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MASTER OF MILITARY STUDIES

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**TITLE:**

**PREPARING FOR LARGE-SCALE COMBAT OPERATIONS  
THE SUPPORT OF MILITARY HISTORY**

SUBMITTED IN PARTIAL  
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FOR THE DEGREE OF  
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**AUTHOR: Major (FR) Laurent Nerich**

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## **Executive Summary**

**Title:** Preparing for large-scale combat operations: the support of military history

**Author:** Major Laurent Nerich, French Army

**Thesis:** Military history can be very helpful to support the current reflexions about Large-Scale Combat Operations (LSCO) and to identify potential pitfalls in their preparation.

**Discussion:** North Atlantic Treaty Organization (NATO) armies are currently implementing a shift towards LSCO. They can benefit from the experience provided by numerous similar episodes throughout modern history, like the first years of the American Civil War or the interwar period. According to doctrinal publications, the first requirement of LSCO is mass, combination of manpower, equipment and strategic mobility. Indeed, it does not just mean having a strong reserve system, but also being capable of deploying quickly a large body of troop, even in a contested area. Recruiting or mustering soldiers is one issue, but then the question of their training and their leadership arises, hence the Professional Military Education (PME) aspect of the preparation for LSCO. In addition to a robust lessons learned system, military history can effectively support adaptation through a conceptual foresight, by enabling comparisons.

**Conclusion:** Considering the challenges ahead regarding LSCO, every available tool – to begin with previous experiences - must be used. Indeed, military history can support every aspect of the current shift towards LSCO: studies, planning, PME and training. Furthermore, it will enable NATO armies to put their current transformations into perspective.

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Acknowledging the evolution of strategic threats, members of the North Atlantic Treaty Organization (NATO) are shifting from a counter-insurgency paradigm to a competition with potential peer adversaries, bringing the organization back to its former paradigm. The French 2017 Strategic Review on National Defense and Security, for example, points out “harder threats” and “the return of military rivalry” with assertive powers.<sup>1</sup> The United States latest National Defense Strategy is also very explicit about it: the “reemergence of a long term strategic competition” by revisionist powers (actively contesting the US hegemony) compels the United States to “prioritize preparedness for war” in order to build a “more lethal force,” suited to the future challenges.<sup>2</sup> The 2017 publication of the US Army Field Manual 3.0 by the Training and Doctrine Center (TRADOC) initiated the doctrinal shift towards Large-Scale Combat Operations (LSCO) within the US Army. It is very clear about the challenges ahead: “Large Scale Ground Combat against a peer threat represents the most significant readiness requirement.”<sup>3</sup> The definition it gives for LSCO is “chaotic, intense and highly destructive” operations, characterized by “complexity, chaos, fear, violence, fatigue and uncertainty.”<sup>4</sup>

This capstone document also stresses that it is not just a doctrinal issue. It has as much to do with training the troops adequately and mobilizing resources (to begin with manpower). Indeed, several historical examples highlight these challenges, be it during the first years of the American Civil War or when the United States entered the Second World War. These examples remind readers that modern total wars involve the whole nations’ resources and not only their military instrument. Set aside by the importance of the text itself, one sentence of President Abraham Lincoln’s Second Inaugural Address is enlightening regarding these issues: recalling the outbreak of the Civil War, he stressed that “neither party expected for the war the magnitude, or the duration, which it has already attained.”<sup>5</sup> Thus, military history can

be very helpful to support the current reflexions about LSCO and to identify potential pitfalls in their preparation.

At the strategic level, these operations raise the question of mobilizing forces in a context of professional armies. Considering the complexity of modern combat and weapon systems, what to expect from conscripts and how long do leaders think it would take to train them? Dealing with LSCO also involves leaders mastering operational art, set aside during the recent counter-insurgency period. Last, but not least, LSCO require a permanent adaptation of both doctrine and training in order to be prepared for future battlefields.

This research essay does not focus on about procurement, force design, or new weapons systems related to LSCO. Neither is it a geopolitical analysis of the current threats, competitors and relative capabilities, nor a criticism of existing plans. It is an intellectual exercise at unclassified level. It will thus provide presumptive and general recommendations (using history as the analytical tool) and will focus on the operational requirements of LSCO. If the strategic framework will be NATO's, most of the current examples selected will be about the United States and France. This research essay will use the first two years of the American Civil War as a recurring theme.

As a comprehensive analysis of Confederate Summer 1862 Counter Thrust<sup>6</sup> shows, 1861 and 1862 offer a good example of such a shift towards LSCO, at every level, including the need for mass, training, and other priorities. The American Civil War ended up in a pattern quite similar to the current prospect: a massive clash of hundreds of thousands of soldiers, opposing two armies with a similar technological level. Lastly, the focus of this paper will primarily be operational art. However, such issues require looking “beyond the battlefield and the headquarters tent to the wider political and social context.”<sup>7</sup> Thus, this essay will address issues across the levels of war from the strategic to the tactical level.



## **I THE QUESTION OF MASS:**

An anecdote mentioned by historian Joseph Harsh about Robert E. Lee gives an idea of the changes that happened to the scale of the armies during the first two years of the American Civil War. When his state of Virginia sided with the Confederacy, then Major-General Lee was demoted to the rank of brigadier-general. It was not a punitive measure: due to the size of the Confederate army at the beginning of the conflict, the rank of brigadier-general “was the highest then recognized by Confederate law.”<sup>8</sup> On the Union side, the three months duration of the volunteers’ contract embodied their belief in a short and limited war. In Summer 1862, in the aftermath of the battle of First Manassas and the Peninsula Campaign, acknowledging that the war would not be short, the Union raised 300,000 additional soldiers, this time for a nine-month obligation (plus a smaller batch of three-year contracts soldiers). For Benjamin Cooling, this capacity enabled Union to withstand the Confederate counter thrust in 1862. “Resurgent Union power parried the Confederate move, if not brilliantly, at least sufficiently,” most notably through accelerating mobilization.<sup>9</sup> The year 1862 ended in a stalemate. Making armies larger as a conflict continues is thus a recurrent pattern.

### 1) Generate and (re)generate mass:

According to the TRADOC and due to the issues at stake, the first requirement of LSCO is mass, combination of manpower, equipment and strategic mobility. As French politician Georges Mandel ironically pointed out during the interwar period, “democracies prepare for war after having declared it.”<sup>10</sup> His sentence highlights the risk associated with being attacked first. Talking about the unpreparedness of United States armed forces (whose strength held the nineteenth rank worldwide in 1939) at the beginning of the Second World War, Japanese admiral Isoroku Yamamoto wrote this sound sentence: “A military man can

scarcely pride himself having smitten a sleeping enemy.”<sup>11</sup> After the collapse of Soviet Union, NATO countries expected to benefit from a lasting peace and they drastically reduced their military expenditure (along with their strength), ending up in small armies, comparable to a bonsai tree. Illusory peace dividends can no longer be expected due to the revisionist and assertive nature of several world powers. Despite the resurgence of a conventional threat, few major shifts have been observed among NATO members’ armed forces, hence the issue of burden sharing (and the 2% of GDP that are expected of members for their defense spending) legitimately raised by the United States. Moreover, most of these countries did not plan to rebuild a large capacity, should a major security crisis happen.<sup>12</sup> Arguably, future enemies could definitely plan on these deficiencies.

Indeed, mobilizing a nation for LSCO has proven to be a long and complex process, as well as feeding and equipping them. Though very unlikely, a mobilization requires numerous actions (census, plans, and depots). Peacetime plans enabling a quick mobilization can be decisive victory factors. At the beginning of the First World War, for example, the German staff based its plan on the assumption that France and Russia would not be able to mobilize quickly enough to repulse their first offensive. In addition to the unexpected counterattack on the Marne, the fast French mobilization prevented Germany to achieve a quick victory in the West.<sup>13</sup> In several campaigns (Italy in 1796, Germany in 1813, and Belgium in 1815), Napoleon as well had planned on the time need by the enemy coalitions to muster their forces: his intent was to strike quickly and beat the first echelon of the coalitions before the allied armies could regroup. These examples illustrate how much this manpower issue has operational consequences, hence the necessity to address it in the current context.

Since a higher rate of casualties is very likely in LSCO, it is necessary to consider all the consequences and requirements of their replacement. Indeed, regeneration is also a key issue since LSCO often become attrition fights, a large-scale version of “last man standing”

brawls, when the long-haul victory belongs to those who were the most able to sustain their effort. The Battle of Verdun in 1916 is one of the most famous examples of these attrition battles, with the German intent of exhausting and then “bleeding the French Army dry.” French organization of units’ rotations and replacement along the main supply road nicknamed the “*Voie Sacrée*” paved the way for the victory.

Today, in case of a massive clash, a key issue would be the time needed to call out or draft additional forces in countries without military service anymore. One of the answers is a robust reserves’ system, which is an essential part of generation (or regeneration) of forces. In December 1915, because of the looming prospect of war, a bill was proposed to the United States Senate Committee on Military Affairs “to provide a large trained reserve from which any desired military force may be drawn whenever needed.”<sup>14</sup> Since its very creation in 1948, Israel has based its strategic resiliency on the reactivity of its reserve system. However, its geopolitical and political context favors such a peculiar and demanding system. More recently, in order to rebuild a full capacity against potential peer or near peer adversaries, France addressed this issue in 2015. In the framework of the annual refinement of the Military Spending Plan 2014-2019, France implemented a new reserves’ plan, with two lines of effort. First, the French armed forces augmented the strength of their operational reserve force of more than 10 000 troops, with a target of 40 000 operational reservists by 2020 (plus 40 000 operational reservists among the *Gendarmerie*, French military police force, deployable overseas). Then, joint headquarters conducted more frequent mustering exercises and deployments, in order to increase the readiness of these reserve forces.<sup>15</sup> In the latest annual fragmentary order for the Navy, Admiral Gilday (Chief of Naval Operations) asked the service to assess its strategic depth regarding reserves<sup>16</sup>, which confirms the importance of this issue.

Throughout history, this capacity to sustain long efforts is (in addition to the technological gap) one of the main reasons why colonial armies prevailed against their opponents. Indeed, they were facing armies emanating from societies that were not tri-functional, that is to say with no standing armies (and thus no difference between warriors and laborers). Members of these societies had to set aside their agricultural duties to wage war, hence their difficulty to implement or withstand long campaigns. That also explains why colonial armies faced difficulties, when confronted with adversaries able to deal with this issue. The 1861 British campaign against rebel Maori tribes in the Taranaki province of New Zealand is a good example of it. In the framework of the “King Movement,” Maori succeeded in implementing a turnover among and between tribes, and the campaign ended in a stalemate. Only the massive engagement of imperial troops in the Waikato province two years later enabled the British empire to prevail.<sup>17</sup> The manpower issue is not specific to LSCO and proved true for expeditionary and counter-insurrection wars, with the additional difficulty of transporting troops overseas in remote areas. As history suggests, it is not only mass *per se* but also strategic mobility.

## 2) Bringing mass to the fight:

The arrival of reinforcements by rail during the battle of First Manassas in 1861 was among the main factors leading to the Confederate victory (in addition to being the first operational use of railroads in North America). Acknowledging the potential of railroads for large-scale operational movements, both sides used them extensively during the American Civil War. The Union even created an agency, whose mission was to standardize regional railroad systems and coordinate inter-theater movements, aiming at a capacity to quickly shift efforts or reinforce a threatened area. Maritime assets were also extensively used by the Union, be they on rivers (such as Mississippi) or at sea, despite inherent delays. The only

major failure in redeployments happened during the Summer 1862, when General McClellan's troops withdrew from Peninsula. In the following campaign, General Lee perfectly exploited the opportunity window offered by this large movement by boats and the subsequent land movements. He could thus beat General Pope's Army of Virginia in Second Manassas before the Union forces were regrouped south of Washington.

Even without considering the extreme case of a mobilization, the first challenge that armies would face in LSCO would be to deploy quickly. In addition to the deployment itself, NATO must consider readiness as a whole. On paper, NATO enjoys a large superiority over its potential adversaries. However, these reassuring figures (comparing, for example, NATO's and Russia's strength) neglect to mention that not all of the soldiers taken into account are properly trained and thus ready to "fight tonight." In addition to that point, these forces could be sent far away from their homeland, hence the key issue of strategic mobility. With the enduring focus on battles, staffs sometimes forget that moving an army and sustaining it on long distances is almost as critical. NATO armed forces often confine strategic mobility as a procurement issue, as part of the endless debates about the relative advantages of tracked and wheeled vehicles (the latter being easier to transport by air).

This mobility issue is broader and has proved an important factor of combat effectiveness for a military instrument throughout history. Historian and strategist Julian Corbett had already stressed the influence of sea power on land operations and the exponential effect related to the capacity of projecting power.<sup>18</sup> However, few countries possess such capacities (sea, air or ground heavy lift) on a large scale. Even the United States faces difficulties in this domain<sup>19</sup>, so it is not exaggerated to doubt NATO's capacity as a whole to effectively and quickly move entire divisions, especially in a highly contested environment. Coalition managed to do so for "Desert Shield" and "Desert Storm" in 1990 but the deployment took almost six months. These capacities are essential to maintain a credible

conventional deterrence and reassure partners such as Taiwan and the Baltic States. In this regard, the overcoming of the Berlin's blockade by air assets was a way to show both United States' determination and lift capacities, before the two countries could conclude a political arrangement. Sealift, airlift, or railroad strategic movements can also suffer from interoperability issues (gauges, norms, etc.), reminding the necessary "standardization" of these assets previously mentioned for Union railroads.

This could lead to a substantial friction in case of an urgent and massive deployment. For example, the 2014-2015 series of wargames about Eastern Europe conducted by the Rand Corporation showed that at least seven brigades would be necessary to secure the Suwaliki Gap, an essential corridor for the defense of the Baltic states in case of a Russian aggression.<sup>20</sup> At a more strategic level, the 2014 Ukrainian crisis made NATO reconsider its rigid five-years "Long Term Rotation Plan" and the articulation of the "NATO Response Force" (NRF), strategic QRF for NATO, which needed a consensus to be engaged. In the aftermath of the Wales Summit held in September 2014, the alliance designed a "Readiness Action Plan." This plan included several modifications of the NRF, to begin with the creation of a "Very High Readiness Joint Task Force" (VJTF). It also increased the strength of the NRF to 40,000 troops.<sup>21</sup> However, the engagement of these forces still requires a consensus among NATO members. A "*fait accompli*" strategy could thus be very efficient in this context. Political dissensions among NATO (most notably with Turkey) additionally weaken this construct and implicitly reduce the readiness of the whole force, not to mention caveats or other limitations that contributing countries could impose on their troops.

Today, the increasing A2AD capabilities of NATO's potential enemies could seriously impede quick deployments in key areas. These capabilities, along with the incremental development of hypersonic munitions, make joint forcible entry operations (JFEO) very risky and would require large efforts, thus reducing the available options to engage forces. Such a

context had prevailed after the First World War and the failure of Gallipoli. Several countries managed to solve this problem through a doctrinal and procurement process. In September 1925, France and Spain were then able to launch the first modern combined joint amphibious assault (including army, navy, and air force) at Al Hoceima in Morocco. The United States, especially the Marine Corps, also addressed this issue by developing both new equipment (such as the Landing Vehicles Tracked (LVTs)) and a more integrated doctrine, which would enable them to prevail in the Pacific Theater during the Second World War. However, few NATO countries possess comprehensive JFEO capabilities, which are an important component of conventional deterrence. Moreover, NATO has no doctrinal equivalent of an “Expeditionary Strike Group,” should the alliance need to conduct such complex operations.

## **II WHICH LEADERS FOR LSCO?**

When proposed the command of the Army of the Potomac, General Ambrose Burnside honestly expressed to President Abraham Lincoln that he felt “not competent to command such a large army.”<sup>22</sup> Unfortunately for the Union, the severe defeat of Fredericksburg on December 1862 proved he was right in his statement. Tomorrow, former COIN leaders will have to be relevant for LSCO. More generally, good tactical leaders do not make good operational leaders. Sir Redvers Buller, for example, was described as “the best colonel of the British Army but, perhaps, the worst general.”<sup>23</sup> It is not just about being promoted beyond one’s capacity. It is also dealing with a new context. Again, there are numerous examples of this in history, hence the inherent leadership issue of LSCO.

## 1) Quality versus mass?

Recruiting, mustering, or drafting soldiers is one issue, but then the question of their leadership arises. Two main solutions do exist: either implementing an internal mentoring or resorting to pre-existing cadres for future units. An internal mentoring consists in using veterans to train and then lead in combat inexperienced units. The regeneration of the French *Grande Armée* after the disastrous 1812 Russian campaign is a good illustration of this method: “I need officers and cadres to receive the recruits arriving from all directions,” wrote Napoléon on 22 January 1813.<sup>24</sup> Thus, Napoléon had to resort to his veterans to lead his new units. The most famous example is the Imperial Young Guard, “a magnificent weapon forged by the Old,” as Henry Lachouque and Ann Brown labeled it.<sup>25</sup> German Third Reich also used this process of internal mentoring to raise the 12<sup>th</sup> SS Panzer Division “*Hitlerjugend*.” To lead the young and fanaticized recruits, it resorted to a “cadre of veteran instructors and officers from the 1<sup>st</sup> SS Panzer Division *Leibstandarte* SS Adolf Hitler,”<sup>26</sup> most notably Kurt Meyer, “paradigm of the SS soldier and a magnet of attraction to the Hitler Youth.”<sup>27</sup>

However, this method is not a panacea: first, armies would dearly need their experienced cadres on the frontline in case of a major conflict. Then, it can have a destabilizing effect on “older” units, as for cohesion and common tactical references. Furthermore, sustaining such a system in the long term can be very difficult. Having used experienced cadres to create new divisions in 1941 and 1942, the US Army had difficulties providing experienced officers and non-commissioned officers to the newly created divisions in 1943. It led to a sensible decrease of the combat effectiveness during the first engagements of these units. Fortunately, massive engagements in North Africa and Italy generated much combat experience and enabled the US Army to resume the process at maximum efficiency.<sup>28</sup> To compensate for their relative inexperience during the first years of the Second World War, Canadian armed forces had to rely on British officers and non-commissioned officers to train



their conscripts and insisted on being assigned combat missions (such as the raid on Dieppe) to gain combat experience.<sup>29</sup>

The other way to address leadership issues in case of a massive generation of force is to use pre-existing cadres. That is what the US Navy had to do to face the outbreak of the American Civil War, after one quarter of his officers sided with the Confederacy. Many “old” lieutenants, blocked by the rigid promotions’ system based on seniority, were promoted and received commands to staff the additional ships required by the war (there were only ninety ships in the US Navy in 1860).<sup>30</sup> The example of the German *Reichswehr* in the interwar period is worth studying in that regard. Failing to create a strong reserve force, General Hans von Seeckt devised expansion strategies based on future leadership requirements. Thanks to these strategies, the German Army would be able to grow from 100,000 military personnel in 1933 to 3,737,104 military personnel in 1939. Indeed, the Versailles Treaty only imposed limitations on officers, and not on non-commissioned officers. That is why the Reichswehr ended up having more non-commissioned officers than privates in its enlisted structure. This *Führerheer* (“leader army”, as it was nicknamed by von Seeckt himself) “would serve as an efficient framework for a larger army.”<sup>31</sup> During the rearmament initiated by Hitler after 1933 and as an essential part of the plans developed by von Seeckt, 1,500 sergeants (previously serving as platoon leaders) would thus become officers. It implied high standards, harsh examinations, and an emphasis on subsidiarity in their schools. Pedagogical methods in their curriculum, namely the “actual Level+2” formation, also favored and supported this very concept of subsidiarity, *Auftragstaktik* in German: for example, a sergeant would be taught tactics at platoon level and a lieutenant at battalion level. This principle should be remembered, especially with the current strong emphasis on mission command. Indeed, soldiers and leaders can be an “asymmetric advantage,” as highlighted by the US Combined

Arms Center motto.<sup>32</sup> Combat Effectiveness also relies on the efficiency of command, now labelled as one of the eight “operational superiority factors” in French doctrine.<sup>33</sup>

## 2) Refine the professional military education (PME):

In the framework of a similar technological level (as it is the case with peer threats), much will be about leadership qualities and their mastery of maneuver warfare. That is why there is a more specific leadership issue linked to LSCO, which is broader than just the need for experienced cadres during training. Indeed, large formations require leaders able to address the complexity of such operations. Complex, often mistaken with complicated, means that there are multiple new variables involved, such as information warfare for example. That is why the second aspect of the leadership issue in LSCO is about PME of the future leaders, who will have to prepare for a different context. Relying on adaptability only seems both illusory and risky, hence this important PME issue. Arguably, new challenges involve a refined PME, with a focus on general tactics and battle space management, as a reminder of the very essence of operational art, which is the coordination and the sequencing of tactical actions, as well as the integration of joint effects.

Contrary to the insurgents faced in last decades, the potential enemy in LSCO is no more elusive. Frontlines are back, like in Donbass, and the enemy must be shaped. In such operations, the shaping phase does not only mean attrition or domain superiority. It also means determining its contours and, more important, its intent. These capacities require an emphasis on “general tactics” and not only on combined arms combat (which are essentially two different things), the ultimate goal being the capacity to design and express a clear commander’s intent. As part of general tactics curriculum, deception will be paramount. Deception never disappeared during the COIN decades, but it was more small-scale and

tactical tricks (such as false heliborne dropping on hilltops) than a line of effort irrigating the whole operational approach. Despite the new paradigm regarding sensors, historical examples (like the Soviet *maskirovka* used before the launching of the “Bagration” offensive in 1944) will be very useful case studies to teach and grasp the essence of deception and its multiple components.

More generally, Command and Control (C2) must be a sweet spot for operational leaders, through the study of (more or less efficient) C2 structures used in previous wars or operations. It will be all the more important in a joint and multi-domain environment, having to integrate multiple components. Sometimes, roots of defeat lie in the force structure’s construct, especially the C2 articulation. Going back to the Summer 1862, General Henry Halleck (then Union commander-in-chief) did not give clear enough orders for the support of Pope’s army by McClellan’s units, thus indirectly favoring the Confederate plan to beat them in detail.<sup>34</sup> Among the available tools to work on these issues, staff rides offer the opportunity to combine both doctrinal aspects and historical perspective. Therefore, they have to be seriously considered in the PME curriculum of future leaders, enabling them to analyze deeply the operational dilemmas faced by commanding officers in the past, especially when they failed.

As for battlespace management, exercises involving entire joint forces with multiple divisions (such as the NATO exercise “*Citadel Guibert 19*”<sup>35</sup> conducted by French 3<sup>rd</sup> Division in Mourmelon in March 2019), though demanding for staffs, illustrate numerous potential frictions caused by LSCO. Basically, these operations mean a large footprint, consisting of thousands of units, entities, and, of course, equipment. In addition to the air-control, this two-dimension issue require a proper control and mastery. As Benjamin Cooling points out about the Union challenge in mid-August 1862, trying to regroup to crush the Confederate Army of Northern Virginia, speed and “coordination were critical and

improbable in this gigantic convergence of forces.”<sup>36</sup> Today’s software assets must be used and improved to overcome this issue. In a confined or narrow area of operation, such as the previously mentioned highly strategic Suwaliki Gap, it can be a decisive factor. TRADOC purposely named one of its recent publications about LSCO *Bringing Order to Chaos*,<sup>37</sup> such as General Mattis’ autobiography *Callsign Chaos*.<sup>38</sup>

That is why main PME reforms in the nineteenth century specifically addressed this issue, such as France after the War of 1870. Indeed, the 1870 war between France and German States highlighted both the relevance of previous Prussian military reforms and the deficiencies of the French high command regarding the management of large formations, especially with (too) small and unprepared staffs. Acknowledging the need of a dedicated PME for field grade officers, combining planning and command lessons, French Army created the *Ecole Supérieure de Guerre* in 1876 and a “*Corps d’Etat-Major*” (staff corps), both necessary to address all the issues of modern large-scale conflicts. According to French military historian Claude Franc, the roots of the French 1916 victory in Verdun date back to the creation of this war college (where then lieutenant-colonel Foch was an instructor) and its focus on operational art.<sup>39</sup> More recently, from a similar analysis and need, the US Army decided to create the School of Advanced Military Studies (SAMS) in 1981 with the same intent: reinvigorate and update operational art, whose imperfections had been illustrated during the Vietnam War.<sup>40</sup> The US Army created this school in addition to a doctrinal process. Indeed, PME reforms must take place in a broader context of transformation, to start with a coherent doctrinal framework, up to date with new challenges.

### **III STAYING RELEVANT:**

From a morale and determination perspective, the performance of the Union brigade commanded by John Gibbon (2<sup>nd</sup>, 6<sup>th</sup> and 7<sup>th</sup> Wisconsin and 19<sup>th</sup> Indiana, all green except the 2<sup>nd</sup> Wisconsin) during the engagement at Brawner's Farm on August 28<sup>th</sup>, 1862 was impressive. They were able to hold their ground for two hours, while being badly outnumbered by Confederate units and after being engaged by surprise. This engagement and some others would gain them the nickname of "Iron Brigade." However, from a tactical perspective, they were only asked to withstand and fire, without any movement under fire. Since even the simplest things become difficult in combat, the question behind this example is the way to reach the best possible combat effectiveness. The guessing game that is the preparation for future war implies a necessary balance between the most dangerous and the most likely scenario. In other words, do armies have to prepare for a specific war or prepare for war in general?

#### 1) A permanent adaptation process:

Adaptation can be defined as the sum of foresight, new concepts and experience (be it recent experiences or historical perspective). On one hand, there is technical foresight, which this paper will not address. There is also the more conceptual foresight, based on a loop combining studies and experiments. Both French and US armed forces use the "threat-informed and concept driven" approach in their current transformations. That explains why doctrinal experiment "Scorpion VII" conducted in March 2018 and led by the *Centre de Doctrine et d'Enseignement du Commandement* (CDEC, French equivalent of TRADOC), focused on operations conducted in a cyber contested environment by a force using SCORPION doctrine and equipment.<sup>41</sup> Military history can effectively support this conceptual

foresight by adding some perspective and enabling comparisons. This is very much the case with the first use of some weapons in history.

Most of time, weapons' "debuts" were quite disappointing, not because of the innovations themselves but because of the lack of integration with previous systems. During the battle of Moremo-Nui fought in New Zealand in 1807, for example, the first use of muskets in Maori intertribal wars by the *Nga Puhi* tribe did not prevent this tribe (though enjoying a monopoly of muskets) from losing the battle with severe casualties. However, a closer look at the course of the battle shows that the tactical situation resulting in the enemy's surprise attack was the main cause for the *Nga Puhi* defeat: the absence of an initial buffer zone had prevented the *Nga Puhi* to benefit from their fire superiority. One of their most prominent war leaders, Hongi Hika, was instrumental in drawing relevant conclusions and not attributing the defeat to the muskets. On the contrary, he even convinced the rest of the tribe that their future power would rely on the possession of numerous modern weapons, and that they had to crave for them.<sup>42</sup> More than one century later, the first use of tanks was, as well, not very convincing, be it on the Somme in 1916 by the British, or at Berry-Au Bac by the French in 1917. A deeper analysis shows that the primary cause for their inability to create a large breakthrough was the lack of a proper infantry support. Thus, several countries nevertheless remained convinced of the potential of such an innovation and worked on it during the interwar period, ending up in the Second World War being mostly a mechanized conflict. In that regard, military history can usefully support foresight and ease the critical "integration process" of new weapons systems.

Lessons learned are the other critical part of the permanent and necessary adaptation process. Several recent conflicts can offer valuable lessons: the United States, for example, can benefit from the lessons learned of the 2003 Iraq campaign regarding battle space management of large formations. After a critical analysis of the sources, the conflict in

Donbass can offer interesting perspectives as for the prominent role of fires in future fights. Though asymmetrical at a strategic level, the fight against ISIS also offers numerous interesting case studies, most notably the large urban battles such as Mosul or Raqqa. These battles differ notably from counter insurgency and are relevant for future challenges, since the enemy was able to establish a local symmetry by using the terrain. To fuel both prospective and current transformation processes, a permanent lessons-learned watch is necessary, especially when they can mitigate “peace disease.”

Again, history is a precious additional source of lessons, enabling for example to address the current prospect of being confronted with more numerous forces, a “back to the basics” reminding of the Cold War period. Another aspect of this necessary back to basics is due to the lethality of modern fires. Throughout modern history, every substantial increase of firepower resulted in a tactical deadlock, which had to be solved through adaptations and a higher dispersion (hence an increasing subsidiarity for lower echelons). Rifled and breech-loading muskets, for example, outdated “Napoleonic” formations and maneuvers. One can even argue that, in modern mechanized combat, a lieutenant has the same area of operations as did Napoleon two centuries ago. This has multiple consequences.

However, looking for recipes in history involves two major risks: first, cherry-picking examples favoring one’s approach without considering counter examples. Training does not consist in reenacting yesterday’s wars but in preparing for tomorrow’s war. The second associated risk is to develop automatic (and thus predictable) procedures. In order to mitigate these risks, use of military history must remain focused on identifying and working on principles. Colonel Pierre Santoni, urban warfare specialist, stresses that in that regard Stalingrad was also a lessons learned failure for the *Wehrmacht*, which failed to reproduce what it had observed in Spain in 1936 and 1937 during the siege of Madrid, such as the use of tanks to cordon a large city.<sup>43</sup> Acknowledging it does not only mean studying historical

campaigns. It also means being more proficient and faster at identifying lessons learned, figuring out one or more “so what?”, and then integrate them with the training curriculum to prepare more efficiently for future war.

## 2) The training issue:

Mass is a necessity and has a quality of its own, but it is not enough. Making conscripts relevant on a modern battlefield in case of a mobilization would take time, when one considers that in French Army, for example, the shortest training period before a low intensity deployment is four months long. “Two-speed” armies, with a professional elite force for kinetic operations and a conscript force for bases defense, both at home and abroad, could be a solution for countries without a robust reserve system. There is also the question of the nature of the training, and the related priority given to COIN or LSCO. Of course, there are training overlaps between counterinsurgency and LSCO, but also specificities, especially in terms of maneuvering capacities. Again, history can help armed forces to identify patterns or gaps.

Similar debates had arisen in France before the engagement of the Colonial Corps during the First World War. Several high-ranking generals openly doubted the capacity of these troops to fight in a conventional war, after decades of engagements in “small wars” all over the world. Due to the nature of the fight, their endurance proved both precious and relevant. It is nevertheless true that the lack of large-unit maneuvers and training by both French and British armies before 1940 is one of the factors explaining the sound defeat against the *Wehrmacht*.<sup>44</sup> Large units maneuvers are necessary, but they also need to be force on force. French pre-deployment operational evaluations of combat units thus always include a force-on force period within the *Centre d'Entraînement au Combat* (CENTAC, Combat



Training Center) in Mailly-Le Camp, for this reason. Indeed, only a force-on-force training will really prepare for LSCO, in order to get out of the “standardized” aspect of combined arms maneuvers. Acknowledging the enduring dialectic nature of war, such a training would also stress the need for subsidiarity. As previously mentioned, subsidiarity requires a proper PME curriculum. It also requires a specific training.

Counter examples also offer useful reminders of what must be a relevant training. Indeed, the tactical “draw” during War of 2006 between Israel and Hizballah was also caused by multiple readiness deficiencies of the Israeli armed forces. Having been mostly engaged in riot control during the previous years, Tsahal developed a “checkpoint culture” whose limits were highlighted by this conflict. Due to years of employment in a checkpoint context, joint training (especially close air support), combined arms combat (combination of armor, reconnaissance and infantry support) and close fire support (smoke screens, for example) were either set aside, or rarely practiced. It resulted in several tactical failures, such as Wadi Saluki, Marun Al Ras, or Bint Jbeil. Tsahal units also faced difficulties for their casualties’ evacuation<sup>45</sup>, issue worth considering in the current context. It is doubtful that every unit would be able to maintain the “golden hour,” the first medical assumption in NATO doctrine, in a high-intensity conflict. For this reason, the attrition has to be addressed not only at the strategic level (with the issue of units’ regeneration) but also at the very tactical level and tried during training, from “pick-and-go” to evacuation and triage.

Lastly, the higher tempo imposed by LSCO requires leaders able to make quick and sound decisions. Tactical (individual) decision games, (double action) wargames, and staff rides appear to be the best learning tools for decision-making. Indeed, they enable students to analyze in depth all the aspects of the decision-making process. That is why these three methods must be the core of the training for future operational leaders (not only for officers, but at every level). Essentially “contextualization” exercises, they will make leaders more

proficient at figuring out situations and adapting doctrine (and procedures) to circumstances. Napoleon himself liked to joke about the fact that all his knowledge about warfare came from “one hundred battles” he had studied when he was a cadet. Such exercises also confront future leaders with the fog of war, again preventing too standardized courses of action.

## **CONCLUSION:**

Preparing and dealing with LSCO, the two top priorities will be the following: first, generate a well-trained mass and bring it to the theater of operations. Starting from now, it will be critical to reinvest operational art, in order to have an “agile mass.” The *Centre de Doctrine et d’Enseignement du Commandement* (CDEC, French equivalent of TRADOC) uses this tactical oxymoron on purpose in order to illustrate the end state of the new SCORPION doctrine, which is aimed at addressing future threats more efficiently. As a summary, history suggests that NATO countries should think of it more comprehensively and consider more closely the following issues for their preparation of LSCO: strategic mobility assets, reserves systems, integration of history in PME curriculum, as a learning tool for general tactics, battlespace management, and C2.

Last, but not least, adaptation of tactics is another important factor of this equation, hence the title *Railroads and Rifles* chosen by Dennis Showalter for his detailed study of Prussian military reforms in the nineteenth century.<sup>46</sup>

Considering the issues at stake, every available tool – to begin with previous experiences - must be used. Indeed, military history can support every aspect of the current shift towards LSCO: studies, planning, PME and training. Its numerous “tools” offer numerous possibilities: staff rides, case studies, and analytical subject matter expertise. But, more important than all specific inputs, the critical use of military history will enable NATO armed

forces to put their new concepts or procedures into perspective. That explains why the staff of French lessons learned central office in Paris (*bureau RETEX / Centre de Doctrine et d'Enseignement du Commandement*, French Army equivalent of the US Center of Army Lessons Learned) included an historian. It is another and necessary application of the famous expression of General Mattis about the “five thousand years old mindset.”<sup>47</sup> To paraphrase the National Defense Strategy, neither NATO nor “American military has a pre-ordained right to victory on the battlefield.”<sup>48</sup>

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- <sup>1</sup> French Ministry of Defense, *Revue Stratégique de Défense et de Sécurité Nationale* (Strategic Review on National Defense and Security), December 2017, p. 37 and 41.
- <sup>2</sup> US Secretary of Defense, *Summary of the National Defense Strategy: Sharpening the American Military's Competitive Edge*, 2018.
- <sup>3</sup> TRADOC, Field Manual 3-0 "Operations", October 2017, p. ix.
- <sup>4</sup> *Ibid.*, p. 1-2.
- <sup>5</sup> Abraham LINCOLN, *Second Inaugural Address*, March 4<sup>th</sup>, 1865.
- <sup>6</sup> See for example Benjamin COOLING, *Counter Thrust, from the Peninsula to the Antietam*, Lincoln, University of Nebraska Press, 2007, or Joseph HARSH, *Confederate Tide Rising: Robert E. Lee and the Making of Southern Strategy*, Kent, The Kent State University, 1998.
- <sup>7</sup> Anne BAILEY and Brooks SIMPSON, in Benjamin COOLING, *op. cit.*, p. ix.
- <sup>8</sup> Joseph HARSH, *op. cit.*, p. 48.
- <sup>9</sup> Benjamin COOLING, *op. cit.*, *passim*, direct quotation from page xii.
- <sup>10</sup> Georges MANDEL, quotation in "La Voie de l'Épée", blog of col. (ret.) Michel GOYA. Consulted on December 02<sup>nd</sup>, 2019. <https://lavoiedelepee.blogspot.com/2013/11/sommes-nous-prets-affronter-lennemi-les.html?m=1>
- <sup>11</sup> US Marine Corps Museum, QUANTICO. Second World War permanent exhibit. Visited on December 6<sup>th</sup> 2019.
- <sup>12</sup> Jean-Baptiste VOUILLOUX, *La démilitarisation de l'Europe : un suicide stratégique ?*, Paris, Argos, 2013.
- <sup>13</sup> Claude FRANC, *Verdun: Pourquoi l'Armée Française a-t-elle vaincu ?*, Paris, Economica, 2016, *passim*.
- <sup>14</sup> United States Senate Committee on Military Affairs, "Universal Military Training", Hearings on S1695 (bill to provide for the military and naval training of the citizen force of the United States), 1917, p. 222.
- <sup>15</sup> French Ministry of Defense/DICOD, *Les Réservistes Opérationnels du Ministère des Armées* (Operational Reservists of the Ministry of Defense), August 2018.
- <sup>16</sup> Department of the Navy, Admiral GILDAY, Chief of Naval Operations, *FRAGO 01-2019: A Design for Maintaining Maritime Superiority*, December 2019, p. 5.
- <sup>17</sup> James BELICH, *The New Zealand Wars and the Victorian Interpretation of Racial Conflict*, Auckland, Penguin, 1986, p. 71-116.
- <sup>18</sup> Martin MOTTE, "Qui tient la mer tient-il le monde ? », in *Conflits*, n°4, Jan-Feb 2015, p. 43.
- <sup>19</sup> David LARTER, "The US military ran the largest stress test of its sealift fleet in years. It's in big trouble", Defense News website, December 31<sup>st</sup>, 2019. Consulted on January 6<sup>th</sup>, 2020. <https://www.defensenews.com/naval/2019/12/31/the-us-military-ran-the-largest-stress-test-of-its-sealift-fleet-in-years-its-in-big-trouble/>
- <sup>20</sup> Rand Corporation (David Shlapak and Michael Johnson dir.), *Reinforcing Deterrence on NATO's Eastern Flank: Wargaming the Defense of the Baltics*, 2016.
- <sup>21</sup> NATO website. *Wales Summit Official Declaration*. Consulted on January 17<sup>th</sup>, 2020. [https://www.nato.int/cps/en/natohq/official\\_texts\\_112964.htm?selectedLocale=en](https://www.nato.int/cps/en/natohq/official_texts_112964.htm?selectedLocale=en)
- <sup>22</sup> Geoffrey REGAN, *Great Military Blunders*, Londres, Seven Oaks, 2016 [1991], p. 116.
- <sup>23</sup> Geoffrey REGAN, *op. cit.*, p. 97.
- <sup>24</sup> Henry LACHOUQUE and Ann BROWN, *Anatomy of Glory: Napoleon and his Guard*, London, Greenhill Books, 1997 [1961], p. 281.
- <sup>25</sup> *Ibid.*, p. 145.
- <sup>26</sup> Martin WINDROW, *Waffen SS*, Oxford, Osprey, 1971, p. 16.
- <sup>27</sup> John KEEGAN, *Six Armies in Normandy*, New York, Viking Press, 1982, 365 p, p.146.
- <sup>28</sup> Peter R. MANSOOR, *The GI Offensive in Europe: The Triumph of American Infantry Divisions (1941-1945)*, Lawrence, University Press of Kansas, 1999, p. 49-83.
- <sup>29</sup> Yves TREMBLAY, *Instruire une armée : les officiers canadiens et la guerre moderne (1919-1944)*, Outremont, Athéna Editions, 2007.
- <sup>30</sup> USS Constellation permanent exhibit, Baltimore Inner Harbor. Visited on January 19<sup>th</sup>, 2020.
- <sup>31</sup> James CORUM, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform*, Lawrence, University Press of Kansas, 1992, p. 198-201. Direct quotation from page 48.

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- <sup>32</sup> Website of the US Combined Arms Center (TRADOC subordinate). Consulted on December 11<sup>th</sup>, 2019. [https://usacac.army.mil/sites/default/files/documents/cact/AJST\\_EABAirspaceCourseFlyer.pdf](https://usacac.army.mil/sites/default/files/documents/cact/AJST_EABAirspaceCourseFlyer.pdf)
- <sup>33</sup> *Future Land Action*, French Army Headquarters, December 2016.
- <sup>34</sup> Benjamin COOLING, *op. cit.*, p. 98.
- <sup>35</sup> « *Citadel* » exercises are NATO certification exercises before a division starts the alert cycle.
- <sup>36</sup> Benjamin COOLING, *op. cit.*, p. 109.
- <sup>37</sup> TRADOC, LSCO Book Set, vol. 2: “*Bringing Order to Chaos: Combined Arms Maneuver in LSCO*”, edited by Peter Schifferle. October 2018.
- <sup>38</sup> Jim MATTIS, *Call Sign Chaos: Learning to Lead*, New York, Random House, 2019.
- <sup>39</sup> Claude FRANC, *op. cit.*, *passim*.
- <sup>40</sup> Thomas E. RICKS, *The Generals: American Military Command from World War II to today*, New York, The Penguin Press, 2012, chapter “*How to teach judgment?*”, p. 354-363.
- <sup>41</sup> In order to support SCORPION transformation and doctrinal process, regular experimentations are implemented, every time with a specific focus (in this case, cyber warfare).  
« *A new phase of the Scorpion project* », French Army website. Consulted on November 19<sup>th</sup>, 2019. <https://www.defense.gouv.fr/terre/actu-terre/scorpion-nouvelle-phase-lancee>
- <sup>42</sup> Stephenson Percy SMITH, *Maori Wars of the Nineteenth Century*, Cambridge, Cambridge University Press, 2011 [1910], p. 44-49.
- <sup>43</sup> Frédéric CHAMAUD and Pierre SANTONI, *L’ultime champ de bataille : combattre et vaincre en ville*, Paris, Editions Pierre de Taillac, 2016, p. 73 and 82-83.
- <sup>44</sup> James CORUM, *op. cit.*, p. 204-205.
- <sup>45</sup> Frédéric CHAMAUD and Pierre SANTONI, *op. cit.*, p. 197-200.
- <sup>46</sup> SHOWALTER Dennis, *Railroads and Rifles: Soldiers, Technology, and the Unification of Germany*, Hamden, Archon Books, 1975.
- <sup>47</sup> Jim MATTIS, *op. cit.*, p. 257.
- <sup>48</sup> US Secretary of Defense, *Summary of the National Defense Strategy: Sharpening the American Military’s Competitive Edge*, 2018, p. 1.

---

## **Bibliography:**

### Doctrinal or official publications:

- United States Senate Committee on Military Affairs, “*Universal Military Training*”, Hearings on S1695 (bill to provide for the military and naval training of the citizen force of the United States), 1917.
- Rand Corporation (David Shlapak and Michael Johnson dir.), *Reinforcing Deterrence on NATO’s Eastern Flank: Wargaming the Defense of the Baltics*, 2016.
- French Army Headquarters, *Future Land Action*, December 2016.
- US Army Headquarters/TRADOC, *Field Manual 3.0 “Operations”*, October 2017.
- French Ministry of Defense, *Revue Stratégique de Défense et de Sécurité Nationale* (Strategic Review on National Defense and Security), December 2017.
- French Ministry of Defense/DICOD, *Les Réservistes Opérationnels du Ministère des Armées* (Operational Reservists of the Ministry of Defense, August 2018.
- TRADOC, LSCO Book Set, vol. 2: “*Bringing Order to Chaos: Combined Arms Maneuver in LSCO*”, edited by Peter Schifferle. October 2018.
- US Secretary of Defense, *Summary of the National Defense Strategy: Sharpening the American Military’s Competitive Edge*, 2018.
- Department of the Navy, Admiral GILDAY, Chief of Naval Operations, *FRAGO 01-2019: A Design for Maintaining Maritime Superiority*, December 2019.

### Books:

- BELICH James, *The New Zealand Wars and the Victorian Interpretation of Racial Conflict*, Auckland, Penguin, 1986, 396 p.
- CHAMAUD Frédéric and SANTONI Pierre, *L’ultime champ de bataille : combattre et vaincre en ville*, Paris, Editions Pierre de Taillac, 2016.
- COOLING Benjamin F., *Counter Thrust, from the Peninsula to the Antietam*, Lincoln, University of Nebraska Press, 2007.
- CORUM James, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform*, Lawrence, University Press of Kansas, 1992.
- FRANC Claude, *Verdun: Pourquoi l’Armée Française a-t-elle vaincu ?*, Paris, Economica, 2016.

- 
- HARSH Joseph J., *Confederate Tide Rising: Robert E. Lee and the Making of Southern Strategy*, Kent, The Kent State University, 1998.
  - KEEGAN John, *Six Armies in Normandy*, New York, Viking Press, 1982.
  - LACHOUQUE Henry and BROWN Ann, *Anatomy of Glory: Napoleon and his Guard*, London, Greenhill Books, 1997 [1961].
  - MANSOOR Peter R., *The GI Offensive in Europe: The Triumph of American Infantry Divisions (1941-1945)*, Lawrence, University Press of Kansas, 1999.
  - MATTIS Jim, *Call Sign Chaos: Learning to Lead*, New York, Random House, 2019.
  - Mc PHERSON James, *Tried by War: Abraham Lincoln as Commander in Chief*, New York, The Penguin Press, 2008.
  - REGAN Geoffrey, *Great Military Blunders*, Londres, Seven Oaks, 2016 [1991].
  - RICKS Thomas E., *The Generals: American Military Command from World War II to today*, New York, The Penguin Press, 2012.
  - SHOWALTER Dennis, *Railroads and Rifles: Soldiers, Technology, and the Unification of Germany*, Hamden, Archon Books, 1975.
  - SMITH Stephenson Percy, *Maori Wars of the Nineteenth Century*, Cambridge, Cambridge University Press, 2011 [1910].
  - TREMBLAY Yves, *Instruire une armée : les officiers canadiens et la guerre moderne (1919-1944)*, Outremont, Athéna Editions, 2007.
  - VOUILLOUX Jean-Baptiste, *La démilitarisation de l'Europe : un suicide stratégique ?*, Paris, Argos, 2013.
  - WINDROW Martin, *Waffen SS*, Oxford, Osprey, 1971.