

# Spanish Panzer IV

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The end of the Spanish Civil War in 1939 saw a drastic 'modernization' of Spain's armored forces. Of course, the word 'modernization' can only be used when comparing Spain's armor prior to the war with what it was left at the war's end. Spain purchased her first tank on 19 May 1919 from the French Renault factory. This tank was the French FT-17, designed during the First World War, and the tank represented a fairly important step in the mechanization of the Spanish Army. Despite Spanish interests in acquiring at least another ten vehicles, the French government was unwilling to complete further orders. It wasn't until the Spanish colonial disaster at the Battle of Annual that the French government finally conceded to the sale of another eleven FT-17s, including one command tank. These twelve tanks served in the Spanish Protectorate of Northern Morocco between 1922 and 1926, partaking in the amphibious landing at Alhucemas in September 1925. When the Spanish Civil War began in July 1936, two small regiments were outfitted with a total of ten FT-17 tanks – both the Republic and the Nationalist uprising were able to gain control of one of these regiments a piece<sup>[1]</sup>.

For all intents and purposes, the Spanish Civil War began with ten obsolete FT-17s and six CA1 Schneider tanks of the same era. The CA1s had been sold by the French government to Spain in the same deal as the FT-17s, and also served during the Rif War in Morocco<sup>[2]</sup>. By the end of the war, the victorious Nationalist Front under the leadership of Francisco Franco found itself in possession of a large fleet of German supplied Panzer I light tanks, Italian L-3-35 tankettes and over one hundred captured Soviet T-26s. Although this material was considerably superior to the ten FT-17s which found themselves in working condition in July 1936, it was already obsolete when compared to contemporaneous equipment in use by the belligerent nations of the Second World War. In fact, the Germans had negated to supply Spain with the most advanced tanks available to them at the time.

Understandably, production did not allow for the employment of newer models of armored fighting vehicles in Spain between 1936 and 1939, but the fact that newer tanks were already in existence during the Spanish Civil War only serves to underscore the point that Spanish armor was severely antiquated in face of potential future threats. For example, as Germany supplied the Nationalist Front with Panzer Is, they already began the production of the Panzer III Ausf A. In comparison to the pair of MG13 7.92mm light machine guns which armed each Panzer I,<sup>[3]</sup> early model Panzer IIIs were armed with the superior 37mm L/45 canon<sup>[4]</sup>.

The heaviest tank gun in the Spanish arsenal was the T-26s 45mm high velocity cannons and these couldn't compare to the more potent guns being unveiled by the Germans<sup>[5]</sup> and Soviets. In fact, Nationalist Panzer Is and L-3-35s were found to be worthless against Republican T-26s and BT-5s. During fighting in the approaches to Madrid in 1936, the machine guns mounted on the two fascist light tanks were too weak to penetrate the 15mm steel armor on the T-26.<sup>[6]</sup> The immediate Spanish response was to begin a modernization program of her Panzer Is during the war, culminating in a short-lived attempt to rearm a number of Panzer Is with the Italian 20mm Breda model 1935 anti-air cannon. With a penetration of 40mm, it was considered that the 140 gram armor piercing projectile and the gun were sufficient to defeat Soviet armor used by the Republicans. However, only four were transformed and subsequent attempts to mount 37mm and even 45mm anti-tank guns on the Panzer I failed before the physical work was even attempted.<sup>[7]</sup> In the end, the Nationalist army pressed into

service captured T-26 to even the odds against their opponents. So important did the T-26s become that German general von Thoma offered 500 pesetas for each captured T-26<sup>[8]</sup>!

In the immediate post-war, Spanish attempts at the production of an indigenous tank also failed. Although production of Spain's Verdeja light tank was ordered to begin as early as January 1939 – production as soon as the vehicle was completely completed in the prototype stage –, production of this tank ultimately faltered due to the lack of a dedicated engine and the adequate type of steel. Nevertheless, the Verdeja deserves mention due to the amount of innovation represented by the project. In some ways, the Verdeja was too advanced for its age and highly unorthodox. For example, it is one of the first tanks to position the engine at the front of the hull to increase protection for the crew. This feature was unseen in any other tank thereafter until the advent of the Israeli Merkava in 1939. The Verdeja mounted a captured 45mm tank gun and originally used a 120mm Ford Zephyr gasoline engine. Perhaps one of the most innovative features was the new track system, designed to avoid derailments – the roadwheels were positioned within a centerline groove within the track. Unfortunately, although the Verdeja was found to be completely superior to the T-26, the project faltered in the face of the lack of enough steel for vehicle construction<sup>[9]</sup>.

The singular Verdeja 1 prototype was later converted into a 75mm self-propelled artillery piece – a project which also failed –, which can be seen today at the tank museum of El Goloso. Another prototype, this time of the future Verdeja 2 project, can be found at the Infantry Academy at Toledo – the Verdeja 2 was also never put into production. By the early 1940s Spain found herself with an ageing tank fleet composed of armor a decade old and further degrading in usefulness in the face of the quick pace of armor development during the Second World War. In March 1943, Spanish representative General of the Artillery Carlos Martínez Campos began negotiating with the German government for the acquisition of German armor. In specific, the Spanish Army was looking to procure two hundred and fifty tanks armed with either a 45 or 50mm cannon, which may have corresponded to the latest versions of the Panzer III, and one hundred tanks armed with 75mm cannons, which were the Panzer IVs<sup>[10]</sup>. The two hundred and fifty tanks with 50mm cannons were to replace Spanish Panzer Is and L-3-35s, while the Panzer IVs were destined to replace the T-26. By 1943 Daimler-Benz was producing the Panzer III Ausf L with the 50mm L/60 high velocity anti-tank cannon and an armor protection of 57mm on the turret<sup>[11]</sup>!

Unfortunately, ultimately the German government decided to agree to a sale of only twenty Panzer IV Ausf Hs and ten StuG III Ausf Gs, which were supplied to Spain by December 1943. This sale represented only a fifth of the original order for Panzer IVs, and none of the order for the lighter Panzer III. Regardless, the Panzer IV was a considerable improvement, even if the eventual order failed to allow the complete replacement of the obsolete light tanks already in the Spanish Army. In Germany, production of the Panzer IV began in April 1936, and these were armed with the low velocity 75mm L/24 cannon<sup>[12]</sup>. However, low production ultimately meant that the majority of tanks partaking in the invasions of Poland (1939) and France (1940) were still light tanks such as the Panzer I, Panzer II and Czech designed vehicles. In fact, armor available to the Germans for the May 1940 invasion of France amounted to only 278 Panzer IVs and 349 Panzer IIIs. On the other hand, the Wehrmacht could count on no less than 523 Panzer Is, 955 Panzer IIs, 106 PzKpfw 35(t)s and 228 PzKpfw 38(t)s.

The better German tanks only accounted for roughly a third of the invasion force<sup>[13]</sup>! In the light of the inefficiency of the 75mm L/24 gun in penetrating enemy armor during operations in France, German factories began to produce the Panzer IV with the improved KwK40 75mm L/43 long-gun, and ultimately even this was lengthened to 48 calibers to improve penetration. The version acquired by Spain or the Ausf H, began production in May 1943 and featured a new cast drive sprocket, a strengthened final drive and increased protection on the turret roof surface area. In June 1943, the 50mm base steel armor and the 30mm appliqué steel were replaced by a single plate of steel armor

80mm thick and the vision ports on the side of the tank were erased. Like the Ausf G predecessor, the Panzer IV Ausf H was armed with the longer KwK40 75mm L/48 high velocity anti-tank gun. Against the M4A2 Sherman, the Panzer IV Ausf H could penetrate at over 1,000m, while the Sherman could only hope to perforate the 80mm thick steel plates on the turret of the Panzer IV at 100m. It was only with the arrival of the M4A4 Sherman when the Western Allies finally had a considerable advantage over the German Panzer IV medium tank<sup>[14]</sup>. The Ausf H weighed twenty-five tons and had an inferior cross-country velocity than its predecessors, and was given the Panzer III's six speed transmission<sup>[15]</sup>.

Despite the fact that Spain only received a fraction of what it had originally asked for, in February 1944 Spain reopened talks to acquire more tanks. The second attempt is known as Programa Ankara, and this time Spain asked for thirty-three Panzer IVs, while simultaneously the president of the German export company AGEKA attempted to gain Spain a further order of sixty-seven Panzer IVs – ultimately, this would suggest the acquisition of another one hundred of this model. At one point, it was even suggested that Spain was interested in acquiring a number of Tiger heavy tanks. Safe to say, none of these programs succeeded in their goal and by the end of the Second World War Spain could count on only twenty Panzer IV Ausf H medium tanks<sup>[16]</sup>. The Panzer IV represented the best tank in Spanish service between 1944 and 1954, and were deployed together with T-26s and Panzer Is. The situation after the end of negotiations with the Germans explains the interests in the Spanish Army to continue the Verdeja project with an all-knew tank design. In 1954 Spain began receiving large amounts of military material from the United States.

According to one source, Spain received a total 389 M47 medium tanks in the late 1950s to replace her entire tank fleet<sup>[17]</sup>. All T-26 and Panzer I light tanks were replaced in Spain's Brunete armored division, and the Panzer IV replaced the L-3-35 tankette in a number of cavalry regiments<sup>[18]</sup>. But, even the Panzer IVs began to be replaced by the North American M24 Chaffee Light Tank by the late 1950s<sup>[19]</sup>. In light of their replacement, seventeen of the twenty Panzer IVs were sold to Syria in December 1965, who used them against the Israeli Defense Force during the Six Day War in June 1967<sup>[20]</sup>. In the mid-90s two of the seventeen tanks sold to Syria were still intact within Israeli museums,<sup>[21]</sup> although one was eventually sold to WTS Koblenz<sup>[22]</sup> and can now be visited in a German museum<sup>[23]</sup>. Spain still conserves three Panzer IVs, which weren't sold to Syria in 1967. These can be found at El Goloso (Madrid), Burgos and Santovenia de Pisuerga (Valladolid)<sup>[24]</sup>.



Figure 1 - Leopard 2E

In late 2004, the company SPAMIR began work on the restoration of the Panzer IV at El Goloso. The project included the restoration of much of the steel substructure, since it was found that most of it had rusted over through the years. The restoration continued for just under a year and the vehicle was completely revitalized. In fact, the restoration was so successful that the Panzer IV found itself in working condition. One of the few discrepancies was the color of paint chosen for the vehicle; the stereotypical grey of German armor was chosen, even though German

Panzer IVs were never painted this tone of color on the Ausf H model<sup>[25]</sup>. Nevertheless, the restoration was of immense importance to the successful maintenance of the Panzer IV, and to date is the best kept vehicle at El Goloso. Unfortunately, the engine recently broke down and no agreement has been reached between the Spanish Army and SPA-MIR on the maintenance of the vehicle<sup>[26]</sup>. All other vehicles in the museum are in the same condition of waste and rust. According to military personnel, currently 'restoration' refers to the application of a new coat of paint to cover the rusting, and most of the vehicles are completely hollow on the inside.

Despite the sorrowful state of surviving Spanish Panzer IVs, it's a privilege to still be able to see the history of Spanish armor first-hand. Furthermore, for a decade the Panzer IV Ausf H was the most powerful tank in Spain's inventory and is one of the few tanks which can be proud of serving alongside a hodgepodge of other vehicles, including the Panzer I, T-26 and the M47 medium tank. Perhaps when funding allows, the Spanish military will look into the restoration of the tanks in the El Goloso ta

nk park, and specifically at the maintenance of the Panzer IV's engine. Until then, we are left with the ability to visit one of the few German tanks to have ever entered service with the Spanish Army. Apart from the Panzer I, the Panzer IV was the only German tank in Spain between 1943 and 2004. Only recently, with the beginning of production of the Spanish Leopard 2E in Santa Bárbara Sistemas (Spain) has Spain opted for a German panzer.

Interestingly, the acquisition of 108 Leopard 2A4s in 1998<sup>[27]</sup> and the beginning of indigenous production of 219 Leopard 2Es<sup>[28]</sup> were preceded by a Spanish indigenous main battle tank project. By the 1980s the Spanish tank fleet was composed of AMX-30Es, produced in Spain, M47E1 upgrades, and M48E upgrades. The former, which made up the bulk of Spain's heavy armor, was plagued by mechanical issues related to the transmission and engine.



Figure 2 - Leopard 2E Turret Armour

By the time production had ended, Spain was already

looking for a replacement. In 1983 the Spanish Government and Krauss-Maffei, the manufacturers of the Leopard 2, agreed to a memorandum of understanding related to the transfer of technology to Spain's Santa Bárbara Sistemas. In 1984 Santa Bárbara Sistemas was awarded a contract for the production of 500 Lince main battle tanks, of which 100 were destined for export. In simple terms, the Lince was a smaller version of the Leopard 2A4, using the same gun, but weighed only forty-nine metric tons. Powered by a 1,200hp engine, the Spanish Lince was designed for mobility and traded armor protection in for low-weight and relatively high-mobility<sup>[29]</sup>. The project was canceled and Spain opted to simply procure the Leopard 2. However, due to the lack of immediate finances, the Spanish government agreed to contract Santa Bárbara Sistemas to manufacture 150 modernization kits for Spain's 299 AMX-30Es<sup>[30]</sup> – the other 149 were 'reconstructed' to working conditions, although these were replaced by M60A3TTS beginning in 1992<sup>[31]</sup>. One could say that the tank modernization of Spain's fleet between 1980 and 2003 is remarkably similar to the circumstances of the modernization of 1939-1945!

## References and Notes:

1. For information on Spanish FT-17s see: García, Dionisio, Renault FT 17 en España (1): La Guerra de Marruecos and Renault FT 17 en España (2): La Guerra Civil. Both of these are published in the Spanish magazine SERGA, numbers 30 and 31, respectively.
2. De Mazarrasa, Javier, Los Carros de Combate en la Guerra de España 1936-1939 (Vol.1º), Quiron Ediciones, June 1998, pp. 43-44.
3. Franco, Lucas Molina, Panzer I: El inicio de una saga, AF Editores, March 2005.
4. L/45 refers to the length of the cannon in calibers. Assuming that the cannon's diameter is expressed in millimeters, the cannon's length in millimeters can be found by multiplying the diameter of the cannon – in this case 37mm – by the length in calibers; the length in meters is thereby found by dividing the product by 1,000. All information on the Panzer III is from: Chicano, Javier Ormeño, Panzerkampfwagen III: El pequeño veterano de la Wehrmacht, SERGA, Nº 45, January-February 2007.
5. Such as the German short 75mm L/24 cannons found mounted on early Panzer IVs.
6. One of the best sources on the T-26 in the English language is: Baryatinskiy, Mikhail, Light Tanks, Ian Allen Publishing, 2006. Information regarding the ballistic inefficiency of the Panzer I's armament against Soviet T-26s are found in: Candil, Antonio J., Soviet Armor in Spain: Aid Mission to the Republicans Tested Doctrine and Equipment, ARMOR Magazine, March-April 1999.
7. Information on Spanish Panzer I upgrade attempts found in: Franco, Lucas Molina, Panzer I: El inicio de una saga, AF Editores, March 2005, pp. 47-50.
8. Perrett, Bryan, German Light Panzers 1932-42, New Vanguard 26, Osprey Publishing, 1998, p. 35.
9. For information on the Verdeja light tank see: De Mazarrasa, Javier, Carro de Combate Verdeja, L. Carbonell Editor, 1988.
10. Jurado, Carlos Caballero, and Franco, Lucas Molina, Panzer IV: El puño de la Wehrmacht, AF Editores, October 2006, p. 76.
11. Chicano, Javier Ormeño, Panzerkampfwagen III: El pequeño veterano de la Wehrmacht, SERGA, Nº 45, January-February 2007, p. 63.
12. De Mazarrasa, Javier, Blindados en España 2ª Parte: La Difícil Posguerra 1939-1960, Quiron Ediciones, 1994, p. 46.
13. This data can be found in Heinz Guderian's Panzer Leader or in New Vanguard 26 German Light Tanks 1932-42, by Bryan Perrett and published by Osprey.
14. Doyle, Hilary and Jentz, Tom, Panzerkampfwagen IV Ausf G, H and J 1942-45, New Vanguard 39, Osprey Publishing, 2001, pp. 11-14. Ballistic data is from p. 20.
15. Perrett, Bryan, Panzerkampfwagen IV Medium Tank 1936-45, New Vanguard 28, Osprey Publishing, 1999, pp. 8-9.
16. Jurado, Carlos Caballero, and Franco, Lucas Molina, Panzer IV: El puño de la Wehrmacht, AF Editores, October 2006, pp. 79-82.
17. Zaloga, Steven, The M47 and M48 Patton Tanks, New Vanguard 31, Osprey Publishing, 1999, pp. 36-37.
18. De Mazarrasa, Javier, Blindados en España 2ª Parte: La Difícil Posguerra 1939-1960, Quiron Ediciones, 1994, p. 50.
19. Ibid., p. 79-82.
20. Ibid., p. 50.
21. Ibid., p. 52.
22. Doyle, Hilary and Jentz, Tom, Panzerkampfwagen IV Ausf G, H and J 1942-45, New Vanguard 39, Osprey Publishing, 2001, p. 24.
23. [http://the.shaddock.free.fr/Surviving\\_Panzer\\_IV.pdf](http://the.shaddock.free.fr/Surviving_Panzer_IV.pdf)
24. Jurado, Carlos Caballero, and Franco, Lucas Molina, Panzer IV: El puño de la Wehrmacht, AF Editores, October 2006, p. 84.

25. For information on the restoration see: Ibid., pp. 83-92.
26. Information provided by one of the museum's tour guides.
27. <http://www.defenseindustrydaily.com/spain-finalizes-buy-of-108-leopard-2a4-tanks-01155>
28. Muñoz, Antonio Candil, Leopard 2E Delivery Begins, Military Technology, March 2004. The Leopard 2E is the Spanish version of the German Leopard 2A6, with increased armor protection on the glacis plate and turret mantle, an indigenously designed (by SAPA) under armor auxiliary power unit, all-electric crew hatches, an indigenous fire control system and battle management system, Spanish rubber track pads, identical 2nd generation thermal viewers for both the tank commander and gunner and a new air conditioning system. In the near future, Spain's Leopard 2E may replace the Type 570 PT tracks with the new PO tracks, which reportedly save 600kg worth of weight.
29. The information comes from a Spanish defense-related magazine which was scanned in. If interested, forum member Catalán can provide the relevant article in PDF form.
30. Perez-Guerra, Jaime, Spanish AMX-30 MBT Upgrade Program, Janes International Defense Review, April 1987.
31. Candil, Antonio J., Spain's Armor Force Modernizes, ARMOR, March-April 1998, p. 41.