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Organizational Structure and Operational Protocols of Bomb Squads in Brazilian Military Police: A Comparative Analysis with Emphasis on the MARTE Group of the PMAM (Military Police of Amazonas)

Organizational Structure And Operational Protocols Of Bomb Squads In Brazilian Military Police Forces: A Comparative Analysis With Emphasis On The Marte Group Of PMAM

*Organizational Structure and Operational Protocols of Antiexplosive Shields
Military Polices In Brazil: A Comparative Analysis With Emphasis In The Marte De La PMAM Group*

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Summary

This study analyzes the organizational structure and operational protocols of bomb squads within the Military Police of Brazil, with an emphasis on the Explosive Ordnance Disposal Group (MARTE) of the Amazonas Military Police. The research problem investigates the tension between the need for rapid operational response and the bureaucratic obstacles to equipment maintenance in different management models. Using qualitative, bibliographic, and documentary methodology, based on Bardin's Content Analysis, organizational models of administrative subordination and independence were compared. The results demonstrated that the administrative autonomy of MARTE ensures greater speed in decision-making processes and in Amazonian logistics, although it does not confer budgetary autonomy. It is concluded that the independent model, by reducing hierarchical levels, presents itself as a promising paradigm for operational efficiency and the preservation of police life.

Keywords: Bomb Squad. Military Police. Asset Management. Public Security.

Abstract

This study analyzes the organizational structure and operational protocols of Military Police bomb squads in Brazil, with emphasis on the Explosive Artifact Handling Group (MARTE) of the Amazonas Military Police. The research problem investigates the tension between the need for prompt operational response and the bureaucratic obstacles regarding equipment maintenance across different management models. Using a qualitative, bibliographic, and documentary methodology based on Bardin's Content Analysis, organizational models of subordination and administrative

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independence were compared. Results showed that MARTE's administrative autonomy ensures greater speed in decision-making processes and Amazonian logistics, although it does not grant budgetary autonomy. It is concluded that the independent model, by reducing hierarchical levels, presents itself as a promising paradigm for operational efficiency and police life preservation.

Keywords: Bomb Squads. Military Police. AssetManagement. Public Security.

Summary

This study analyzes the organizational structure and operational protocols of anti-bomb shields of the Military Police in Brazil, with emphasis on the Explosive Artefacts Management Group (MARTE) of the Military Police of Amazonas. The investigation problem asks about the tension between the need for a prompt operational response and bureaucratic work for the maintenance of equipment in different management models. Using a qualitative, bibliographic and documentary methodology, based on Bardin's Content Analysis, organizational models of subordination and administrative independence will be compared. The results demonstrated that MARTE's administrative autonomy guarantees greater speed in decision-making processes and Amazonian logistics, even though it does not rely on presupposed autonomy. It is concluded that the independent model, by reducing hierarchical levels, presents itself as a promising paradigm for operational efficiency and the preservation of police life.

Keywords: Anti-bomb Squadrons. Military Police. Asset Management. Public Security.

INTRODUCTION

The deployment of bomb squads within public security forces represents one of the more critical and technically demanding specializations in the contemporary police field. A The inherent complexity of handling energy materials, coupled with the unpredictability of the scenarios. operational, it requires technical proficiency that transcends conventional policing, demanding cognitive and technological apparatus capable of neutralizing invisible threats (Feitoza; Alves Jr., 2020). In this context, the doctrine of *Explosive Ordnance Disposal* (EOD) requires constant updating. technological and procedural, requiring unwavering emotional stability from the operator in the face of Psychological pressure where the mistake results in irreversible consequences (Leão, 2019).

In Brazil, there has been a significant increase in incidents involving artifacts. explosives, fueled by the phenomenon of the New Cangaço and territorial disputes between factions criminal. Between 2013 and 2017, Brazil recorded 4,571 criminal incidents involving explosives. making an average of 900 occurrences annually, of which approximately 40% were related to attacks. against the financial system (Feitoza; Alves Jr., 2020; Bó; Silveira; Pereira, 2020). Although attacks on Although the number of ATMs has decreased quantitatively (92.4% between 2012-2022), there has been an increase qualitative in the sophistication of techniques against armored cars and cash depots, demanding a response. highly complex policing (Mendes *et al.*, 2024a).

Thus emerges the central legal-administrative problem of this study: the tension between the The Principle of Efficiency (Article 37 of the 1988 Brazilian Constitution), which demands a swift response in crises, and state bureaucracy. maintenance of high-tech assets. The effectiveness of the bomb disposal operator depends intrinsically linked to the availability of robots and protective suits; however, data indicate that the



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Most state units have deficiencies in the preventive maintenance of these assets (Sales;

Januário, 2025). Given this, the question arises: to what extent does the administrative autonomy of the model

The organizational structure adopted by the MARTE Group of the Amazonas Military Police solves the

A deadlock between bureaucratic rigidity and operational needs?

The relevance of this study is justified by the need to discuss management models that

They guarantee not only operational efficiency, but also the survival of the specialized police officer.

The overall objective is to analyze the effectiveness of the organizational models of bomb squads.

in Brazil. The specific objectives are: (1) to describe comparatively the hierarchical structures

of the state units, identifying decision-making bottlenecks; (2) examine the correlation between models

management and availability of critical equipment; and (3) identify how independence

MARTE's administrative structure facilitates logistics in the Amazonian theater of operations.

LITERATURE REVIEW

The theoretical foundation of this study is structured around four axes: the international doctrine of

EOD, the criminological phenomenon of the New Cangaço, the Brazilian legal framework, and its complexity.

technical aspects of bomb disposal.

International Doctrine of EOD

The bomb squad is a unique specialized police unit, composed of

Trained professionals to identify, assess, neutralize, and safely dispose of artifacts.

explosives (Souza, 2018). Operational standardization follows international guidelines, such as

advocated by the United States Army. The mnemonic protocol of the "5 C's" stands as

The backbone of the initial response: *Confirm* (confirm the threat), *Clear* (isolate the area), *Cordon*

(establish perimeter), *Control* (control access) and *Check* (verify adjacent areas) (Columbus,

2025; United States, 2019).

Although of foreign military origin, this protocol was adapted to the peculiarities

Brazilian women. According to Souza (2018), the immediate application of containment and isolation measures by

The first police team is crucial for crisis management. Mendes *et al.* (2024b)

They add that the technical delimitation of the safety zones (hot, warm, and cold) must follow

Strict distance parameters, protecting the integrity of state agents.

The Phenomenon of the New Cangaço and the Demand for Specialization

The contemporary Brazilian public security landscape is marked by a qualitative shift in



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Violent crime. The phenomenon known as "New Cangaço" represents a tactical evolution.

substantial in actions against property, characterized by the massive use of effective resources.

criminal, heavy weaponry and the use of highly destructive explosives for

Breaking through physical barriers and overcoming social intimidation (Borges, 2019; Aquino, 2020).

The strategic use of explosives goes beyond technical breaching, serving as instrument of deterrence and encirclement. According to Junior (2023), the *modus operandi* includes the isolation of

local police contingents through detonations in infrastructure and access roads, defining the

The transition from common crime to organized extreme violence. Criminal organizations.

They migrated to higher-value targets, requiring larger explosive charges and more efficient detonations.

complex, which demands greater specialization from the security forces.

Brazilian Legal Framework

The national legal framework is governed by the Federal Constitution of 1988, which in its article 144

It defines public security as a duty of the State and, in article 37, imposes the Principle of Efficiency on it.

Public administration. Police management cannot be merely bureaucratic; it must be purposeful.

guaranteeing the necessary means for the safe execution of the core activity.

Specific laws such as the Disarmament Statute (Law 10.826/2003) and the Anti-Terrorism Law (Law 13.260/2016) defines the use of explosives rigorously, requiring a specialized state response.

Decree No. 10,030/2019, which regulates controlled products, complements the legal framework to

Establish traceability and control standards (Brazil, 2019). Maintaining capacity

The operational capacity of bomb squads is therefore a legal imperative.

Technical-Technological Complexity and the Human-Machine Binomial

Explosive Ordnance Disposal (EOD) activity goes beyond the application of techniques.

Mechanical factors, involving a complex interaction of physical, chemical, and psychological variables. Pressure

The pressure exerted on the bomb disposal technician is unique: operational error invariably results in

fatal and irreversible consequences, leaving no room for empirical learning through failure.

(Leão, 2019).

Technical doctrine has evolved to minimize human exposure, prioritizing robotic vectors.

and remote diagnostic tools. In accordance with international guidelines, the philosophy of "access

"Remote" is mandatory whenever the tactical situation allows, safeguarding human capital as

most valuable asset (Australia, 2022). The explosive ordnance disposal suit (EOD suit) and the robot

Interventions constitute the "gold standard" of operational safety (Mano, 2020).

Robotics applied to bomb disposal has reached levels of sophistication that allow



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Millimetric manipulation of objects. Models such as THEODOR (American) and TELEMEX (German).

They have manipulator arms with six degrees of freedom, high-definition cameras, and capabilities.

to traverse rugged terrain (Santos, 2021). However, acquisition is only the first step of

The logistics cycle is complex, and the sustainability of the robotic fleet is often overlooked.

due to state bureaucracy in bidding processes (Sales; Januário, 2025).

METHODOLOGY

This research is characterized as qualitative, exploratory, and descriptive.

based on bibliographic review and document analysis according to Gil (2008) and Silveira and Córdova (2009). The design is structured around the comparative analysis of organizational models.

of bomb squads, through triangulation of primary sources (institutional documentation)

and secondary sources (specialized literature).

The qualitative approach is justified by the need to understand formal structures.

decision-making processes and administrative bottlenecks that characterize each organizational model.

(Minayo, 2010). According to Silveira and Córdova (2009), this approach allows us to uncover meanings.

underlying institutional data, proving suitable for analyzing tensions between

The Principle of Efficiency and Bureaucratic Stress in Maintaining Technological Investments

specialized.

The documentary *corpus* includes institutional documents from state Military Police forces.

Brazilian women in the period 2014-2025, a strategic focus for capturing transformations resulting from

New Cangaço. The documents include Internal Regulations, Standard Operating Procedures,

Command Bulletins and Technical Reports. Additionally, protocols were consulted.

International EOD guidelines from the National Institute of Justice (NIJ) and Australian defence guidelines.

(2022), allowing comparison between international standards and Brazilian practice.

For data processing, Bardin's (2011) Content Analysis was used, structured in

Preliminary analysis, exploration of the material, and treatment of the results through thematic categorization.

The limitations of the design are acknowledged: as bibliographic and documentary research, it was not

It is possible to gather direct insights from operators through field techniques. The difficulty of

Access to classified data restricted the depth of analysis into specific logistical aspects.

RESULTS AND DISCUSSION

Document analysis revealed three predominant models of institutional insertion of

bomb squads within Brazilian public security forces, each with its own implications.

distinct for operational efficiency and asset management.



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Organizational Models Identified

The first model, which is hegemonic in large centers such as São Paulo and the Federal District, It is characterized by direct subordination to Special Operations Battalions (BOPE). Although Promote tactical integration; this configuration can generate competition for resources within the same organization. The extensive hierarchical chain also tends to compromise the effectiveness of asset management. specialized (Buss, 2024).

The second model, observed in Rio de Janeiro, assigns primary responsibility for customer service. explosive incidents are the responsibility of the Civil Police. Recently consolidated by Law No. 11.003/2025, the The Bomb Squad operates under the command of the Special Resources Coordination Unit (CORE). The arrangement prioritizes investigative bias and the preservation of the chain of custody of evidence, integrating Tactical response to the function of judicial police.

The third model, identified exclusively in Amazonas, constitutes an operational unit. independent. The MARTE Group stands out for being a subordinate anti-bomb unit. directly to the Specialized Policing Command (CPE), without the intermediation of battalions. This unique configuration provides greater operational autonomy and speed in processing. administrative processes (Sales; Januário, 2024; Amazonas, 2024).

Comparative Analysis of Hierarchical Structures

Structural analysis reveals significant differences in hierarchical architectures. In the model Subordinate to BOPE, the chain of command is configured in multiple layers: Secretariat of Public Security ÿ Commander-General ÿ Special Operations Command ÿ BOPE ÿ Anti-bomb Squad, totaling 4-5 hierarchical levels of approval (Zanini, 2015; Carvalho et al., 2017; Lucca, 2018).

In contrast, the independent MARTE model presents a simplified structure: Specialized Policing Command ÿ MARTE Group (Amazonas, 2024). This reduction The different levels of decision-making have substantial operational implications, as each hierarchical layer The additional measure introduces administrative limitations that slow down decision-making. The MARTE commander, in direct communication with the CPE, obtains a differential that translates into greater... Agility in logistical response.

Impact on Equipment Availability and Operational Risk

The practical consequences of hierarchical differences manifest themselves in the availability of Critical equipment, and consequently, a risk to the operator. As per the operation report of In 2024 in Brasília, the presence of EOD robots was described as "a fundamental factor for saving lives."



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"Lives" during an incident in Praça dos Três Poderes (CNN Brasil, 2024). This example illustrates the

A principle enshrined in international doctrine: the human operator should only approach physically.

of artifacts if all technological options fail (Leão, 2019; Australia, 2022).

When robots are unavailable due to lack of maintenance – a direct consequence of slowness.

Due to bureaucratic processes in parts acquisition, operators are compelled to adopt approaches...

Manuals that exponentially increase the risk of fatal accidents. Research by Sales and Januário.

(2025) identified that most state units do not fully meet the requirements of

Preventive maintenance is a problem, and an even larger proportion shows flaws in predictive maintenance. A

Hierarchical comparison, therefore, is not merely administrative: it represents a tangible difference.

between preservation and exposure to lethal risk.

The MARTE Group as a Reference Model

The MARTE Group has established itself as the only independent unit focused on the management of

explosives between Brazilian state military corporations, reflecting institutional focus and

technical expertise developed since its founding in 2009 (Amazonas, 2024). The challenge is

amplified by geography: the group operates throughout the Amazonian territory – the largest unit

federal territory of the country, with 1,559,146 km² –, facing logistical challenges that often require

complex river and air transport.

It should be noted, however, that MARTE's operational autonomy does not extend to the sphere.

budgetary. The Military Police of Amazonas operates under a predominantly centralized model.

for purchases and distribution of resources, in accordance with Law No. 3.514/2010 and Resolution No. 013/2010

(Amazonas, 2010a, 2010b). The specialized units participate in a centrally managed flow.

by the Logistics Support Directorate and the Finance Directorate. This distinction between operational autonomy

Budgetary dependence is a relevant finding of this research.

Improvement Prospects

The resurgence of incidents involving explosive devices is related to...

Tactical improvement of criminal organizations, enhanced by porous oversight.

of controlled products and the illicit flow originating from border regions (Aquino, 2020; Junior,

2023). Prospects for improvement point to a pressing need to create a center.

national training program in bomb disposal operations, aiming for doctrinal self-sufficiency and standardization.

of protocols at the federal level and institutionalization of interstate cooperation mechanisms,

as advocated by Leão (2019).



FINAL CONSIDERATIONS

This study identified three predominant models of institutional integration of squads.

Anti-bomb measures in Brazilian Military Police forces: the model of subordination to Operations Battalions.

Specialized, dominant in large urban centers; the model linked to the Civil Police, observed in Rio de Janeiro.

January; and the independent unit model, identified exclusively in the MARTE Group.

from PMAM. The comparative analysis revealed that administrative autonomy constitutes a factor

crucial for speed in decision-making processes and operational response to incidents.

Among the main findings, the heterogeneity in the equipment stands out.

Available resources reflect regional budgetary disparities, compromising the ability to respond.

state-run in some federative units. It was also identified that there is a deficiency in maintenance.

Preventive and predictive maintenance of robotic equipment constitutes a critical bottleneck, compelling operators to

Manual approaches increase the risk of fatal accidents. Furthermore, it was found that autonomy

MARTE's operational scope does not extend to the budgetary sphere, with the group remaining linked.

to the centralized flow of corporate resources.

As suggestions for improvement, it is proposed: the creation of a national center of excellence in

anti-bomb operations, aiming at standardization of protocols and doctrinal self-sufficiency;

institutionalization of interstate technical cooperation mechanisms; review of processes

bidding processes for the acquisition and maintenance of specialized equipment, providing greater

speed; and the feasibility analysis for partial budgetary autonomy of specialized units.

It is important to acknowledge the limitations of this research. Therefore, since this is research...

Based on bibliographic and documentary research, it was not possible to gather the perceptions of the professionals working in the field.

directly in the bomb disposal units. The difficulty of accessing classified data restricted the

depth of analysis in certain aspects. In terms of contributions, this work

It offers a systematic diagnosis of the current situation, which can support policy formulation.

public initiatives aimed at strengthening these specialized units.

Finally, it is recommended that future research incorporate methodologies.

qualitative field methods, such as semi-structured interviews with operators and managers, as well as

In-depth case studies on specific interventions, in order to complement the findings.

from this investigation and broaden the understanding of the factors that determine operational effectiveness.

of the bomb disposal units in Brazil.

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