak Army seized 52 LT vz . 35 tanks when they declared their independence from Czechoslovakia in March 1939 . They were organized into a battalion that was later incorporated into the Armored Regiment . Three of these tanks participated in the Slovak @-@ Hungarian War of March 1939 . One tank company participated in the invasion of Poland , but didn 't see any fighting . The Army upgraded the internal communications system of its tanks with German intercoms in 1941 , but it is unknown if they added a fourth crewman as did the Germans . When Slovakia joined the German invasion of the Soviet Union it sent a Mobile Group that included thirty LT vz . 35 . The Mobile Group was reinforced and reorganized in early July 1941 as the Mobile Brigade , also known as Brigade Pilfousek after its commander , and it mustered only twenty seven tanks despite seven reinforcements because breakdowns had caused ten to be evacuated back to Slovakia . This was due to a conspiracy among the Slovak tankers that the tanks would be needed to overthrow the regime at some point and couldn 't be wasted in combat against the Soviets . This caused a high incidence of crew sabotage to which the officers and maintainers turned a blind eye , which caused the tanks to be withdrawn to Slovakia at the beginning of August 1941 . On 1 January 1942 , the Slovaks had 49 LT vz . 35 on hand because three had been destroyed in the battle for Lipovec earlier in the summer . However , of these 49 only seven were operational as part of the conspiracy to keep the tanks in Slovakia The LT vz . 35s were relegated to the training / reserve role by 1943 when the Germans began to supply more modern tanks to Slovakia . At least eight LT vz . 35s were used by the insurgents during the Slovak National Uprising in 1944 .

= = = Bulgaria = = =

Bulgaria used 26 tanks , delivered by Germany in early 1940 , with the normal A @-@ 3 gun and 10 T @-@ 11 tanks with the more powerful A @-@ 7 gun from the confiscated Afghan order were delivered between August and October 1940 . They were supposedly relegated to training duties once the Germans began to deliver Panzerkampfwagen IV medium tanks in 1944 , but apparently remained in service into the Fifties . But Kliment and Francev claim that the T @-@ 11s participated in the fighting in Yugoslavia and ended the war south of Vienna as part of the 1st Tank Brigade .

= = = Hungary = = =

Hungary captured one LT vz . 35 in Carpatho @-@ Ukraine on 15 March 1939 , when it conquered that country , and another in fighting with the Slovaks on 24 March 1939 . They were impressed and asked ?koda for a quote to repair them . The Hungarians did not accept the price , but ?koda fixed them for free once the Hungarians had bought a license to build the medium 40M Turán I tank in August 1940 . The tanks were returned to Hungary in March 1941 and were used for training through 1943 .