



## MILITARY READINESS: DEBATES AND DEFINITIONS

### *PRONTIDÃO MILITAR: DEBATES E DEFINIÇÕES*

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*Readiness becomes an issue when peace comes into doubt*  
(Richard K. Betts)

#### **Abstract**

This article provides a literature review on the concept of “readiness,” examining its definition and connections to other defence-related themes. It identifies key issues and proposes an operational framework for readiness. A systematic bibliographic review was conducted using a qualitative and exploratory research approach. The main finding is a conceptual definition of readiness: the state in which a military force maintains all required capabilities to deploy within a specified timeframe, execute its designated activities and tasks and accomplish assigned missions using its own organic resources. Readiness is conceptualized here as a dynamic state, a temporary condition characterized by an unstable equilibrium that requires ongoing resource allocation to prevent degradation. The article is organized into the following sections: an introduction; methodology; theoretical and conceptual framework; a review of existing readiness concepts; and a results section, in which the proposed concept of readiness is detailed, along with its typologies, measurement approaches, and associated trade-offs. The article concludes with recommendations for further research.

**Keywords:** Readiness; measurement; trade-offs.

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## **Resumo**

*O presente artigo tem por objetivo conduzir uma revisão de literatura sobre o tema da “prontidão”, buscando entender o seu conceito e o seu relacionamento com outros assuntos de defesa e destacando as principais questões envolvidas, a fim de propor operacionalmente um conceito de prontidão. Para tanto, foi realizada uma revisão bibliográfica da literatura, de forma sistematizada. O principal resultado foi a apresentação de uma proposta de conceito de prontidão: um estado em que uma força militar encontra-se com todas as capacidades necessárias para ser desdobrada em um prazo previamente estipulado, a fim de desempenhar as atividades e tarefas para as quais foi originalmente constituída e cumprir, com seus recursos orgânicos, as missões que lhe sejam designadas. A prontidão é aqui apresentada como um estado, uma condição de momento, caracterizado por um equilíbrio instável mantido a um custo, para não ser degradada. O artigo se estrutura em introdução, metodologia, referencial teórico e conceptual, no qual se revisita os conceitos de prontidão, discussão de resultados, onde se apresenta e explica a proposta do conceito, apresentam-se classificações, modos de mensuração e custos de oportunidade. Por fim, há uma conclusão com recomendações de pesquisa.*

**Palavras-Chave:** *Prontidão; mensuração; custos de oportunidade.*

## **1. Introduction**

Ensuring the Land Force remains in a sustained state of readiness is a fundamental component of the Brazilian Army’s core mission (Army Command [AC], 2023a, p. 3-1). This state of readiness is a prerequisite for the deployment of the Brazilian Land Force (AC, 2023b, p. 1-2). The Army’s Strategic Concept (CEEx) (Army General Staff [EME], 2023, p. 1-2) is based on the revised Operational Concept of the Brazilian Army (COEB) – Convergence Operations<sup>1</sup> (EME, 2023b) and encompasses operational readiness<sup>2</sup>, technological readiness and logistical readiness.

This article explores the concept of readiness through the lens of the land doctrine of the Brazilian Army, which has maintained force readiness via a structured training system in place since 2019. The article aims to conduct a literature review to clarify the meaning of “readiness” and its connection to broader defence issues, identify key challenges associated with the concept, and propose an operational definition of readiness.

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<sup>1</sup> Convergence Operations is the term used by the Brazilian Army for its current Operational Concept, which has replaced the previous Broad Spectrum Operations concept. “The core idea behind Convergence Operations is to define how the Land Forces are to be employed, at the highest levels of warfighting intensity, that is, for the defence of the homeland, in conventional symmetrical conflicts (where opposing forces possess comparable combat power) and asymmetrical conflicts (where one adversary holds an advantage in technology, training, strategy, tactics or manoeuvrability)” (EME, 2023, p. 5-2).

<sup>2</sup> The term “operational” does not exclusively refer to the levels of war (namely, Political, Strategic, Operational and Tactical, in descending order). It can also describe anything related to, or part of, a military operation. It is synonymous with “operative” (COTER, 2022b). The Brazilian Army tends to prefer the term “operational”, while the Brazilian Navy favours “operative”. In this article, the term “operational” will be used consistently. The context should clarify its intended meaning.

The article's specific objectives are to review the ongoing debate surrounding readiness, propose a definition of the concept, examine relevant categorisations and methodologies for assessing readiness and discuss the trade offs inherent in managing readiness.

In 2019, the Land Operations Command (COTER) launched the Operational Readiness System (SISPRON) with the objective of maintaining certain forces at a state of "full readiness" (original emphasis), ensuring operational readiness and enhancing the Land Force's ability to respond swiftly, in alignment with the National Defence Policy (PND), the National Defence White Paper (LBDN) and the National Defence Strategy (END) (Land Operations Command [COTER], 2019).

The Brazilian Army's approach reflects similar policies adopted by other military forces. Since 2023, NATO member states have implemented the New NATO Force Model, which replaced the NATO Response Force and significantly raised overall readiness levels. Under this new readiness model, allied nations are capable of deploying over 100,000 troops within ten days (Barry et al, 2023, p. 8).

The United Nations' Peacekeeping Capability Readiness System is structured around four readiness levels (Department of Peacekeeping Operations [DPO], 2023), while the U.S. Army has employed various models to manage force readiness over recent decades, including the Army Force Generation (ARFORGEN) model and the Sustainable Readiness Model. Its current framework is the Regionally Aligned Readiness and Modernization Model (ReARMM) (Galvin, 2015). Additionally, the U.S. Congress oversees a Subcommittee on Readiness, which is responsible for allocating a significant portion of the country's defence budget (United States Congress, 2022).

These examples highlight why readiness features prominently in the Brazilian Army's high-level defence policy documents and why it is such a timely topic. Betts' observation that "readiness becomes a problem when peace is in doubt" (Betts, 1995, p. 35) invites a deeper analysis of the issue.

The Houaiss Portuguese dictionary defines *prontidão* (readiness) as "the state of being ready to do something" (Houaiss, 2024). Similarly, an English dictionary describes readiness as: "when you are prepared for something, or when something is ready to be used" (Longman Dictionary of Contemporary English [LDOCE], 2024). In both languages, the noun *readiness* is derived from the adjective *ready*.

While these definitions appear straightforward, the concept of readiness remains the subject of ongoing debate, particularly in military contexts. The U.S. Department of Defence (DoD) has used the term since at least the 1830s, yet its definition has evolved over time. Today, each branch of the U.S. armed forces employs different methods to assess readiness (Herrera, 2020, pp. 1-2; Rumbaugh, 2017, p.1; Junor, 2017, p. 2).

Knowledge advances more by asking the right questions than by simply finding the right answers. Betts (1995, p. 33) highlights three fundamental questions when discussing readiness: Readiness for when? Readiness for what? Readiness of what? The answers to these questions help define a country's national defence policy and strategy. Similarly, Harrison

(2014, p. 38) poses another set of questions: What does it mean to be ready? What are the attributes of a ready force? How much readiness is enough? Readiness can refer various factors, such as training levels or equipment maintenance. It can apply to individual military units or joint commands.

Addressing these questions involves complex trade offs that influence a country's Force Design. Readiness is a key component of Force Design, alongside plans, presence, and force size and structure (Retter, Hernandez, Caves, Hughes, & Knack, 2021, p. 4). Ultimately, readiness can only be fully understood within the context of a national strategy (Harrison, 2014, p. 39).

While this article does not seek to provide recommendations in response to these questions, they have guided the overall direction of the study. As such, the research problem has been framed around three key questions: How can readiness be conceptualised? What are its core components and how do they relate to each other? Can readiness be measured?

This article explores the concept of readiness through a literature review, examining its definition, its connection to other defence challenges and the key issues at stake, to develop an operational definition of readiness (Cooper, Hedges, & Valentine, 2019, p. 21; Leavy, 2017, p. 93) that can serve as a foundation for future research.

The article begins with a chapter outlining the methodological approach, followed by a review of the existing literature on readiness and a proposal for a definition of readiness. Subsequent sections examine various classifications and measurement methods used by governments and international organisations to assess readiness. The final section explores the trade offs commonly encountered in readiness-related debates.

This study adopts a general working definition of readiness as the state in which military forces are prepared to execute their assigned missions.

## **2. Methodology and method**

This article presents a systematic literature review designed to expand the body of knowledge the concept of readiness. Content analysis was employed as the primary method, comprising pre-analysis, examination of the material, and data processing (Bardin, 2016). As the study aims to deepen insights into a phenomenon, a qualitative exploratory approach was adopted (Leavy, 2017, p. 72).

Drawing on the taxonomy proposed by Cooper, Hedges & Valentine (2019, p. 5), the review focuses on the findings of existing studies on military readiness. The aim is to synthesise previous research and identify central themes. The analysis is based on a select set of representative studies. It is organised conceptually to reveal relationships between key ideas.

As this study aims to build deeper understanding on the concept of readiness, a qualitative approach was deemed the most appropriate for exploring, describing and explaining the concept, as well as to address the research question: "How can readiness be conceptualised?" (Leavy, 2017, p. 9). Given the scarcity of research on readiness, especially in Brazil, one of the broader goals of social research – exploration – is particularly relevant for this study (Leavy, p. 5).

A literature review involves an examination of existing published works (Cooper et al, 2019, p. 4), making it well-suited to the objectives of this study. Accordingly, most of the data was drawn from bibliographical sources and official documents. The aim is to recommend topics for future research, where appropriate.

This article adopts a systematic review<sup>3</sup> methodology, which seeks to make generalisations, resolve inconsistencies within the literature and pinpoint key issues for further investigation (Cooper et al, 2019, p. 21). As noted by Cooper, Hedges & Valentine, a variable is operationally defined by the procedures used to generate and measure it, which is the approach taken in this work. The goal is to identify robust indicators and explore their causal relationships (Goertz & Mahoney, 2012, p. 206). Systematic reviews often begin with a broad (and sometimes fuzzy) conceptual definition and a few known operations, allowing for the discovery of unexpected insights along the way (Cooper et al, 2019, p. 21).

Data collection began with keyword-based searches to identify relevant sources. The initial search focused on identifying specialised books on Defence Management and related defence issues. Subsequent searches within the sources and academic databases identified in the first phase incorporated the keywords “readiness” and its less common synonym, “preparedness” (Herrera, 2020, p. 2; Galvin, 2015, p. 2).

The search included both Portuguese and English-language works. The emphasis on English sources reflects the fact that a significant portion of the relevant literature is published in Anglo-Saxon countries, particularly the United States, where government organizations have produced an abundance of reports, studies and research documents on the topic.

The term “readiness” is also used in other fields, such as education, physiology and psychology. For instance, “combat readiness” may refer to a soldier’s fitness for combat (including experience, leadership, confidence, etc.) (Shamir, Brainin, Zakay, & Popper, 2020). However, these definitions fall outside the scope of this study. As such, those results were excluded.

To narrow the scope, additional keywords – “defence”, “operational” and “military” – were combined with “readiness” in academic database searches.

The following databases were consulted: Google, Google Scholar, *Periódicos CAPES*, Routledge/Taylor & Francis, RAND Corporation, RUSI, SAGE journals, Cambridge University Press, Oxford University Press, King’s College of London, National War College and the *Universidad Complutense de Madrid*, as well as the Army Digital Library (BDEX), which provided doctrinal manuals and academic papers. Some websites did not yield relevant results. The U.S. Congress Research Service was also used as a database, given its comprehensive reports on readiness, a topic frequently discussed in congressional debates.

Most searches were conducted between December 2023 and January 2024.

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<sup>3</sup> According to Cooper, Hedges and Valentine (2019, p. 6), the terms “research synthesis”, “research review” and “systematic review” are frequently used interchangeably.

### 3. Theoretical and conceptual framework

#### 3.1. Revisiting readiness

In both military defence doctrine and the doctrines of the Brazilian Navy and Army, readiness is recognized as a fundamental principle of war. It is generally defined as the capacity to respond swiftly to any combat situation (EME, 2019, p. 5-4; Brazilian Navy [MB], 2020, p. 36; Ministry of Defence [DM], 2007, p. 40). According to Brazil's military defence doctrine, "readiness is grounded on the forces' organisation, training, doctrine, resources and professionalism" (MD, 2007, p. 40).

The Brazilian Air Force (FAB) adopts a slightly different perspective, defining readiness as "being prepared to employ all capabilities required for aerospace warfare" (Air Command [COMAER], 2020, p. 34).

The doctrine further elaborates on how readiness, as a principle of war, applies to various military functions, including: command, intelligence, planning, operations, logistics and mobilisation (MD, 2007, p. 40).

The Brazilian Army Glossary offers yet another definition, describing readiness as "the ability to deploy a force to execute a mission within a specified timeframe, relying on its own organic resources and capabilities". This should not be confused with another usage of the term found in the same glossary, which aligns more closely with the concept of a state of alert (EME, 2018, p. 234).

Despite some variation in how different branches define readiness, several core ideas are shared across definitions: capabilities, the time required to respond to combat situations, and resources. Before exploring the concept further, it is useful to examine how NATO countries and the U.S. military define the term.

NATO defines readiness as "the state of a force's preparedness expressed as the period of time from an activation order to the moment when the organization is ready to perform a specific task" (NATO Standardisation Office [NSO], 2024). This aligns with NATO's new Force Model, which seeks to ensure "a larger pool of high readiness forces across all military domains" (Barry et al, 2023, p. 8) in response to the growing threat posed by Russia.

The U.S. Department of Defense (DoD, 2021, p. 179) defines readiness as "the ability of military forces to fight and meet the demands of assigned missions". While this is the definition used in DoD congressional reports, there is still significant debate among congressional leaders regarding its interpretation, shaping debates over defence budgeting (Herrera, 2020, p. 2).

Having reviewed the definitions of readiness found in doctrinal documents, this article will now examine how the concept is addressed in the academic literature. The database searches did not yield any relevant scientific studies from Brazilian civilian universities. However, the Army's database includes numerous works on readiness in its narrower sense, most of which were published after 2019, coinciding with the implementation of the Brazilian Army Readiness System (SISPRON).

The most influential international scientific work on readiness is a book by Richard K. Betts (1995), *Military Readiness: concepts, choices, consequences* (O'Hanlon, 2009; Harrison, 2014; Galvin, 2015; Junor, 2017; Rumbaugh, 2017; Herrera, 2020; Brown & Berger, 2021).

Betts (1995) identifies two distinct uses of the term: a broad sense, which refers to the capacity of a nation’s armed forces to carry out the roles assigned to them, and a narrower sense, which denotes the ability of a specific military unit to execute a specific mission, based on factors such as training levels and equipment availability.

In the narrow sense, readiness holds equal importance to other military priorities, such as modernisation (e.g., weapons sophistication) and force structure (e.g., unit size). These two meanings are interconnected (Betts, 1995; Rumbaugh, 2017, p. 1; Junor, 2017, p. 2). Figure 1 illustrates how frequently each definition is employed across different military echelons.

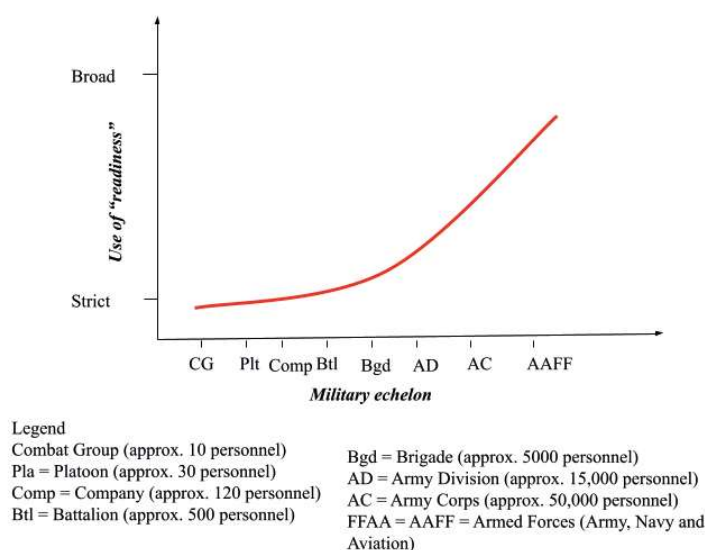


Figure 1 – Use of the term "readiness" by echelon

Military readiness is intrinsically tied to a nation’s military objectives, as outlined in its national defence strategy, and the timeframe available for generating the necessary capabilities to prevail in a conflict. In this sense, a country is considered militarily ready when the time needed to convert its potential capabilities into effective war-fighting capabilities does not exceed the interval between the decision to act and the onset of war (Betts, 1995, p. 27; Harvey Jr, 2013, p. 3). Figures 2 and 3 illustrate the dynamic between Military Readiness, the time required for capability conversion and the moment the decision is made.

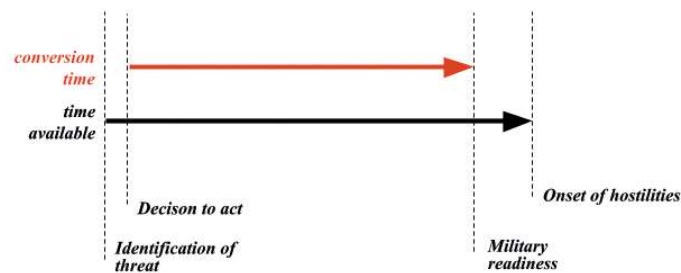


Figure 2 – Military readiness window

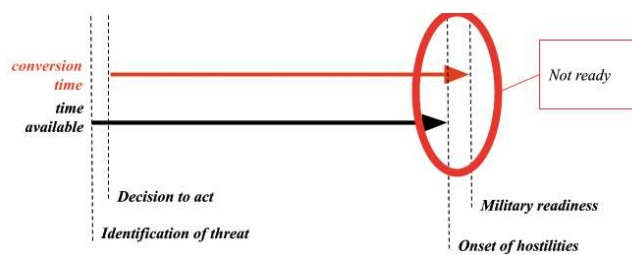


Figure 3 – Ineffective military readiness window

Even if a force is fully trained, equipped, and staffed, it may still be unprepared for the specific demands of the war it faces (Galvin, 2015, p. 15). In 2016, General Mark Milley, then Chief of Staff of the U.S. Army, highlighted this challenge in a speech to the U.S. Senate. Milley noted that while the U.S. Army was well-prepared for counterinsurgency operations in Iraq and Afghanistan, it was not ready for large scale combat against a near peer adversary (Milley, 2016). In other words, at that time, the U.S. military was ready in the narrow sense, but not in the broad sense.

Harrison (2014, p. 40) revisits the readiness debate with a key question: How can readiness be achieved? More specifically, what is the most effective way to allocate resources to meet the readiness demands of a given strategy? While this question falls more under defence management than strategy, it remains critical. To assess the effectiveness of the process, one must examine the relationship between inputs and outputs.

Readiness inputs include: training, people, equipment, supplies and maintenance (Harrison, 2014, p. 42). An imbalance between these inputs and the actual output (readiness) can create a “hollow force”, that is, a force that appears ready, but, in reality, lacks sufficient personnel, equipment, or training. This means that readiness cannot be assessed purely in quantitative terms (e.g., number of inputs or products) – it also demands a qualitative, subjective assessment by commanders based on their understanding of their units’ ability to perform assigned missions (Harrison, 2014, p. 45; Rumbaugh, 2017, p. 10).

Readiness in the narrow sense focuses primarily on inputs, such as the quantity and availability of equipment and personnel, the number of training hours and training quality, and the qualifications of military personnel. In contrast, readiness in the broad sense focuses on threats, that is, on assessing whether a force’s weapons, equipment and training are

appropriate for countering a specific threat. The issue has been addressed by Milley (2016) and further developed by Brown & Berger (2021).

According to Brown & Berger (2021, p. 2), a persistent challenge lies in distinguishing readiness from availability. Recently, readiness has often been reduced to the question of whether a force is available for immediate deployment, rather than its capacity to counter the threats identified in the strategy.

There is an important distinction between short-term readiness and long-term readiness. Some authors refer to the former as readiness and to the latter as modernisation (Harrison, 2014, p. 40; Galvin 2015, p. 2; O'Hanlon, p. 32), possibly mirroring the U.S. defence budget's division into categories such as Operation & Maintenance (short-term) and Procurement (long-term) (Rumbaugh, 2017, p. 4). Modernisation, in this context, is about building capabilities for "tomorrow's readiness". Galvin (2015, p. 2) proposes the term "preparedness" to refer to both short-term and long-term readiness.

In the sense proposed by Galvin (2015), preparedness represents both short-term readiness and long-term readiness. That is, preparedness becomes a synonym for readiness in its broadest sense, which encompasses both "today's readiness" and "tomorrow's readiness". Short-term readiness is associated with the tactical and operational levels. It involves a force's training outcomes and its capacity to deploy to the theatre of operations, the availability of its resources, and its ability to generate combat power. Long term readiness is concerned with developing the necessary capabilities to close the gaps identified in the national defence strategy. This capability building process often involves investments in procurement or research and development, typically as part of a transformation process.

#### 4. Discussion of findings

##### 4.1. Defining readiness

Based on the literature reviewed above, a basic conceptual framework for readiness can be identified. While readiness is most commonly associated with training, it also includes people, equipment, supplies and maintenance (Harrison, 2014, p. 42). This framework is structured around: capabilities, demand, mission and timeframe.

This study proposes the following definition: readiness is *the state in which a military force possesses all the necessary capabilities to deploy within a specified timeframe, execute the activities and tasks for which it was designed and employ its organic resources to accomplish the missions assigned to it (emphasis added)*. The sections that follow will elaborate on this definition.

##### 4.1.1. Readiness as a state

Readiness can be described as a state, a temporary condition that reflects an unstable equilibrium sustained through intensive force generation processes (Junor, 2017, p. 1). In this sense, readiness can fluctuate over time. It can be generated, increased, sustained (Herrera, 2020, p. 16) and, consequently, degraded (Junor, 2017, p. 2).

Readiness represents the optimal condition that must be reached and maintained. While scholars generally agree on this premise, there is ongoing debate regarding the precise

definition of this optimal condition (Betts, 1995, p. 31). It is also important to note that readiness tends to degrade faster than it is generated, that is, generating a force is typically a slower process than its deterioration.

#### **4.1.2. Generated military force**

Readiness reflects the current state of a military force. The size of that force can vary – from a squadron (e.g., a corporal and two soldiers in a land force) to an entire armed forces structure. Naturally, a squadron with three soldiers and an army corps of over 30,000 personnel will have different readiness requirements.

However, the readiness of a larger unit depends on the readiness of its subordinate units. An army corps is only ready if its units are ready. This does not imply that a single unit lacking readiness automatically compromises the readiness of the entire corps. However, if the problem is not addressed, it can affect other units and ultimately jeopardise the readiness of the whole corps.

On the other hand, a unit's readiness is more than the sum of the readiness levels of its subordinate units. The way in which military units are integrated into a larger force influences the readiness of the force as a whole. In other words, the whole is greater than the sum of the parts. In larger units (such as an army corps), readiness is assessed in relation to a specific adversary, that is, in the broad sense. In contrast, in smaller units (such as a squadron) readiness is assessed in terms of preparation time, equipment, personnel and training, that is, in the narrow sense.

#### **4.1.3. Required capabilities or resources**

A generated military force must possess the capabilities required to fulfil its core function. A capability refers to the force's ability to execute its assigned mission. This ability is determined by a combination of factors: doctrine, organisation, personnel, education, equipment, training and infrastructure, collectively known by the acronym DOPEMAI (EME, 2019, p. 3-2). The following section will explore each of these factors in greater detail.

##### **4.1.3.1. Doctrine**

Doctrine is the first factor, from which all other factors derive. It encompasses campaign manuals and doctrinal publications, which outline a military force's operational capabilities, activities and deployment parameters. These manuals establish a doctrinal framework for the force's operational capabilities, its activities and the tasks that it must perform (EME, 2019, p. 1-1).

Doctrine integrates tactics, techniques and procedures, standardising how operations are conducted. As such, it directly shapes force organization, defining hierarchies, roles and operational protocols. Doctrine enables readiness – without effective doctrine, a military force may be unable to effectively carry out its mission (Andrade, Santos & Correia, 2019, p. 3).

Another important aspect is ensuring that military forces are employed in accordance with the activities and tasks for which they were designed. A force is considered ready when it can execute the tasks assigned to it by doctrine. The doctrinal procedures of a mechanised

cavalry regiment differ significantly from those of a construction engineering battalion, and these differences are reflected across all factors that contribute to their operational capability. If an artillery unit is tasked with performing an infantry role, its readiness level will decline because its organisation and operational procedures were not designed for such tasks.

A military force's readiness tends to improve when its doctrine is well-established and consistently applied.

#### 4.1.3.2. Organisation

Organisation refers to a military force's organisational structure. This structure is visually represented by "a diagram that outlines the chain of command and the elements that constitute it" (EME, 2015, Art. 12). It also reflects the force's operational design. A military force must have a clearly defined organisational structure. For example, an infantry battalion is composed of three rifle companies and a command and support company. A force's readiness improves when its organisational structure is consolidated.

#### 4.1.3.3. Personnel

The personnel factor encompasses the preparation of individual soldiers and the number of personnel assigned to a unit (qualitative and quantitative aspects, respectively). That is, it concerns both soldiers' physical fitness and mental resilience, and whether all positions are filled according to the staff structure (SS). A unit's readiness increases when all roles are occupied by qualified personnel. Additionally, the ability to recruit personnel to generate the force also contributes to its readiness (EME, 2015; 2019, p. 3-4).

#### 4.1.3.4. Education

Education refers to the training and qualifications of military personnel. Soldiers must be able to apply military doctrine and operate assigned weapons and equipment. The higher the level of training and education, the greater its readiness levels (EME, 2019, p. 3-3).

#### 4.1.3.5. Equipment

The equipment factor encompasses not only the quantity of equipment allocated to a military force but also the availability and suitability of that equipment for its intended mission. The quantity is outlined in the force's Equipment Allocation Table (QDM) (EME, 2015; 2019, p. 3-3). However, simply possessing equipment does not automatically increase readiness; the equipment must also be available. This is ensured through maintenance, which may be preventive, predictive or corrective.

Moreover, equipment must be appropriate for the mission (Betts, 1995, pp. 37). Using inadequate defence products can reduce overall readiness. For example, if a military force has to use anti-personnel ammunition against an armoured force, its combat effectiveness will be compromised.

Another challenge is obsolescence (Betts, 1995, p. 69). Equipment may become outdated due to prolonged use and wear, but obsolescence can also result from technological

advancements. If an enemy's weapons systems are superior (in range or capabilities), a force may not be able to use its own equipment (or it may be functional, but ineffective)

When a military force is equipped with a defence product (PRODE)<sup>4</sup> that is both sufficient and mission-appropriate, that force's readiness increases, while obsolete equipment diminishes it.

#### 4.1.3.6. Training

Training is another critical component of readiness. It involves preparation activities that follow specific programmes and cycles, including simulated combat scenarios (EME, 2019, p. 3-3). By replicating real-world conditions, training helps forces anticipate challenges and enhance mission readiness. Unlike education, training is usually directed at sub-units, units and large formations, that is, it is typically a collective activity.

There is an optimal level of training. Insufficient training prevents a force from achieving the required readiness standards. Conversely, excessive training can degrade readiness by causing equipment wear and tear and personnel fatigue (Betts, 1995, p. 71). It may also lead to declining morale, especially if units are kept in a state of alert for extended periods.

#### 4.1.3.7. Infrastructure

Infrastructure refers to "all structural elements (facilities, equipment and services) that support the preparation and deployment of a military force" (EME, 2019, p. 3-4). This includes barracks, maintenance equipment and simulation systems, as well as service providers and the defence industrial base. In this sense, military readiness extends beyond the armed forces and intersects with national logistics (COTER, 2022a, p. 2-2), and especially with the defence economy.

Infrastructure supports the training and deployment of military forces (Andrade, Santos & Correia, 2019, p. 10). For example, an aviation unit requires aerodromes to operate effectively. Without this infrastructure, the unit's readiness to deploy may be compromised. The availability of support infrastructure enhances a force's readiness.

#### 4.1.4. Timely deployment

Deployment represents the culmination of a military force's cycle and marks the beginning of a new operational phase. It is the moment for which the force has been preparing, when it is moved to a designated location and initiates operations (EME, 2018, p. 85). The force must deploy to the right place, at the right time.

While readiness is often associated with immediate deployment, this is not a requirement for most military forces. The deployment timeline includes the entire process of generating combat power (mobilisation, achieving operational readiness and executing deployment). A

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<sup>4</sup> A Defence Product refers to: "Any good, service, work or information – including weapons, ammunition, transportation and communication systems, uniforms and equipment for individual and collective use – intended for defence operations, excluding items designated for administrative use" (Law No. 12.598/2012, Art. 2).

force does not always need to arrive immediately; in many cases, the area of operations must first be secured and prepared.

Armies typically maintain certain units on standby while others deploy as they reach operational readiness and as their capabilities are transferred from headquarters to the theatre of operations. The speed of deployment depends on the type of force: light infantry units generally deploy more quickly than armoured forces.

Deployment must occur within the window between the decision to deploy and the expected onset of hostilities. The greater an army's ability to generate combat power within that interval, the higher its overall readiness.

#### **4.1.5. Use according to purpose**

The doctrinal foundation of a military force is defined by the activities and tasks assigned to it, which answer the fundamental question "readiness for what?" (EME, 2015, Art. 9; COTER, 2016). Military units are typically specialised, especially in the case of smaller units. For example, a cavalry or infantry force prepared for direct combat would not be ready to execute engineering activities and tasks.

As such, a force may complete its training cycle, possess all required equipment and be fully staffed, yet still lack readiness for a mission that falls outside its intended purpose. Inputs are less important to this aspect of readiness than whether the force is being employed for its designed purpose.

#### **4.1.6 Availability of organic resources**

Another condition for achieving military readiness is sustainability (Betts, 1995, p. 37). A military force must be capable to execute its assigned missions using its own organic resources. A unit may be fully trained, have all necessary equipment, be capable of deploying within the required timeframe, yet still lack sufficient ammunition and/or fuel to sustain operations.

Organic resources, or organic allocation, refer to the supplies a force carries into combat. A force's organic resources are determined by both quantitative and qualitative factors. They also depend on the capabilities of friendly forces and the capabilities of the enemy (EME, 2015; Logistics Command, 2020). Readiness must be sustainable throughout the duration of combat. This is achieved through logistical support. As Betts (1995, p. 37) emphasises, a ready force must be sustainable in combat. A force that performs exceptionally well on the first day of combat but collapses on the second cannot be considered ready.

This principle also applies at the strategic level, where it concerns a country's resources, including raw materials, national reserves, mobilisation capabilities and production capacity. The more autonomous a country is in supplying its armed forces during hostilities, the higher its overall readiness. A force deployed with insufficient organic resources is not truly ready.

The missions assigned to a military force should not involve activities and tasks it was not designed to perform. Even if a force can perform tasks it was not trained for, it will do so in suboptimal conditions. Using a force for tasks outside its intended role compromises its readiness.

## 4.2. Readiness categories

Betts (1995, pp. 40-42) identifies three distinct stages of readiness: operational (operative) readiness, structural readiness and mobilisation readiness. Operational readiness focuses on the level of preparation of available forces, ensuring they are ready for rapid deployment once their training cycle is completed. Structural readiness refers to the time required to expand a force to the necessary size to counter a specific threat. Operational readiness implies a degree of structural readiness. Mobilisation readiness involves the transition of a civilian economy into a wartime economy.

Operational readiness is primarily associated with the tactical level. Structural readiness corresponds to the operational level and involves the generation of combat power, including force concentration and strategic deployments (COTER, 2020, p. H-5). Mobilisation readiness refers to the mobilisation of national capacity for war, representing the strategic and political levels (MD, 2020, pp. 22-24).

The EB's strategic concept refines readiness into three components, or strands: operational, logistical and technological readiness. Operational readiness refers to the availability of military forces that can be deployed when and where needed. Logistical readiness addresses the ability to meet the demands of the land army, both in peacetime and during operations. Technological readiness refers to the maturity of critical technologies and to whether they can be acquired within a feasible timeframe (EME, 2023b, p. 1-2). Even though the word "strand" suggests separate pathways, the three strands are interdependent.

When a military system and/or equipment (SMEM) is acquired through research and development, the relationship between technological, logistical and operational readiness becomes particularly clear. First, the users, that is, the soldiers engaged at the tactical level of combat, define the operational needs of the SMEM based on foreseeable combat scenarios. The next phase is the design of the system, which initiates its life cycle (C Ex, 2024, Art. 37), beginning at technology readiness level (TRL) 1 and progressing until the prototype is evaluated, approved, and deemed ready for full-scale production (TRL 9) (França Júnior; Galdino, 2022, pp. 51-52).

Once the defence system is acquired, the procurement and production phase begins. This phase primarily involves logistical activities that directly impact logistical readiness. The introduction of a new SMEM requires training personnel to use the new equipment, which involves new techniques, tactics, and procedures, and may also require adjustments to operational protocols (Barros, 2022, p. 244), all of which influence operational readiness.

As the concepts described above suggest, these three dimensions of readiness are interdependent. According to both Betts (1995) and the EB (EME, 2023b), operational readiness is driven by requirements set by logistical and technological readiness. Conversely, logistical and technological readiness exist to fulfil those operational requirements. However, because they depend on resource availability, they also shape operational readiness, either enhancing or constraining it. When resources are scarce, as is often the case, defence strategists and planners must make choices (trade-offs) to ensure overall readiness.

### 4.3. Measuring readiness

Operational readiness is generated through quantifiable inputs, such as: training hours, the percentage of available equipment, personnel numbers and qualifications, and supply levels. The U.S. Department of Defense (DoD) employs the Status of Resources and Training System (SORTS) to assess readiness both individually and collectively. The system assesses: personnel, including the number of staff and their qualifications; equipment availability, that is, whether the unit has the necessary equipment or can acquire it within 72 hours; equipment readiness, that is, whether the equipment is fully mission capable; and training levels (Herrera, 2020, p. 43). The SORTS also includes a subjective assessment by force commanders, who may override certain quantitative metrics if they deem it necessary (Rumbaugh, 2017, p. 10).

In addition to the SORTS, the DoD uses the Defense Readiness Reporting System (DRRS), which relies on a subjective evaluation of a unit's ability to perform the missions for which it was designed and those it may be assigned under war plans (Rumbaugh, 2017, p. 10).

The United Nations (UN) Department of Peace Operations (DPO) employs the Peacekeeping Capability Readiness System (PCRS), which categorizes readiness into four levels, from Level 1, in which the force is not yet ready for deployment, to the Rapid Deployment Level, in which it must be capable of deploying within 60 days. The PCRS includes Operational Readiness Inspections during peacekeeping missions to assess the status of equipment and the self sustainability of deployed troops (United Nations General Assembly [UNGA], 2020, p. 25).

Brazil's SISPRON includes a certification process in which a military force, after completing a training cycle, maintains rapid deployment status for a specified period. This certification is based on multiple factors, including the unit's level of training, staff planning and the execution of techniques, tactics and procedures. The certification process is finalised with an assessment conducted at the Army's training centres.

Readiness is most easily assessed at the lowest level (Betts, 1995, p. 89; Junor, 2017, p. 3). However, measuring operational readiness requires assessing the outcome of a force generation process that begins with the defence industrial base (Junor, 2017, p. 2). The metrics traditionally used at unit level do not provide sufficient information for strategic level management (Junor, 2017, p. 6). Technological readiness is evaluated using the Technology Readiness Level Scale (TRL) mentioned above.

At the tactical level, particularly for combat units (infantry and cavalry), logistical readiness is a component of operational readiness when its assessment metrics include the availability of organic resources, the status of equipment and the preparation of logistical support teams (as seen in systems like the DoD's SORTS).

However, when it comes to measuring the readiness of logistics units and processes at the operational level (combat power generation) and strategic level (mobilisation), there remains a gap in scientific knowledge, which presents opportunities for further research.

Readiness cannot be measured linearly. In other words, increasing inputs does not guarantee a more prepared force. Several scholars have identified a nonlinear relationship between a force's training (inputs) and performance (outcomes). While training influences performance, a direct correlation between the two has yet to be clearly established (Harrison, 2014, pp. 47-48).

This shows that readiness is a complex system influenced by a wide range of variables, often producing random or unpredictable outcomes. The principles governing readiness depend on evolving technologies, operational concepts, threats and the capabilities of military forces. The interdependencies among these factors are difficult to identify. As a result, developing accurate mathematical models for readiness is challenging. Different types of military units require distinct readiness models (Harrison, 2014, pp. 54-59; Betts, 1995, p. 32).

#### **4.4. Readiness trade offs**

When resources are limited, decisions about readiness inevitably involve trade offs, which often result in tensions between competing priorities. Several of those tensions are outlined below.

The most significant is what Betts (p. 30,42) refers to as the “big trade off” between “today’s readiness” and “tomorrow’s readiness”, essentially, a choice between consumption and investment (O’Hanlon, 2009, p. 32; Galvin, 2015, p. 2). This tension revolves around the questions “readiness for what?” and “readiness for when?” It reflects a competition for resources between maintaining current readiness and investing in modernisation.

While maintenance funding tends to cover ongoing costs and modernisation requires investment, both compete within the same budget constraints. A military force undergoing modernisation is temporarily less ready for immediate deployment, and a force that is not modernised risks becoming obsolete.

One of the challenges in modernisation is timing. Ideally, new SMEM should be acquired before the existing ones become outdated. This decision is usually made during the third decision meeting in the equipment’s life cycle management process (C Ex, 2024, Art. 41).

A choice must be made between investing in quantity (mass) or quality (efficiency). Is it better to maintain a smaller force, fully equipped and ready for combat, but which may be too limited in size to secure victory, or build a larger force with fewer capabilities, which offers greater combat power but requires more time to become operational? In the first scenario, maintenance costs are usually higher; whereas in the second, the time required to generate combat power may become a critical limitation (Betts, 1995, p. 47).

Deciding how resources are allocated also involves trade offs: whether to purchase additional armaments or invest more in supplies and maintenance for existing systems. There should be a balanced investment between armament and supplies.

Overinvesting in armaments may result in weapons that cannot be effectively used in combat. Conversely, an excessive focus on supplies and maintenance may lead to a force with insufficient firepower to counter threats. Achieving the optimal balance between combat forces and support forces, especially logistical units, presents a critical decision (Betts, 1995, p. 10,27).

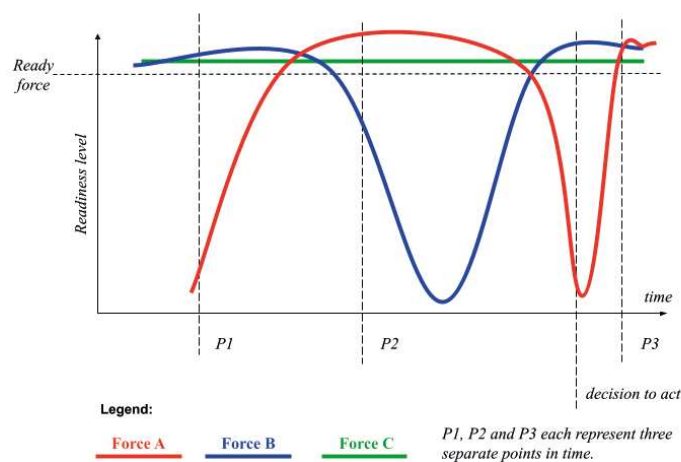
Another decision involves determining the optimal level of readiness – specifically, how much training, and what type, is required for a force to achieve and sustain peak readiness without degrading equipment, personnel, or supplies. Realistic military training exercises can lead to casualties, equipment damage and declining morale.

Ready forces are typically kept in a state of high alert, which raises the question of how long troops can remain in that state. Prolonged periods of alert required for rapid deployment may lead to fatigue and stress, ultimately reducing readiness. To manage this, one option is rotating those units (or at least their personnel).

However, rotating staff requires a new training and adaptation cycle, temporarily decreasing readiness. Maintaining a roster of forces also implies having at least one unit in training for every ready unit. As a result, each armed force must determine the force size needed to maintain a desired number of units ready for deployment. Keeping one unit in full readiness implies that another is training to take its place.

Betts (1995, p. 50) argues that a calculated level of reduced readiness can be advantageous, as costs can be lowered by focusing more on structural readiness or mobilisation, provided that the time required to convert potential capabilities into combat power is closely monitored and managed. Typically, armed forces deploy units at different stages of training.

Some forces are designed for rapid deployment, while others are tasked with broader roles, achieving full readiness after a combat power generation phase. This approach is exemplified in models like the New NATO Force Model and the Brazilian Army's strategic concept (Barry et al, 2023; C Ex, 2023, p. 2-2). Junor (2017, p. 18) refers to this approach as "layered readiness". Figure 4 provides an example of a military force's readiness cycle.



**Figure 4 – Readiness cycle of a military force**

Another decision relates to the question “readiness for what?” Countries like Brazil, whose armed forces rarely participate in war operations, but are frequently deployed in Stabilisation Operations, must choose which type of readiness best aligns with their primary roles. There is often a competition for time and resources between preparation for war and preparation for Stabilisation Operations (COTER, 2025, p. 4-16). Therefore, it is essential to ensure that the preparation for non-combat operations does not interfere with the armed forces’ primary mission – national defence.

The previous sections outlined a series of trade offs that decision makers must confront, where prioritising one option means sacrificing another. These decisions can have long-term implications for the structure of the armed forces. Therefore, policymakers must rely on studies and expert assessments. Some of these decisions have a political dimension, as they reflect the will of the population, expressed through elected representatives.

The discussions addressed here have focused on issues specific to the armed forces. However, they also highlight a broader national dilemma, the Guns vs. Butter trade off (Becker, 2023), which concerns the extent to which a society is willing to allocate resources to defence at the expense of other public services. This balance is influenced by the perceived level of threat.

## **5. Conclusions**

This article examined the concept of readiness through a review of existing literature. The research revealed that readiness has been extensively debated, particularly in the United States, where it often features in U.S. Congressional discussions. The most influential author on the subject is Richard K. Betts. More recently, other scholars have published works on the topic, including Harrison (2014), Galvin (2015), Junor (2017) and Brown & Berger (2021).

The chosen methodology was a qualitative approach and a systematic literature review supported by content analysis to interpret the data. Searches were conducted on specialised websites, focusing on articles and reports, using the keyword “readiness” combined with adjectives such as “military”, “operational” and “defence”. Following an initial screening to identify the most relevant publications, selected works were analysed based on their summaries and key findings. From this analysis, interpretations were derived and a working concept of readiness was proposed.

The primary contribution of this study is a proposed definition of readiness grounded in the literature. Additionally, the article presents the key characteristics of readiness, along with relevant discussions and definitions.

Military readiness is influenced by a series of variables: force size, doctrine, organisation, training, equipment, education, personnel, infrastructure, time and organic resources.

Readiness can be assessed in the narrow sense, which refers to a military force’s ability to execute missions based on its current level of training and available equipment. However, it can also be examined from a broader perspective, by assessing whether an armed force is prepared to counter threats to its nation.

Readiness is also associated with time: specifically, the time required to convert a country’s potential military capacity into the operational capacity needed to prevail in a conflict. This conversion time must be shorter than the interval between the decision to engage and the onset of hostilities.

The primary inputs driving readiness are: training, personnel, equipment, supplies and maintenance. Readiness can be quantified using indicators and metrics. However, it remains a complex system and simple cause and effect mathematical models are not always reliable. Therefore, quantitative measurements must be supplemented by qualitative assessments, including subjective evaluations by commanders.

Readiness represents an unstable equilibrium, where the goal is to achieve an optimal balance. Maintaining a ready military force requires ongoing maintenance costs to prevent degradation. One of the most critical challenges for decision makers is defining this optimal level of readiness.

A military force's readiness increases as it acquires key capabilities (doctrine, organisation, personnel, education, equipment, training and infrastructure). Readiness typically encompasses technological readiness, logistical readiness and operational readiness. These three strands of readiness interact dynamically.

Studies on readiness seek to address three fundamental questions: Readiness for what? Readiness of what? Readiness for when? The answers to these questions shape national defence policies and often require a reflection over trade offs, such as: the trade off between "today's readiness" and "tomorrow's readiness", between investing in "mass" or in "quality" (efficiency), and between investing in acquiring new armament or investing on supplies and maintaining existing equipment.

Another critical trade off concerns the original purpose of the armed forces: the answer to the question "readiness for what?" The original purpose of the military is war. While their primary role is to prepare for and conduct war, military forces are frequently tasked with non-combat roles (particularly in countries not constantly on high alert for conflict), which can compromise their readiness levels.

The questions "readiness for what?", "readiness for when?" and "readiness of what?", along with the trade offs discussed here, offer rich avenues for future studies, especially if applied to specific cases.

For example, it would be interesting to explore new ways of measuring readiness and decision support tools for managing trade offs, or to identify the minimum capabilities required to generate effective combat power.

The discussion on military readiness is linked to national defence policy, strategy and planning. The primary outcome of this debate is Force Design. Readiness remains a relevant issue for any nation that must manage its defence forces. Hopefully, this article can serve as a foundation for a deeper exploration of this topic.

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