

Armored Warfare during the Spanish Civil War (1936-1939): The Experience Reconsidered

by COL(R) Anthony J. Candil

Historians of armored warfare have often misinterpreted the role of armor in the Spanish Civil War. Some of them said the war was just a “laboratory”; others concluded there were few, if any, lessons to be drawn from it. The confusion of historians is understandable because the conflict was not a demonstration of brilliant tactics and great battles, but was rather a series of attritional battles.

The Spanish Civil War was of interest to the U.S. War Department’s Military Intelligence Division (MID).¹ Through Army attachés stationed in major embassies in Europe, MID received technical and tactical information concerning weapons that the Germans, Soviets and Italians used in Spain. Although the information the attachés gathered was often random and incomplete, they and their sources saw trends in the development and use of modern weapons, especially the tank and antitank guns. The attachés’ efforts provided MID with information that could be analyzed about the nature of a possible future European war; that the U.S. Army could not or would not make use of the lessons of the war in Spain was not due to a lack of information!

The Spanish Civil War was the first encounter between tanks in combat, although limited. However, the employment of tanks on the Spanish battlefield allowed many aspects and possibilities of armored warfare that later would make it a key decision tool for modern warfare.

Doctrine still developing

Each nation that provided armor to the Spanish Civil War harbored its own views about how to employ tanks in operations. The Germans were still developing their thinking, while the Soviets had already embraced concepts stressing “deep battle” by offensive actions – and even codified them in their army regulations of 1936. The Italians were committed to their theory of *guerra celere*, so far experienced only in Ethiopia against a much weaker foe.

However, the circumstances of the war in Spain made it impossible for the nations’ ideas to be tested except on a few limited occasions. Tanks became tactical weapons normally employed in support of offensive operations or to bolster defenses.

Neither the Nationalists nor the Republicans in Spain employed *blitzkrieg* tactics for the simple reason that German doctrine at that moment was purely theoretical and had not been fully worked out, even for the German army, much less for the rudimentary Spanish Nationalist forces. Combined-arms operations involving air-to-ground support, though, became important for Nationalist offensives during the last two years of the war. This occurred despite the fact that the opposing armies were inadequately developed to create any other forms of combined-arms operations. Much of the time, the defense enjoyed an almost-World War I level of effectiveness, and though Francisco Franco Bahamonde – the Spanish general who led the Nationalist forces in overthrowing the Second Spanish Republic during the Spanish Civil War – was successful in most of his counteroffensives, they foreshadowed those of World War II only to a limited degree.

As a matter of fact, the German *blitzkrieg* theory was embraced only after the campaign of France in 1940, leading to unforeseen consequences for the German army. However, the word *blitzkrieg* was expressly mentioned in 1935 in an article in the professional magazine *Deutsche Wehr*, stating that “countries with a rather weak food industry and poor in raw materials should try to finish a war quickly and suddenly by trying to force a decision right at the very beginning through the ruthless employment of their total fighting strength.” (That was certainly Spain at the time.)

A more detailed analysis of the term was published in 1938 in the official German magazine *Militär-Wochenblatt*, but such references are rare, and the word *blitzkrieg* was also scarce in the Wehrmacht’s official military terminology during World War II.

If the hope of military thinkers was that the Spanish Civil War would bring a return to battlefield maneuver by using tanks, Spain's experience was clearly a disappointment.

Tanks through attaché eyes

Not much has been written on the employment of armor during the Spanish Civil War and, in comparison to what happened during World War II, the proper employment of armor was easy to overlook. Nevertheless, the Spanish Civil War was a kind of foreword for what was to come; the lessons obtained in Spain confirmed what we know today as essentials of armored warfare.

In fact, the presence in Spain of key officers of the armored forces of Germany, Italy and the Soviet Union – who during World War II acquitted themselves very well and even faced each other or fought alongside each other on some occasions – adds more interest to this chapter of Spanish history.

As mentioned, in 1936, the U.S. Army shared with the armies of Europe a special interest in the war in Spain. It was the first time since World War I that European weapons were used by Europeans against Europeans. Although most of COL Stephen O. Fuqua's² reports – as U.S. military attaché in Madrid throughout the war – concerned the non-technical "infantry war" of individual soldiers, the focus of interest for most of the American military attachés in Europe became tanks and antitank/antiaircraft weapons.



Figure 1. COL Stephen O. Fuqua (left, in civilian clothes), U.S. Army attaché at the U.S. Embassy in Madrid, Spain, visits a battlefield near the "Fuentes de Ebro" ("sources of the Ebro" – the Ebro is a river in Spain) in 1937 in Aragon. A full regiment of the newest Soviet BT-5 tanks (50) was nearly annihilated by the Nationalist defense by the end of August 1937. Fuqua is talking with two unidentified Republican officers. (Author's collection)

Even though they were removed from the fighting, the attachés in Paris and London, and to a lesser extent in Rome and Berlin, provided information that supplemented the sketchy technical and tactical data Fuqua sent from Spain to Washington.

The main conclusion reached by the attachés and their sources was that the tanks used in Spain were inefficient. They lacked the armor and armament necessary to successfully meet an enemy equipped with heavy machineguns and antitank weapons, and they were continually plagued with mechanical malfunctions. U.S. COL Raymond Lee, military attaché in London, submitted a report in Spring 1937 that contained an excerpt from an article by Sir (CPT) Basil H. Liddell Hart, a British soldier, military historian and strategist known for his advocacy of mechanized warfare. Within it, Liddell Hart stated that the tanks used in Spain were “obsolescent and of poor quality.”

In a certain sense Liddell Hart was correct. With the rapid technical development taking place during the 1930s, much equipment was soon displaced by more advanced technology. Yet it would be wrong to assume from his statement that the tanks used in Spain were old and discarded models, because they were not. So, although Liddell Hart may have been theoretically correct in arguing that these tanks were obsolete, in a practical sense the tanks used in Spain were the standard weapons of their respective armies at the time. The information gathered by the attachés about the Nationalist tanks appeared to be relatively accurate and consistent. For example, although the attachés never mentioned the German Panzer I by name, they provided an early description of its basic characteristics.

U.S. Army LTC Sumner Waite, military attaché in Paris, submitted a report at the end of January 1938 that said: “Whatever types of tanks the Soviets sent to Spain, they all seemed to share an unfortunate flaw.” Attaché reports indicated that Russian tanks were susceptible to destruction by fire, apparently more than the Italian and German tanks.

According to an article by CPT Ed Bauer of the Swiss army, forwarded to MID by U.S. LTC John Magruder from the U.S. Embassy at Bern, the part most susceptible to combustion was “the rubber sheathing covering the roller bearing which supports the caterpillar drive.”

Another report from Lee early in 1937 had made a similar observation about how easily the synthetic rubber the Soviets used on their tanks burned.

The Nationalists soon discovered it and exploited the flaw.

Italian experience

As mentioned, the tactical employment of armor during the Spanish Civil War reflected, for the most part, the contemporary doctrines of the nations that provided materiel and training assistance to each side. Accordingly, the Nationalists used a peculiar version of German *blitzkrieg* tactics or, at other times, an Italian method of combined-arms operations integrating infantry and armor. Much has been said of the role of military intervention in Spain pertaining to the testing and evaluation of new weaponry and tactics, especially in the case of the German Condor Legion, which came to play so important a role in the Nationalist forces. What has not generally been appreciated is that this sort of advantage accrued much more to the Soviet military command than to the Germans; whereas the Germans were skeptical and carefully selective with the lessons they chose to draw from the Spanish conflict, the Soviet approach was much more extensive and more credulous.

Italian tankers in Spain faced conditions radically different from those of the Ethiopian War of 1935-36, where the poorly equipped Ethiopians were overwhelmed by a relatively modern Italian army. The Italians found the tables turned against them in Spain, and this was reflected in the relatively high level of their casualties. Even more significant, however, was that the Italian General Staff failed to draw any useful lessons in tank warfare from the Spanish experience. As a matter of fact, when Italy entered World War II in 1940, her armored units – including many L-3 CV 33/35 light tanks – would face heavier tanks even more formidable than the BT-5 or the T-26B, and the results on the battlefield would be disastrous.



Figure 2. This is the Italian light tank Fiat L-3 CV 35 made by Fiat-Ansaldo. A total of 155 tanks were provided by Fascist Italy to Nationalist Spain. The first L-3 tanks arrived in Spain in late August 1936, the first modern tanks entering service in the Spanish Civil War. Outgunned – they were armed with only two fixed machineguns – they were not a match to Soviet tanks. They did not even have a turret; to aim the machineguns, the whole tank had to move. Some 60 Italian tanks survived the war and even continued in active service until the early 1950s in Spanish cavalry units. (Author's collection)

The first Italian mechanized unit in World War II in North Africa consisted of organic assets organized in a hurry and in a situation already seriously compromised. However, these Italian mobile units – although with inferior means and scant media logistics – fought the British troops by opposing powerful and highly mobile tactics within the limits of what was possible. Their use, fragmented with little strategic policy, negatively influenced the result of the disastrous campaign of 1940, and all Italian mechanized units ended up being needlessly sacrificed in the final Battle of Beda Fomm Feb. 7, 1941.

The Italian Special Armored Brigade (also known as Armored Brigade Special Babini, named after its commander, GEN Valentino Babini, who went to Spain in 1937) was a mechanized unit of opportunity – quickly established in November 1940 in North Africa at Babini's request by Marshal Rodolfo Graziani's High Command in Libya. It was created to group the various operationally separated armored units in the theater to constitute a sufficiently powerful and mobile unit that could thwart the efficient and dangerous mechanized units of the British Western Desert Force. The Special Brigade was destroyed nevertheless, and most of the Italian troops were taken captive, including Babini, who had fought bravely. Babini was captured at the battlefield of Beda Fomm.

In Spain, after the city of Santander was captured in the northwest, the commander of the Italian *Raggruppamento Reparti Specializzati* (RSS) (the English equivalent is Special Units Task Force), then-COL Babini reported³ to the Italian High Command about the good results of the intensive training program undertaken for all Italian crewmen after Guadalajara (a Nationalist offensive using Italian troops and *blitzkrieg* tactics that was a Republican victory). Nevertheless, the Fiat L-3 light tank was considered technically perfect, stating that "when the crewmen were expert and ready, the tank became almost perfect, achieving optimum results."

However, it was clear that the L-3 tankette was not up to the task of making a breakout at the front, and a cannon-armed gun was necessary no matter what. For that reason, and while waiting for such a better tank, antitank guns were towed into battle, at least one per platoon. The RSS was a mix of light tanks and antitank units. Later it was equipped with an air-defense-artillery (ADA) unit and 20mm antiaircraft guns.

In May 1938, the Italian War Department published an information booklet titled “Notice on the employment of small infantry and artillery units at the Spanish Civil War.”⁴ This booklet was relevant for two reasons: first, the paper was about the employment of tanks; and second, it was mainly addressed to the Italian military command in northern Africa. The Spanish experience made the Italian War Department acknowledge that a future major war of high intensity would be different from World War I. When analyzing the employment of tanks, the booklet brought into light two main issues: cooperation with infantry, especially considering the cross-country speed of tanks, and the problem of refueling and resupplying tanks in combat.

The Italians considered cooperation between tanks and infantry an issue because they were never able to achieve simultaneous efforts when tanks and infantry were on the attack in Spain. It was a fact that requesting tanks to move in the open at the infantry’s pace was almost suicidal. On the other hand, Italian tanks in Spain were often used on their own until they ran out of fuel or outpaced their infantry support – then they were just sitting ducks for the Republican antitank and heavy weapons. The Italians’ document, though, didn’t take into account Babini’s proposal after his return from Spain: to organize combined assault light task forces made up of light infantry (*bersaglieri*) and engineers, together with tanks. Babini limited his scope to requesting that the infantry speed up its movement.

By Fall 1938, the Italians had organized within the frame of the Italian Volunteer Corps, a kind of armored task force (*RRS/Raggruppamento Carri*) that included:

- One headquarters company, including a platoon of L-3 flamethrower tanks;
- One tank regiment with three tank battalions (one manned by Spanish soldiers), three tank companies each (all with Fiat L-3 tanks);
- One mixed mechanized battalion consisting of one motorized-infantry company on trucks, one company of machineguns on motorbikes and an armored wheeled car company;
- One engineer battalion reinforced with a machinegun company; and
- One fire-support battalion, which included one motorized 65mm assault battery, one antitank company (with German 337mm Pak guns), one mixed antitank battery (with Italian 47mm guns and Russian 45mm guns) and one air-defense company (with 20mm Breda-35 guns).

Lack of cooperation

Nevertheless, full cooperation was always lacking between tanks and infantry. In fact, combat in Spain proved that there were rivalries between tank-unit commanders and infantry commanders – to the point that “before the battle everyone was asking for the other’s support, especially the need for tanks, but on the day after, nobody wanted to admit that the other’s cooperation had been essential.”⁵ However, no matter what, there were many mistakes when employing tanks – for example, tanks were often used as supply trucks carrying ammunition or to block road crossings in static positions. Italian tank officers sometimes complained about a lack of clear missions for tank units.

Refueling while in combat was challenging, mostly due to the Italian Fiat L-3 CV33/35 tank’s technical performance, which had a limited range for operations deep in enemy territory. Since refueling was an issue, a special organization was set up to refuel either individual tanks or tank platoons.

As a follow-up, the Italian War Department’s document addressed the appropriate armament for the assault tank. Superiority of cannon-armed tanks over the machinegun-only armed tanks became evident in Spain. On the other hand, the usual procedure then adopted of towing antitank guns, with some tanks while in combat, was considered slow and impractical when challenging the heavier and better-armed Republican tanks. According to the document, the adopted solution lacked the high mobility needed for quick intervention. Therefore the need for cannon-armed tanks, operating with the light assault tanks armed only with machineguns, was now an inescapable demand. The proposed solution was to organize mixed tank platoons of four tanks, with one cannon-armed tank for three machinegun-armed tanks.

However, there’s no reference or statement within the Italians’ booklet about the light machinegun-armed tank as an “obsolete” vehicle. Light tanks such as the Fiat L-3 were still considered useful for scout and reconnaissance purposes, as infantry-support platforms and to achieve surprise on enemy forces, even if they were inferior when facing heavier tanks. No reference at all, though, was made of armor forces penetrating the depth of enemy

deployment. The main idea still was that of cooperating with the infantry. Nevertheless, an alarm bell was ringing in the mind of Italian tank officers. They realized the lack of their tanks' capabilities and the absence of organizational effectiveness for the employment of tanks in the Italian High Command's thinking. They should have considered the experience and lessons-learned in Spain.

Almost all Italian tank-unit commanders in Spain tried to present the Spanish Civil War's lessons-learned to their superiors; it was clear that any future conflict would require a good understanding of how to employ tanks and armor on the battlefield. The Italian army should count on modern armored cars with high firepower, they thought, and medium tanks cannon-armed with 360-degree turning turrets should replace all Fiat L-3s during a future major war. Tank officers also proposed that the Fiat L-3s be used for reconnaissance purposes only and that modern trucks, efficient logistics, armored self-propelled artillery and good command, communications and control assets would be essential during a future major war.

The Italian High Command missed its opportunity to learn adequate lessons from Spain and consequently didn't improve Italy's armored forces before the next war. Looking at how Italian armor did during the first months of World War II, it's obvious that the Spanish experience had been almost completely forgotten. Initially, Italian armored forces appeared still equipped with the Fiat L-3 light tank in spite of the fact that it was inadequate to break out through enemy positions. The Fiat-Ansaldo M-11/39 – the first Italian cannon-armed tank – entered combat in September 1940 in northern Africa, and the much better M-13/40 tank entered combat in October 1940 in the Greek campaign. However, both tanks were already inferior to what the Allies could deploy by then.

Lacking adequate capabilities, Italian armor was mostly nonexistent. The Special Armored Brigade organized in Libya by Babini – achieving at first some limited success – was destroyed at Beda Fomm by the British army, as mentioned. The armored division Centauro participated in the Greco-Italian War and received its first M-13/40 tanks in December 1940; it deployed the tanks in January 1941, losing many of them to Greek artillery fire.

With the experience they had fighting in Africa, the Italian armored division was reorganized in 1942 into a six-battalion (three tank and three infantry) structure, combined with a field-artillery regiment that included two battalions of self-propelled guns and one antiaircraft battalion, plus reconnaissance and engineer battalions. The reorganization was too late, though.

If the lessons-learned in Spain had been understood and implemented, results on the operational level afterward could have been different for Italy. Maybe they would not have been as successful as the German *panzertruppe*, but they would not have suffered such humiliating defeats as they did in Greece and Africa. Sadly for the Italians, the lessons were there.

Encapsulating Babini on the need for tanks and their role in modern warfare, everything can be condensed into one sentence: "Tanks for all, tanks spearheading, tanks for all missions." Therefore, the need was for more and better tanks than the Fiat L-3.

On the other hand, the discourse was no longer about more cooperation between tanks and infantry. According to Babini, it was about "tanks and their supporting infantry, which had the mission of protecting the tanks from assault weapons, antitank weapons and artillery." Within the same document, Babini proposed the future employment of armor: "All support means for the infantry, in the offensive, should be armored and must include heavy tanks for achieving a breakthrough, medium tanks for close support and for penetrating in depth, both cannon and machinegun-armed, and assault tanks' machineguns, armed to go alongside the infantry."⁶

Even while the Spanish Civil War was still raging, Italian tankers continued implementing some of the lessons and experiences learned. By the end of April 1938, the Italian tank battalion (*Raggruppamento Carri/CTV*) made a special report on the results of recent operations on the Aragon Front and the splitting of the Republican zone in two. Signed by Babini, the report confirmed all that was learned after the capture of Santander. It opened the way for a new debate, especially on employment procedures, an idea perhaps already grasped by the Germans as well.

High-mobility units useful

In the chapter dealing with "conclusions and remarks," Babini's report⁷ addresses the "confirmed exceptional usefulness of the high-mobility units (*unita celeri*) when in battle." Entering into details, he stated that if the tank battalion within the Italian tank unit would have had the structure of a true high-mobility unit, the outcome of the

Battle of Guadalajara would have been very different. On the other hand, Babini was clear on how armored troops should be organized:

- Tanks should be fitted to the nature of the mission;
- Tanks should be organized into tactical units; and
- Tanks should be used in mass employment.

On the issue of infantry and tanks being separate for reasons of mobility and speed, Babini's solution was to create heavy-tank task-force units where infantry and combat engineers were integrated and subordinated to the tank-force commander. At the same time, Babini addressed the need for close coordination and support of tactical aviation.

The relative success of the Italian military's small high-mobility units, together with the mirage of the Nationalists' final victory, merely reconfirmed the Italians' otherwise generally inadequate priorities and policies, as World War II demonstrated later.

German conclusions

Perhaps the only European military command that drew the correct lessons was the German command, which concluded correctly that the Spanish conflict was a special kind of war, from which it would be a mistake to draw any major new conclusions or lessons. However, even the Germans did not altogether draw proper conclusions about the need to improve their basic antitank weapons and hurry up production of newer, more efficient and better armored tanks, as the invasion of Poland in 1939 proved. Most of the German armored units were still equipped with Panzer I and Panzer II light tanks during action in Poland.

According to reports sent to Germany by LTC Wilhelm von Thoma, the experience from the Spanish Civil War ultimately helped speed up production of gun-armed tanks, especially the Panzer III and IV types. However, the misleading results of the Nationalist victory probably gave the Germans some false reassurance, since when Operation Barbarossa started, the bulk of the panzer force still had more tanks of the Types I and II in its inventory than the better-armed Type IV. (The Panzer IV was the only tank capable of confronting the T-34 and KV-I Soviet tanks, which were superior to anything within the Germans' available armory.)

The Spanish Civil War demonstrated to the Germans the convenience of engaging enemy tanks at maximum range – some German reports mentioned no less than 3,000 meters – a distance considered more than adequate by today's standards but out of question at the time unless the mighty 88mm guns were used. However, the Spanish Civil War produced other conclusions for the Germans about tank operations: "The combination of tanks with motorized infantry qualified armored units to accomplish many combat tasks in which both types of units complemented each other. (Failure to do so was the main reason to explain Soviet mistakes.) The speed of tanks on the march and in combat made command and timely appraisal of the situation very difficult. Close cooperation with aircraft was therefore necessary for command, reconnaissance and combat. (This was clearly understood by the Nationalists and the Germans since the very beginning.) Only the employment of tanks in depth promises success. (A two-mile-wide front was considered the smallest front for the employment of an armored division then.) Employment of tank-only units was considered only suitable in rare cases and adequate mostly against limited objectives."

Thoma added that Franco, as a typical general from the old school, wanted to distribute the available tanks among infantry units but, on the other hand, most of the Nationalist victories happened when tanks were employed in a concentrated way, even if in close coordination with other arms. Nevertheless, it seems that Franco and Thoma were always at odds on this issue, and as the latter recalled: "The Spaniards learned quickly but forgot also quickly."



Figure 3. The panzer Kpffw Ausführung A is on display at the Spanish army's tank museum near Madrid, Spain.

This type was one of the first light tanks provided by Germany to Nationalist Spain by the end of September 1936. These tanks were not "real" tanks, in a sense, as they were armed only with machineguns. However, they constituted the bulk of the German panzer arm at the time. The more powerful and better tanks that would be employed during World War II were yet at an early stage of development. Panzer I tanks were supplied to Spain both in Versions A and B that were practically identical. The total number of Panzer I tanks supplied was 122. The surviving tanks remained in service with the Spanish army until the early 1950s. (Photo by COL(R) Anthony J. Candil)

Panzer success unclear

How important the German panzer component in the Spanish Civil War may have been for the final victory is hard to say. True, the war did give the Germans an opportunity to see tank tactics practiced in a live situation. However, Franco and the Nationalist generals – veterans of the North African counterinsurgency campaigns of the Rif War (in Morocco) – were conditioned to the requirements of a civil war in which it was necessary to grind down local opposition thoroughly, territory by territory, rather than bypass it. Their interest in *blitzkrieg*-type mobile warfare was intermittent at best, leaving the panzers mainly confined to an infantry-support role.

Thoma's observations determined that by firing steel-core armor-piercing (AP) ammunition, the dual-machinegun armament of the Panzer I could disable a T-26 or BT-5, both of which were scarcely better armored than the Panzer I at short range. However, this was not very good, as the Soviet tanks all carried the excellent 45mm Russian cannon. All the Spanish/Soviet gunners had to do was open fire at the longest range possible to destroy a Panzer I, allowing the latter no opportunity to do more than scratch its paint.

It was no wonder that captured Soviet tanks were greatly prized on the Nationalist side. The captured T-26s that the Nationalists managed to return to action ended up constituting the most potent component of Franco's armored force. Then again, the Panzer I was undoubtedly quite effective in an infantry-support role for as long as there were no Soviet tanks along the way.

Despite the important lessons-learned, the Germans did not plan the Wehrmacht's development around the Spanish experience. They failed to draw proper conclusions about the need to improve antitank weapons and protection. Nor can it be said that clear evidence exists that the superior Soviet tank designs spurred them into rapid improvement of their own better tank types.

German lessons from Spanish Civil War

According to Mary R. Habeck, beyond unsatisfactory results, German officers drew two main conclusions about the use of tanks early in the Spanish Civil War. The first was an affirmation of the initial lessons: Russian tanks performed better than Italian and German ones. Russian tanks were considered excellent for defensive action but

were also a good offensive weapon. The second lesson was that it was difficult to make conclusive decisions about tactics based on the Spanish experience because conditions had been specific to that conflict alone; in the first place, too few vehicles had participated, and secondly, the terrain in Spain had been particularly difficult for the successful use of tanks in comparison to the northern European plains.

The German General Staff concluded that the belligerents had not used the tanks “in accordance with their offensive purpose.” Both German and Soviet tanks had been subordinated to infantry and had been mostly treated as heavy-infantry weapons. For all these reasons, the German High Command refused to draw any major conclusions about tank tactics or their operational use. Instead they reserved judgment until tanks could be used in a larger conflict.⁸

More details and lessons-learned were recorded in the official report on the Spanish Civil War from the German Army General Staff (*Generalstab des Heeres*) dated March 30, 1939: “Panzer tanks were never used in action in a battalion-size unit by the Nationalists. Usually in small packets, the panzers were attached directly to and escorted the infantry as armored heavy-infantry weapons. Based on the judgment of the troops and their achievement in the Panzer I Ausf A, ‘Krupp’ variant, [the tanks] covered 5,000 to 8,000 kilometers each and the Ausf B ‘Maybach’ covered 2,000 to 4,000 kilometers each. Both tanks were considered a success from the viewpoint of mechanical reliability.

“Light tanks are useful only when armed with flamethrowers, since they can’t hit anything by firing their machineguns while moving. However, they themselves are vulnerable to machineguns firing special ammunition. The nozzle for the small flamethrower can be readily secured in the right-hand machinegun mount in the Panzer I. However, a longer range is desired because relatively high losses occur to the crews.

“In general, the panzer tanks employed in Spain in small numbers and without other supporting weapons have mainly been shown to be inferior, very seldom superior to the antitank defense. They were also only available in small numbers. The 45mm gun of the Russian tanks shot high-explosive shells in an arcing flight path. The effectiveness of these shells was unsatisfactory. It also shot armor-piercing shells at a flatter trajectory. Due to poor steel quality, the penetrating ability of the Russian [AP] shells is significantly lower than the corresponding German [AP] shells. The Russian AP shells can only penetrate 40mm armor plate at a range of 100 meters. In addition, up to 75 percent of the base fuses fail to detonate.”

In a way, the Spanish Civil War established the axiom of the main battle tank as we understand it today. As British MG J.F.C. Fuller, senior British army officer, military historian and strategist, stated: “The three types of tanks that I have seen in Spain – Italian, German and Russian – are not the result of tactical study but are merely cheap mass production from the standpoint of a machine.” Fuller seemed to be advocating for a gun-armed tank, with full protection and high reliability as a weapon system. Fuller was not fair in his appreciation because by then, in 1936, not even the British army was in much better shape than the three main nations involved in the Spanish Civil War.

British tanks unsatisfactory

British tanks, except for some heavily armored variants, were unsatisfactory. Most were weakly armored, and early in World War II still carried only machineguns. Emphasizing mobility, as Fuller did, the British had not paid enough attention to the ability of their tanks to fight other tanks. Even worse, if possible, the standard “cruiser” tanks were unreliable, often breaking down.

An improved design was delayed by lack of attention; British tank design caught up with German design only near the end of World War II. By the mid-1930s, the British armored force was split between the relatively new Royal Tank Corps and a few reluctantly mechanized cavalry units that only slowly had adjusted to the change from horses to armored vehicles. Tank fanatics like Fuller and Liddell Hart with their attitudes hampered the armored units’ development.⁹

Liddell Hart¹⁰ made some interesting references about the employment of armor during the Spanish Civil War: “It was a great mistake to consider the Spanish Civil War as proof of inefficiency of the mechanized forces. On the contrary, the mechanized troops proved that they should move cross-country by preference and in a wide front. ... When employed in such a way, they contributed a great deal to the achievement of success. If mechanized troops

were used extensively at their advantage, they contributed very efficiently to the defense. The most suitable procedure for the defense was the mobile defense rather than a strongpoint-based defense.”

Soviet experience

Against the 122 Panzer I tanks Germany supplied to the Nationalists during the war, the Soviet Union supplied the Republicans with some 281 T-26 and 50 BT-5 heavier tanks. The first notable impact of Soviet participation was felt on the Central Front in combat around Madrid from mid-October to November 1936. Key combat participants were the Soviet crewmen who entered battle Oct. 29 with a mobile counterattack against advancing Nationalist troops. However, Republican commanders were never able to develop effective combined-arms operations, so successful tank attacks were generally poorly supported and never sustained for long.



Figure 4. This is a T-26B Soviet light tank furnished by the Soviet Union. Those tanks started to arrive into Republican Spain in October 1936 and were real tanks with a main gun and machineguns. They were heavier than the ones provided by Germany and Italy to Nationalist Spain and better protected. The Soviet Union provided 286 T-26B tanks to the Spanish Popular Army, and more than 130 ended up in the service of the Nationalist Army by the end of the war. They remained in active service until the early 1950s. This picture was taken near a memorial for the civil war on what was once the battlefield of the Ebro, which took place in 1938.

(Photo by COL(R) Anthony J. Candil)



Figure 5. This Soviet BT-5 tank is on display at Russian Museum at Kubinka. This type of tank was sent by the Soviet Union to Republican Spain by mid-1937. Only 50 BT-5 tanks were supplied, and none survived the war nor saw service in the aftermath. Faster and heavier than the T-26 tank, the BT-5 was the forerunner of the future T-34, and they fought against German panzers in the early days of the German invasion of the Soviet Union in 1941. (Photo by COL(R) Anthony J. Candil)

Mistakes made by the combined Soviet-Spanish leadership were not correctly understood, and the disbandment of existing armored formations proved disastrous in 1941. The superiority of their equipment gave the Soviets some dangerous peace of mind, and by 1941 the T-34 had not been yet introduced in sufficient numbers. The Soviets also never understood the importance of close cooperation between air support and armor. They also didn't grasp the key role of mechanized infantry working together with tanks. Despite these shortcomings, their organization of armored units proved more efficient and has even lasted until today: three tanks per platoon, 10 tanks and three platoons per company, 30 tanks and three companies in a regiment, and one independent tank regiment per division.

As Habeck,¹¹ one of the leading Western specialists in armored warfare, writes, "Soviet officers, unlike their German counterparts, believed that the conflict presented a valid picture of a future great war. The Soviet command staff became convinced that the Spanish war was a reliable model of modern war and treated each new experience of combat as a valuable lesson for how the Soviet army should fight in the future." Soon after the Soviet military intervention in Spain began, GEN Kliment Voroshilov issued orders detailing the specific tactics and technology that his men were to study and test.¹²

The Soviets formed a commission¹³ to review the organization of the Red Army's tank forces. Soviet experience in the Spanish Civil War led commanders who served there to recommend against the use of large mechanized formations, chiefly due to technological limitations in communication and vehicle effectiveness. The Soviet 1935 tank corps had two tank brigades and one motorized rifle brigade in its force structure, totalling 348 tanks. However, the Soviet tank corps was disbanded in favor of a motorized division that had 275 tanks and more infantry. The most important aspect of this change was that the new 1939 motorized division wholly emphasized the infantry-support role, with little focus on exploitation into the depth of an enemy force's disposition.

The Republicans were heavily influenced by the Soviet practice of massed armor attacks. It is interesting to note that the Soviets were notably reluctant to let Spanish crews operate their vehicles. Because they were unfamiliar with the peculiarities of the Spanish terrain, this attitude caused them to be overly cautious with their tanks. Initially, operations orders reflected a high degree of indecisiveness due to Soviet leaders' caution. The Soviets finally agreed to mixed crews for political reasons, but this often caused more problems and resulted in considerable squabbling, which sometimes degraded mission accomplishment.

Furthermore, the Republicans were often known to move their tanks without any artillery preparation and without the support of infantry. This made them vulnerable to enemy antitank weapons and even to hand grenades or incendiary devices. Therefore, results on the battlefield were often disappointing, even when the Republicans held as much as a 3:1 advantage in the number of tanks.

Red Army learns lessons

Probably no other major European army devoted as much attention to the presumed lessons of the Spanish Civil War as did the Soviet Red Army. The study of operations in Spain, as well as the study of German and Italian equipment, was massive, but the question is whether in fact Red Army commanders learned accurate lessons or managed to deceive themselves, as historian Stanley G. Payne concludes.

Soviet commanders obviously made a fundamental mistake in taking the Spanish conflict as a valid scenario for a future European war. The armies in Spain for the most part lacked the weapons, firepower, leadership and training to provide many lessons applicable to major mid-20th Century campaigns. Payne noted that this was especially true when Spain's topography was compared with that of Eastern Europe. Mountains played a major role in the Spanish struggle but are almost absent in European Russia, most of Poland and eastern Germany. However, Payne said, it should not be forgotten that German armor managed to get through the Ardennes' hilly terrain on two occasions and through the Balkans in the invasion of Greece in 1941.

The most important mistake that Soviet commanders made when trying to learn from their experience in Spain pertained to armor doctrine and organization. They also overlooked improvements the Red Army was able to make in many individual technical areas, ranging from administration and engineering to specific weapons systems. Soviet tanks were by far the best in Spain. With that said, they also revealed notable shortcomings, which allowed Soviet planners to accelerate the T-34's development. As a result, the T-34 became one of the best tanks in World War II. The experience of the Spanish war was not uniquely decisive, but the intensive studies on the war certainly played a role in the development of better Soviet armaments and even in its technical execution.



Figure 6. Soviet leadership conducts a review of Soviet armored fighting vehicles used to equip the Republican People's Army during the Spanish Civil War.

The Soviet army's lessons from the war in Spain were summarized in a 1939 study. The study began by noting that lessons from Spain were important since all modern combat arms had participated in the fighting, and the results were likely to be absorbed by all modern European armies. Specific tactical lessons of the conflict were highlighted, including:

- Infantry attacks needed to be supported by tanks;
- Coordination needed to be made among infantry, armor and artillery; and
- Tanks were vulnerable to antitank defenses without such coordination.

Regarding the use of tanks in the defense, the report singled out the role of tanks as a key element in carrying out local counterattacks based on several examples of the First Armored Brigade in 1937. The study was extremely cautious in drawing any lessons about the use of armor in-depth since there were no experiences of the use of large armor formations in Spain. The report was skeptical about the possibilities of using independent tank groups to achieve breakthroughs in the face of well-prepared defenses. The Soviet General Staff's view was that the full potential of tanks had not been displayed in Spain and that the Soviet army should continue to pursue plans to use tanks, but on a mass scale with artillery support. On the other hand, Marshal Georgy Zhukov's later successful use of mechanized formations to defeat the Japanese army at Khalkin Gol in 1939 further reinforced the advocates of armored warfare.

Armor-infantry cooperation was not the only area of concern in Soviet analyses of their experiences in Spain. Command, control and communications were poor, and radio equipment – because of technological flaws and lack of experienced operators – never worked well. More problems pointed out by Soviet observers included the lack of reconnaissance before tank attacks. This forced the Republicans to attack blind many times, and it demonstrated the inadequacy of depending on sheer movement to save the tanks. Also, vehicles traveling at 35 mph did not guarantee that they would not be hit by artillery, and the speed increased the chances of falling into antitank traps. Further, visibility from inside the tanks was too poor, and the motion of the vehicles caused inaccurate fire.

(However, if the Soviet army sometimes drew inaccurate lessons from the war, it was not alone. For example, for most French military observers, the Spanish war tended to reconfirm the importance of the defense and of antitank warfare.)

Tank losses

The result of these combined problems was inordinately high losses of Republican tanks, which led to some interesting conclusions on the Soviet side about the future employment of armored units. Thus, from October 1936 to February 1937, the Republican forces lost no less than 52 tanks, or between 25 to 30 percent of their deployed tanks destroyed for each day of battle. By mid-September 1937, the Republicans had only 170 tanks serviceable out of a total of 256 T-26 tanks delivered since mid-October 1936.

Another view argued that if the Soviet Union had sent 256 tanks to Spain, in a half-year of combat, 63 had been lost, but multiplying these by two, it would mean that 126 would be lost in a year. Therefore, the normal rate of attrition for tanks in a year would be around 50 percent of the total force employed – no doubt about it, a high figure.¹⁴

Nevertheless, it should be taken into account that because tanks arrived in several shipments, and because the fronts where tanks became employed were widely separated from each other, the Republicans never used more than 70 to 80 tanks at once except at some special occasions. This practice was the same for the Nationalists. With these parameters in mind, one can estimate that the rule for yearly permanent tank losses could be much higher, between 300 to 400 percent – in other words, three to four times the initial strength of the combat force. The conclusion was that tanks would suffer massive destruction in a major war.

Key historical moment

Soviet GEN Dmitry Pavlov thought nevertheless that tanks had fought well in short, independent battles such as at Jarama, and they performed even better when they had cooperated properly with infantry, artillery and air support at Guadalajara. Pavlov concluded that the infantry was helpless against tanks, while artillery and air forces did not present serious problems for an armored attack. Certainly, tanks needed the infantry, but the infantry needed the tank just as much.

In sum, Nationalist armor and antitank tactics were generally more sophisticated and effective. The Nationalists compensated for the smaller caliber of their tanks' weapons by falling back at the appropriate time to bring enemy tanks within range of antitank guns and the 88mm guns of the German Condor Legion, which proved to have excellent anti-armor weapons. The Republican People's Army never became a cohesive skilled army, though sometimes it fought well enough.

Overall the Spanish Civil War was a low-intensity war punctuated by occasional battles of high intensity. There is no question, however, that Soviet assistance postponed the Republicans' defeat, though at no time was Soviet assistance of enough magnitude to give the Republicans a major chance for victory.

German and Italian assistance was not much more decisive than the Soviet one, but Italian dictator Benito Mussolini certainly made a major commitment to victory in Spain. The technical quality of German assistance was distinctly higher than the Soviet one. Overall, the German and Italian escalation in military aid in November and December 1936 raised the stakes to a point where Soviet dictator Josef Stalin was not willing to make a direct bid for victory in the hope of more favorable geostrategic conditions in Europe.

The Spanish Civil War was the first conflict in Europe after World War I where an extensive use of tanks took place since their appearance on European battlefields in 1915. It happened certainly at a key moment in armaments history, when production was increasing in many European countries, but especially in Great Britain, France, Germany, Italy, the Soviet Union and even Czechoslovakia. For many, the Spanish Civil War was seen as a kind of laboratory to test their equipment and doctrine.

Many authors insist that the Spanish Civil War provided few clear tactical lessons. However, it did provide many. The crucial aspect was whether those lessons were considered. Tank employment in Spain was certainly unique, but a bright observer could draw important conclusions about the nature of armored warfare.

Lessons-learned

Lesson 1: learn the examples of numbers, crew training, tactical understanding. The Spanish Civil War demonstrated especially that tanks should not be split into small factions and used in small numbers by non-trained crews, and that senior commanders needed a better tactical understanding of the tank's capabilities. Using the Spanish experience to validate any preconception of armored warfare as the French did – and the British also to a point – was a misuse of the lessons. A British military attaché in Spain during the war wisely observed that “the greatest caution must be used in concluding general lessons from this war.”¹⁵

Both warring parties split their tank units and divided them piecemeal among their infantry, but this was especially true of the Nationalists. At the Battle of Teruel, they assigned tank platoons and even tank sections to larger units such as brigades or divisions. The tank became nothing more than a supplementary fire platform.

The course of the Spanish war in 1938 was discouraging for anyone who thought that tanks were the decisive weapon of the future. Even though more tanks than ever took place in the conflict, they had not yet made a convincing impact in any battle, nor had they made an overwhelmingly positive impression on any of the war's observers.

Lesson 2: exercise caution in drawing on lessons-learned. Most military analysts in the mid-1930s had some firm facts about tank-warfare procedures in Spain. However, a study at the U.S. Army Infantry School at Fort Benning, GA, by CPT Thomas Stark mentioned that in 1939, “The lack of detailed information precluded any comprehensive analysis.”¹⁶ Spain was certainly not a “proving ground for *blitzkrieg*.” After failing to take over Madrid in the winter of 1936, it became obvious that Franco never wanted a quick ending to the war, but there were some significant technological lessons.

Lesson 3: armored warfare would be expensive, and not everyone would be able to keep pace. To start with, the Spanish Civil War showed that tank vs. tank combat would be the main mission for main battle tanks from then on. But it showed too that armored warfare would not be cheap, as better power packs and better armaments – combined with better and improved armor – would escalate at high speed both purchase prices and operating costs for a substantial tank fleet. It was clear that not all countries would be able to cope, certainly a reason why the crippled economy of Spain never allowed the development of a reasonable armor force for the Spanish army.

Lesson 4: employ proper tank-infantry tactics. According to Spanish GEN Ignacio Despujol Sabater, who retired from the army in 1931, bad employment of tanks mainly applied to the Republicans; however, in November 1936, during the Battle of Madrid – as can be seen in the documentary “Spain in Arms” – Nationalist tanks advanced in a line equally spaced by about 60 meters. Infantrymen strung out between the tanks rather than clustered behind each tank for cover. Similar tactics were evident during the Battle of Teruel. It was obvious that the Nationalists had much to learn about tank-infantry cooperation.

Evoking the memories of some Spanish Nationalist combatants, they usually smiled when speaking of tanks. They recounted as a common exploit how to approach a tank without risk from its blind side. Then they would throw a bottle of gasoline on the tank, followed by a hand grenade. The tank often burst into flames. Moroccan soldiers were experts in capturing or destroying Russian tanks with blankets, which they lobbed into the roadwheels or the tracks' cogs, which sometimes threw the tracks out and stalled the tank. Then they resorted to another blanket soaked with gasoline, which they tossed over the turret and set afire. Adequate infantry cooperation would have rendered such actions impossible. Yet it was not the fault of the tanks; the blame should lie on the commanders who employed the tanks under such conditions.

Lesson 5: tanks were also vulnerable to antitank guns. When tanks proved incapable of the tasks first assigned to them, such as clearing the way for the infantry, the immediate use was to employ them as assault artillery guns. Accompanying the infantry and laying broadside to provide fire support made them more vulnerable to antitank guns. Nationalist troops at the Battle of Brunete made wiser use of their tanks, employing them in close liaison with the infantry.



Figure 7. Italian troops man a 10-centimeter howitzer at Guadalajara, Spain, in 1937. (Bundesarchiv)

Mechanized operations did not play any role in the war because neither side had enough mechanized equipment. This reason may appear naïve, but one makes war with what one has. The Spanish army had neglected tanks and mechanized equipment before the war. During the war, this continued to a point that resembled the latest maneuvers from the pre-war time of peace (for example, the rebellion of Asturias in 1934). Public opinion and morals imposed a form of war applicable to the mass of the mobilized population, not just to an elite group of warriors.

In addition, the consideration of making use of everything they possessed, men and arms, played a capital role in Spain in the armies' composition. Because of that, the troops adopted certain methods of combat, and equally, they lacked certain aspects of combat.

Therefore to the question of the utility of armor and tanks, the Spanish Civil War supplied no answer. As to the question of the use of tanks, it answered by the force of circumstances that employed them in close liaison with other arms. The war sought to use all the weapons possessed in the best way. The main difference was that on the Nationalist side, these were combined for maneuver. Both sides employed recently designed tanks, but they often discovered that those tanks were not always ideally suited for the missions they were tasked to perform.

Balanced assessment difficult

A balanced assessment of armored warfare in the Spanish Civil War is difficult to find. Works that focus on World War II or deal with the whole history of the tank either avoid this issue altogether or treat it cursorily, just as a quick introduction to more interesting events. Therefore, this article's review of tank employment in Spain should help a better understanding: 1) The technological superiority of Soviet armor came to matter only at the tactical level; 2) neither German nor Russian doctrine received fair tests; and 3) by default, what happened in Spain degenerated into a series of *ad hoc* tactical adjustments by commanders who were understandably more concerned about accomplishing missions than proving theories.

The Spanish Civil War certainly was not a successful testing ground for armored warfare. To be fair, much of the land where the main campaigns and battles were fought was unsuitable for massive use of armor. Moreover, contemporary tanks were not developed enough, nor were the other arms trained to cooperate with them to conduct the sort of operations envisaged by the mechanization theorists of the 1920s and 1930s. Therefore, it must be no surprise that the Spanish commanders did not think of any other use for tanks beyond the role of infantry support.

The only partial exceptions were Republican GEN Vicente Rojo's plan to seize Zaragoza in 1937 and the Nationalist breakthrough on the front of Aragon in March 1938. However, these were operations limited in time and space.

Nonetheless, there was a difference between the Republicans and the Nationalists. Both based their use of armor on the Spanish pre-war doctrine. The Nationalists, however, remained attached to this concept, and their German advisers, surely aware of their armor's limitations, seem to have been satisfied with merely introducing minor tactical innovations such as using larger tactical units and employing antitank guns in support. Indeed, the evidence shows that the Germans were mainly worried about organizational matters and the Spanish commanders' poor understanding of elementary tank tactics. However, above all, there was a single, coherent policy.

By contrast, the evidence does not show any coherence on the Republican side. Officers were trained following the Spanish regulations in force before the conflict. However, the Republican command issued instructions based on recent battlefield experience, which in some points differed significantly from pre-war doctrine. How did an officer reconcile the teachings of the staff college, where he learned that tanks must not pursue the enemy, with the new instructions from Rojo about advancing deep into the enemy rear?

This problem was worsened by the nature of most of the Republican officer corps. When the regular officer corps of foreign armies elsewhere were hard put to assimilate the procedures of armored warfare, it is easy to understand why the improvised officers of the Spanish Republican army so often failed to use and understand armor effectively. As it has been said already, it was not so different from present times, especially when tanks are still subordinated to the infantry.

The fighting in Spain ended on the last day of March 1939, and five months later Europe was at war. There was no time to ponder the data gathered and the conclusions reached. War followed war too quickly. Yet Spain held clues to the war that came in Europe. The weapons used by the Germans, Italians and Soviets in Spain were not outdated relics or surplus to their armies. They were largely their armies' standard equipment, and they were employed based on tactical doctrine learned in peacetime training in Germany, Italy and the Soviet Union. Light, fast tanks sent to Spain by Germany and Italy proved vulnerable to antitank guns and to the heavier-armored and -sarmmed Soviet tanks. And all tanks were in peril when employed singly or in small groups without the protection of artillery or aviation. The attachés and their sources insisted that tanks had to be employed in mass and in combination with infantry, aviation and artillery to be effective.

The use of tanks in Spain also demonstrated that the advantages of heavy armor and armament outweighed the corresponding loss of speed. Effective antitank guns, especially when combined with obstacles, served to slow or destroy enemy tanks. And as the tanks of the future became heavier, there was a corresponding indication in Spain that antitank weapons would likewise become larger and more powerful. The Germans' successful use of the 88mm gun as both a direct-fire weapon and an anti-aircraft gun was an indicator of the direction in which defensive weapons could develop.

The stabilized conditions at the front when tanks arrived at the war, coupled with the relatively small numbers of vehicles deployed, created circumstances where the different theories of operations elaborated by the foreign countries supplying them could not be executed. Instead, tanks became tactical weapons normally employed in support of operations, either offensive or defensive.

Tanks showed some value in pursuit, as demonstrated by the Italians at Malaga, and as a counterattack force, as shown by the Republicans at Madrid, but this was only true if used before the enemy had organized the terrain and brought forward antitank weapons. However, tanks did participate in urban combat in some villages and cities, where they were most vulnerable to antitank measures and improvised devices. Nevertheless, one lesson was clear: tanks, even during limited operations, required mobile infantry support to negate antitank defenses.¹⁷

Whatever promise independent tank and mechanized action held, combined-arms operations involving tank and dismounted infantry were to be expected.

German personnel avoided engagements with Russian tanks whenever possible and increasingly limited themselves to instructional duties. Spaniards commanded the tanks in battle as they had before the Germans' arrival, and it would not be until the war's closing months, at the offensive in Catalonia, that the tanks would participate in an operational decisive offensive. Tank vs. tank engagements, where they did happen, continued to favor Republican tanks, but it was to no avail because in a few weeks the Republic lost the war. Despite the personnel turnover rate and the small number of tanks available, the tank's great potential as a close-support weapon for non-mechanized infantry assaults became apparent, and the yet unfulfilled promise of independent operations did not make this less truthful.

The Soviet experience also indicates that tanks, although they were real purpose-built offensive weapons, were often a front commander's most effective stop-gap, especially when neither artillery nor air support was available (this is precisely what the Germans tried to do in Normandy in 1944). The positive psychological impact of even just a single T-26 company on the defenders of Madrid was fully understood by both sides.

When considered in their true perspective, rather than in hindsight-aided assessments of later German successes against Poland, France and the Soviet Union, tank actions in the Spanish Civil War, especially the opening engagements, appear neither as flawless manifestations of later *blitzkrieg* doctrine nor as unqualified indications of the Soviets' intention to use long-range independent operations.

In the United States, attaché reports from Spain reinforced the somehow parochial attitude of most of the U.S. Army's leadership at the time, and even that of the ground combat-arms branches. The then-Chief of the Army's General Staff, GEN Malin Craig, stated that a balanced army could never "dispense with a proper proportion of horse-mounted cavalry and horse-drawn artillery."¹⁸ The field artillery also continued to view the tank as an infantry-accompanying weapon, an idea that had not changed much since 1918.

Most U.S. Army attachés stationed in Europe, starting with Fuqua, the attaché in Madrid, who was a former Chief of Infantry, reported that lightly armored tanks armed only with machineguns were unable to overcome determined enemy fire. These lessons were misread in the United States, and in 1939 the M2 medium tank, although underpowered and underarmored, was introduced. Fuqua's opinion was that tanks did not prove themselves in separate offensive operations in Spain because they were effectively challenged by antitank guns – therefore his main conclusion was that tanks were only useful when in support of attacking infantry.

Regarding military operations in Spain, GEN Craig's view was that tanks were not successful due to antitank weapons, insufficient armor protection, mechanical defects, tactical errors in their employment and inadequate support from artillery and aviation. In the meantime, MG Adna Chaffee¹⁹ was also paying close attention to events in Spain. A report he received from the General Staff stated that tanks used in Spain were unsuccessful in almost all operations. The problems identified were many, such as inadequate crew training and poor discipline, mechanical deficiencies, insufficient terrain reconnaissance, lack of infantry and artillery support, the questionable use of tanks against strong obstacles and villages, inadequate numbers and the reported superiority of antitank guns. As far as the new mechanized cavalry was concerned, the Spanish Civil War only provided ample evidence of what not to do.

American mechanized and armored-cavalry pioneers at Fort Knox, KY, believed that the new weapons of the war – armored cars, self-propelled artillery, tanks and mechanized-infantry vehicles – required new mission-oriented tactics rather than the tank tactics inherited from World War I and demonstrated in Spain. The consensus among American armor specialists was that tank tactics used during the Spanish Civil War were unsound and that tanks were improperly used.

During the 1930s, the military debate revolved around the issue of mechanization. After World War I it was clear that airplanes and tanks had appeared on the battlefield and were there to stay, but there was not a clear view on how they would be employed. The interwar era found, therefore, all major armies in the world seeking an improved solution to use the tank as a tool to end the trench-machinegun-artillery deadlock. Conservative thinkers, including most general staffs, were not impressed by the new technologies. Spanish military minds were

not particularly isolated on the issue and, as many others, considered the new machines, especially tanks, to be roleplayers. They still believed the battlefield belonged to the infantryman and, to a certain extent, to the horse.

Worthy of military interest

In Spain, tanks restored mobility and maneuver to the battlefield. In so doing, they proved that war and tactics could consist of more than launching bloody frontal assaults by massed infantry. Nevertheless, even if the Spanish Civil War was quickly overshadowed by World War II, for a brief time in 1939 it was Europe's most modern war, fought with weapons newly developed since 1918 and pitting industrialized European nations against each other. It is truly worthy of military interest.

Spanish army COL(R) Tony Candil has lived and worked in Spain, the United Kingdom, Belgium and Italy. He currently lives in Texas. COL Candil's assignments included defense assistant attaché at the Spanish Embassy in London, United Kingdom; defense assistant attaché at the North Atlantic Treaty Organization headquarters, Brussels, Belgium; Spanish Joint Defense Staff, Plans and Policy Division, Madrid, Spain; and director of the Armored Vehicles Program (Leopard II main battle tank) at the Spanish Ministry of Defense, Madrid. His military schools include Armor Officer's Advanced Course of the U.S. Army Armor School, Italian War College, Spanish Staff and Command School, British Defence Intelligence Course, German Army Armor School and the Spanish General Military Academy (equivalent to the U.S. Military Academy). He has a bachelor's of science degree in physics from the University of Madrid; a master's of arts degree in administration from the University of Navarre, Spain; a master's of arts degree in international relations from St. Antony's College, Oxford, United Kingdom; and a doctor of philosophy degree in Eastern European Studies/history from the University of Edinburgh, Scotland. COL Candil's awards include the commander of the Victorian Order (United Kingdom), Medalha Do Pacificador (Brazil) and Honor Cross (Germany).

Notes

¹ The American ambassador and the American military attaché to Spain also recognized the war as a testing ground. The ambassador, Claude G. Bowers, used that very phrase after the war: "Spain then was to be the testing ground. Here would be staged the dress rehearsal for the totalitarian war on liberty and democracy in Europe. ..." COL Stephen O. Fuqua, the U.S. attaché, wrote in Spring 1937 that "it is generally accepted that the civil war in Spain had not only been a laboratory for testing equipment, particularly of German and Russian designs, but a dress rehearsal for the next war."

² James W. Cortada, *Modern Warfare in Spain: American Military Observations on the Spanish Civil War, 1936-1939*, Williamsport, MD: Potomac Books, 2012. During the Spanish Civil War, foreign military officers wrote highly elaborate reports of their experiences at the front. One was attaché COL Stephen O. Fuqua of the U.S. Army, who later became a major general. His presence was highly unusual, for most military observers were less-experienced captains, majors and lieutenant colonels. Fuqua's reports contained important observations about Spanish armament and troop movements, and he managed to acquire Nationalist propaganda and information despite being situated entirely within the Republican military lines. His reporting was considered so valuable that during World War II, Fuqua was tapped to be *Time* magazine's military commentator.

³ "Esperienze dalla Offensiva Santander," RRS/CTV, Sept. 15, 1937.

⁴ "Note sull'impiego delle minori unità di fanteria e artiglieria nella guerra di Spagna," Italian War Department, May 1938, published Rome.

⁵ According to Babini: "Bisogna finalmente avere il coraggio di confessare questo bisogno generale di carri nel senso dinamico della parola. Succede questo: alla vigilia della battaglia tutti pretendono i carri ed nessuno ne può fare a meno; il giorno dopo la battaglia non si riconosce più il grande compagno d'armi. Perché non c'è posto per tutti anche nei consuntivi tattici?"

⁶ Putting Babini's words in today's procedures, he was then asking for main battle tanks and armored infantry fighting vehicles.

⁷ Babini becomes sometimes a bit confusing when talking of "tank units" (*unità carriste*) or "high-mobility units" (*unità celeri*), concepts he mixed often.

⁸ GEN Heinz Guderian, *Achtung – Panzer!*, Stuttgart, Germany: Union Deutsche Verlagsgesellschaft, 1937.

⁹ Corelli Barnett, *Collapse of British Power*, Amherst, NY: Prometheus Books, 1986.

¹⁰ Sir Basil Liddell Hart, *The Memoirs of a Captain*, but first presented in Liddell-Hart's book *Europe in Arms*, New York: Random House, 1937.

¹¹ Mary R. Habeck, *Storm of Steel: The Development of Armor Doctrine in Germany and the Soviet Union, 1919-1939*, Ithaca, NY: Cornell University Press, 2003. Habeck is an associated professor of strategic studies at Johns Hopkins University. Her book is a masterpiece on armored warfare and development.

¹² Robin Higham and Frederick W. Kagan, *The Military History of the Soviet Union*, London: Palgrave Macmillan, 2000. Copious and detailed reports were sent to Russia by the Soviet military advisers, ultimately composing an entire section in the Red Army archives. Specialists returning to the Soviet Union after combat in Spain were interrogated exhaustively on the effectiveness of the equipment supplied.

¹³ Jonathan House, "Toward Combined-Arms Warfare: A Survey of 20th Century Tactics, Doctrine and Organization," Fort Leavenworth, KS: U.S. Army Command and General Staff College, 1984.

¹⁴ A report by Soviet GEN Kirill Meretskov to Marshal Boris Shaposnikov, Chief of the General Staff, Aug. 5, 1937. Cited in Habeck.

¹⁵ Steven Zaloga, *Spanish Civil War Tanks, the Proving Ground for Blitzkrieg*, Oxford, United Kingdom: Osprey Publishing, 2010.

¹⁶ MID reports at the U.S. National Archives and Records Administration, also cited by Zaloga.

¹⁷ COL Antonio J. Candil, "Soviet Armor in Spain: Aid Mission to Republicans," *ARMOR*, March-April 1999.

¹⁸ George F. Hofmann, *Camp Colt to Desert Storm, the History of U.S. Armored Forces*, Lexington, KY: The University Press of Kentucky, 1999.

¹⁹ MG Adna R. Chaffee Jr. was nicknamed the "Father of the Armored Force" for his role in developing the U.S. Army's tank forces. He predicted in 1927 that mechanized armies would dominate the next war and assisted in the first program for developing a U.S. Army armored force. In 1938, he assumed command of the reorganized 7th Cavalry Brigade, the Army's only armored force. Chaffee battled continuously during the prewar years for suitable equipment and for the creation of armored divisions. With the collapse of France in June 1940, Chaffee's 1927 predictions of the importance of armored forces in modern warfare were confirmed.

Acronym Quick-Scan

ADA – air-defense artillery

AP – armor-piercing

MID – Military Intelligence Division

RRS – *Raggruppamento Reparti Specializzati*