



The 'Aracnocóptero' monitors the status of the wind turbines of the Iberdrola Sierra de Dueña wind farm

THE AGE OF MECHANICAL BIRDS

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La Gaceta de Salamanca

SMALL AND INCREASINGLY INTELLIGENT DEVICES FLY OVER US TO CARRY OUT IMPORTANT MISSIONS OR TO ENTERTAIN US IN OUR LEISURE TIME. THE OPERATORS OF THE AIR ROBOTS WE CALL DRONES ARE SUBJECT TO STRICT REGULATIONS. BECAUSE THEY ARE MORE THAN JUST A TOY

TOY, INSTRUMENT AND WEAPON



INSPECTOR. A drone travels a high voltage line to assess its status

They control borders and forest fires, look for lost people, carry out archeological investigations and even parade flying over fashion runways. Drones can be a fun toy and a useful instrument, but also a dangerous weapon. And they have come to change our life

Like many other technological inventions, they were used in principle for military use. The progress of research, ingenuity and need expanded its utilities and today they are everywhere. Some do not go beyond being a curious toy and others are sophisticated control and measurement tools. They are the new mechanical birds, increasingly intelligent and more autonomous.

Incidents such as the temporary closure at the last Christmas parties of the London Gatwick airport due to the presence of drones of unknown origin, a fact that caused the suspension of about a thousand flights and that left 140,000 passengers on the ground, highlight the vulnerability of strategic facilities for public use and oblige administrations to refine the regulation of the use of drones, devices with infinite possibilities but whose improper or irresponsible use carries significant risks.

The term *drone* defines the various types of unmanned aerial vehicles according to the Spanish language dictionary. The word is an assimilation of English 'drone', which literally means 'zángano' (Spanish). The story tells that the English were the first to

devise very simple aerial devices that served during the First World War. Those Aerial Targets were controlled by radio from the ground and served as an aerial training target and as a defense against the zeppelins.

The English were the first to devise very simple aerial devices during the First World War

The great evolution of military drones arrived at the end of the century. War conflicts in the Gulf and the Balkans were scenarios in which drones showed their potential not only in obtaining, handling and transmitting information, but also in precision attack sections against military targets.

With time and the development of technology, the drones invaded the field of leisure, reached the appliance stores and became more affordable and manageable. Three years ago they became the great novelty in the main electronics establishments of Salamanca and today they keep the pull by offering a wide range of possibilities for all needs, from family leisure to the specialized company.

Today the United States controls 35% of the global drone market, followed by Europe with 30% and China with 15%. According to the estimates handled in the International Drones Exhibition of Los Angeles, by 2025 this industry will have a value close to 80.000 million euros worldwide.

But drones are not toys. You have to inform yourself a little before going to the store.

NORMATIVE. The growth of the sector of the aerial devices piloted by remote control promoted in Spain the need to establish a legal regulation that establishes security measures for this emerging sector. Since the end of 2017, a Royal Decree regulates the civil use of remotely piloted aircraft (RPAs). This rule requires the license of the drone pilot exclusively for those who are going to carry out a professional activity with them. The Matacán base in Salamanca has one of the training centers for homologated pilots in Spain. With a two-and-a-half-month course with simulator and real practices, the Unmanned Ship School enables military and civilian people to handle drones of more than 150 kilos that rise to a height of 5 kilometers.

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For the recreational use of drones and in compliance with the latest legal regulations, the Spanish Air Safety Agency establishes, among other measures, that flights over urban areas and people are avoided. Drones weighing up to two kilos, accessible in electronics stores, can be flown over a park, but always observing that there are no people nearby who could be injured in case of a possible fall. Above that weight the regulations are already much stricter: they cannot fly at night and any flight must be carried out within the visual range without exceeding 120 meters from the ground. Airports, such as Matacán in Salamanca, are forbidden by drone flying eight kilometers around.

The law also obliges to "enroll" drones. Any aircraft piloted by remote control must carry a fireproof identification plate that must include data such as the manufacturer's name, drone type and model, serial number and operator's name and contact information. "Irresponsible use can cost lives," says the AESA, who recalls that whoever violates the limitations established in the Royal Decree is exposed to fines that can reach 225.000 euros.



DEMAND. An employee of an electronics establishment shows a drone for recreational use

The drone concept encompasses a wide range of flying devices. Anyone can fly some of the simplest models in the living room of their house. With a weight of just 50 grams, its lithium battery and a lightweight plastic housing, the simplest come out for less than 30 euros. "What sells the most is the drone for leisure, less than 250 grams, with extendable propellers that fit in a small bag. The demand is more intense during the Christmas season, the time of communions and summer", says Raúl Jiménez, from the MediaMarkt Electronics department in Salamanca.

For newbies experts recommend starting with the simplest drones, which can operate from an app on your mobile, without assembly

and with few instructions. "The other type of customer is the one who knows what he wants and the use he will give," says the seller. With a larger budget, between 300 and 500 euros, the drones already have a camera, from the simple ones to those recorded with



CONTROL. The 'Aracnocóptero' of the company Arborea checks the status of Iberdrola wind turbines

4K quality, and a range of about 2 kilometers. Built-in GPS systems provide more wind stability and allow semi-professional recordings.

Knowing and respecting the regulations is usually the first recommendation that buyers of a drone receive. The risks involved in piloting a device through the air require having the necessary knowledge and taking responsibility. From there, the possibilities offered by these iron birds today are endless.



FASHION SHOWS. Drones have been present in recent years as special guests at events such as fashion shows. In the image, three drones carry bags of the signature By Imelda in the last Gateway of Castilla y León.



STUDY THE LAND. Precision mapping work by video is frequent in the field of drones. This is the one used by Francisco Javier Robledillo Martín, an engineer in Geomatics and Surveying, in his company based in Santa Marta.

REMOTE EYES THAT SERVE ALMOST EVERYTHING



THE HEAVY WEIGHT. The "Atlante" (Spanish Unmanned Long-Range Tactical Aircraft) is an unmanned aircraft model developed by Airbus Defense and that has been in tests in recent months at the School of Unmanned Ships of Maticán Base. It is designed to carry out military missions and numerous tasks in the civil sphere, from the control of illegal immigration, firefighting to infrastructure supervision and search for missing persons.



THE BEST PICTURE. Aerial photography is one of the most common uses of drones. The possibility of finding new points of view that provide spectacular images, both for your own fun or for professional use, is one of the most frequent aspirations of drone pilots.



RAILWAY SAFETY. The Eurecat technology center coordinates the European Assets4Rail project, presented at the recent Mobile World Congress, which over the next three years will test the use of drones to monitor the state of rail infrastructure, such as bridges and tunnels, in order to detect possible defects and to increase security.



MINI FUN. The sector of the mini drones, cheaper, offers options for family leisure like this one that incorporates a clamp to carry small objects, a marble launcher with which to engage in battles.