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**TITLE:**

**Expeditionary Advanced Base Operations Concept: Its Application by the  
Brazilian Marine Corps**

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OF THE REQUIREMENTS FOR THE DEGREE OF  
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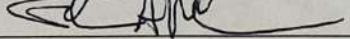
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## Executive Summary

**Title:** Expeditionary Advanced Base Operations Concept: Its Application by the Brazilian Marine Corps.

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**Thesis:** The Expeditionary Advanced Base Operations concept can be a cornerstone to enable the Brazilian Marine Corps to better support the Brazilian Navy in protecting the Blue Amazon and its strategic environment. Nonetheless, it must modify its doctrine, redesign its organization and review its material capabilities.

**Discussion:** The Expeditionary Advanced Base Operations concept has represented a paradigm shift for the United States Marine Corps by prioritizing this type of operation over amphibious operations. This concept primarily aims to improve the US Marines' capabilities to counter China's A2/AD assets, which threaten US national interests in the Indo-Pacific region by, among other things, limiting freedom of navigation. Although in a different strategic environment than the United States, the sea is also relevant for Brazil. More than 90% of Brazilian international trade occurs by sea. The same percentage represents the proportion of offshore oil concerning the total Brazilian reserves. Moreover, the country's interest in its strategic environment, which includes the South Atlantic and the West African coast, increases the importance of the sea to Brazil. In this sense, the analysis of the applicability of the Expeditionary Advanced Base Operations concept by the Brazilian Marine Corps results in the finding of the concept's usefulness. In light of this, this paper identifies doctrinal, organizational, and material capability changes required for the Brazilian Marine Corps to implement such a concept. Thus the doctrine of the Brazilian naval forces should contemplate in a more detailed way the littoral operations, expand the contribution of the Brazilian Marine Corps in obtaining sea control, and not consider only the amphibious operations as the structuring operation of the Brazilian Marines. Regarding organization, the Brazilian Marine Corps should create Battalions for littoral operations to contribute to the sea control task both in the Blue Amazon and in the Brazilian strategic environment. Finally, the Brazilian Navy should divest in specific material capabilities, such as policing materials and wheeled armored vehicles, and invest in new capabilities like long-range missiles and medium and low-range air defense assets.

**Conclusion:** The Brazilian Marine Corps can apply the Expeditionary Advanced Base Operations concept to increase its capabilities to support the Brazilian Navy in protecting national interests in its jurisdictional waters and the Brazilian strategic environment. However, this concept has to be adapted to Brazil's strategic guidance and objectives due to the specific characteristics of the possible operational environments for the employment of amphibious troops in both countries and also due to two contrasting budgetary realities. The proposed doctrinal, organizational, and material capability changes proposed in this paper substantiate such adaptations. Moreover, because the Expeditionary Advanced Base Operations concept is still under development, it is necessary to follow its evolution, as well as other options for the Brazilian Marine Corps to contribute better with the Brazilian Navy in accomplishing its tasks.

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## **Preface**

The United States Marine Corps is the most globally significant amphibious force, not only for its actual combat power but also for its history. This history is marked by the ongoing search for improving its doctrine and capabilities in opposition to the existing threats. When, once again, this renowned institution decides to break a paradigm, other Marine Corps worldwide turn their attention to this change. It is no different for the Brazilian Marine Corps, an amphibious force of great tradition that is also constantly concerned with improving its capabilities. As a representative of the Brazilian Marine Corps at the Command and Staff College 2021/2022, the new concepts coming from the EABO caught my attention from the first weeks of the academic year. In this sense, I started to wonder about the possibility of its application by the Brazilian Marine Corps. Thus, I decided to accept the challenge of verifying the applicability of a concept still under development and untested by a Marine Corps with a budgetary reality quite different from the American one. What initially proved to be an obstacle with time became the most significant incentive for the continuity of this work. Moreover, the desire to contribute to my Marine Corps gave me even more strength during this journey, even if only with reflection topics.

Furthermore, I would like to express some thanks. First and most important to my family. Without my wife Junia's unconditional support and incentive, I would not have developed this work. I also thank my daughters, Elisa and Isabela, who knew how to understand their father's absences even in their most tender infancy. To my mentor, CDR Stephen Kelley, Ph.D., I thank you for always proper guidance and the words of incentive during the elaboration of this work. Finally, I would like to thank the Brazilian Navy and all its members that directly or indirectly contributed to my intellectual development and allowed me to have the conditions to write this



work. Especially to my friend, CDR Ricardo Bragança, currently liaison officer of the Brazilian Marine Corps with the USMC/CD&I, I thank you both for all the support and for the debate of ideas to improve the content of this work.

## Introduction

The dispute over maritime areas due to the relevance of sea lines of communication (SLOCs) for international trade and the growing demand for natural resources, many of which come from the oceans, has intensified tensions in the global environment, especially in the Indo-Pacific region. Moreover, the competition between great powers can exacerbate these tensions, making the sea one of the operational environments (OE) of this dispute. In this regard, great power competition today guides the United States' grand strategy. Thus, each of the country's military services has been developing its doctrines and capabilities to counter better the main competitors of the United States, notably the People's Republic of China (PRC) and Russia. As a result, the United States Navy (USN) and the United States Marine Corps (USMC) created two concepts that are focused on the maritime environment: Littoral Operations in a Contested Environment (LOCE) and Expeditionary Advanced Base Operations (EABO). Specifically, the EABO concept has represented a paradigm shift as it prioritizes the employment of Marines in this type of operation, to the detriment of the already established amphibious operations.

Although it is not directly involved in great power competition, the Federative Republic of Brazil also considers the sea strategically important. First, around 90% of Brazilian foreign trade occurs by sea.<sup>1</sup> Second, the country is among the sixteen largest oil reserves globally and is currently the ninth-largest oil producer, with more than 90% of this oil extracted offshore.<sup>2</sup> Third, Brazil has almost 7,400 km of coastline, with most of its population living near the Atlantic coast, around large cities such as Rio de Janeiro and São Paulo.<sup>3</sup> Thus, in the event of a conflict, an adversary can not only threaten Brazil's foreign trade and oil reserves but also launch attacks from the sea off Brazil's extensive coastline and close to the country's main urban centers. Not by chance, Brazil's 2020 National Defense Policy or *Política Nacional de Defesa (PND)* states that

the South Atlantic is one of the priorities from the defense point of view.<sup>4</sup> Furthermore, it identifies the Brazilian strategic environment, which comprises the South Atlantic, the west coast of Africa, South America, and the Antarctic continent, as the area of priority interest (see figure 1).<sup>5</sup> Finally, the Brazilian Navy or *Marinha do Brasil (MB)* and its Marine Corps or *Corpo de Fuzileiros Navais (CFN)* is responsible for protecting Brazilian jurisdictional waters, also called the Blue Amazon (see figure 2).<sup>6</sup>



**Figure 1: Brazilian Strategic Environment**

Source: Marinha do Brasil, *Plano Estratégico da Marinha 2040* (Brasília, DF: Estado-Maior da Armada, 2020), 18, <https://www.marinha.mil.br/pem2040>.

Thus, the topic of this paper explores the application of EABO by the Brazilian Marine Corps. Hence, the author established the following research question: does the EABO concept allow the Brazilian Marine Corps to provide adequate support to the Brazilian Navy in protecting the Blue Amazon and its strategic environment? If it does, what are the doctrinal, organizational, and material that the Brazilian Marine Corps would need to undertake to implement it?



**Figure 2: Blue Amazon**

*Source:* Marinha do Brasil, *Plano Estratégico da Marinha 2040* (Brasília, DF: Estado-Maior da Armada, 2020), 7, <https://www.marinha.mil.br/pem2040>.

Besides the already demonstrated relevance of this topic for Brazil, the issue is essential for its Navy and Marine Corps because the EABO concept emphasizes greater integration between naval and marine forces to achieve sea control in a contested environment, enhancing the protection of the Blue Amazon.

Furthermore, the topic is also relevant to the United States. First, because the EABO concept is still under development, few studies have addressed its possibility of application by other amphibious forces. Evaluating this possibility can contribute to the development of the idea and improve the employment of other Marine Corps worldwide, including one of the great partners of the United States in South America, Brazil. Second, both states preach freedom of navigation across the oceans, making the security of the South Atlantic vital to their interests. In this sense, if the use of the Suez Canal or the Panama Canal becomes impossible, the Cape of Good Hope route allows the continuity of the connection between the Indian Ocean and the

Western Hemisphere, especially to the Atlantic coast of the American continent. Not less important, the expansion of the Chinese presence in Africa could lead to the installation of another military base in the continent besides the one already established in Djibouti, but now facing the Atlantic, which can also threaten the freedom of navigation in the region.

Although there are differences between the strategic defense documents of the United States and Brazil regarding military power in the maritime environment and the OE of their naval services, the *CFN* can use the EABO concept with some adaptations. Thus, the EABO concept can be a cornerstone to enable the Brazilian Marine Corps to better support the Brazilian Navy in protecting the Blue Amazon and its strategic environment. Nonetheless, it must modify its doctrine, redesign its organization and review its material capabilities.

The research methodology employed in this work consisted of literature reviews and analysis of national defense strategies of the United States and Brazil and other high-level documents of their Navy and Marine Corps and technical publications, books, and articles. Hence, this paper has six parts, including this introduction. The second chapter will cover the maritime environment and the defense of United States-Brazilian national interests, addressing the American and Brazilian strategic defense documents and their naval service's OE. The third chapter will discuss the adaptations of the USMC to current American threats, the evolution of American naval doctrine, the redesign of the USMC organization, and the modification of its material allocation. The following chapter will identify opportunities for improvement in doctrine, organization, and material allocation of the Brazilian Navy and its Marine Corps. The fifth chapter will present proposals for changes in the Brazilian Navy and its Marine Corps in the three points where the study identified gaps. Finally, the sixth chapter will conclude the paper.

## **Maritime Environment and the Defense of United States'-Brazil's National Interests**

The United States and Brazil have political and geographical similarities, such as their government systems and the large size of their territories. However, there are differences between their national interests and how they use their armed forces, mainly due to the hegemonic power status of the United States. This chapter will compare the United States' and Brazil's strategic documents regarding the employment of military force in the maritime environment and their naval service OE to identify their main similarities and differences. By doing so, it intends to answer the first part of the research question: does the EABO concept allow the Brazilian Marine Corps to provide adequate support to the Brazilian Navy in protecting the Blue Amazon and its strategic environment?

### **United States'-Brazil's Strategic Defense Documents**

According to the 2018 National Defense Strategy (NDS), interstate strategic competition has supplanted terrorism as the primary concern of US national security.<sup>7</sup> The document mentions as main competitors the revisionist powers, such as China and Russia, that try to influence the world with their authoritarian models.<sup>8</sup> To take a case in point, China is expanding its military power and economy to coerce the countries around it and position itself at an advantage in the Indo-Pacific region.<sup>9</sup> The consequences of not focusing America's strategy on great power competition may reduce America's influence in the world and hinder its market access, contributing to the decline of American prosperity and standard of living.<sup>10</sup> Therefore, long-term competition with the two aforementioned powers is a top priority of the US Department of Defense.<sup>11</sup> Last, the 2021 Interim National Security Strategic Guidance (INSSG) reemphasized the great power competition but stressed that only China could threaten the

stability of the international environment due to its economic, military, diplomatic, and technological power capabilities.<sup>12</sup> Thus, the EABO concept was born and has been establishing itself as the USMC's contribution to taking on the United States's two main competitors, especially China.

Brazil's strategic defense documents follow another path. The country emphasizes the principles of non-intervention, defense of peace, and peaceful settlement of conflicts in its international relations.<sup>13</sup> However, its 2020 *PND* highlights that Brazil must dedicate continuous attention to its defense because it can get involved in potential conflicts of interest with different actors due to its growing international projection.<sup>14</sup> Still, this document states that the borderland, the Amazon Forest, and the South Atlantic are the country's priorities from the defense point of view.<sup>15</sup> Last, the 2040 Brazilian Navy Strategic Plan, or *Plano Estratégico da Marinha 2040 (PEM)*, highlights that the defense of the oil installations in the Blue Amazon must have a proactive character.<sup>16</sup> Therefore, the documents that serve as a basis for the organization and employment of the two countries' armed forces present different approaches. On the one hand, the American strategic documents suggest a more offensive posture with the possibility of using power worldwide, focusing on the Indo-Pacific region, aiming to preserve the country's global hegemony. On the other hand, the Brazilian strategic documents denote a more defensive posture, focusing on more regional and state sovereignty concerns.

Another critical difference between Brazilian and US defense documents is how they approach marine forces in this context. While the unclassified version of the US NDS does not explicitly provide the capabilities required for the military services, the 38th Commandant of the Marine Corps (CMC) points to the need to modernize the USMC by the former document while still performing the US naval expeditionary force role.<sup>17</sup> To that end, he states that there is a need

to integrate actions with the USN in a contested maritime space to facilitate sea control since the USMC is not prepared to face the Chinese threat alone in the Indo-Pacific region.<sup>18</sup>

In contrast, Brazil's 2020 National Defense Strategy or *Estratégia Nacional de Defesa (END)* establishes the four basic tasks of the *MB*, namely sea control, sea denial, contribution to deterrence, and projection of power over the land.<sup>19</sup> To accomplish this last task, it praises the employment of the Brazilian Marine Corps, which can also be employed in the defense of naval or port facilities and of oceanic islands in Brazilian jurisdictional waters.<sup>20</sup> The *PEM* also mentions the use of the *CFN* as part of the pro-active defense system of the oil installations in the Blue Amazon but does not detail its form of employment.<sup>21</sup> Thus, although power projection over land can contribute to sea control, the contribution of the *CFN* to the protection of the South Atlantic and the Blue Amazon is relatively simple since there is no greater integration with the Brazilian Navy fleet. This integration improvement is one of the purposes of the EABO concept.

#### United States-Brazil Naval Service's Operational Environment

After analyzing some of the general guidelines for the naval services of the two countries, it is necessary to detail the similarities and differences between the OE of employment.

*Advantage at Sea*, a maritime strategy jointly developed by the USMC, USN, and US Coast Guard (USCG), explains that the world's oceans are vital to US prosperity and national security as they provide essential resources and connect societies and markets.<sup>22</sup> Nevertheless, the strategy focuses on the two major US competitors, mentioning that the growth and modernization of their naval forces may mean that US naval services will not be in a position to protect US interests within the next ten years.<sup>23</sup> Indeed, the document emphasizes competition with China by stating that naval service operations will focus on containing the PRC and



strengthening deterrence in the Indo-Pacific region.<sup>24</sup> In addition, the proximity of their territory and base networks to the OE of a possible conflict in this region and their significant Anti-Access/Areal Denial (A2/AD) capabilities, comprised of shore-based sensors, precision weapons, and air and surface platforms, give China and Russia a relative advantage, in contrast to the extensive American lines of communication.<sup>25</sup> Moreover, such weapons and sensors have ranges of hundreds of kilometers, so they can interfere simultaneously with both land and sea operations, making it difficult to distinguish between these two types of operations, leading to an operational approach that considers the littorals a unique battlespace.<sup>26</sup>

Like the United States, the importance of the sea for Brazil is strategic, but the Brazilian OE is different from the American one. About 90% of Brazilian foreign trade occurs by sea, and, no less important, the same percentage represents the national production of hydrocarbons extracted from the Blue Amazon.<sup>27</sup> In this context, the *PEM* warns that the significant reserves of natural resources in Brazil and its strategic environment may lead to the interference of external actors in the region. Furthermore, the uncertainty of the international conjuncture can exacerbate tensions among other states, leading Brazil into conflicts in case of a threat to Brazilian sovereignty.<sup>28</sup> Hence, in the case of a war involving Brazil, it should be considered a possibility that an adversary attacks from the sea, that offshore energy production facilities are valuable targets, and that a superior naval power threatens maritime traffic and, consequently, Brazilian supply and trade.<sup>29</sup>

But there are not the only threats to Brazilian sovereignty. Illegal fishing, organized crime, terrorism, and piracy, concentrated in the African margin, can also challenge the Brazilian Navy.<sup>30</sup> Thus, the OE of the Brazilian naval services is predominantly regional, focused on the South Atlantic and mainly on the Blue Amazon, while the American naval services are global

and focused more on the Indo-Pacific region than on the two oceans bordering the United States coasts. In addition, the USMC developed the EABO concept based on the main threat to the United States, China, and its A2/AD capabilities. In turn, Brazil does not concretely identify its threats. In summary, what Brazil considers its main threats are more diffuse and less concrete when compared to what the United States believes its main threats to be.

Although this analysis may conclude that the *CFN* cannot apply the EABO concept to protect the Blue Amazon, it can *adapt* this concept to suit Brazil's unique operational environment and specific strategic objectives. In this sense, the *CFN* would apply the EABO concept in two ways. The first is similar to the USMC concept regarding the country's projection of power in its strategic environment, especially on the west coast of the African continent. The second, which is about protecting the Blue Amazon, is different from the USMC. In this situation, the *CFN* would assume a more defensive posture, turning its forces towards the direction from inside the country to the Atlantic Ocean and not from the Atlantic Ocean to the Brazilian territory, as the USMC would be employing the concept. Thus, the Brazilian Marines would be deployed along with the country's own territory but would use forward bases as part of the defense in depth of its jurisdictional waters from its oceanic islands, facilitating control of the sea.

Furthermore, although the unclassified Brazilian strategic documents do not identify the main threats nominally, Brazil needs to be able to face those considered most dangerous, notably those with military capacity superior to that of the country, since they are the ones that can risk its sovereignty. In this manner, it is relevant to highlight the differentiation between *threat* and *risk*. The former refers to the capability and intention to cause danger or damage, and its evaluation depends on the association of both factors.<sup>31</sup> For instance, according to the threat

assessment matrix in figure 3, threats with sophisticated capabilities but low willingness to take an opportunity to inflict damage could be classified as medium level. However, it is essential to point out that this is only an example of a matrix, which can present minor differences from organization to organization.

<b>Capability</b>	<b>Sophisticated</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>Extreme</b>
C3I	<b>High</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>
Weapons	<b>Medium</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
Mobility	<b>Low</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>
Supply		<b>Low</b>	<b>Medium</b>	<b>High</b>	<b>Extreme</b>
<b>Intent = Will &amp; Opportunity</b>					

**Figure 3: Threat Assessment Matrix**

Source: David Strachan-Morris, “Threat and Risk: What Is the Difference and Why Does It Matter?,” *Intelligence and National Security*, April 2012, 177

On the other hand, the risk is a combination of probability and extent of damage, and its acceptance depends on how willing the state or organization is to accept it.<sup>32</sup> Figure 4 presents an example matrix for a state where risk acceptance is lower.

<b>Probability</b>	<b>Extreme</b>					
<b>High</b>						
<b>Medium</b>						
<b>Low</b>						
<b>None</b>						
		<b>Negligible</b>	<b>Minor</b>	<b>Moderate</b>	<b>Critical</b>	<b>Catastrophic</b>
<b>Harm</b>						

**Figure 4: Risk-Averse Matrix**

Source: David Strachan-Morris, “Threat and Risk: What Is the Difference and Why Does It Matter?,” *Intelligence and National Security*, April 2012, 183

Thus, based on Brazil's unclassified strategic documents, it is difficult to assess the threats to the country since they are diffuse and not very concrete. In this context, this fact may lead to the understanding that the adoption of the EABO concept by the CFN is not necessary. Nevertheless, the evaluation of this issue not only with the threat view but also with the risk view tends to change this perception. In this manner, the main risk of not adopting the EABO concept would be linked to the country's sovereignty since the protection of the Blue Amazon is related to this. Therefore, although the risk is generally associated with the predisposition to accept it, sovereignty is a catastrophic risk that a sovereign state such as Brazil does not want to incur since it is a fundamental principle of the state, provided for in the first article of its Constitution.<sup>33</sup> Moreover, it is essential to point out that no other Brazilian military service has effectively addressed the projection of land power over the sea. Consequently, the EABO concept, even if not in its entirety, allows the CFN to provide adequate support to the Brazilian Navy to enhance the protection of Brazilian national interests in the Blue Amazon and its strategic environment.

In this sense, the next chapter will look at changes that the USMC has been implementing due to the EABO concept.

### **The Adaptation of the United States Marine Corps to Current American Threats**

A series of changes in the USMC has occurred since the 38th CMC identified that the USMC was not prepared to counter peer competitors' A2/AD capabilities. First, however, it is essential to clarify that Force Design 2030 has structured such changes in four phases, ranging from problem framing, which is already completed, to analysis and refinement of all changes, which is still in progress.<sup>34</sup> Therefore, some of the contents of this chapter are not as detailed and

may be non-definitive. Considering this fact, the chapter will analyze the significant doctrinal, organizational, and material changes related to the EABO concept that the USMC is implementing to inform the proposed changes in the Brazilian Navy and its Marine Corps, which the author will present in chapter 5.

### Evolution of American Naval Doctrine: the EABO Concept

Before starting the analysis of the EABO concept, it is relevant to highlight some aspects of sea control and sea denial concepts. In this sense, the 38th CMC asserts that the main aim of an integrated naval force will change from traditional power projection to an advanced naval presence that enables sea control and denial.<sup>35</sup> Regarding sea control, Milan Vego, professor of joint military operations at the US Naval War College, states that obtaining and maintaining this control is the main objective of a more powerful force at the beginning of hostilities in a conflict.<sup>36</sup> Indeed, securing sea control is critical for other types of missions, such as sealift and power projection.<sup>37</sup> As a result, considering the analysis of the likely OE of US naval forces, the tendency is that their operations will occur in contested seas close to the coast, which will first require gaining sea control. Thus, it becomes critical to integrate the Navy and Marines in all domains to achieve sea control in littoral contested environments.<sup>38</sup>

In this regard, the Marines' contribution to gaining sea control occurs primarily through the employment of expeditionary forces that seek to facilitate sea denial. In this sense, LOCE publication defines the concept of sea denial as “partially or completely denying the adversary the use of the sea with a force that may be insufficient to ensure the use of the sea by one’s own forces.”<sup>39</sup> In this sense, expeditionary forces can conduct sea denial operations, mainly at

maritime chokepoints, supporting the naval operations.<sup>40</sup> In doing so, the employment of Marine Corps capabilities based at sea and on land renews the concept of the fight to gain sea control.<sup>41</sup>

In this context, the Chinese A2/AD capability along its coastline blurs the divide between land and sea battlespace.<sup>42</sup> Moreover, such capabilities allow China to deny the use of the sea to their possible adversaries in the Indo-Pacific region. Thus, considering that littoral operations are broader than amphibious ones, due to the more significant influence of the terrestrial and maritime parts of the coast over each other, and also because of the need to reverse the Chinese denial of sea use, the USMC developed the EABO concept.

The EABO concept fits into this context by being defined as “the employment of mobile, low-signature, persistent, and relatively easy to maintain and sustain naval expeditionary forces from a series of austere, temporary locations ashore or inshore within a contested or potentially contested maritime area in order to conduct sea denial, support sea control, or enable fleet sustainment.”<sup>43</sup> Such temporary locations can be the expeditionary advanced bases (EABs). For instance, the naval forces can use these bases to position coastal defense cruise missiles (CDCMs), anti-aircraft missiles (against aircraft and cruise and ballistic missiles), refueling points, and aircraft operating bases.<sup>44</sup> In addition, they can enable the control of key maritime terrain, which allows the denial of the use of the sea to the enemy or the improvement of the security of SLOCs.<sup>45</sup> In general, EABOs intend to perform a range of tasks to fulfill missions related to sea denial operations within littorals, thus supporting sea control operations by an integrated naval force.<sup>46</sup> Therefore, the EABO aims to provide conditions to support naval operations in achieving sea control in an OE influenced by the adversary's lethal and nonlethal assets.

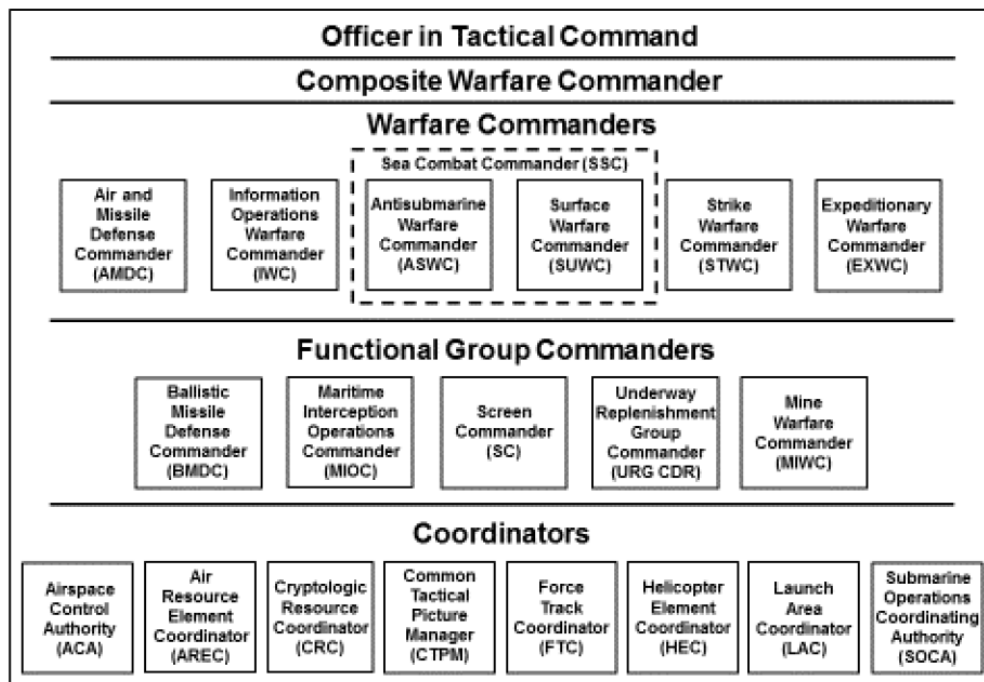
Hence, the composition and distribution of USMC forces performing EABO are critical to reducing the adversary's ability to affect its operations while maintaining the ability to hit them by fire and influence their actions.<sup>47</sup> From this comes the developing concept for Stand-in Forces (SIF). These forces must retain their lethality, although they must be small, low signature, mobile, and relatively simple to maintain to serve as the vanguard of a maritime defense-in-depth.<sup>48</sup> While the permanent function of SIFs is to contribute to the overall joint force and the US Navy in reconnaissance and counter-reconnaissance battles, they can also conduct sea denial operations in support of the fleet.<sup>49</sup> Moreover, while threats in the Indo-Pacific region are the SIF's focus, they apply to any part of the world.<sup>50</sup> In this way, the concept for SIF was born as a consequence of the Chinese A2/AD capabilities and has started to guide the development of the organization and composition of the USMC forces, as will be discussed below.

### Redesigning the USMC Organization

The Marine Corps is an expeditionary force employed in support of a wide range of missions that span humanitarian operations to forcible entry operations. It combines its size and speed as an expeditionary troop to achieve strategic mobility.<sup>51</sup> When task-organized, it uses the modular Marine air-ground task force (MAGTF) organization, which in turn has four main elements: a command element (CE), a ground combat element (GCE), a logistics combat element (LCE), and an aviation combat element (ACE).<sup>52</sup> In addition, its organization aims at projecting power from the sea over land.<sup>53</sup>

However, this structure is no longer effectively adapted to A2/AD threats, especially in the Indo-Pacific region. Hence, the LOCE manual states that the MAGTF could significantly contribute to the struggle to gain control of the sea, from bases at sea or on land.<sup>54</sup> Because of

this, the same publication suggested the possibility of employing MAGTF commanders, within the naval concept of Composite Warfare (CW), as a warfare commander, calling them the "expeditionary warfare commander" (EXWC) (see figure 5).<sup>55</sup> The 38th CMC went further by stating later in his Commandant's Planning Guidance: "The Marine Air-Ground Task Force (MAGTF) cannot be our only solution for all crises."<sup>56</sup> In conclusion, the USMC had to look for other forms of organization that would fit the EABO concept and enable it to contribute more to the USN to gain and maintain sea control.



**Figure 5: Composite Warfare Construct**

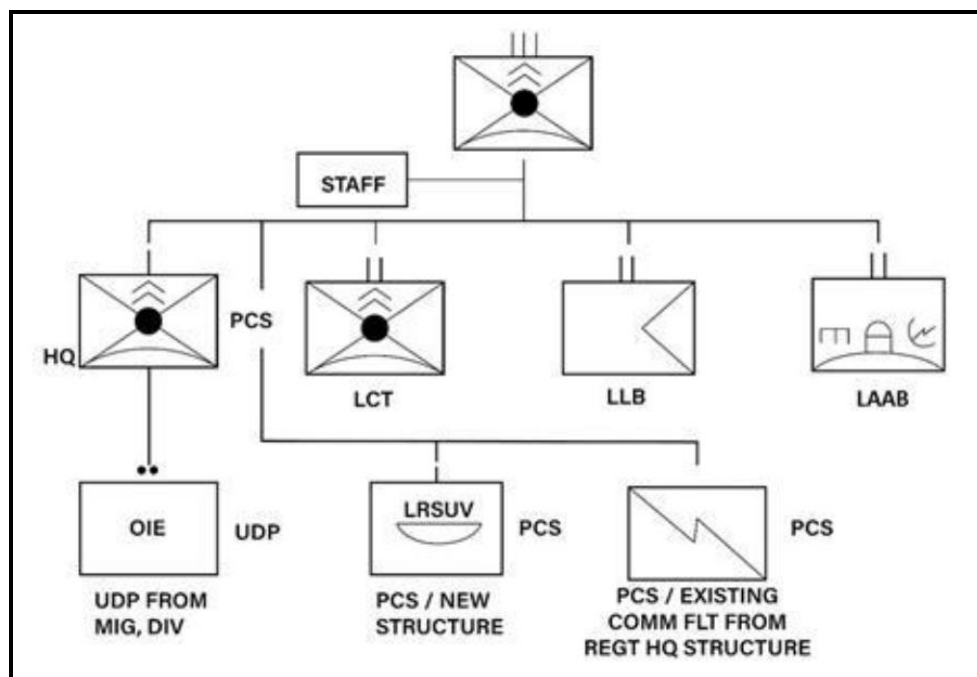
Source: US Department of the Navy, *Littoral Operations in a Contested Environment* (Washington, DC, 2017), 11, <https://www.hqmc.marines.mil/Portals/160/LOCE%20full%20size%20edition.pdf?ver=2018-06-20-095003-177>.

In this context, in 2020, Force Design 2030 described a new formation to meet these needs: the Marine Littoral Regiment (MLR). By 2030, MLRs should be capable of conducting sea denial operations within a contested maritime environment as part of a naval expeditionary force.<sup>57</sup> They must conduct surveillance and reconnaissance, strike operations, air and missile defense, sustainment operations, operations in the information environment (OIE), and deny or



control key maritime terrain.<sup>58</sup> Thus, the MLR looks to meet the concept for SIF and become the core of the USMC in an integrated naval task force that seeks control of the sea, constituting itself as EXWC.

In its turn, the MLR has four components, namely its headquarters, a Littoral Combat Team (LCT), a Littoral Anti-aircraft Battalion (LAAB), and a Littoral Logistics Battalion (LLB), as illustrated in figure 6.<sup>59</sup> Thus, MLRs will have Command and Control (C2), OIE, electronic warfare, anti-ship, anti-aircraft, and logistical capabilities.



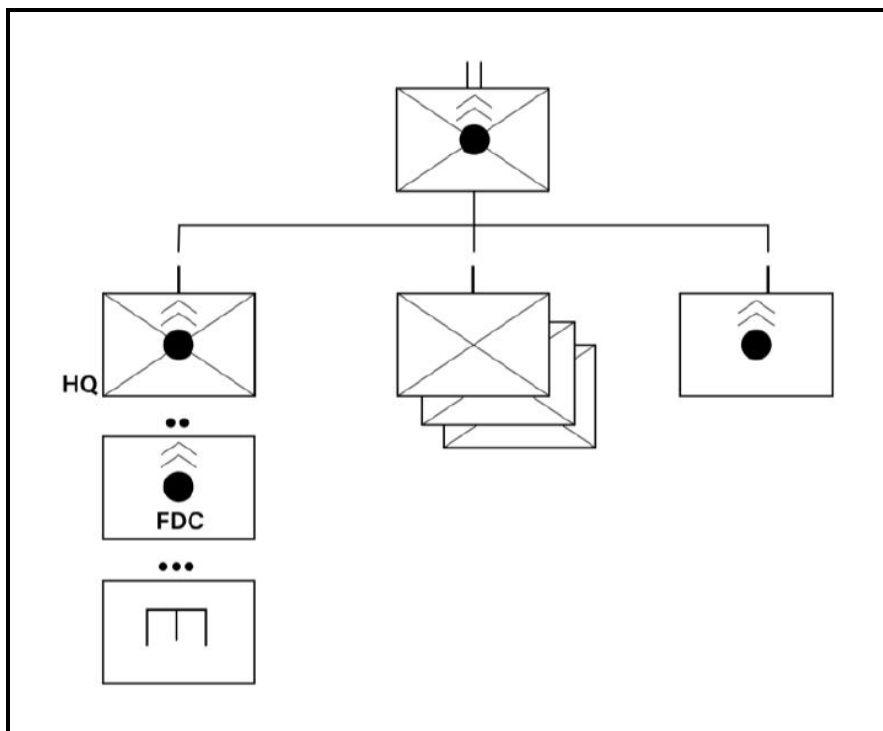
**Figure 6: Organization of the 2030 MLR**

Source: US Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations* (Washington, DC: Headquarters US Marine Corps, 2021), A-1, [https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance\\_2019.pdf?ver=2019-07-16-200152-700](https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance_2019.pdf?ver=2019-07-16-200152-700).

The LCTs will include an infantry battalion (constituted by three rifles companies) and a missile battery (see figure 7). Nonetheless, the USMC will employ them in task organizations (from teams to battalions) nucleated into infantry formations, including fire support elements.<sup>60</sup> As a result, when organized for employment, the LCTs will be able to command and control

multiple EABs that are being used as logistical bases or as places to establish firing platforms.<sup>61</sup>

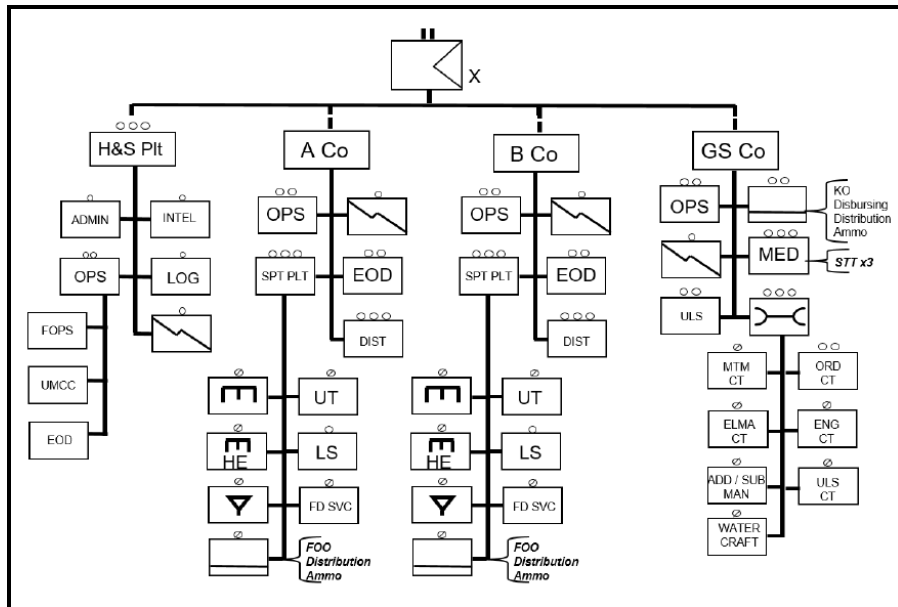
Therefore, the primary organization of LCT gives it the flexibility to be task-organized according to factors such as terrain conditions and the purpose of the EABs.



**Figure 7: Organization of the LCT**

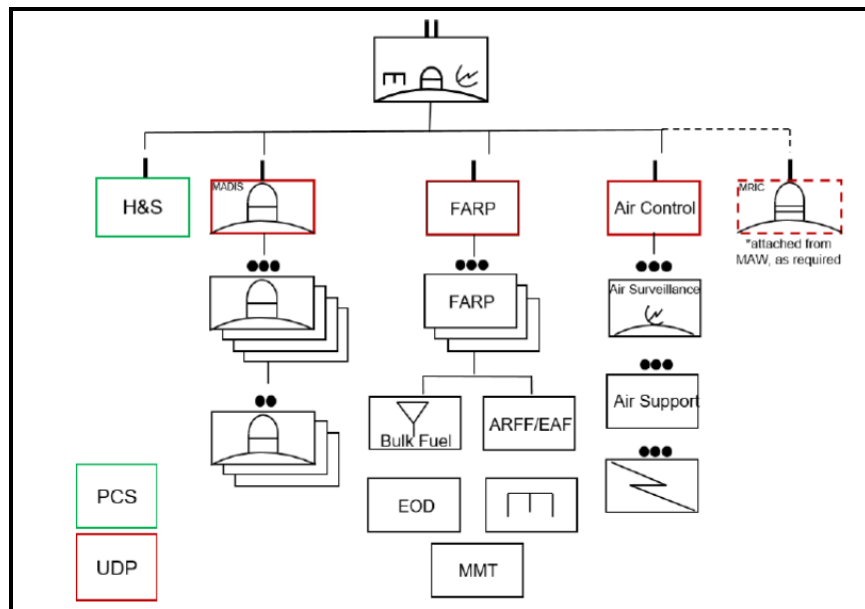
Source: US Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations* (Washington, DC: Headquarters US Marine Corps, 2021), A-2, [https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance\\_2019.pdf?ver=2019-07-16-200152-700](https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance_2019.pdf?ver=2019-07-16-200152-700).

The organizations of the other MLR components are in figures 8 and 9. LLBs will provide tactical logistics support to MLRs by managing cache locations and linkage to operational logistics.<sup>62</sup> In turn, the LAABs will be a composite battalion of ground-based air defense, support, communications, and air control elements of the Marine air wing.<sup>63</sup> Both organizations will have a relevant but supportive role.



**Figure 8: Organization of the LLB**

Source: US Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations* (Washington, DC: Headquarters US Marine Corps, 2021), A-3, [https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance\\_2019.pdf?ver=2019-07-16-200152-700](https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance_2019.pdf?ver=2019-07-16-200152-700).



**Figure 9: Organization of the LAAB**

Source: US Marine Corps, *Tentative Manual for Expeditionary Advanced Base Operations* (Washington, DC: Headquarters US Marine Corps, 2021), A-4, [https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance\\_2019.pdf?ver=2019-07-16-200152-700](https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance_2019.pdf?ver=2019-07-16-200152-700).

The creation of the MLRs also entails the need to adapt the primary warfighting organization of the USMC, the Marine Expeditionary Force (MEF). MEFs are normally task-organized into smaller MAGTFs that are employed to conduct expeditionary operations.<sup>64</sup> The three existing MEFs are currently composed of a Marine Division (MARDIV), as GCE, a Marine Aircraft Wing (MAW), as ACE, a Marine Logistic Group (MLG), as LCE, and a MEF Information Group (MIG).<sup>65</sup> I MEF is based in California and Arizona and focuses on operations in the Indo-Pacific and the Middle East; II MEF is based in North Carolina and focuses on operations in the North Atlantic, Africa, and Europe; III MEF is the only MEF that is forward-deployed, in Okinawa, to cover the Pacific Ocean.<sup>66</sup> However, this structure is changing. According to the Commandant's Planning Guidance, the MEF will remain the central combat organization of the USMC, but MEFs will not be equal to each other.<sup>67</sup> They will all have adaptations, but the III MEF will become the main focus of the effort to support the naval campaign in the region.<sup>68</sup> Corroborating this fact, the CMC has already determined the establishment of three permanent MLRs at the III MEF.<sup>69</sup> Nevertheless, the MEF will not be exclusively focused on EABO but will still be able to conduct various mission types, such as crisis response and all forms of amphibious operations.<sup>70</sup> Therefore, while the basic organization of the USMC will not change and it intends to continue to be able to fulfill an extensive range of operations, it will undergo relevant modifications, mainly to adapt it to the OE in the Indo-Pacific. Along with the organizational restructuring comes the changes in material endowment. In the following, we will analyze these changes.

## Modification of the USMC Material Allocation

The change in the USMC employment concept brought about by the EABO concept implies the need for changes in its organization and its capabilities. In this regard, the USMC is making modifications in its capabilities guided primarily by two aspects. The first is the assumption that the USMC will not receive additional resources for this restructuring and therefore must divest itself of specific existing capabilities to resource the new capabilities required.<sup>71</sup> The second aspect is that the USMC is focusing this divestment on previously existing capabilities that have low demand or serve to counter some catastrophic but unlikely scenarios.<sup>72</sup> This section will present some of the USMC's changes in its capabilities that could serve as a basis for a possible change in the *CFN*'s capabilities. In addition, table 1 in the appendix summarizes these investments and divestments.

The basis for USMC divestment has been the reduction of infantry battalions. The logic of this approach is that a decrease in infantry battalions causes a systemic reduction as the organizations dedicated to supporting these battalions also reduce proportionally.<sup>73</sup> In this sense, in addition to extinguishing five infantry battalions (three active component and two reserve component), the remaining ones are being restructured in order to have their numbers reduced by approximately 200 Marines.<sup>74</sup> Considering this reduction of infantry battalions and the analysis of capabilities no longer needed, the GCE has undergone further divestment. For example, the USMC is phasing out sixteen cannon artillery batteries, two assault amphibian (AA) companies, and all seven tank companies.<sup>75</sup> The decrease in the number of infantry battalions justifies the first two reductions. Regarding the extinction of all tank companies, the justification is that this capability is not adequate for the higher priority challenges that the USMC will face in the future. The US Army will continue to provide heavy ground armor capability.<sup>76</sup> Therefore, in

terms of USMC material allocation, these changes have the impact of decreasing the number of cannons, Amphibious Assault Vehicles (AAV), and the extinction of tanks in the USMC.

The CE, ACE, and LCE are also undergoing relevant divestments. The CE is losing the three active component law enforcement battalions since this capability is inadequate for current USMC needs and because the remaining Corps force could meet with some adjustments.<sup>77</sup> In addition, the ACE is divesting three heavy-lift helicopter squadrons, three medium-lift helicopter squadrons, and two light attack helicopter squadrons due mainly to the reduction in the number of infantry battalions.<sup>78</sup> Finally, the LCE is eliminating three bridging companies because this capability is primarily related to sustaining ground operations, which is outside the EABO concept.<sup>79</sup> On the one hand, the extinction of some ACE squadrons does not significantly impact the troops' transport capacity because they are proportional to the reduction of infantry battalions. On the other hand, eliminating bridging companies and law enforcement battalions reduces the MAGTF capability, especially if there is a need to continue ground operations after an EABO.

Regarding investments, the USMC aims to equip itself with low signature mobile weapons and sensors that can complement the USN's surface warfare, anti-submarine warfare, air and missile defense, and airborne early warning capabilities.<sup>80</sup> To achieve this goal, the USMC has focused on ground-based Long-Range Precision Fires (LRPF), air and missile defense, and unmanned systems while also recognizing the need to develop its Command and Control capabilities to better operate in a contested environment. For example, concerning ground-based fires, they must be capable of supporting troop maneuver ashore as well the maneuvering of the fleet and the joint force commander by providing conditions that facilitate sea control and sea denial.<sup>81</sup> This is the basis for the transition from fourteen towed cannon

batteries to anti-ship missile batteries and self-propelled rocket artillery.<sup>82</sup> As for air and missile defense, the USMC is prioritizing investments in more modern short-range air defense systems, aiming for a more extended range to meet the need for SIFs to remain within the adversary's weapons engagement zone (WEZ).<sup>83</sup> Also, the USMC is developing unmanned systems suitable for reconnaissance, surveillance, and lethal and non-lethal effects to produce effects under the sea, on land, and in the air to reduce Marines' exposure.<sup>84</sup> Hence, the USMC is planning to invest in unmanned surface vessels and aircraft, as well as create three unmanned aerial vehicles (VMU) squadrons.<sup>85</sup> Finally, although the Marine Corps has planned to increase by three the number of light armored reconnaissance (LAR) companies, it is still evaluating whether manned armed ground reconnaissance units are the best option to be employed in the Indo-Pacific region for ground reconnaissance and counter-reconnaissance tasks.<sup>86</sup>

Furthermore, since the EABO concept envisions the employment of smaller troop forces in different locations, there is a need to develop adequate means to transport these troops efficiently. In this manner, the littoral maneuver will depend on landing craft and aircraft to launch the troops on land and USN support in developing high-speed, long-range, low-signature vessels, such as the light amphibious warship (LAW).<sup>87</sup> Thus the USN will develop LAWs with capabilities that facilitate the agile embarkation and disembarkation of MLRs either by vehicle or amphibious vehicle.

In summary, by altering its material allocation, the USMC seeks to increase its ability to support fleet actions while protecting itself from its possible adversary's A2/AD threats. In addition, the reorganization of the Corps into smaller structures intends to enable investment in more sophisticated equipment that will increase the USMC firepower while also increasing their ability to remain in the adversary's WEZ. Thus, significant investments are occurring in long-

range fire execution capabilities, air and missile defense, and unmanned systems, which may serve as a direction for developing *CFN* material capabilities. First, however, the next chapter will present some opportunities for improvement in some current aspects of *CFN* and *MB*.

### **Current Brazilian Navy and Its Marine Corps**

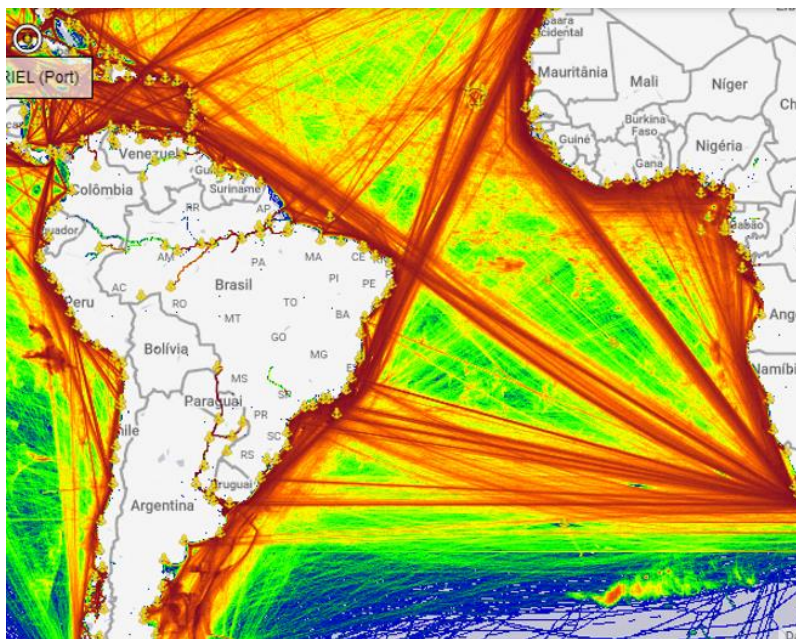
The Brazilian Navy and its Marine Corps protect national interests in the Brazilian strategic environment that encompasses the Blue Amazon, the entire South Atlantic, and the African continent's west coast. In this sense, it is fundamental that both operate in an integrated way and maintain themselves in conditions to counteract the possible threats in this OE. Therefore, this chapter will identify the main opportunities for improvement in doctrine, organization, and material capabilities related to increasing *CFN* support to the *MB*.

#### **Brazilian Navy and Marine Corps Doctrine**

The Naval Military Doctrine, or *Doutrina Militar Naval (DMN)*, is the principal doctrinal document of the Brazilian Navy. For this reason, it establishes the *MB* principles, concepts, and methods of combat employment to orientate the preparation and application of naval power in accordance with the *END* and the *PEM*.<sup>88</sup> Thus, it currently adopts the same four basic tasks determined for the Brazilian Navy in the *END*: sea control, sea denial, contribution to deterrence, and power projection over the land.<sup>89</sup> Regarding the sea control task, it is worth mentioning that this is not an end in itself, being in general a pre-requisite for other basic tasks or naval operations.<sup>90</sup> For example, sea control may be necessary to provide security to SLOCs crossing Brazilian jurisdictional waters (see figure 10), preserve natural resources and exploration facilities within the exclusive economic zone (EEZ), and provide conditions for the employment



of the Brazilian Marines in the projection of power over the land.<sup>91</sup> At the same time, projecting power over the land can contribute to the achievement of sea control since it may be necessary to neutralize threats or control land portions of the coast.<sup>92</sup> Thus, the tasks of sea control and projection of power over the land complement each other, although Brazilian naval doctrine does not expressly mention littoral operations. Nonetheless, as for the United States, considering the analysis of the probable OE of the Brazilian naval forces, it is likely that their operations will take place within the littoral, which would demand a greater focus on this type of operation.



**Figure 10: South Atlantic SLOCs**

Source: Marine Traffic, “Density Maps,” December 24, <https://www.marinetraffic.com/en/ais/home>

In this sense, it is crucial to quote again that the *CFN* is the *MB*'s troop that ensures its power projection capability, besides being employed in defense of the islands in the Blue Amazon and the naval or port facilities on the Brazilian coast.<sup>93</sup> However, the role of the Brazilian Marines in the latter type of operation is reduced to actions to secure its facilities.<sup>94</sup>

Furthermore, not deviating from the essence of the sea control concept, the recently published *PEM 2040* adopts the expression “combat for the sea”, not yet contemplated in the

*DMN*. This expression alludes to the preservation of maritime interests, be they on account of existing natural resources or important SLOCs, not only by direct combat against opponents but also by deterrence.<sup>95</sup> Specifically, concerning the protection of Brazilian maritime interests in the Blue Amazon, it considers the need to adopt a proactive defense in the air, surface, submarine, cybernetic, and space operational environments.<sup>96</sup> In this context, the *PEM* cites the importance of vessels capable of establishing sea control and mentions the need for power projection means to support amphibious operations.<sup>97</sup> Therefore, Brazilian naval doctrine does not mention the possibility of employing Marines to project power from land to sea, contributing to the control of maritime areas, either for the defense of a port area or naval base, or for the protection of interests in its jurisdictional waters.

Regarding the Brazilian Marine doctrine itself, the CGCFN 0-1 reinforces the employment limitation of the *CFN*. First, it states that power projection through amphibious operations guides the Brazilian Marine Corps.<sup>98</sup> Second, it establishes amphibious operations as one of the structural axes that condition the development of the force's doctrine, material, and human resources.<sup>99</sup> On the other hand, MCDP 1-0 cites that it was not until World War II that the USMC was organized, equipped, and trained exclusively for amphibious operations, and after that period, it focused primarily on rapid and effective crisis response.<sup>100</sup> The *CFN* itself did not conduct any significant amphibious operations recently. As a result, these arguments reinforce other arguments already exposed throughout this paper, in the sense of expanding the contribution of the *CFN* to the *MB*, not restricting its foundations only to amphibious operations. The following two sections will discuss how the presented doctrine and other aspects influence the gaps in the organization and the material capabilities of the current *CFN*.

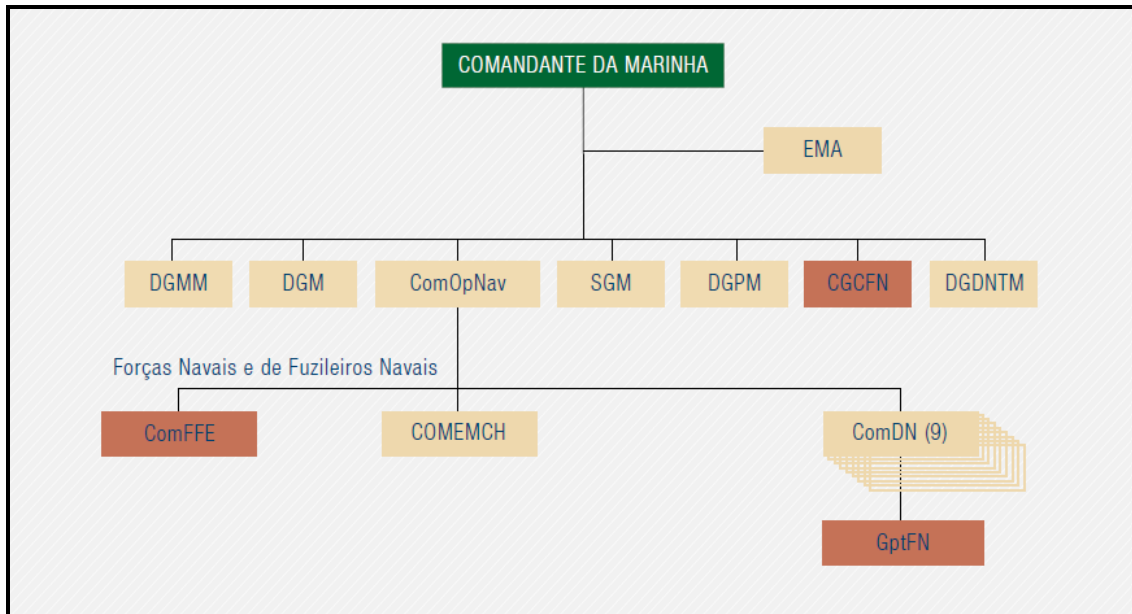
## Brazilian Marine Corps Organization

The Brazilian Marine Corps has two forms of organization. The first form is administrative and focused on preparing the *CFN's* troops. The second focuses on the employment of the force itself with the constitution of the so-called *Grupamentos Operativos de Fuzileiros Navais (GptOpFuzNav)* or Marine Corps Operating Groupings.

Regarding the first form, the *CFN* is part of the Brazilian Navy organization. One of the operational components of this organization is the *Comando da Força de Fuzileiros da Esquadra (ComFFE)* or Fleet Marine Force Command, directly subordinated to the *Comando de Operações Navais (ComOpNav)* or Naval Operations Command (see figure 9).<sup>101</sup> The *ComFFE* has its organization, training, and equipment geared to carry out mainly amphibious operations, although it also can execute riverine, humanitarian, peacekeeping, and governmental support operations.<sup>102</sup> Its organization includes infantry battalions, a cannon and rocket artillery battalion, an engineering battalion, amphibious assault and armored vehicle battalions, a logistic battalion, and special operations units.<sup>103</sup> Like the USMC, infantry battalions are the base of this organization and proportionally affect the organization of the supporting units.

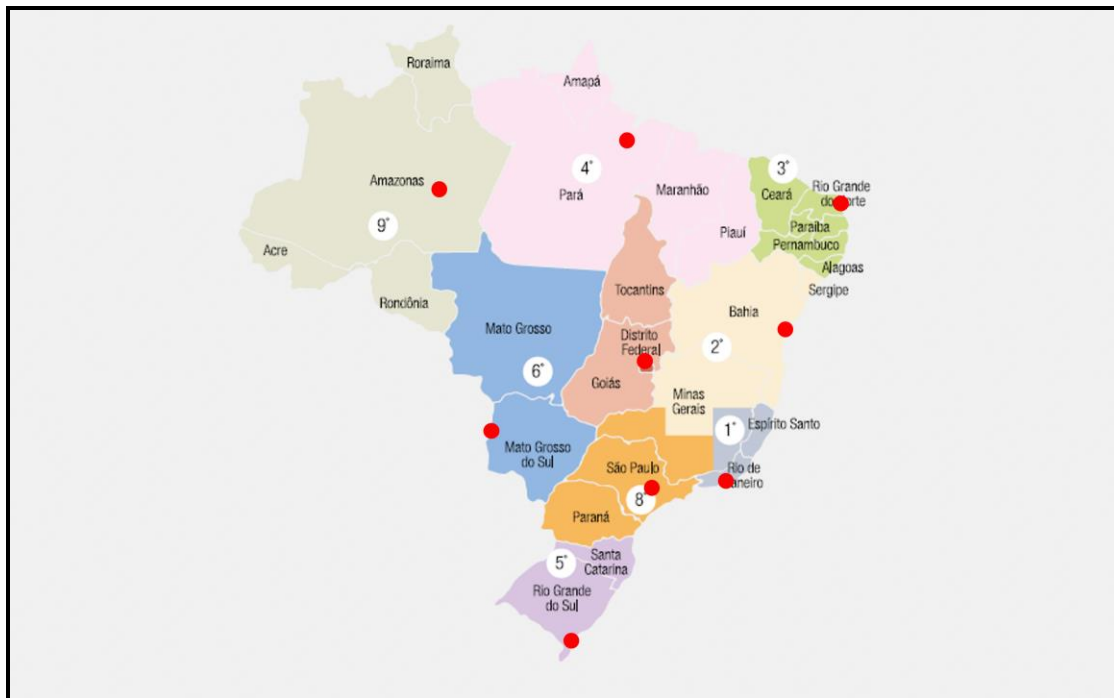
Other operational components of the *CFN* are the Riverine Battalions and the *Grupamentos de Fuzileiros Navais (GptFN)* or Marine Corps Groupings. Each Naval District (areas of the administrative organization of the *MB*) has either a *GptFN* or a Riverine Battalion at its headquarters (see figures 11 and 12).<sup>104</sup> The *GptFN* has to perform port defense actions and other naval facilities as its primary task, although it may also reinforce the *ComFFE*.<sup>105</sup> Consequently, its elemental composition is infantry and police troops. In conclusion, the *ComFFE* is the main operational component of the *CFN* administrative organization, and its

main task is to prepare to conduct amphibious operations. In contrast, the *GptFN* plays only a secondary role in this organization.



**Figure 11: Organization of the CFN**

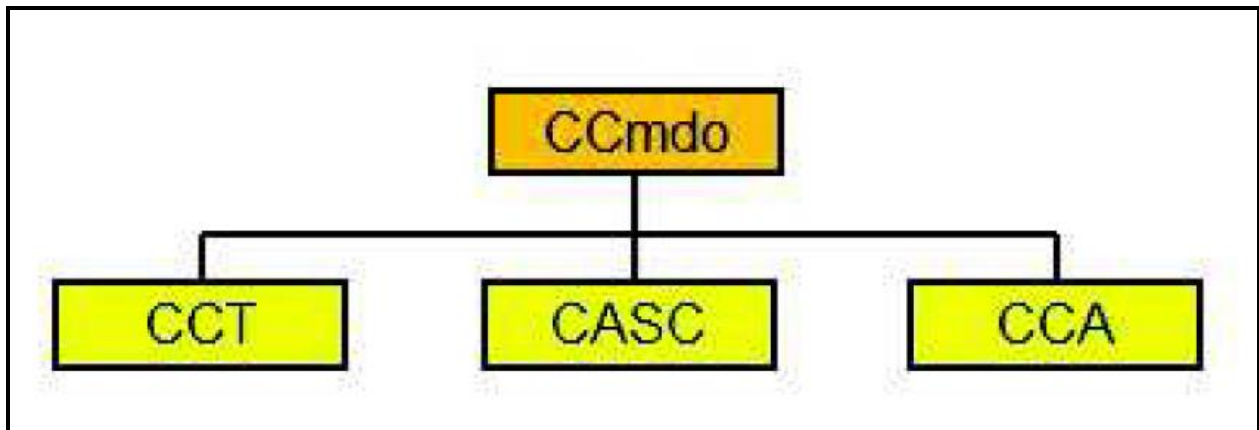
Source: Ministério da Defesa, *Livro Branco de Defesa Nacional* (Brasília, DF, 2020), 60, [https://www.gov.br/defesa/pt-br/assuntos/copy\\_of\\_estado-e-defesa/livro\\_branco\\_congresso\\_nacional.pdf](https://www.gov.br/defesa/pt-br/assuntos/copy_of_estado-e-defesa/livro_branco_congresso_nacional.pdf).



**Figure 12: *GptFN* and Riverine Operations Battalions Locations**

Source: Ministério da Defesa, *Livro Branco de Defesa Nacional* (Brasília, DF, 2020), 58, [https://www.gov.br/defesa/pt-br/assuntos/copy\\_of\\_estado-e-defesa/livro\\_branco\\_congresso\\_nacional.pdf](https://www.gov.br/defesa/pt-br/assuntos/copy_of_estado-e-defesa/livro_branco_congresso_nacional.pdf).

Nevertheless, such administrative organizations constitute *GptOpFuzNav* when employed to accomplish specific missions. *GptOpFuzNav* follows the organizational concept of components with the following structure: *Componente de Comando (CCmdo)*, *Componente de Combate Terrestre (CCT)*, *Componente de Apoio de Serviços ao Combate (CASC)* e *Componente de Combate Aéreo (CCA)* (see figure 13).<sup>106</sup> These components bear a resemblance to the elements of the USMC's MAGTF, respectively the CE, the GCE, the LCE, and the ACE. Furthermore, the employment of Marine troops organized in the form of *GptOpFuzNav* is the second of the three structuring axes of the *CFN*, conferring flexibility and versatility to the employment of troops.<sup>107</sup> However, considering the possibility of employing the *CFN* in the long extension of the Brazilian coast to support the sea control task, such advantages may not be as relevant as the deployment of units already constituted.



**Figure 13: *GptOpFuzNav* Components**

Source: Comando-Geral do Corpo de Fuzileiros Navais, *Manual Básico dos Grupamentos Operativos de Fuzileiros Navais* (Rio de Janeiro, RJ: CGCFN, 2020), 4–2.

### Brazilian Marine Corps Material Capabilities

The *CFN* material allocation is under the organization and doctrine presented in the previous sections. This section will broadly identify opportunities to improve the *CFN*'s material capabilities to increase its support to the *MB* in the sea control task.

Although the *ComFFE* can perform a wide range of operations, its material endowment privileges amphibious operations. Concerning fire support, it has howitzers and rocket batteries to support the infantry battalions.<sup>108</sup> Mobility and firepower are provided by an AAV battalion, wheeled and tracked armored vehicles, and light tanks companies.<sup>109</sup> In addition, it has low-altitude air defense systems and unmanned aerial vehicles (UAVs) with surveillance capability.<sup>110</sup> In turn, the GptFN has its material resources limited to the tasks performed by infantry and police troops. As a result, both organizations lack a more significant number of medium and low altitude air defense assets and a larger number of light vehicles to meet the need to employ several small forces simultaneously. In addition, there is a lack of missile systems with anti-ship capabilities, and attack and surveillance UAVs.

However, it is essential to note that the *CFN* currently has a strategic program that seeks to revitalize and increase the combat power of the force: the PROADSUMUS.<sup>111</sup> Besides other means more oriented to amphibious operations, this program foresees the possibility of acquiring joint light tactical vehicles (JLTVs), medium and low altitude air defense assets, UAVs, and tactical cruise and anti-ship missiles.<sup>112</sup> Thus, PROADSUMUS already contemplates part of the opportunities for improvement mentioned, although in quantities and priorities geared towards amphibious operations.

Furthermore, considering that the *CFN* is an integral part of the *MB*, two points are worth mentioning. First, the *CFN* has no subordinate aircraft squadrons but receives support from aircraft subordinate to *ComOpNav* whenever necessary. Second, the characteristics and quantities of the current navy ships do not allow the simultaneous transport and landing of Marine troops in different EABs. As a result, there is also a need for *MB* to purchase or develop new naval and aircraft means to support *CFN*.

The next chapter will present the proposals for change in the gaps identified in this chapter

### **Proposed Changes in the Brazilian Navy and Its Marine Corps**

The demand for greater integration of the Brazilian Marines with its Navy creates the need to develop a long-range strategy for the *CFN*. This type of strategy estimates the force's possible future threats and objectives and the need for increased military capabilities arising from these estimates.<sup>113</sup> In this context, based on the two previous chapters, this chapter will propose some changes in doctrine, organization, and material capabilities of the *CFN* that enable the increase of its contribution to the protection of the Brazilian strategic environment. In addition, table 2 of the appendix summarizes the proposed solutions for each improvement opportunity identified.

#### **Brazilian Navy and Marine Corps Doctrine**

The previous chapter identified three main opportunities to improve the doctrine of the Brazilian naval forces. The first is that the Brazilian naval doctrine does not explicitly address littoral operations. Nevertheless, the analysis of the possible OE of employment of these naval forces found that it will occur primarily close to the coast, in perhaps contested seas, even under Brazilian jurisdiction in the Blue Amazon or on the West African coast. In this context, littoral operations involve a more significant influence of land and sea environments on each other due to the large range of existing weapons and sensors. In turn, the peculiarities and implications of the mutual influence of land and sea contribute to the assertion that the *MB* must consider this type of operation in a specific way. Furthermore, the *PEM 2040* emphasizes the need for the

implementation of a pro-active defense, as well as the increase of deterrence power to preserve the Brazilian interests in the Blue Amazon. Hence, the *DMN* should expressly consider the littoral operations a naval warfare operation, unlike the other operations foreseen in this publication, such as attack and amphibious operations. From there, it would allow its study and detailing.

The second gap in Brazilian naval doctrine is the limited contribution of the Marines to the Brazilian Navy fleet for the sea control and sea denial tasks. First, it is relevant to remember that littoral operations require obtaining sea control, making this task an integral part of these operations. In addition, other types of operations, such as amphibious operations and defense of the maritime area of ports or naval bases, have this requirement. Thus, it is even more important to integrate the Navy and the Marines to obtain sea control. By doing so, the latter could contribute not only through the projection of power from the sea over land but also with the projection of power from land over the sea in order to deny the enemy the use of the sea, supporting the task of sea control. In light of this finding, the *CFN* can adapt some EABO concepts to the Brazilian OE, foreseeing, for instance, the employment of small and mobile task organizations with high firepower from points on the Brazilian coast itself and oceanic islands. In this way, the Brazilian naval doctrine should update the concept of sea control, expanding the contribution of the Marines through the projection of power from land to sea.

Further, these two identified opportunities for improvement highlight the third gap in the Brazilian naval doctrine: the fact that amphibious operations are one of the structural axes of the *CFN*. Although one cannot fail to consider the importance of this type of operation, as it already exposed the need for increased protection of Brazilian interests in the Blue Amazon and the Brazilian strategic environment emphasizes a more significant contribution of Marines to obtain



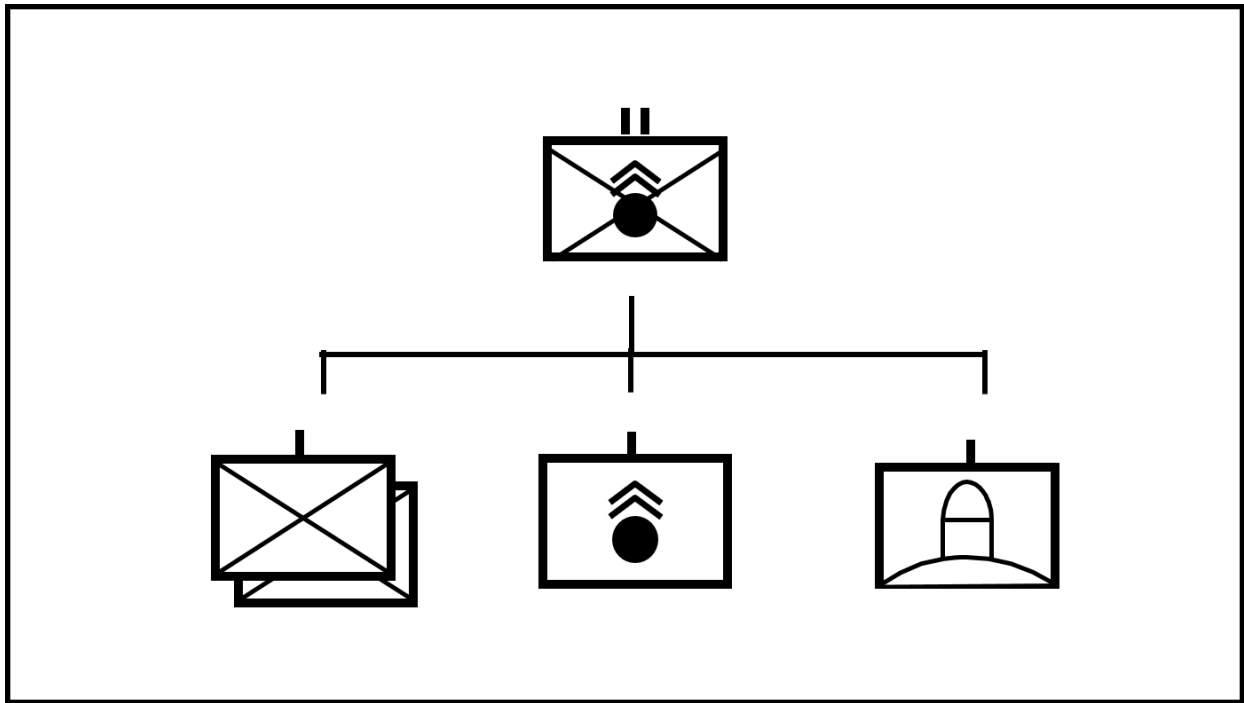
control of the sea. Moreover, the *CFN* has rarely performed this type of operation. Therefore, the Brazilian naval doctrine should consider the possibility of structuring the *CFN* not only focusing on amphibious operations but also on operations that contribute to the achievement of sea control from land, similarly to the EABO.

From these proposed doctrinal changes, the next section will focus on providing suggestions for improving the organization of *CFN*.

### Brazilian Marine Corps Organization

The current organizational structure of the *CFN* does not meet the needs of changes suggested in the application of naval power to counter the possible threats to the Blue Amazon and the Brazilian strategic environment and the growing importance of sea control.

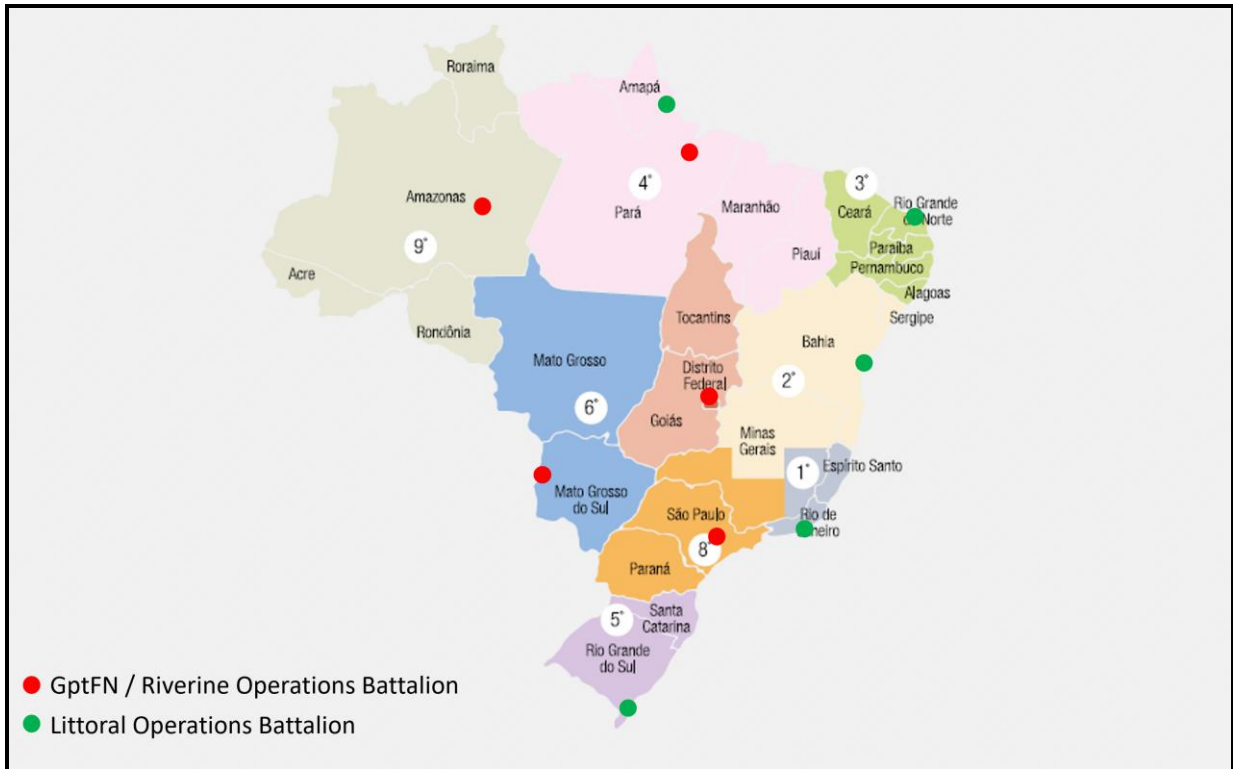
As a result, the focus of the *CFN*'s organizational restructuring would be on the creation of units for littoral operations in the Brazilian strategic environment, here entitled Littoral Operations Battalions. These units would be more straightforward than the USMC's proposed MLRs but would be equally capable of contributing to the sea denial mission as a part of an integrated expeditionary naval force. To do this, it would conduct surveillance and reconnaissance, LRPF attacks, and air and missile defense. Therefore, it would have a missile launcher battery, an air defense battery, two to three infantry companies, and a logistic support company (see figure 14). Another difference with the MLRs is that it would not have aircraft since the *CFN* receives support from Navy aircraft when required. Finally, like the USMC, the Littoral Operations Battalions would operate in small decentralized units deployed simultaneously at different points along the Brazilian coast or in EABs in the Brazilian strategic environment.



**Figure 14: Proposed Organization of the Littoral Operations Battalion**

Thus the *ComFFE* would be endowed with one of these units and would be responsible for contributing with the Brazilian Navy in sea control throughout the Brazilian strategic environment. In addition, five Littoral Operations Battalions would become subordinate to the naval districts (see figure 15). Four would replace the existing *GptFN* (1st, 2nd, 3rd, and 5th naval districts), and one would be created (4th naval district). Each of these Littoral Operations Battalions would contribute to sea control and sea denial in the coastal area corresponding to its district, except the 1st naval district, which would still be responsible for the 8th district area. Nonetheless, the Littoral Operations Battalion subordinated to *ComFFE* could reinforce the Littoral Operations Battalion subordinated to the 1st naval district. Furthermore, the suggested positioning of these battalions considers the SLOCs that cross Brazil and the fact that the *END* establishes as priorities for the control of the maritime area of the Brazilian coast, the coastal strip between the cities of Santos and Vitória (1st and 8th naval district) and the area around the

mouth of the Amazon River (4th naval district).<sup>114</sup> Thus, with this restructuring, the *CFN* would broaden its integration with the MB to accomplish its tasks while continuing to perform its current operations.



**Figure 15: Littoral Operations Battalions Locations**

Lastly, considering that Littoral Operations Battalions would have a hybrid and unique nature, they would be capable of being employed within an expeditionary naval force without the need for the constitution of *GptOpFuzNav*, although this is not forbidden. Thus their commander would be Task Force or Task Group commander, such as the EXWC in the LOCE concept.

The following section will present the material capabilities adaptations proposed to meet this new organization.

## Brazilian Marine Corps Material Capabilities

The development of long-range strategies has as an essential component the provision of budgetary resources to avoid the so-called strategic-capabilities mismatch.<sup>115</sup> In this sense, although Brazil was among the top fifteen in global military expenditures in 2020, the percentage of these expenditures compared to its gross domestic product (GDP) was one percentage point lower than the average of the top forty military spending in the same year, which was 2.4%.<sup>116</sup> Thus, differently from the USMC premise that it will not receive more resources for its restructuring, this work considers that it is necessary and possible to increase the budget of the *MB* in order to increase its capacity to fulfill its tasks, especially the protection of the Blue Amazon.

Nonetheless, it is still possible to propose minor divestments focusing mainly on existing surplus or low demand capacities. Therefore, as in the USMC, the basis of this reduction would be in the infantry battalions. However, in the *CFN*'s case, this reduction would be just in the number of personnel in each battalion. One way to reduce this would be to decrease the number of personnel in teams and squads, which today are more significant than the USMC. Yet, in the *ComFFE*, there is room for two other divestments. The first would be to reduce the diversification of calibers in the cannon batteries and their quantity. Thus, it would focus on only one caliber and reduce the number of cannon batteries to one per infantry battalion. The second would be the disinvestment in wheeled armored vehicles because they are more appropriate for actions in urban areas, and their numbers exceed the necessary support to the *ComFFE*, also considering the existing AAV and tracked armored vehicles. Moreover, as implicitly exposed in the previous section, the *GptFN* on the coast would no longer have companies capable of carrying out policing and law enforcement actions.

In addition to these divestments, the *MB* should make necessary investments to equip the Littoral Operations Battalions. As a result, the *CFN* should update the PROADSUMUS program to revise the priorities and quantities of some materials, such as long-range missiles with anti-ship capabilities and medium and low air defense assets JLTVs, and surveillance UAVs. However, no less important than investments in the *CFN* itself, there must also be investments in other *MB* organizations that would support the Littoral Operations Battalions and meet the proposed doctrinal and organizational changes. The first is in a more significant number of ships capable of simultaneously transporting and discharging different and smaller task organizations. With the same intent as the first, the second would be to acquire new rotary-wing aircraft. Finally, it would also be necessary to purchase or develop attack UAVs.

Therefore, while considering the need to increase the Navy's budget, these investments and divestments intend to allow the *CFN* to protect Brazilian maritime interests in its strategic environment effectively.

### **Conclusion**

The EABO concept, still under development by the USMC, can indeed serve as a basis to increase the capabilities of the Brazilian Marine Corps to support the Brazilian Navy in the protection of national interests in the Blue Amazon and the Brazilian strategic environment. In this sense, its doctrine, organization, and material capabilities must underpin its changes on the mentioned concept.

The USMC developed this concept based on the identification in American strategic documents of the possibility of carrying out expeditionary operations from advanced bases in the Indo-Pacific region to guarantee American national interests in the area. In turn, the Brazilian

strategic documents have their primary focus on the country's sovereignty in its jurisdictional waters without neglecting its strategic environment. Nonetheless, the *CFN* can adapt some EABO concepts to defend its territory, protect maritime interests in the Blue Amazon, and project power on the African coast, if necessary.

To do so, it is necessary that, first, its doctrine begins to foresee the carrying out of littoral operations to guide the restructuring of the force. Moreover, the *CFN* should not only be driven by amphibious operations but also project its power from land to sea, thus contributing more decisively to the basic task of sea control. In this context, organizational and material capability changes would occur according to the new doctrine and based on the EABO concept. Thus the creation of Littoral Operations Battalions within the *ComFFE* and in each naval district near the coast would be the main change in the administrative organization of the *CFN*. About the differences concerning the material endowment, the major highlight is the need to acquire long-range missiles and medium and low air defense assets.

The contribution of the EABO concept to the *CFN* goes beyond the changes suggested in this paper. The analysis presented here allowed a reflection on the possibility of improving the employment of Marines in contributing to the basic tasks of the Brazilian Navy. Thus, this paper suggests that, besides continuing to monitor the development of the EABO concept, the Brazilian Marine Corps looks for other options to improve its integration with the Brazilian Navy.

## Appendix: Tables

**Table 1: Summary of USMC Major Investments and Divestments**

Element	Investment	Divestment
Command Element		- Three law enforcement battalions
Ground Combat Element	- Fourteen rocket artillery batteries - Three light armored reconnaissance companies	- Five infantry battalions - Sixteen cannon artillery batteries - Seven tank companies (all of them) - Two assault amphibian companies
Air Combat Element	- Three unmanned aerial vehicles squadrons - One aerial refueler transport squadron	- Three heavy-lift helicopter squadrons - Three medium-lift tiltrotor squadrons - Two light attack helicopter squadrons
Logistics Combat Element		- Three bridging companies

**Table 2: Improvement Opportunities and Solution Proposals for CFN**

Aspect	Improvement Opportunities	Solution Proposals
Doctrine	<ol style="list-style-type: none"> <li>1. Brazilian naval doctrine does not foresee littoral operations specifically</li> <li>2. The contribution of the Brazilian Marines to the tasks of sea control and sea denial is negligible</li> <li>3. Amphibious operations are currently the type of operation that structure the Brazilian Marine Corps</li> </ol>	<ol style="list-style-type: none"> <li>1. The <i>DMN</i> should expressly consider littoral operations as a type of naval warfare operations</li> <li>2. The <i>DMN</i> should update the concept of sea control, expanding the contribution of Marines through the projection of power from land to sea</li> <li>3. The Brazilian naval doctrine should consider the possibility of structuring the <i>CFN</i> also with operations that contribute more incisively to the achievement of sea control</li> </ol>
Organization	<ol style="list-style-type: none"> <li>1. Administrative organization of the main operational component of the <i>CFN</i> focused on amphibious operations</li> <li>2. <i>GptFN</i> organized primarily for the defense of port facilities and naval bases</li> <li>3. The <i>GptOpFuzNav</i> may not be the only employment option for the <i>CFN</i> to contribute with the <i>MB</i> in the sea control task</li> </ol>	<ol style="list-style-type: none"> <li>1. Provide the <i>ComFFE</i> with a Littoral Operations Battalion to make it capable of contributing with the <i>MB</i> in the sea control task in the Brazilian strategic environment</li> <li>2. Transform the <i>GptFN</i> on the coast into Littoral Operations Battalions organized to contribute with the <i>MB</i> in the sea control task in the Blue Amazon.</li> <li>3. Employ the Littoral Operations Battalions as a component of an expeditionary naval force</li> </ol>
Material Capabilities	<ol style="list-style-type: none"> <li>1. Lack of medium and low altitude air defense assets</li> <li>2. Lack of missile systems with anti-ship capabilities</li> <li>3. Lack of attack and surveillance UAVs</li> <li>4. Lack of light vehicles</li> <li>5. Lack of Navy ships and aircraft suitable for the simultaneous transportation of Marine troops to different EABs.</li> </ol>	<p><b>Divestments:</b></p> <ul style="list-style-type: none"> <li>- Reducing the number of personnel in infantry battalions</li> <li>- Unification of calibers and reduction of the number of cannon batteries</li> <li>- Extinguish the wheeled armored vehicles company</li> <li>- Extinguish the police companies in the coastal <i>GptFN</i></li> </ul> <p><b>Investments:</b></p> <ul style="list-style-type: none"> <li>- Acquisition of long-range missiles, medium and low-range air defense assets, JLTVs, and surveillance UAVs (<i>CFN</i>)</li> <li>- Acquisition of vessels and rotary-wing aircraft suitable to the new doctrine and attack UAVs (<i>MB</i>).</li> </ul>



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