DRONES IN SURVEILLANCE MISSIONS: CASE STUDY OF THE GENDARMERIE FORCES OF THE IBERIAN COUNTRIES

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ABSTRACT

The objective of this work is to support the continuous development and modernization of the Gendarmerie Forces, analyzing the use of Drones in the police activities of the Portuguese and Spanish Gendarmerie forces, examining the extent to which the implementation and expansion of these resources represent an advantage for the police service and operations of the Gendarmerie. Due to the great changes taking place in the world, it is crucial to rethink state security. The convergence of internal and external threats, together with the increase in the feeling of insecurity on a global scale, are emerging factors that require different strategies of the security forces, especially with regard to the support tools used. Thus, there was a need to analyze the legal panorama of the Drones used in police, military and customs missions, verifying their classification as state aircraft, verifying the current doctrine (civil, military and police), taking into account the analysis of these scenarios. To this end, a methodology based on the inductive method was adopted, which made it possible to generalize the data collected through the analysis of data on the Spanish Gendarmerie force, appreciating their characteristics and use, with the aim of comparing the modus operandi with the Portuguese Gendarmerie force.

KEYWORDS

Drones; Unmanned Aircraft Systems; Unmanned Aerial Vehicle; Guarda Nacional Republicana; Guardia Civil

1. INTRODUCTION

The society has great expectation towards the Gendarmerie (military force with law enforcement duties among the civilian population) due the responsibility for most of the national territory of a country, requiring the innovation of its procedures so that its institutional duties are assured as well as the fulfilment of its mission [1]. The evolution of social reality is one of the factors for the innovation of criminality transformation, where crime increasingly has no boundaries. It is in this context that the modern phenomenon emerges: “crime spree” (a series of crimes committed in quick succession) characteristic of criminality, urban, mobile, violent and unpredictable, which obliges the security forces to adopt new measures and innovate by finding new responses aimed at the well-being and security of citizens. Society is subject to the rapid technological development that fosters globalization, which in turn conceives timeless products: the modernity. Usually, the modern is synonymous with the contemporary, it is like a process whose components accumulate, which once acquired are unstoppable, producing a dynamic of acceleration [2, 3].

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Security is a responsibility of the government of each State and of society. A modern concept of security must imply overcoming limited or conservative visions, above all, it is necessary to increasingly combine the efforts and modernization of the Security Forces and Services in the face of a society that is undergoing rapid transformation, in which security must increasingly be an open concept, flexible and as comprehensive as possible. According to the paradigm of military sociology, the military are designated as "managers of violence" taking into account security and defense; the police, on the other hand, are seen as agents of public security, making it necessary to accept that these elements of the police function are cumulatively managers of violence. It can be seen that the use of remotely piloted aircraft system (Drones) has applicability in several missions [4-8].

Drones are a bet with several potentialities, being for the Gendarmerie Forces a complement, but never a replacement for any CCTV (Closed Circuit Television) systems or any video surveillance measures that are in use. Drones allows efficient management of human and material resources in operational activity, substantially reducing the development time of a given task, but increasing the operational capacity of the Gendarmerie Force [9, 10]. Thus, the main purpose of this work is to analyze the use of unmanned aircraft, that is, Drones in Surveillance, Reconnaissance and Target Tracking missions in the police activity of the Gendarmerie Forces, and to discern to what extent the use of Drones and the expanding their employment constitutes an added value in the police service. [43]

To this end, the Investigation Analysis Model was prepared and the General Objective (GO) was established: **To characterize the benefit of using Drones in surveillance, reconnaissance and target tracking missions in the police activity of the Gendarmerie Forces**. Subsequently were defined three Specific Objectives (SO):

- **SO 1**: Characterize Drones and their use in surveillance, reconnaissance and target tracking missions by Gendarmerie Forces.
- **SO 2**: Identify the legal norms that regulate the use of Drones in Gendarmerie Forces.
- **SO 3**: Characterize the process of acquiring Drones in Gendarmerie Forces.

This work has as its Starting Question (SQ): **What is the benefit of using Drones by the Gendarmerie Forces in surveillance, reconnaissance and target tracking missions?** This work has two parts. The first part integrates the theoretical background, including the definition and legal framework of Drones at European level; and defines the Portuguese Gendarmerie Forces and the Spanish Gendarmerie Forces as two similar forces, identifying their similarities and particularities. The second part refers to the practical part and the fieldwork, which involves the methodology, methods and matters addressed in the investigation; the analysis, discussion and presentation of the results referring to the data obtained from the interview surveys. Finally, the conclusions are presented in which answers to the Derived Question and Starting Question, allowing to formulate hypotheses/theories from the conclusions, producing recommendations.
In this paper, the main contribution are the following:

1) Presents a particularization of the provision of Drones for the Gendarmerie Forces allowing the echelon to empirically analyze the current needs, capabilities, weaknesses and potential of Drones.
2) Shows the use of Drones in the pursuit of the missions of the Gendarmerie Forces, with the necessary adaptations at the level of Administration and State Policy, to accompany the extraordinarily fast evolution of the digital age that characterizes the world today that enhances efficiency and effectiveness of the strategic objectives of Gendarmerie Forces and States.

3) It exposes the legal, administrative, logistical and operational constraints that exist or may arise for the implementation of the capacity of Drones in the organization of the Gendarmerie Forces, allowing the identification of the specific and particular needs of different Units and/or Specialties of the Gendarmerie Forces, promoting the idea of creating different groups of Drones, according to the necessary characteristics (Type I, II and III), adjusted to the general and specific missions of the Units, General and Specific Missions of the Gendarmerie Forces.

2. THEORETICAL BACKGROUND

The civil aviation is regulated in three areas: at the international level, at the European, International and National levels where the States develop their local/national regulations [11]. At the international level, the International Civil Aviation Organization (ICAO) is responsible for developing norms, policies and good practices; for carrying out compliance audits; for carrying out studies and analyses; and for providing assistance/support in the development of aviation capability underpinning the cooperation of its member states and stakeholders [12]. At the European level, the European Organization for the Safety of Air Navigation (EUROCONTROL) is a pan-European civil-military organization that supports civil aviation in the vision of the EU (in the creation of a Single European Sky), and at a technical level the air traffic management [13]. The European Aviation Safety Agency (EASA) is a decentralized European agency, responsible for regulating civil aviation activity ensuring the safety and protection of the environment in air transport in Europe [14].

In the Portuguese context, the National Civil Aviation Authority (ANAC) is an authority in matters of civil aviation with the nature of an independent administrative entity, endowed with administrative, financial and management autonomy, as well as own assets [15], responsible for regulating and supervising the civil aviation sector as well as the activities carried out in this field. The National Aeronautical Authority is a structure under the authority of the Ministry of National Defense responsible for coordinating and executing the activities to be carried out by the Air Force [16], with competence to regulate, inspect and supervise aeronautical activities in the area of National Defense (areas under military responsibility), as well as use State authority in the strategic planning of national interest [16, 17].

2.1. Iberian Gendarmerie Forces

2.1.1. Portuguese Gendarmerie Force: National Republican Guard

The Decree (law) of October 12, 1910 created the Republican Guard, which lasted until its successor was structured, and with the Decree (law) of May 3, 1911, the National Republican Guard emerges as a security force of a military nature, made up of organized in a special corps of troops with jurisdiction throughout the national territory and in the territorial sea, constituting a hinge institution between the Armed Forces and the Security Forces and Services. Given its nature and versatility, the National Republican Guard is institutionally positioned within the set of military forces and Security Forces and Services, being in Portugal the only security force with a military nature and organization, so it is appropriate to characterize it as a Military Security Force. The mission of the Guard is extensive and carried out throughout the National Territory in the different ways of acting: security, protection and national defense, that is, by fulfilling missions and tasks: protection and rescue, military and international police [18, 19].

2.1.2. Spanish Gendarmerie Force: Guardia Civil

On March 28, 1844, the historic moment of the official creation of the Guardia Civil with the name of Civil Guards took place, as a special armed force of infantry and cavalry, was created by Royal Decree, under the aegis of the Spanish Ministry of the Interior. On October 9, 1844, the Regulations for the Service of the Guardia Civil were approved, which established the duties and powers of the Guardia Civil: its organic dependence, in relation to its peculiar service to the Ministry of the Interior; and its main objective: the conservation of public order, the protection of persons and property and the assistance required for the execution of laws. The Guardia Civil (Spanish Gendarmerie Force) is a public security body of a military nature and that integrates the State Security Forces and Corps: a set of professional and permanent security forces, placed at the service of Public Administrations to maintain the security of citizens [20] [21] [22].

2.2. Background of Police and Military Laws regarding Drones

2.2.1. Portuguese Gendarmerie Forces

It is important to define the doctrinal model to be followed in the scope of Drones used by the Portuguese security forces (Republican National Guard – GNR, Policia de Segurança Pública - PSP): whether through the European Aviation Safety Agency (EASA) and consecutively by the National Civil Aviation Authority (ANAC) (for civil society); or by the National Aeronautical Authority (AAN) (for Armed Forces / NATO – supervised by the Chief of Staff of the Air Force, CEMFA). The AAN is responsible for issuing opinions on the attribution, by the Portuguese Government, of the status of State Aircraft, without prejudice to the powers of the Ministry of Foreign Affairs (MNE). The AAN has also competence to issue certificates of airworthiness for military aircraft; regulate air traffic management and air navigation services, at the military level, and define the rules of operation in the airspace for military aircraft, carrying out the respective inspection and supervision; certify personnel who perform aeronautical functions in the military area and certify national entities within the scope of the airworthiness of military aircraft [16].

It should be noted that in 1948, Portugal ratified the Convention on International Civil Aviation known as the Chicago Convention, establishing its scope of application in Article 3: this convention only applies to civil aircraft, and not to State Aircraft; aircraft used in military, customs and police services are considered State Aircraft; the State undertakes to establish the regulations applicable to State Aircraft taking into account civil aviation safety [23, 24]. It is important to note that in the light of Air Navigation Law, the concept of aircraft is considered through two basic notions: its conceptual definition and the distinction between civil aircraft and State Aircraft. Thus, in terms of the Air Law of Air Navigation, an “aircraft” is classified as “any machine that achieves support in the atmosphere due to the reactions of the air other than those of the air on the earth's surface”. The concept of “civil aircraft” implies a negative delimitation, that is, civil aircraft are all those that are not classified as State Aircraft [23, 25].

The National Civil Aviation Authority (ANAC) defines State Aircraft as an unmanned aircraft (Drones) used in military, customs and police services [26, 27]. These services show that State Aircraft are those used in missions that carry out the security function of the Administrator State, that is, they are primarily concerned with national defense and internal security. It should be noted that a military aircraft is any manned or unmanned aircraft operated by the Armed Forces or registered with the National Aeronautical Authority. Also including in this definition aircraft that are in the design and manufacturing phase; these must also bear external signs typical of military aircraft of its nationality, these being in operational terms the determining element of the qualification of a military aircraft [24, 25].

With regard to the registration of military aircraft, nothing prevents them from being registered with the ANAC (National Civil Aviation Authority), however as dictated by the nature of the military function, it is common for military aircraft not to be included in that register, and there must be a separate register, military and not public. The organic characterization and registration of police and customs aircraft can follow the same process, with aircraft that belong to the police or customs services of a State. Those aircrafts should bear badges specific to the customs or police service and those of their nationality; are commanded by a public servant from the special staff of one of those services or who is highlighted therein; the crew is subject to the statute of the service of the police and/or customs [25].

For the purposes of air traffic management, the EUROCONTROL took a decision, according to which it determined that an aircraft that appear in the military register, or are identified as military in the civil register of aircraft (ANAC), are considered as being "aircraft used in military services" and "aircraft with civil registration, but used in military, customs and police services are classified as State Aircraft". This decision clarifies that aircraft with civil registration of aircraft (ANAC) used by the State in other missions that are not within the scope of military, police and/or customs service are not classified as State Aircraft [23] [28] [25]. On the other hand, for aircraft classified as state aircraft by internal law, and despite not being used in military, police or customs missions, they are, in the eyes of the Chicago Convention, "civil aircraft" and must consequently follow the rules and principles stipulated by the member state that joined the convention [23, 25].

2.2.2. Spanish Gendarmerie Forces

Within the scope of the Guardia Civil (Spanish Gendarmerie Force), there are several regulations related to the use of Drones, like all Member States, the Guardia Civil depends on EASA, so that each Member State has its own National Agency, which in the Spanish case is the AESA that publishes national regulations in the scope of Drones, in addition to these there are also civil regulations and military regulations. European legislation regarding civil drones also applies in Spanish territory: Delegated Regulation (European Union) number 2019 of May 21 approved by Decree Law number 87/2021 of October 20 on the rules and procedures for the operation of Drones, in which it defines its operations in three categories. Regarding Spanish legislation on Drones, this is tripartite at civil, military and police level. Currently, Spain has specific regulations that regulate NON-EASA activities (through the AESA), deciding activities with Drones that are under the jurisdiction of the Member States, such as police operations [29].

At the civilian level, the use of Drones is governed by Royal Decree number 1036/2017 of December 15th, which regulates the use of civilian Drones and modifies Royal Decree number 552/2014, of June 27th, which develops the Regulation of common aerial and operational provisions for air navigation services and procedures and Royal Decree number 57/2002, of January 18th, which approves the Air Traffic Regulation. Royal Decree number 1036/2017 of December 15 excludes its applicability in relation to military drones and drones used in police operations [30].

At the military level, the use of Drones is regulated by the Operational Air Circulation Regulation approved by Royal Decree number 601/2016 applicable to all military aircraft (with or without crew), Spanish and abroad. These Drones have to fly in accordance with the rules issued by this Royal Decree that also classifies Spanish military aircraft according with the Maximum Take-Off Weight (MTOW). Ministerial Order number 18/2012 of March 16th, in conjunction with Ministerial Order 23/2011 of April 27th, in conjunction with Resolution number 420/38035/2014, of March 25th, stipulates the principles of collaboration between the "Ejército del Aire" and civil

universities, for the provision of training related to obtaining the qualification of "Drone Operator for Armed Forces personnel" also for the training of civilian Drone operators [31-33].

At the police level, the Guardia Civil has formulated an internal regulation: Technical Instruction 01/2020 of September on the acquisition and use of Drones, with everything related to anti-drone systems falling outside the scope of this Technical Instruction. Regard anti-drone systems, there is no internal order, how to use these systems depending on the type of missions and their priorities [34].

3. MATERIALS AND METHODS

3.1. Research Strategy and Approach Method

According to the problem to be studied, research strategies are adopted, which can take on different types of approaches: quantitative, qualitative or mixed [35]. In the present work, a qualitative strategy was used, as it is considered that there is an inseparable relationship between the real world and the subjectivity of the subject under study, that is, a relationship incapable of being translated into numbers. As a rule, these qualitative studies follow a sequential line of procedures: (**A)** Collecting, interpreting, absorbing and experimenting with data; (**B)** Data analysis; (**C)** Conclusions are extracted; (**D)** Hypotheses are formulated from the conclusions; (**E)** The hypotheses can be used for the formulation of a theory.

The qualitative strategy is descriptive since it conceives descriptive data from documents, interviews and observation in which data collection is carried out using interviews, observation and document analysis [35, 36].

The inductive method advocates carrying out the greatest possible number of observations devoid of value judgments, personal considerations and/or preconceived ideas so that reality is encompassed in the most impartial way possible [35]. In this work, the inductive method is verified through the analysis of data on the Drones of the Spanish Gendarmerie, appreciating their characteristics and use, with the aim of comparing their modus operandi with the use of Drones in the Portuguese Gendarmerie, so that became possible withdraw elations to be applied to building the capacity of Drones in the Portuguese Gendarmerie. To encourage research, a literature review was carried out, which according to Prodanov and Freitas [37] that has a crucial role in an academic work, as it reconciles the theme in the major areas of research.

3.2. Research Criteria and Method of Procedures

After reflecting on the multiple existing research criteria, it is verified that the great difference between them is indirectly centered on the different technical procedures and as this study dealt with a comparison between two cases (Portuguese Gendarmerie and Spanish Gendarmerie) contrasting through identical methods, the research criterion followed the comparative type [35]. In this investigation, the independent variable was the security forces of a military nature (Iberian Gendarmerie Forces) of two countries (Portugal and Spain). Procedure methods are different from approach methods, as they refer to the technical means of investigation followed by the researcher in his research, which will consequently determine the procedures to be used in collecting data and information for analysis. In line with research criteria, this investigation follows the comparative method as it focuses on study of differences and similarities, explaining the identified divergences [37].

3.3. Analysis Model

To assist in delimiting the path of the research, it is essential to create a Starting Question that guides the researcher's study as a lighthouse and is aligned with the general objectives of the investigation. The Starting Question embodies the guiding principle of the investigation, bringing structure and coherence to the present work, so that the investigation is guided with clarity, feasibility and relevance [38, 39].

This investigation intended to answer the following starting question: "**What is the added value of using Drones by the Iberian Gendarmerie Forces in surveillance, reconnaissance and target tracking missions?**" in order to characterize the relevance of the applicability of Drones in the Portuguese Gendarmerie having as a comparative target, a similar force: the Spanish Gendarmerie. So, the Starting Question is aligned with the General Objective, which is "**to characterize the use of Drones in missions of surveillance, reconnaissance and tracking of targets in the police activity of the Iberian Gendarmerie Forces**", and which advocates the synthesis of what is intends to achieve in this work, so the Specific Objective will explain the details and will be a deconstruction of the General Objective [37].

Consequently, the Derived Question (DQ) were defined, aligned with the Specific Objective so that the General Objective is substantiated and the Derived Question answered:

DQ1: Which units of the Iberian Gendarmerie Forces have Drones and that use them in their police activity, specifically in surveillance, reconnaissance and target tracking missions?
DQ2: How are characterized the Drones used by the Iberian Gendarmerie Forces?
DQ3: How is carried out the training of Drone operators in the Iberian Gendarmerie Forces?
DQ4: What are the legal norms that regulate the use of Drones by the Iberian Gendarmerie Forces?
DQ5: How does proceed the acquisition process of Drones in the Iberian Gendarmerie Forces?

3.4. Data Collection Methods and Techniques

Data collection began with data collection, which allowed the formulation of the theoretical framework based on 3 types of information: theoretical referring to models and theories related to the problem to be investigated; the empirical one, which aims at theses and works that address the results of previous works; and finally the methodological one, which concerns the approaches and methods used to carry out an investigation in a given domain. This data collection was based on primary, secondary and tertiary sources, where primary sources are made up of original texts that have not been interpreted or summarized by other authors, while secondary sources facilitate access to primary sources and interpret texts from primary source, while tertiary sources are all those that compile and organize primary and secondary source information [39, 40].

Thus, the primary sources involved internal documentation of the Iberian Gendarmerie Forces (NEP, Technical Instructions, Orders and Directives); secondary sources comprised magazines, books, master's dissertations, doctoral theses, scientific articles in physical and online format; tertiary sources, on the other hand, involved university repositories, glossaries and encyclopedias. The bibliographic sources allowed knowing the pertinent concepts of the investigation in order to deepen the chapters of the literature review and allowed an initial theoretical construction of reference. Thus, the empirical phase of the investigation involved: observation in loco at the Units with Drones of the Iberian Gendarmerie Forces; document analysis (legislation, regulations, NEP, etc.); and conducting surveys by interview that allowed following the defined qualitative approach strategy. The interview was structured with open and closed questions with a pre-established Interview Guide, which allowed establishing a proximity between the interviewer

and the interviewee in which the latter had some freedom and flexibility in answering, although some questions were closed, limiting the interviewee to present dichotomous answers. The interviewees were contacted via institutional email, which included the Research Analysis Model, the Presentation Letter, the Interview Guide and the Declaration of Informed Consent (signed by all interviewees) so that the interviewees had awareness of the research topic and the questions that would be answered, being aware that they could refuse to respond and that the data collected were subject to confidential treatment [37, 41].

3.5. Sampling Procedures, Data Treatment Techniques and Data Analysis

The sample is part of the population / universe, being chosen according to a rule, since the population / research universe presupposes the totality of individuals with the same particularities within the scope of a study. The target population has a direct influence on the conceptualization of research results. Therefore, in this research there was a concern with the size and quality of the sample, represented as a subset of individuals from the target population. Sampling was classified as non-probabilistic because the interviewees were chosen intentionally. It is also an intentional sample, of rational selection because the investigation was purposely directed at groups of elements whose opinion was desired through interview surveys. Since the nature of the investigation (universe) was directed to the Iberian Gendarmerie Forces with the uniqueness of Drones, this particularity consequently amplified the sample covering entities such as ANAC, AAN, PSP and entities with functions related to Police Law and privacy and protection of personal data treatment [37, 39, 41].

The sample of this investigation is a total of 27 interviewees divided into 4 groups:

- **Group A:** 14 interviewees from Portuguese Gendarmerie.
- **Group B:** 8 interviewees from the Spanish Gendarmerie.
- **Group C:** 2 interviews aimed at specialists in Police Law and privacy and protection of personal data.
- **Group D:** 3 interviews directed at specialists in the field of Drones (AAN, ANAC, PSP).

In this way, it was possible to verify the saturation point in some questions, as the answers / contributions of the interviewees began to be successively similar.

With regard to the treatment of the surveys by interview, it was done using the technique of content analysis in which an exhaustive analysis was made of all the answers given by each interviewee, with content analysis tables having been formulated with summaries and key ideas that materialize a descriptive material that is carefully read and synthesized identifies the themes and problems [42].

The carrying out of exploratory interviews and interview surveys enabled the creation of SWOT matrices regarding the use of Drones in surveillance, reconnaissance and target tracking missions by the Iberian Gendarmerie Forces.

The interviewees were recorded and later transcribed. In 8 cases they were translated, having been submitted for revalidation to each interviewee.

4. RESULTS AND DISCUSSION

4.1. Drone Legislation in the Iberian Gendarmerie Forces

Of the 24 interviewees, all showed knowledge of the civil and/or military legal framework for Drones, with the exception of interviewee E9, who revealed that he was unaware of the legislation about the use of Drones by police forces. Regarding the legal norms that regulate the use of Drones by the Portuguese police forces, Group A and D were generally unanimous in referring to European and national civil regulations (from interviewees E1, E2, E8, E10.1, E10.2 and E25). Reference was also made at the military level to Regulation no. 533/2020 of June 18, which defines the conditions for issuing military remote pilot licenses for unmanned aircraft only applied to the Armed Forces (interviewee E25).

Interviewees from Groups A and D (National Republican Guard) noted that there are still no legal regulations regulating the operation of Drones at the service of the Security Forces and Services (interviewees E1, E25). Although there is a definition of the path, but without specific regulation, the regulations that exist followed the civilian ones, taking into account the characteristics of the Drones in use (interviewee E7). ANAC (interviewee E23) declares that the Portuguese State adopted Decree-Law number 87/2021 in order to guarantee compliance with European regulations, so in the particular case of the National Republican Guard, it must comply with the regulations and determinations of the AAN to enjoy such flexibility and keep their operations secure. The AAN (interviewee E24) states that Regulation (European Union) 2018/1139 of the European Parliament and of the Council, of July 4, 2018, EASA, does not apply to the military, as written in number 2 of Article 3rd. This situation being similar to what results from the application of Article 3rd of the Convention on International Civil Aviation (Chicago Convention), signed on December 7, 1944, approved by Decree-Law No. 36 158, of February 17, 1947 and ratified by the Portuguese State on April 28, 1948, by expressly excluding State Aircraft from its scope of application.

The AAN (interviewee E24) also mentions that the Contracting States of this Convention, currently 193, when issuing regulations for State Aircraft, are obliged to take into account the safety of other airspace users, as a result of paragraph d) of article 3rd. In turn, ANAC is not the competent authority for military matters, as expressed in number 1 of article 4th of Decree-Law number 45/2015, of March 16. Therefore, the AAN is the competent authority for the supervision, regulation and inspection of aeronautical activities in the area of National Defense, and it is responsible for certifying aircraft and personnel, as enshrined in Law No. 28/2013, of April 12, pursuant to the Article 3rd of the Chicago Convention State Aircraft are those used in military, police and customs services and therefore, by definition, remotely manned aircraft of police forces are State Aircraft. Interviewee E11 (Operational Command / National Republican Guard) recalls that the sensitive part of using Drones is to match their correct use, so as not to violate the inalienable right to privacy and data protection. And finally, interviewee E10 (Emergency Protection and Help Unit / National Republican Guard) notes that there is a lack of definition on this subject, on the one hand the civil aspect through ANAC with diverse general legislation, but not specific legislation. On the other hand, the AAN, with its own regulation for military aircraft, however the part of State Aircraft is not very developed, being a matter to be discussed with both entities in order to obtain a balanced solution.

The interviewees in Group B were unanimous as in Spain the legislation that regulates police drones is clear, objective and stratified. According to the Spanish law that legitimizes the use of drones, there are three documents that correspond to European regulations, regulations national (civil and military) and internal regulations (Guardia Civil). European regulations are the same as

applied in Portugal (European community). National regulations, Royal Decree No. 1036/2017, an application document in Spain that regulates activities with drones for civil users and non-EASA flights. Internal regulations (Guardia Civil) Technical Instruction No. 01/2020 - Internal Guardia Civil Document signed by the Deputy Director of Operations, which internally regulates everything related to the acquisition, use and maintenance of Civil Guard drones and Operations Manuals.

4.2. Civilian Versus Military Doctrine about Drones in the Iberian Gendarmerie Forces

In the National Republican Guard, 10 interviewees (E1, E3, E4, E6, E7, E8. E9, E10, E10.1 and E11) refer that there is no doctrine in this institution about Drones, but 3 interviewees (E2, E5 and E10.2) refer to the existence of a doctrine on these in the National Republican Guard, identifying Procedure number 01 (Integrated National Center for Operational Management / Operational Command) which, on page 6, states that Drones have a differentiated activation; and the doctrine developed in the Emergency Protection and Help Unit. According to interviewee E11, in National Republican Guard there is still no internal and doctrinal regulation, approved by superiors, that standardizes the use of this medium, uniformly throughout the device. At the present, a Working Group was created specifically to build this capacity, which will be done according to the process of building a DOTMLP capacity (Doctrine, Organization, Training, Material, Leadership and Personnel) [NATO doctrinal model]. Now, it will be from this context that all the sustained doctrine of action in this area will emerge. However, it is important to emphasize that there is a Permanent Execution Standard of reference for a Unit, the Emergency Protection and Help Unit, an embryonic unit, in which Drones began to be implemented in the National Republican Guard in 2015, in a project developed in partnership with the private company TEKEVER. This NEP, despite regulating the performance of Drones by the Emergency Protection and Help Unit, is serving as a reference for other units that do not have these documents.

It was analyzed whether the categories of civil operations with Drones (open, specific and certified) were adapted to the needs and characteristics of operations using Drones by police forces. It was verified that 6 interviewees (E1, E7, E10, E10. 1, E10.2 and E18) considered these 3 categories are suitable for the range of police missions, and the need for certification of the military to fly in all categories (interviewee E1). This certification of the 3 categories should be aligned according to the complexity and risk of the missions (interviewee E10) so that the most sensitive missions fall into the certified category, despite the request for services/missions with Drones requested from the National Guard Republican most fall into the specific category (interviewee E10.2). Of the 24 interviewees, none responded that the open category is exclusively or uniquely suited to the needs of police missions. However, 5 interviewees (E5, E8, E13, E14 and E23) concluded that the open and specific category, gather the characteristics necessary to satisfy the assumptions of police missions, since the specific category completes the open category, with the possibility of carrying out flights beyond from the line of sight (interviewees E5 and E23). Interviewee E2 refers to the specific and certified category as essential, excluding the open category, justifying that it is not suitable for police actions.

There were interviewees who only considered one category suitable for the needs of police actions, as was the case with interviewee E16 who only considered the specific category appropriate; and the case of interviewees E4 and E11 who considered only the certified category taking into account the dynamism of operations and increased risk, with only this category having the necessary requirements to guarantee the safety of flight, operations and data recording/processing. There were also 6 interviewees (E3, E6, E9, E15, E17 and E19) who did not have a definitive opinion on this issue due to lack of knowledge. Three interviewees (E20,

E24 and E25) also mentioned that none of these categories fit to police missions because the particularity of the operations carried out by the police dictates this (interviewee E20); referring to paragraph d) of article 3rd of the Chicago Convention, which establishes that the Contracting States must establish their own regulations for their State Aircraft. In accordance with the provisions of Regulation (European Union) No. 947/2019, civil operations in the three categories do not suit the needs and characteristics of police missions, as they are too restrictive, and this reality is transversal to various forces similar police officers in the European Union (interviewee E25) as verified in the Guardia Civil with the production of its own legislation and operations manuals aimed at police missions with Drones.

4.3. Drones in the Iberian Gendarmerie Forces: a way or a capability?

As for the characterization of Drones in police operations, 10 of the interviewees (E1, E2, E3, E4, E5, E6, E9, E10, E15, E16 and E19) stated that it is a means, on the other hand, 4 interviewees (E8, E10.1, E14 and E20) maintain that Drones are a capability and 5 interviewees (E7, E10.2, E11, E13 and E18) state that if Drones are cumulatively a means and a capacity in police operations, on the other hand, 2 interviewees did not express an opinion on this issue (interviewees E2 and E17). The justifications presented by the interviewees who consider Drones as a means are several, and it is not possible to reach a common link. Interviewees E1, E2, E5 and E9 do not answer or do not justify their answer (they have redundancy in the answer). Interviewee E3 argues that for Drones to be a capability they must be more developed and regulated, interviewee E4 claims that for Drones to be a capability they must have administrative, logistical and operational autonomy. On the other hand, interviewees E6 and E10 state that in order to become a capability, the specific vectors of a capability, doctrine, training, organization, etc., must be developed. Interviewees from Group B: E15, E16, and E19, have a different approach to the concepts and claim that Drones are the means that confer capacity to other valences.

Interviewees who consider Drones a capability do not have the same conception of the concepts of means and capacity, as seen in the previous set. For interviewee E8 it is a capacity since it characterizes Drones equipment as a “means” (inherent to the definition lexicon of what serves to achieve an end), interviewee E10.1 considers it a capability because it is a new valence in the National Republican Guard, so the operator has the possibility to decide which Drones to use for each mission, according to the characteristics of the operation. Interviewee E20 from Group B argues that Drones are a capability that complements other capabilities. Regarding the interviewees who answered that Drones are a means and a capacity, it is possible to verify two identical approaches within Group A, interviewees E10.2 and E11 state that from a broader observation Drones as a means or capacity depends on the development or not from the premises foreseen in the NATO (North Atlantic Treaty Organization) doctrine, that is, at this moment in the National Republican Guard it is a means, but that it could be a capacity provided that the qualifications of doctrine, organization, training, material, leadership and personnel are developed. On the other hand, interviewee E7 from Group A and interviewees E13 and E18 from Group B argue that it is a means when we refer to the device per se, inherent in the lexical definition of “what serves to achieve an end”, identifying the capacity when referring to the set of means (interviewee E7) or the possibility of gathering information to support the Command's decision-making (interviewees E13 and E18).

4.4. Drones in the Iberian Gendarmerie Forces: Current Status

It was found that the National Republican Guard has 3 dozen Drones while the Guardia Civil has 3 hundred Drones. Of the 20 Territorial Command of the National Republican Guard, only 8 have Drones and they are used in Criminal Investigation, Road Safety, Nature and Environment

Protection, Protection and Rescue, and other possible missions. The Communication and Public Relations Division and the Criminal Investigation Department own Drones, so the first uses this resource for Public Relations (production of audiovisuals) and the second for Road Safety (reconstruction of road accidents). There are also units holding Drones to carry out the missions inherent to them: Tax and Customs; Protection and Rescue; Special Police Operations, and Coastal and Border Control. In the National Republican Guard, the Directorate of the Nature and Environment Protection Service, the National Transit Unit and the Center for Inactivation of Explosives and Underground Security of the Intervention Unit do not have Drones.

Regarding Drone brands used by the Iberian Gendarmerie Forces, it was found that DJI is the predominant brand. Surveillance, reconnaissance and target tracking missions are part of several specific missions of the National Republican Guard's police activity. Of the 18 people interviewed (10 people from the National Republican Guard and 8 people from the Guardia Civil), currently 17 people use drones in their police activity, except for: the Coastal Control Unit of the National Republican Guard (interview E7) which has Drones, however it still does not apply them in real missions; and the Operational Command of the National Republican Guard (interview E11) whose reply encompasses the entire Republican National Guard.

It was found that 11 people (6 people from the National Republican Guard and 5 people from the Guardia Civil) use Drones in surveillance, reconnaissance and target tracking missions (see table 1), these were classified in the various attributions / missions of the National Republican Guard. It should be noted that not all the people interviewed cumulatively include surveillance, reconnaissance and target tracking missions in their police activity, so the Special Operations Intervention Unit of the National Republican Guard (interview E5) excludes surveillance; the Traffic Grouping of the Guardia Civil (interview E14) excludes target tracking; the Directorate of Criminal Investigation of the National Republican Guard (interview E6) and the Special Intervention Unit of the Guardia Civil (interview E17) only include recognition.

Table 1. Units of the Iberian Gendarmerie Forces carrying out surveillance, reconnaissance and target tracking missions.

	Group A											Group B							
interviewee	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10 E10.1 E10.2	E11	E13	E14	E15	E16	E17	E18	E19	E20
surveillance	Y	Y		Y	Y			Y		Y		Y	Y		Y		Y	Y	Y
reconnaissance	Y	Y		Y	Y	Y		Y	Y	Y		Y	Y		Y	Y	Y	Y	Y
target tracking	Y	Y		Y	Y			Y		Y		Y			Y		Y	Y	Y
others			Y			Y	Y			Y	Y	Y	Y	Y					

The missions assigned to each unit and with potential use of Drones are presented in table 2.

Table 2. General Missions & Surveillance, Reconnaissance and Target Tracking with potential use of Drones. Caption: V=Surveillance, R=Recognition, SA=Target Tracking, LSA=Target Locating and Tracking, OM=Other Missions.

		General Missions								
interviewee		Security	Criminal investi-gation	Road safety	Coastal and border control	Protection of nature and environ-ment	protecti on and rescue	tax and customs	general police	police specials
Group A	E1	V+OM							V	R+LSA
	E2		V+R			V+R				
	E3		OM	OM						
	E4						R+LSA			
	E5	V	R						V	R+LSA
	E6		V+R+SA							R
	E7				V+R+LSA					
	E8							V+R+SA		
	E9									R
	E10, E10.1, E10.2						V+R+L SA			
	E11	V		V	V	V	OM		OM	R
Group B	E13	V							V	
	E14		OM	OM						
	E15	V+OM			V					
	E16		V+R+SA							
	E17								V+R	LSA
	E18								V	R+LSA
	E19		V+R+SA							
	E20	V+R+SA								

It was possible to verify the predominance of the use of Drones in missions involving surveillance and reconnaissance (Table 2).

In order to face the need to use Drones, units that do not have Drones, request through the internal channels of the Operational Command or the National Integrated Center for Operational Management, depending on the time of day and the urgency. In most cases, the mission is assigned to the Rescue Emergency Unit of the National Republican Guard, which is the unit with the most Drones and the most experienced operators.

4.5. Common Features of Drones

Regarding the main characteristics that Drones should have, 14 interviewees highlighted autonomy (E1, E2, E3, E4, E5, E8, E9, E10, E10.2, E11, E13, E18, E19 and E20); 8 interviewees highlighted the thermal camera (E1, E2, E4, E7, E10.2, E11, E17 and E20), 8 interviewees highlighted the optical zoom (E1, E5, E7, E10.2, E14, E16, E18 and E20); 6 interviewees highlighted the minimum noise (E6, E16, E17, E18, E19 and E20) and 6 interviewees highlighted the image resolution (E9, E10.1, E11, E14, E15 and E17).

Autonomy was disregarded by some interviewees (E6, E10.1, E14, E15, E16 and E17), given that the missions performed with Drones do not qualify as long-lasting, with the autonomy of 20 minutes of flight being considered sufficient (interviewees E6, E14 and E17). On the other hand, those who carry out long-term missions eliminated the need for long autonomy by purchasing several batteries (interviewees E10.1 and E16). In the particular case of the Police Specialist in

Aeronautical Management and Operational Safety of the Guardia Civil (interviewee E15) it does not refer to autonomy as it does not make recurrent use of Drones, but of anti-drone systems. In the case of the Coastal Control Unit of the Guardia Civil National Republican (interviewee E7) no reference was made to autonomy, as it is still in the implementation phase, waiting to see if this characteristic will affect or not the missions that will be carried out using Drones.

The thermal camera was identified as a need by the units that perform missions to search for missing persons or locate targets (interviewees E1, E2, E4, E7, E10.2, E11, and E17) together with the features: sound amplifiers (interviewee E4) in order to contact missing victims, tracking mode (interviewee E4), follow-me mode (interviewee E4); with the exception of the Guardia Civil Reserve and Security Unit (interviewee E20) which also considers the thermal camera necessary for its missions of public order and tranquility. Optical zoom was identified as an important feature by units that carry out reconnaissance missions (interviewees E1, E5, E7, E10.2, E14, E16, E18 and E20); the minimum noise was listed by some of the units that perform specific missions of criminal investigation (interviewees E6, E17, E17, E18, E19 and E20) together with the feature of the image/video being in RAW format (interviewee E6) in order to prove the not tampering with the image (it might be a proof).

Image resolution, on the other hand, is of importance for the interviewees who carry out missions where the detail can make the difference in decision-making, as is the case of the National Republican Guard's Center for Inactivation of Explosives and Underground Security (interviewee E9), where it is essential to have a very detailed image of the suspected object or the Traffic Unit of the Guardia Civil (interviewee E14) for the inspection of indirect proceedings or crimes in road inspection missions using drones. The remaining characteristics addressed are particular and specific for each type of mission, in order to meet the unique needs of each unit, such as encrypted systems (interviewee E17), night vision (interviewees E5 and E7) or specific communication frequencies (interviewee E9) for the units of the 4th level of operational employment, the initiation time (interviewee E17), the size of the Drones (interviewee E17), live streaming (interviewees E11 and E10.2), multispectral sensors (interviewee E8), altitude (interviewee E11), anti-collision system (interviewee E11) and range (interviewees E11 and E15).

4.6. Legitimacy in the use of video cameras in Drones by the Security Forces

It is consensual for all interviewees that the use of video cameras in Drones should be allowed and provides positive benefits for the police and citizens. The most outstanding advantages were: specific operational support in crime prevention and repression operations (interviewees E1, E2, E21), image recording that facilitates the collection of evidence in missions of a criminal investigation nature (interviewees E4, E5, E7 and E8), increasing the efficiency of decision-making (interviewees E7, E10.2, E20, E25), capture/recording of illegal acts (interviewees E4, E6, E13 and E22) and also the prevention of crimes and other contrary events to the Law (interviewee E22).

The main difference mentioned by the interviewees, despite all agreeing, is based exclusively on authorization, that is, in Portugal (Group A, C and D) prior authorization by the Criminal Investigation Judge is required, whereas in Spain (Group B), it is carried out the capture of the image and subsequently, if there is no unlawful act, they are deleted, otherwise they are kept and sent to the judicial authority.

4.7. Potentialities and Limitations of the Use of Drones by the Iberian Gendarmerie Forces

The potentialities listed by the interviewees, the general opinion stands out that Drones are an excellent tool to support Command and Control, 13 of the interviewees consider that Drones allow the commander of the operation to make decisions in a more thoughtful and assertive way (interviewees E1, E2 , E3, E6, E7, E8, E9, E10.2, E11, E15, E17, E18 and E20). The remaining advantages listed focus on risk reduction (interviewees E2, E5, E9, E10, E13 and E17), resource efficiency (interviewees E2, E4, E10.1, E11, E13 and E20), safety (respondents E5, E9, E10 and E19) and the ability to see without being seen (interviewees E7, E10, E13 and E16). It is thus possible to define three general areas:

1) Command and Control – support to Command and Control (interviewees E1, E2, E3, E6, E7, E8, E9, E10.2, E11, E15, E17, E18 and E20).
2) Security - advantages of risk reduction, security and seeing without being seen (interviewees E2, E5, E7, E9, E10, E13, E16, E17 and E19).
3) Human resource management - resource efficiency (interviewees E2, E4, E10.1, E11, E13 and E20).

The remaining potentialities presented by the interviewees include the possibility of collecting evidence (interviewees E2 and E11), credibility (interviewee E3), time savings (interviewee E4), dissuasion (interviewee E11) and detection of infractions (interviewee E14). Regarding the limitations on the use of Drones by police forces, half of the interviewees (E2, E7, E8, E11, E14, E15, E16, E17, E18, E19, E20, E22, E24 and E25) consider that the legal limitations are the great difficulty in the use of Drones. The other difficulties presented are restricted to technical specifications (interviewees E1, E2, E4, E5, E6, E11, E13, E16 and E17), air restrictions (interviewees E6, E8, E10.1, E13, E14 and E24) and training (interviewees E2, E3, E10 and E10.2). The legal limitations presented by Groups A, C and D (relating to Portugal) differ from those presented by Group B (Spain - Guardia Civil) because although the Guardia Civil has much more comprehensive and specific regulations regarding the use of Drones by the police forces, the legal framework on this matter in Portugal is still rudimentary.

Regarding the technical specifications, the interviewees are unanimous in presenting the climatic conditions and autonomy as more complex difficulties at a technical level. As for air restrictions, the difficulties presented by the interviewees relate to the impossibility of operating near airports and the need to reserve airspace.

Training is a difficulty presented only by Group A, as in the National Republican Guard there is still no certified training, with the military having to seek self-training or attend courses given by military institutions outside Portugal or on an individual basis.

4.8. Insurance, Training and Acquisition of Drones

Analyzing the need for insurance for Drones, it was found that of the 26 interviewees, 16 agree with the existence of insurance (Portugal: E1, E2, E5, E7, E10., E10.2, E21, E22 and E23) (Spain: E13, E14, E15, E16, E18, E19, E20), 7 interviewees argue that insurance should not exist (interviewees E3, E4, E6, E8, E11, E24 and E25) and 3 interviewees (E9, E10 and E17) have no opinion on the matter. However, after exploring the interviews, it appears that 3 of the interviewees who consider insurance necessary, E1, E2 and E5, defend the existence of insurance under the legislation that regulates State vehicles, that is, the State must constitute itself as an insurance company for their movable assets, like the 7 interviewees who argue that there should be no insurance because the State should grant Drones the provisions of the extra-contractual

civil liability regime of the State and other public entities for damages resulting from the exercise of political-political functions. legislative, jurisdictional and administrative (Decree-Law No. 67/2007 of 31 December).

In this way, it is possible to state that 13 of the interviewees (E7, E10.1, E10.2, E13, E14, E15, E16, E18, E19, E20, E21, E22 and E23) consider that there must be civil protection insurance, while 10 of those interviewed (E1, E2, E3, E4, E5, E6, E8, E11, E24 and E25) consider that Drones should be included in Decree-Law number 67/2007 of December 31st. It should be noted that within Group A, C and D (interviewees from Portugal) there are 6 interviewees defending the use of civilian insurance, 3 military interviewees (E7, E10.1 and E10.2) and 3 civilian interviewees (E21, E22 and E23), on the other hand, there are 10 interviewees, 9 Criminal Police Agency (E1, E2, E3, E4, E5, E6, E8, E11 and E25) and 1 civilian (E24) who defend the lack of civil insurance, the legislative provisions of Decree-Law no. 67/2007 of 31 December must be checked. In Group B, none of the interviewees agreed with the lack of civil insurance, due to the internal reality of their country (Spain), where the State does not assume itself as an insurance entity and establishes civil insurance for State vehicles and other public entities.

Regarding training in Group A, there are 2 units with Drones, but without any training (interviewees E1 and E4), the remaining units that have Drones have internal training (Unmanned Aircraft Remote Pilot Course and Remotely Piloted Aircraft System Course) and external training (Guardia Civil and open category A1, A2 and A3). In Group B, all entities have Drones and the operators have certification both internally (Tactical Training Air Service of the Guardia Civil) and externally (State Air Safety Agency - AESA, open category A1, A2 and A3 and STS (Declarative Operation Scenarios)). In Group A and D there are 5 units that do not have their drone operators registered, they are the Public Order Intervention Group of the National Republican Guard (interviewee E1), the K9 Intervention Unit of the National Republican Guard (interviewee E4), the Special Operations Intervention Unit of the National Republican Guard (interviewee E5), the Directorate of Criminal Investigation of the National Republican Guard (interviewee E6) and the Protection an Rescue Emergency Unit of the Public Security Police (E25) . The rest are registered with ANAC (interviewees E7, E8 and E11) and ANN (interviewees E10, E10.1 and E10.2). In Group B, all operators are registered with various entities, AESA (interviewees E13, E15, E16, E18, E19 and E20), Air Service of the Guardia Civil (interviewees E13, E15, E18, E19 and E20), Guardia Civil Traffic Grouping (interviewee E14) and Ministry of Defense (interviewee E16). ANAC considers that State Drones should be registered on the ANN platform as civilians Drones, while ANN considers that the National Republican Guard Drones should be registered on a military platform.

None of the interviewees from the Republican National Guard and Guardia Civil referred to the existence of specific or decisive norms regarding the type of Drones to be acquired depending on the type of mission to be carried out. In the National Republican Guard, the units that decide to acquire Drones, as a rule, request support from the Protection an Rescue Emergency Unit for recommendations on the equipment to be acquired (interviewee E1). At this moment, drones of several brands and characteristics are acquired (interviewee E2) without prior planning. In the Guardia Civil, it is the units themselves that decide which Drones to use in each mission (E16) and it is up to the Air Service of the Guardia Civil to evaluate and determine, through a technical opinion, the acquisition of Drones.

The acquisition process at the Republican National Guard takes place through the foreseen logistical channels, through direct adjustment, when the value does not exceed the limits defined by the legislation, where the target model is identified and 3 or 4 quotations are requested for the same device from different companies, opting for the most favorable value for the National Republican Guard. Alternatively, through purchasing processes for goods and services, and

defining the minimum requirements for Drones, after which public tenders for the acquisition of goods are launched. The process of acquiring Drones in the Guardia Civil, the Air Service of the Guardia Civil receives a document with the needs of the type of flight to be carried out and/or characteristics that the Drones must have, as well as the maximum budget (interviewee E13). The Guardia Civil Air Service looks for the product that best adapts to the transmitted needs and according to the budget. Once the technical requirements have been defined, the Guardia Civil Air Service prepares a Technical Data Sheet which is subsequently sent to the Contracting Service so that they can publish the offer so that all companies can participate. As a rule, the company that offers the best technical conditions and the largest number of Drones wins. Once the procedure is completed, the Air Service of the Guardia Civil distributes the equipment and manages the appropriate training/training, if necessary, for the Drone model (interviewee E13).

5. CONCLUSIONS

The present work aimed to analyze Drones in the police activity of the Iberian Gendarmerie Forces, namely in surveillance, reconnaissance and target tracking missions, so that the relevant level of knowledge was reached to answer the research questions. Regarding **DQ1: "Which units of the Iberian Gendarmerie Forces have Drones and that use them in their police activity, specifically in surveillance, reconnaissance and target tracking missions?"** it was verified that the National Republican Guard has a total of 34 Drones and the GC 329 Drones. The National Republican Guard Drones are located in several Territorial Commands, also in the General Command (Communication and Public Relations Division and the Criminal Investigation Department), Tax Action Unit, Protection an Rescue Emergency Unit, Intervention Unit, and in the Coastal Control; while the Guardia Civil has Drones in all Guardia Civil Commands and Specialized Units, covering its entire area of operation.

Currently, of the 19 people interviewed, 17 make use of Drones in their police activity, except for: the Coastal Control Unit (interviewee E7) which has Drones, but does not yet use them in real missions and the Operational Command (interviewee E11) whose answer encompasses all National Republican Guard. Of the 17 Units that use Drones in police activity, 15 use Drones in surveillance, reconnaissance and target tracking missions, the Iberian Gendarmerie Forces Units specialized in road enforcement (interviews E3 and E14) do not carry out this type of missions using Drones, however in the field of road safety they resort to the use of Drones to support the command decision (interviews E3 and E14), manage traffic and carry out road inspections (direct and indirect records) (interviewee E14).

As for **DQ2: "How are characterized the Drones used by the Iberian Gendarmerie Forces?"**; it was evident that despite the divergence of opinions of the interviewees between the characterization of Drones as a means, capacity or both, it is the intention of the National Republican Guard, through the work group "Implementation Capacities with Drones", to use Drones as a capacity following the assumptions of the NATO Doctrine and developed the qualifications of doctrine, organization, training, material, leadership and personnel. It was verified that the Portuguese State is assumed as the insurer of the Drones of the Armed Forces, with uncertainties regarding the Drones of the Security Forces. The Spanish State, regarding the Guardia Civil Drones, does not assume itself as an insurance entity, so it establishes civil insurance for them.

Regarding **DQ3: "How is carried out the training of Drone operators in the Iberian Gendarmerie Forces?"**; it was found that the training / certification of the operators of the National Republican Guard: the certification that only a few operators have is internally the Remote Pilot Course for Unmanned Aircraft and Remotely Piloted Aircraft System Course (not recognized), and externally the course given by the Air Service of the Guardia Civil and open

category A1, A2 and A3, with the cost to be supported by the operators. At Guardia Civil, operators are certified internally (Guardia Civil Air Service tactical training) and externally (AESA, open category A1, A2 and A3 and STS), with costs borne by the Guardia Civil. In the National Republican Guard there are units that do not have registered drone operators, they are the Intervention Unit and the Criminal Investigation Directorate. The rest are registered with ANAC and ANN. In the Guardia Civil, all operators are registered with various entities, AESA, the Guardia Civil Air Service, the Guardia Civil Traffic Unit and the Ministry of Defense.

Regarding **DQ4: "What are the legal norms that regulate the use of Drones by the Iberian Gendarmerie Forces?**"; it was verified that the European regulations are the same, with divergences in the legislation produced in each country: in Portugal, there are only national norms of civil scope and military scope (exclusive applicability to the Armed Forces). In Spain there are still no legal norms that regulate the operation with unmanned aircraft at the service of the Security Forces, although there is a definition of the path, but without express regulation, the norms that are followed are the civilian ones, taking into account the characteristics of the Drones in use.

With regard to **DQ5: "How does proceed the acquisition process of Drones in the Iberian Gendarmerie Forces?"**; it was found that the acquisition process takes place in the Republican National Guard through the foreseen logistical channels, in an autonomous way, that is, each Unit elaborates its acquisition process, through direct agreement or through acquisition processes of goods and services. As for the process of acquiring Drones at the Guardia Civil, the Guardia Civil Air Service manages the acquisition based on the technical and financial guidelines provided.

This work allowed for a comparative analysis of the use of Drones by the Iberian Gendarmerie Forces in the course of their police activity and specifically in surveillance, reconnaissance and target tracking missions, extracting their advantages and disadvantages, answering the starting question **"What is the added value of using Drones by the Iberian Gendarmerie Forces in surveillance, reconnaissance and target tracking missions?**". The result of the research responded to the great added value that police forces derive from the use of Drones in their operational activity. It was possible to verify that the use of Drones by the National Republican Guard in missions of surveillance, reconnaissance and tracking of targets has as main advantages the support to the command and control (command decision in making adequate and correct decisions). The risk reduction in which the military are less exposed to dangerous situations, allowing a previous reconnaissance of operations and approaches; resource efficiency and time savings in mobilizing patrols and personnel, enhancing the security of the military. As for the use of Drones by the Guardia Civil in the respective missions, the main advantages were support for decision-making; increased resource efficiency and decreased exposure of the military to materializing in the reduction of risk and advantage in seeing without being seen.

As disadvantages, on the part of the National Republican Guard, the difficulty in acquiring resources with regard to monetary issues and ad hoc acquisition; the lack of training for Drone pilots suitable for the tactical-police scope and the existing training of pilots at the internal level of the National Republican Guard not being recognized by external entities. On the part of the Guardia Civil, the main disadvantage was the fact that the Drone inhibition systems only covered DJI Drones. It was concluded that, despite two similar forces, but different in terms of the legal framework and in using Drone resources, both have in line the strategic vision of taking advantage and income from Drones in operational and police scope. It was also possible to see a concern by the National Republican Guard for the primacy of respect for individual rights, freedoms and guarantees, preserving the personal dignity of those whose images may be collected by the Drones. Remembering that there are factors that are appreciated for the purposes of using Drones: the risk, benefit and performance dimensions. The importance of deciding on

the current uncertainty of creating insurance was reiterated, or considering the Drones as belonging to the State, since, for an operation to be safe, the products must also be safe.

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