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MASTER OF MILITARY STUDIES

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**TITLE:**

ATTACK AVIATION IN THE SPANISH CIVIL WAR AND THE MARINE CORPS'  
MISSED OPPORTUNITY TO DRAW LESSONS LEARNED

**AUTHOR:**

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## Executive Summary

**Title:** Attack Aviation in the Spanish Civil War and the Marine Corps' Missed Opportunity to Draw Lessons Learned

**Author:** Major Lance Day, United States Marine Corps

**Thesis:** The United States Marine Corps' lack of analysis on the Spanish Civil War was a missed opportunity to gain vital lessons learned on the development and employment of attack aircraft during the lead up to World War II.

**Discussion:** From 1936 to 1939 Spain was immersed in a bloody civil war that involved casualty levels unseen by Europeans since the First World War. As the ideologies of communism, democracy, and fascism competed for existence, Europeans increasingly looked to the conflict in Spain to press their political agenda as well as test the military innovation of the interwar years. With the Russians in support of the Spanish Republican forces and the Germans and Italians backing Franco's Nationalist forces, a whirlwind conflict involving new technologies emerged.

The belligerents increasingly utilized military aircraft to attack targets on the ground and support maneuver forces on the offensive. The lessons on the effectiveness of attack aviation were finally tested during a large scale military conflict and used to help shape the Russian, German and Italian air doctrine prior to World War II.

Interest in the Spanish Civil War also extended to the United States military. An ambitious effort to surge military attaches to the Iberian Peninsula took place and the reporting on the progress of the war was extensive; often resulting in lectures and discussions at professional military institutions. However, the Marine Corps, by comparison to the other military services, remained noticeably absent from the conversation. What little information on attack aviation that was drawn from the war often lacked depth and thorough analysis. Rather, the Marine Corps leadership chose to use its small war experiences in Central America to lay the foundation for Marine aviation as it related to the air-ground team.

**Conclusion:** The United States Marine Corps should have paid more attention to the reporting coming out of Spain in the late 1930s on the developments of attack aviation. Many of the lessons learned in regards to the employment and effectiveness of attack aviation could have helped validate certain practices as well as draw attention to areas of deficiency in contemporary Marine Corps attack aviation doctrine. Undoubtedly this would have lent way to a better-prepared force upon entry into World War II.

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*Table of Contents*

	Page
TITLE PAGE .....	1
EXECUTIVE SUMMARY .....	2
DISCLAIMER .....	3
REPORT DOCUMENTATION PAGE.....	4
TABLE OF CONTENTS.....	5
PREFACE.....	6
INTRODUCTION .....	7
BACKGROUND .....	8
BODY .....	11
CONCLUSION.....	27
END NOTES .....	30
BIBLIOGRAPHY.....	32

## *Preface*

Often eclipsed by World War II, the Spanish Civil War is rarely looked at by Marines as a focal point for military innovation when discussing the evolution of warfare in the twentieth century. After all, the United States assumed a position of neutrality during the war and the aggressive actions in the Pacific by Imperial Japan during the interwar years rightly warranted the attention of the Marine Corps elsewhere. However, after living in Spain for two years and witnessing Spanish society's trepid approach to matters concerning their military, my curiosity about the Spanish Civil War grew. My experiences with the elite Spanish Legion in both Spain and Iraq left me with a sense of admiration for their passion, professionalism and ever present awareness of Legion heritage. The parallels with the Marine Corps could hardly be ignored. Yet, the one glaring difference between these fighting organizations was the absence of Spain's public support for the military. The overwhelming service pride of Spanish soldiers juxtaposed against the backdrop of a war weary society is a telling sign of the compelling experiences of the Spanish Civil War and its horrific impact on modern technology applied to Twentieth Century warfare.

I would like to thank my War Studies Advisor Dr. Richard L. DiNardo for inspiring me to write on this topic. I would also like to thank the ladies at the library for their continuous support in helping me to locate sources for my topic. Finally, I want to thank the kind folks in the archives section at the Gray Research Center for helping me locate lectures and monographs from Marine Corps Schools on the topic of the Spanish Civil War.

# *Master of Military Studies*

## INTRODUCTION

Spain's immersion in a bloody civil war from 17 July 1936 – 1 April 1939 gripped the world as powerful nations observed with great anticipation how military advancements made during the interwar years would impact warfare. More so than any other conflict since World War I, the Spanish Civil War offered insight on the introduction of modern technology to the battlefield. The effects and implications of the employment of weapon systems benefitting from this period of innovation were yet to be understood. Perhaps the most significant aspect of the Spanish Civil War is the timing of its occurrence. On the eve of a world catastrophe and with international pressure mounting between whom would later become the Axis and Allied Powers during the 1940s, the lessons learned from relentless combat in Spain served as a final test of existing equipment and military doctrine before the onslaught of World War II.

Although the United States remained neutral during the Spanish Civil War, the battles fought and the lessons learned throughout the conflict were of great interest to the American military. Both the United States Army and Navy sent representatives to Spain to observe and report on the war. Furthermore, the reporting and articles written on the subject were studied and routinely incorporated into lectures given to mid-level and senior Army officers at teaching institutions such as Fort Leavenworth, Kansas and West Point. Similar efforts were made by the British, French, and German military at their respective training centers.<sup>1</sup>

Conversely, little effort was made by the United States Marine Corps to study the lessons learned during the Spanish Civil War. And the limited discussion that did take place on the War at Marine Corps Schools in Quantico, Virginia lacked the depth and analysis of what had become a continuous dialogue in the other services. As a result of this lack of interest in the Spanish Civil War, the leadership of the Corps missed an opportunity to gain relevant knowledge generated from the conflict. Had Marine leaders put more effort and analysis into studying lessons learned

## *Master of Military Studies*

from the Spanish Civil War, the force could have been better prepared to fight in the Pacific during World War Two. The United States Marine Corps should have noticed the rapid developments being made in the realm of attack aviation in Spain and realized how those recent lessons were directly relevant to the discussions being had on the incorporation of aviation in amphibious doctrine. Analysis of aerial operations in the Spanish Civil War could have allowed the leadership in the Marine Corps to identify doctrinal deficiencies as well as validate existing practices.

### BACKGROUND

In the years and months leading up to the outbreak of the Spanish Civil War a polarization amongst the Spanish population had gradually matured into violent clashes of political ideology. The Nationalists, or Rebels as they were often referred to, included Roman Catholics, significant portions of the military leadership, land owners and businessmen. Conservative in their views and backed by Fascist Italy and Nazi Germany, their cause was in direct response to the growing socialist tendencies of Spain in the 1930s. The Republicans, also referred to as the Reds or Loyalist, were made up mostly of urban workers, agricultural laborers, and many of the educated middle class. In addition to the liberal and socialist nature of the Republicans, a growing communist sentiment permeated throughout the movement. As a result, their cause received aid from the Soviet Union as well as France.

When the Popular Front government, represented by who would later be called Republicans, emerged victorious in the elections of early 1936, conservative uprisings ensued all across Spain. A military coup failed to take control of the country and Spain found itself enmeshed in a bitter civil war. Initially, the Nationalists secured the Spanish territories in North Africa to include portions of Morocco, the Canary Islands and the Balearic Islands. In addition to a few isolated territories in the North, the Nationalist support was strong in the Andalusian cities

## *Master of Military Studies*

of Sevilla, Granada, and Cordoba. Well-led and disciplined, the Nationalists were commanded by General Francisco Franco. The nucleus of Franco's forces was the North Africa contingent consisting of the Spanish Legion, also known as the Tercio. These battle-hardened troops were well-seasoned as a result of their experiences fighting in North Africa during the Rif war which lasted from 1920-1926. Although small in numbers compared to the Republican forces at the beginning of the war, the majority of the military leadership aligned with Franco. Where the Republican's relied on militiamen and foreign vigilantes to create the bulk of its forces, the Nationalists, who also relied on militia members, relegated the professional component of its forces to serving as assault troops.

The Republican forces retained most of the North to include, Madrid and Barcelona. Heading the Republican movement was the socialist, Juan Negrin who commanded as the premier throughout the war. The Spanish president, Manuel Azana, was an anticlerical liberal. For the duration of the conflict the Republican effort was plagued with competing interests from a host of diverse groups within its ranks. On one end of the spectrum were loyalists who were simply interested in preserving the Republic while the other end contained fringe groups of anarchists and militant socialists. This diverse makeup of the Republican Army strained the ability to truly unite as a homogeneous fighting force. While there were undisputed acts of heroism, particularly from the International Brigades of volunteers from all over Europe and the United States, the Republicans fought from the defensive for the majority of the war.<sup>2</sup>

Despite declaring neutrality throughout the Spanish Civil War, the United States made a concerted effort to send Officers abroad to collect information and report back with the findings. Virtually all of the major European powers were intently studying the progress of the war through attachés, observers and periodicals containing information on the war effort. Leading this venture for the United States was Colonel Stephan O. Fuqua. Throughout the war his reports,

## *Master of Military Studies*

as well as literature from other members of his team of observers, sought to gain information on the fighting and answer specific military questions generated from the Military Intelligence Division within the War Department. Having already served as a military attaché in Spain well before the conflict began, Fuqua was able to leverage his clout and strong relationships with the Republican military leadership to gain a level of autonomy unseen by any other foreign government attaché in Spain at the time.

However, accuracy in the reporting coming out of Spain in the late 1930s was sometimes difficult to decipher. Where most foreign observers and attachés had relatively strong freedom of movement within the Republican lines, access to the Nationalist forces was limited. Also, much of the information gathered was second or third source reporting. This was especially true with regards to the information being reported out of the embassies in France and England. This unfortunately elevated the likelihood of false information. Lastly, there was a tendency by both sides to withhold or manipulate the information that observers were inquiring about. This was certainly true with the Republican forces. As the Russians became increasingly involved in supporting the Republican forces, they introduced their political commissar system. As a result, sifting through the layers of political rhetoric was a necessary feat in order to seek the truth.<sup>3</sup>

In general, it was a commonly held view by Fuqua as well as other military observers of the time that the Nationalists were a more capable and professional fighting force than the Republicans. As noted during a lecture at The Command and General Staff School in Fort Leavenworth, Kansas, “Franco has united the disparate elements behind him to a remarkable extent, while parties of the Government have devoted as much energy to fighting among themselves as to fighting Franco.”<sup>4</sup> In addition to the noteworthy reputation of the Spanish Legion, Franco’s Moroccan regiments were also highly regarded for their professional fighting ability. In a report from the embassy in Paris on the Moorish contingent of the North African

## *Master of Military Studies*

Army it was said that, “They [Franco supporters] are particularly proud of the fighting qualities of the Moors and comment happily on the ruthlessness of a people who but a few years ago were deadly enemies of every true Spaniard.”<sup>5</sup> While the Spanish Legion and Moroccan forces represented the majority of the shock and assault troops of the Nationalist forces and were certainly noted for their courage in battle, much of their success was a result of the German and Italian military support they received. The introduction of modern technology to the battlefield by these fascist countries combined with Franco’s offensive ambitions provided the Nationalist forces with the edge they needed to maintain constant pressure on the Republicans. Arguably equal to the Germans in technological advancement, the Russians increasingly supported the Republican forces as well. However, unlike the Nationalists, political infighting and a preference to fight from the defense hindered their ability to make effective use of Russian military technology. The result was futile and a Nationalist victory was inevitably secured.

### ATTACK AVIATION INTRODUCTION

One of the most studied aspects of the Spanish Civil War was the application of Air Power. At the beginning of the war Franco’s forces were greatly outnumbered by the Republicans in terms of number of aircraft. However, once the Germans and Italians began aiding the Nationalists with aircraft and the necessary logistics and maintenance units to support their air force, the odds were quickly leveled. Similarly, the Russians and French provided the planes and the much-needed logistical backing to the Republican forces. What started as an opportunity for Germany, Italy, Russia, and France to test their aircraft in combat by training Spanish pilots, quickly devolved into their own pilots flying combat missions in support of each side’s respective ground forces. Reporting by the American attachés was overwhelmingly focused on the air aspect of the Spanish Civil War. As a result of the new and dynamic application of air technology, Col Fuqua ensured that Captain Townsend E. Griffiss of the Army

## *Master of Military Studies*

Air Corps reported voluminously on the entire spectrum of air warfare.<sup>6</sup> While information on the Republican air force was relatively easier to access, much was written on the tactics and strategy of the Nationalist air force as well.

Although the Marine Corps' coverage of the Spanish Civil War was limited, the writings and lectures given at Marine Corps Quantico Schools that did involve the war were primarily focused on the air war. More so than the other services during the interwar years, Marine leaders were attempting to shape their understanding of military aviation to best employ aircraft in support of maneuver. The lessons drawn from the successful testing of aviation in Nicaragua and Haiti should have been expanded upon through diligent study of the Spanish Civil War. The effects of close air support, the communication systems between aviators and ground forces, the tactical approach of aircraft in a ground attack, proper targeting and engagement criteria in support of maneuver forces, and the use of attack aircraft against traditional naval targets were lessons drawn from the Spanish Civil War and applicable to a future war in the Pacific.

### CLOSE AIR SUPPORT

In terms of close air support, the Marine Corps' literature of the late 1930s was primarily concerned with ship to shore movement and the role that aircraft would fill in facilitating a beach assault by an amphibious force. A period of instruction given in 1938 at Marine Corps Schools Marine Barracks, Quantico, Virginia highlights this emphasis on close air support by stating, "Under protection of this intensive attack [close air support] assault troops are able to debark from their landing boats, dash across the beach and secure some cover a short distance inland from which an advance from their immediate objective can be started."<sup>7</sup> In a lecture given in 1937 at Marine Corps Schools a note was made when addressing the use of close air support that, "The use of attack to cover the critical period of the landing of leading waves on the beach is proper and compiles with the principle of the objective."<sup>8</sup> The document goes on to emphasize

## *Master of Military Studies*

the importance of the element of “surprise” when employing aviation in a ground attack role. Furthermore, when addressing the effects of close air support the author goes to great lengths to paint a dramatic picture of its effects on the enemy by stating, “Suddenly out of the sun or over a low hill roars the attack with an intense barrage of grazing machine gun fire as it bursts into view. There is a crash of bursting bombs and whistling fragments.”<sup>9</sup> It is obvious that Marine leaders at the time had an optimistic view of the future of close air support. In writing about air operations during the Spanish Civil War, one Marine leader made the bold statement, “Ground attack missions became second only to aerial bombardment in importance.” He went on to state, “aerial attacks on them [defensive positions] softened the job of the attacking ground forces to a great extent. It reduced their morale considerably, in some cases, aerial attacks in lieu of artillery preparations, eliminated resistance and turned prospective battles into walkaways.”<sup>10</sup>

Undoubtedly, this confident outlook on the use of attack aviation was shaped by the Marine Corps’ experiences in Central America during the 1920s while fighting guerilla insurgent forces. In one instance while commenting on a recent close air support action in Nicaragua, a Marine pilot proudly claimed, “The air attack was the deciding factor in our favor, for almost immediately the firing slackened and troops began to withdraw.”<sup>11</sup> So valued was the Marine Corps’ experience in Nicaragua that an article published in the Marine Corps Gazette in 1929 claimed that, “probably no broader experience has been gained, or greater success achieved through the employment of aircraft in minor warfare, than that which attended the operations of our own Marines during the Nicaraguan campaign of 1927 and 1928.”<sup>12</sup> Literature like this captures the optimism of attack aviation and reflects the impact Nicaragua had in shaping the Marine Corps’ vision on close air support.

Although the Marine Corps was overly confident in what effects close air support could achieve, it was ahead of the other services in its assessment of the importance of attack aircraft in

## *Master of Military Studies*

supporting maneuver on the ground. Similar to the belligerents participating in the Spanish Civil War, close air support was seen by the Marine Corps as a means to fill the role of artillery in supporting an attack. This phenomenon was captured when a Marine Officer at Marine Corps Schools stated, “Both sides have successfully used aerial attack in preparation for launching an infantry attack in much the same way that artillery was customarily used for the same purpose in the World War.”<sup>13</sup> For the Spanish, lack of equipment and a void in trained gunnery prevented artillery from having a significant role during the war. For the Marines, amphibious assaults meant relying on naval gun support until friendly forces came into close proximity to the beach; At which point the only supporting arm for the near fight were attack aircraft.

Because the absence of artillery provided a gap that was often filled by aviation, the Marine Corps should have paid more attention to the reporting coming out of Spain on the lack of effects close air support was having on well prepared positions. In a report from the Assistant Chief of Staff, G-2 of the French Army on the effects of Nationalist close air support it was stated,

“The Reds refused to be scared. It becomes increasingly evident that while aviation may to a large extent help prepare the way, the effect is fugitive and as soon as the bombers have passed the defenders come out of their holes. To move forward, take and hold positions, the pressure must be constant”.<sup>14</sup>

Also, in a conversation between Military Attaché Lt Col H.H. Fuller and a German military attaché on events in Spain the German claimed, “aerial bombardment was not producing the results that most everyone had anticipated...it was entirely too transitory in its effect ...had not been sufficiently effective to drive the ground forces from positions held and once the aerial attack was completed the defenders were able to meet the opposing forces heretofore.”<sup>15</sup> In a report from Valencia in 1937 it was even stated, “There is also excellent proof, it seems to me, of the inability of air attack to achieve very much by itself aside from property destruction.”<sup>16</sup>

## *Master of Military Studies*

Finally, in writing about the highly publicized successes of the Republican Air Force against the Italian ground forces during the battle of Guadalajara, an American Infantry officer observing the battle alluded to the possibility of giving unrealistic credit to the potential of air attack when he warned, “the student of the Spanish Civil War must not learn a wrong lesson from the successful achievements of the air service in this and other offensive operations.”<sup>17</sup>

Conversely, lectures by Marine leaders at the time painted a different picture of close air support in a monograph used at Marine Schools in 1939 in which it was stated, “Aerial attack has also been effectively used against defensive positions or strong points which were holding up an infantry attack, and in several reliably reported instances, a thorough strafing has completely removed resistance and allowed the ground troops to advance unopposed. The effect of these attacks is reported by Spanish officers as being unbelievably severe.”<sup>18</sup> The Marine Corps should have recognized that, like the well-prepared defensive positions that Franco’s forces were often attacking into, an opposed landing would more than likely require assaulting against a well prepared and defended beach.

Essentially, if the Spanish Republican forces, which largely consisted of undisciplined militia troops, were able to continue defending from prepared positions after repeated exposure to Nationalist close air support, one could logically conclude that a determined and professional army would surely do the same and more while defending a beach from a well-prepared position. An example of this exact situation took place on one of the rare occasions where the Nationalist forces were on the defensive rather than the offensive. From 11-14 July 1937 the Republican forces launched a series of unsuccessful attacks against the heavily defended Nationalist positions in Brunete, Navalcarnero, and Madrid. Waves of bombers were used in an attempt to weaken Franco’s forces just prior to Republican infantry assaults. The results were an utter failure despite the overwhelming numbers of Republican forces. In a correspondence from the

## *Master of Military Studies*

embassy in Paris it was stated by LtCol Fuller that, “The more supine the Republican infantry, amongst whom the action of some 10,000 men merely consisted of the very passive defense of a village, the more intensified was the offensive action of the Government aircraft in their effort to compensate for the shortcomings of their grand troops.”<sup>19</sup> Clearly the experiences in Spain with close air support and its effects did not reflect the rosy picture that the Marine Corps was celebrating as a result of their expeditions in Central America.

### AIR-GROUND COMMUNICATION

Another lesson learned from the Spanish Civil War that should have been recognized by the Marine Corps involves the lack of communication between the ground forces and the pilots during close air support attacks. The lack of ability of the infantry to directly talk to the aircraft posed a serious problem in regards to the coordination of air strikes. As mentioned by a German military attaché when speaking about the communication issues between pilots and ground forces the statement was made, “...and as yet lacked the necessary timing and coordination with ground forces.”<sup>20</sup> Also, in a report on a conversation with General Kuhlenthal on the issue of controlling planes from the ground he expressed his frustration by stating, “proper control of planes in the air; that aerial operations in Spain had shown distinctly that control in the air was lacking and that aerial combatants never produced any coordinated attacks.”<sup>21</sup> Ironically, the Germans, who represented the bulk of Franco’s air forces with the elite Condor Legion flying in support of ground troops, were highly regarded for their communication system between the air and ground forces when compared to aviators of other nationalities. This was made evident in a report out of the embassy in Paris that, “They[Germans] are reported as being better trained than the Italians...and are especially good for cooperation with ground troops.”<sup>22</sup> Regardless of the Republican’s perceived competence of the Germans on air to ground coordination, the German

## *Master of Military Studies*

military had clearly conducted a self-assessment that concluded their needed to be improvement in their ability to coordinate attacks with aircraft.

During the interwar years, the Marine Corps had experienced the problems associated with lack of an efficient way for aircraft to communicate with ground forces. On July 16, 1927 Marine pilot Hayne D. Boyden even landed his plane in a village in Nicaragua while conducting close air support for a garrison of Marines battling guerilla forces in order to receive additional information relevant to the engagement. Without radio contact to the ground, Boyden had to fly back to his base to get an additional five aircraft to continue providing close air support for the Marines on the ground. In an effort to familiarize his fellow pilots with the location of both friendly and enemy troops, Boyden flew in a circular pattern around the engagement area before commencing his attack.<sup>23</sup>

As a result of experiences like Boyden's in Nicaragua, the Marine Corps began to explore ways to improve communication between pilots and troops on the ground. One technique involved the use of colored panels and other signaling devices by ground forces. The positions and sequencing of the markers helped direct close air support and were often turned into standard operating procedures.<sup>24</sup> This technique was also used by Franco's forces during the battle of Bilbao in which Nationalist forces were constantly marking newly-taken positions with large flags to keep their close air support from attacking friendly troops. During the offensive at Bilbao, close air support was constantly used to help dislodge the enemy when resistance on the ground was too stiff. Also, as described in a report on the fighting surrounding the Ebro River crossing at Quinto from an attaché with the embassy in London in 1938, Franco's forces successfully utilized ground strips to communicate with friendly aircraft when close air support was called in.<sup>25</sup> Although reporting from the attachés suggested that this form of communication with the aircraft was successful, the Marine Corps failed to capture this lesson. To do so would

## *Master of Military Studies*

have offered an opportunity for the Marine Corps to use a lesson from the Spanish Civil War to validate a current practice already being used by Marines in the field.<sup>26</sup>

Still, as the Marine Corps emerged out of the 1930's, much remained to be developed in the way of communications between the ground forces and attack aircraft. Even as late as 1940, as indicated in a training lecture at Marine Schools, the Marine Corps was attempting to improve communications between the air and ground by having designated planes, "swoop low over assaulting troops and drop a message – later returning to the same vicinity to make a pick-up of the message."<sup>27</sup> Shortly after establishing the Fleet Marine Force (FMF) in 1934, the Tentative Landing Operations Manual was created to outline the sequencing of steps during the conduct of an amphibious assault. This document called for a focus on communication between aircraft, ships, and ground units. Furthermore, it recommended that all airplanes be equipped with two-way radios.<sup>28</sup>

As indicated above, it is clear that the Marine Corps was aware that improved radio communication would be beneficial to improving the employment of close air support. Yet, little progress was made to rectify these obvious and apparent communication issues. The Spanish Civil War provided an excellent opportunity to learn how the lack of radio communication between pilots and ground forces impacted the effectiveness of attack aircraft. Had the Marine Corps placed more emphasis on this analysis, the urgency of the matter could have been more apparent and potentially pushed the issue to the forefront of discussion as a priority for development. This would have ultimately led to much better preparedness for World War II.

### ATTACK AIRCRAFT METHOD OF APPROACH

Another area of focus that the Marine Corps would have been wise to pay attention to is the method of approach used by attack aircraft on ground targets during the Spanish Civil War. During the interwar years, the Marine Corps used dive bombing as its primary maneuver in

## *Master of Military Studies*

providing close air support for ground troops. In its infancy during operations in Haiti during the summer of 1919, Lieutenant Lawson H.M. Sanderson found dive bombing at 45 degrees with a bomb release at 250 feet to be very effective. By 1920 this practice was implemented by Marine Aviators on both the East and West Coast.<sup>29</sup>

During the conflict in Nicaragua, close air support involved diving attacks by aircraft in which Marine aviators would fire their front machine guns and drop fragmentation grenades on targets in the open. After the dive was complete, the pilot would pull the aircraft up while the observer, located directly aft of the pilot, would continue to strafe the target with machinegun fire during the egress.<sup>30</sup> In one account a lecture given at Marine Corps Quantico Schools on the approach of attack aircraft in Spain claimed that, “the most popular method seems to have been by diving from a moderate altitude, rather than the hedge-hopping method.”<sup>31</sup> Another report suggested that although air attacks on ground forces were made anywhere from 16,000 to 15 feet in Spain, the preferred method was that they, “should be made from very high down to minimum altitudes.” The lecture goes on to approvingly claim that “Along this same line, I have been reliably informed that our Army Air Corps is about to abandon attack aviation for dive bombing aviation.”<sup>32</sup>

A closer and more in depth look at the various reporting coming from the attachés in Spain at the time indicates that the Marine Corps was wrong in their assessment that dive bombing was the primary tactic used in Spain against ground targets. During a conversation between the Military and Naval Attachés of the United States with the German military attaché at the embassy in Paris, German General Kuhlenthal stated, “All bombing in Spain was done with the horizontal and no dive bombing had taken place.”<sup>33</sup> Also, a report from 1937 on the tactics of Russian attack aircraft described the Russian successes by claiming, “their method of attack was to fly very low and very fast along the trench, dropping bombs at intervals and

## *Master of Military Studies*

sweeping the trenches with machinegun fire from a gun fitted forward. These attacks were very successful at first owing to the surprise with which they were delivered.”<sup>34</sup> The Government’s spectacular air attack against the Nationalist Italian ground forces at Guadalajara served as an example of how low altitude attacks against ground targets were truly the preferred method of attack by pilots participating in the combat in Spain during the late 1930s. On the morning of March 12, 1937 Russian aircraft successfully destroyed a large motorized column of Italian infantrymen who were in route to the front.<sup>35</sup>

Although the Republican ground forces were unable to exploit this success, the case was made that low level attacks on ground targets by specialized attack aircraft was very effective in practice. In this same report it was claimed that, “Every operation since the Guadalajara affair of March has shown the value of low bombing and ground attack work by both specially equipped attack planes and pursuit types.”<sup>36</sup> While it is true that in some cases dive bombing was used in Spain, the reasons for it normally involved specific aircraft that were hindered by poor armor around the vitals of the plane or faulty bomb release equipment. In the case of the Russian I-16 fighter, the 10-lbs bomb release rack was so unreliable that pilots preferred to, “very occasionally indulge by diving and using their two very fast firing guns.”<sup>37</sup> The Russian pilots flying I-15 planes had a higher propensity to participate in ground attacks due to their armament of four machine guns. However, their overreliance on their machineguns directly stemmed from the awkward positioning of the bomb release in the cockpit. As a result, these pilots would often drop their ordnance from a higher altitude of 1000 feet if possible, and then rely on the machine guns during the dive to about 300 feet.<sup>38</sup>

During the 1930s the Marine Corps began to realize that the dive bombing method of ground attack was not necessarily the most effective use of close air support. In 1935 during fleet landing exercises at Culebra, Puerto Rico, 1st and 2nd Marine Air Groups came to the

## *Master of Military Studies*

conclusion that low altitude-bombing was more effective than dive bombing. After numerous training exercises, to include a large scale amphibious assault on San Clemente Island, California that involved two Marine Brigades, two Marine Air Groups, an Army brigade, and a Navy aircraft carrier, Marine aviators came to the conclusion that faster and more powerful aircraft didn't necessarily equate to better performance while conducting close air support.

The problem associated with faster and higher-flying aircraft involved an increased difficulty in locating friendly and enemy positions on the ground. Where the old slow-moving DH-4Bs had open cockpits that enhanced visual situational awareness on the ground, the newer aircraft had closed cockpits and excessive speeds that hindered visual recognition.<sup>39</sup> Similar to what happened with the development of communication systems for pilots and ground forces, little was done to shape this tactical deficiency of close air support. The opportunity to gain lessons learned from the reporting generated from the Spanish Civil War in regards to the advantages of low-level close air support was missed by the Marine Corps. Not until World War II and the implementation of napalm in the taking of the island of Tinian would Marines adopt the method of low level attack.

### TARGETING

The role of aircraft in supporting troops on the ground and the priority of targets was another area of development in the Marine Corps during the interwar years that lessons from the Spanish Civil War could have helped shape. While it is true that the Marine Corps made leaps and bounds in its incorporation of air power into the development of amphibious doctrine, the reality is that the Corps' vision on the tactical role of aircraft was often muddled. On one hand, the Commandant of the Marine Corps made the comment that the most important role of Fleet Marine Force (FMF) was, "the close support of troops in the landing and during operations subsequent thereto."<sup>40</sup> Supporting this stance was a determination by the General Board of the

## *Master of Military Studies*

Navy in 1939 that stated, “Marine aviation is to be equipped, organized and trained primarily for the support of the Fleet Marine Force in landing operations in support of troop activities in the field.”<sup>41</sup>

On the other hand, lectures at Quantico revealed hesitancy when it came to the employment of attack aircraft. In one lecture it was stated, “In close support of ground troops it should be used only on those targets which cannot be handled by other weapons at the time necessary.”<sup>42</sup> The same document later concludes that, “Attack[aircraft] should not be used on targets that can be reached by ground weapons except as a last resort and on beach defenses when naval gun fire lifts.”<sup>43</sup> Even as late as 1940 the Marine Corps Schools was teaching that vital targets beyond the range of weapon systems on the ground should be the priority of attack aircraft. Supplementing the firepower of ground forces was discouraged and generally seen as a distraction from the targets that were further inland and considered to be of greater importance. There was also a belief that aviation should only be used as a substitute for artillery in its absence. This is clearly made evident in the statement, “attack aviation should be used in lieu of artillery only when the time limit precludes the assembly of sufficient artillery units to provide the necessary preparation, and when the absence of artillery may involve failure of the campaign as a whole.”<sup>44</sup>

Had the Marine Corps paid more attention to the lessons coming out of the Spanish Civil War, a deeper emphasis on the proper employment of attack aircraft in a close air support role could have been realized. While reporting from the attachés in Europe consistently revealed that the use of close air support in Spain had little effect on the destruction of troops in the defense, there was an overwhelming amount of information on the success of suppression of defensive positions during infantry assaults. This required both Republican and Nationalist planes to designate enemy positions in the immediate vicinity of the advancing infantry as priority targets.

## *Master of Military Studies*

An example of this can be seen during the Bilbao Campaign in which Franco's forces successfully used combined arms to advance on a well defended garrison of Government troops. The integration of close air support and maneuver eventually caused the Republican forces in Bilbao to surrender on June 19, 1937. Based on extensive reporting from attachés in the field, a lecture given at The Army Command and General Staff School in 1937 noted how the Nationalist forces utilized a 90 minute artillery preparation followed by a 30 minute bombardment of heavy bombers to suppress the enemy while the infantry closed on the Republican position.<sup>45</sup>

Another example of Nationalist's use of continuous close air support during a ground attack occurred during the battle for Madrid in which it was reported by Colonel Fuqua that, "The rebel attack invariably follows the same plan...airplane bombing and artillery shelling by way of preparation, followed by an infantry advance against a flank."<sup>46</sup> The key requirement that ensured success of close air support was the ability of the infantry to have the willingness to exploit aerial suppression by unmasking and closing the gap with the enemy. The Nationalist Forces were much better at this than the Republican forces and their tactics closely paralleled the amphibious doctrine developed out of the 1930s by the Marine Corps. A telling report on this matter from American Attaché Stephen Fuqua revealed, "An Air Force is an invaluable striking weapon on both the defense and offense and when cooperating with troops that have the heart, courage, and leadership to advance its value is tenfold."<sup>47</sup>

Why the Marine Corps was so cautious with its approach to the use of attack aircraft in support of ground forces remains a mystery. The prioritization of deeper targets further inland also brings to question whether Marine attack aircraft were truly integrated into the Marine Air Ground Team that was so celebrated in the early 1930s. One possible explanation is the influence that the other services may have had on military aviation; specifically the Army. During the

## *Master of Military Studies*

interwar years a dichotomy between the real-world lessons of the experiences with military aviation in Central America and the emerging theory of strategic air power became a common topic among the military aviation community. Despite the reporting generated from General Fuqua and his team of attachés in Europe on the use of air power in the Spanish Civil War, many of the lessons learned were ignored in lectures given at U.S. Army teaching institutions. The Army Air Corps Tactical School taught that the primary attack mission was the destruction of an enemy's aircraft on the ground as well as their support infrastructure. Aiding ground forces with air support was listed as a secondary mission.<sup>48</sup> The theory of strategic bombing was overly emphasized despite the fact that a second look at the fighting in Spain would have revealed that close air support should have been more intently focused on.

Undoubtedly, this overemphasis on strategic bombing and downplaying of the role of aircraft in close air support by the Army Air Corps had a swaying effect on the United States Marine Corps. If more enthusiasm had been directed towards the study of the reporting coming from Spain in the late 1930s it would become clearly evident that both the Russians and Germans were more focused on the ability of aircraft to support maneuver. Their experiences in Spain had demonstrated that vectoring assets towards the support of ground forces was a much better use of air resources.<sup>49</sup>

Furthermore, the Marine Corps should have realized that close air support is only effective if a disciplined and courageous ground force is willing to exploit the success of the suppression on the enemy positions by rapidly closing on them. To do this effectively requires attack aircraft fully committed to targets immediately impacting the assaulting troops. As highlighted in a report from the embassy in Paris in 1937 on the need for constant supporting arms in order to facilitate an infantry assault it was claimed, "To move forward, take and hold positions, the pressure must be constant."<sup>50</sup> Also, in a lessons-learned lecture given at the

## *Master of Military Studies*

Command and General Staff School it was proposed that combined action of infantry, tanks, artillery, and air was needed to drive the enemy from defensive positions in Spain. In addition, an emphasis on the morale effect associated with close air support gives credence to the notion that a continuous stream of close air support is necessary during an infantry assault on an objective.<sup>51</sup> Marine Corps Schools in 1940 however, outlined that deep targets out of range of ground weapons should be the priority for attack aircraft, the usage of attack aircraft was not consistent with the FMF's newly adopted amphibious doctrine. Finally, the reporting that came out of Spain at the time clearly indicated that attack aircraft were best used against targets that posed a direct threat to ones advancing infantry. To relegate such a valuable resource as an attack aircraft to anything other than the direct support of the maneuver forces was seen as a waste of resources. This lesson from Spain was clearly missed by the Marine Corps.

### ATTACK AIRCRAFT IN A NAVAL ROLE

Another reason that the Marine Corps should have paid attention to the Spanish Civil War was the fact that much of the air activity surrounding the war, especially in the case of the Nationalist forces, involved expeditionary principles that were, in many ways, naval by nature. During Franco's invasion of the coastal Province of Malaga, the Nationalist Forces were supported, in a great display of combined arms, by naval gunfire as well as close air support from attack aviation. So effective was the surprise and shock on the Government troops, that their well defended positions were in many cases completely abandoned. This was significant because the terrain was mountainous and suited towards defense. Taking full advantage of their ability to mass troops at Malaga while continuously supported by attack aircraft, the Nationalist forces continued their advance through the Malaga littoral and coastal corridor of Granada until they finally consolidated in Almeria, Spain.<sup>52</sup> This display of naval gunfire in conjunction with close air support had obvious relevance for the Marine Corps.

## *Master of Military Studies*

With Marine Corps aviation having a secondary role of providing support as replacements for carrier-based naval aircraft, attention to typical missions associated with naval aircraft should have been studied as well. On two separate occasions Nationalist aircraft unsuccessfully attacked Government naval warships underway. On April 30, 1937 when the Jaime I Espana-class battleship steamed into a mine and began to sink, Nationalist aircraft attempted to bomb the vessel while it was sinking. As a result of propaganda and inaccurate reporting, it was initially reported that the Nationalist planes were successful in their bombing efforts.<sup>53</sup> However, it was later revealed that the true reason the ship sunk was due to damage received as a result of the explosion from the mine. A monograph used at Marine Schools captured this instance but failed to draw the correct lessons. First, the monograph incorrectly credits the Nationalist aircraft with destroying the vessel. Second, the author is overwhelmingly concerned with the failure of the ship's crew to recognize that the plane was an enemy aircraft. Hence, the lesson drawn is that aircraft recognition needs to be better-studied.<sup>54</sup> The real significance of the event was that the aircraft for whatever reason missed its target during an attack that was naval in nature and similar to what Marine Corps aviators could likely be tasked to accomplish during a war.

A similar instance happened during a naval engagement on 12 July, 1937 that involved the Nationalist cruiser Canarias and two Republican destroyers that were protecting the merchant ship Campilo. The war vessels exchanged shots for several hours off the coast of Valencia but none of the shots were able to connect with their targets. Later, Nationalist planes attempted to bomb the Campilo but were unsuccessful. Also, during continuous fighting along the coastal region between Castellon and Alicante Nationalist Forces launched a series of air strikes on ports in which over fifty commercial vessels were sunk or rendered ineffective. Lacking naval ships, Franco used his aviation assets instead to cause a blockade of the coastline. In a report generated

## *Master of Military Studies*

by Col Fuqua for the Chief of Staff of the Army in 1938, it was claimed that, “These attacks...seem to have been directed primarily at docks, port facilities and shipping in the harbor.”<sup>55</sup> The opportunity to draw conclusions on such a significant event that involved attack aviation applied to a naval role was completely missed by the Marine Corps.

### CONCLUSION

During the interwar period the United States Marine Corps made impressive advancements in the development of attack aircraft. As amphibious doctrine evolved and the formulation of the Fleet Marine Force took shape, advancements in the use of close air support during the conduct of an amphibious assault continued to be refined. Since the Marine Corps did not use aviation in a close air support role during World War I, the experience it gained from supporting ground troops with attack aircraft in Nicaragua, Haiti, and Panama served as the primary basis for Marine Corps attack aviation leading up to World War II. While much of the lessons learned in Central America undoubtedly lent way to the establishment of the Marine Air-Ground team, much remained to be learned and developed in the realm of attack aviation.

The Spanish Civil War offered an opportunity for the Marine Corps to gain knowledge on the capabilities and limitations of attack aircraft in a real world setting. From 1936-1939 Spain's civil war between the Government's Republican forces and General Francisco Franco's rebellious Nationalist forces involved a clashing of technologies developed during the interwar period; notably the use of aircraft for military purposes. When Communist Russia entered the war on behalf of the existing Government and the Fascist countries of Germany and Italy decided to back Franco's forces, the battlefield in Spain became a testing ground for aviation. Overwhelmingly, attack aircraft were used by both sides to provide close air support for maneuver elements on the ground. This phenomenon provided excellent insight for Russia,

## *Master of Military Studies*

Germany, and Italy on the effective use of aviation assets in support of ground forces and proved highly influential in shaping air power doctrine in the lead up to World War II.

Specific lessons that should have been drawn from the Spanish Civil War and used to benefit the Marine Corps' development of attack aviation included the following: the effects of close air support, the communication systems between aviators and ground forces, the tactical approach of aircraft in a ground attack, proper targeting and engagement criteria in support of maneuver forces, and the use of attack aircraft against traditional naval targets. However, the Marine Corps did not make a concerted effort to conduct an in depth analysis of the war in Spain. In the little that was written on the Spanish Civil War and the various monographs and lectures at Marine Corps Schools in Quantico, the information presented was often lacking in depth and substance. In some cases the information pertaining to Spain contradicted existing Marine Corps doctrine while in other examples it substantiated contemporary practices. Regardless, the Marine Corps missed this unique chance to weigh the knowledge coming out of Spain on attack aviation with their own doctrine. Furthermore, the Marine Corps leadership should have recognized many of the parallels it shared with the elite North African component of the Nationalist forces as well as the expeditionary nature of much of the fighting in Spain. This observation would have aided in understanding the relevance of the conflict in Spain.

It is clear that the Marine Corps did not place much emphasis on the study of the Spanish Civil War. It is ironic that while the Marine Corps was internally wrestling with the complexities associated with incorporating attack aviation into their own amphibious doctrine in the 1930s, the Civil War in Spain was raging on with American military attachés such as Col Fuqua consistently reporting on the endless infantry assaults supported by close air support from attack aircraft. The questions that are left to be answered are why did the Marine Corps ignore the Spanish Civil War and could the Marine Corps have had time to shape its use of attack aviation

## *Master of Military Studies*

to better prepare for World War II if it had paid more attention to the lessons learned that were being reported on during the conflict?

The United States' prominence on the world scene is much different now in comparison to what it was during the interwar years. The current operating environment is complex and, as America's expeditionary force in readiness, the Marine Corps must maintain the capability to respond to global crisis across the spectrum of conflict. Fostering a culture within the force that is encouraged to seek information abroad will assist with the effort to stay ahead of military innovation. It is recommended that the Marine Corps continue to study military conflicts and training evolutions involving foreign militaries in the contemporary in order to avoid the mistake of missing an opportunity to learn relevant military lessons as was unfortunately done during the Spanish Civil War.

# *Master of Military Studies*

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## *Master of Military Studies*

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- <sup>48</sup> Gary C. Cox, "Beyond the Battle Line: US Air Attack Theory and Doctrine, 1919-1941" (master's thesis, School of Advanced Airpower Studies, 1994-95), 39.
- <sup>49</sup> Skip Hinman, LtCol USAF, "Air Power's Lost Lessons," *Armed Forces Journal* (October 1, 2006): 4-5. <http://www.armedforcesjournal.com/air-powers-lost-lessons/>.
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- <sup>53</sup> H.H. Fuller, Lt. Col. Military Attaché in report No. 23, 508-W from Paris, June 22, 1937, "Major Operations. Basque Front," in *Modern Warfare In Spain*, 141-142.
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# *Master of Military Studies*

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