Drones. Unmanned Aircraft

PAOLA SERRANO GARCÍA
Aviation and space director of MAPFRE GLOBAL RISKS

Drones, also known as RPA (Remotely Piloted Aircraft)) or UAVs (Unmanned Aerial Vehicle) have recently become a subject of great interest.

Drones are aircraft designed to fly without a pilot on board and were originally designed for military use. However, nowadays these unmanned vehicles have become particularly relevant due to their commercial possibilities. They are used for a wide variety of purposes, such as border control or firefighting, crop and forest management, mapping, traffic surveillance, aerial photography, movies, etc. This range of commercial uses and their potential application to humanitarian aid (delivery of medical supplies in the third world, search and rescue missions, management of emergencies, etc.) have been essential in making drone production the fastest-growing segment in the aeronautical industry in recent years.

Nevertheless, this proliferation involves new risks for aviation safety and must be controlled to guarantee the development of a state-of-the-art technology sector with high growth potential.

October 17, 2014 saw the publication in Spain's *Official State Bulletin* of Act 18/2014, dated October 15, which approved urgent measures for the growth, competitiveness and efficacy and, among other aspects, regulated the use of unmanned aircraft or drones. By approving this Law, Spain has become one of the first countries in the world to regulate drones. Act 18/2014 sets forth the conditions for the operation of unmanned aircraft dedicated exclusively to performing technical, scientific or commercial activities and that weigh less than 150 kg, or, if heavier, dedicated to performing firefighting or search and rescue activities.

This law regulates three essential aspects of drone operation, all of which affect operational safety:

1. PILOTS:

Extensive pilot training and experience are essential to guarantee safe operation. Therefore, the law requires pilots of aircraft operated by remote control to demonstrate that they possess the necessary theoretical and practical knowledge, to be of legal age and to have an updated medical certificate.

These individuals must also hold some sort of aircraft piloting license or be able to demonstrate that they have the necessary technical knowledge to obtain one. In addition, the law stipulates that for aircraft with a maximum takeoff weight under 25 kg, pilots must be in possession of a basic certificate allowing them to fly the drone within their visual range or an advanced certificate if the drone is operated outside the pilot's visual range.

2. FLIGHT CONDITIONS:

Society must to be assured that the activity performed by drones is safe and that all possible hazards are under control. Therefore, the law stipulates a series of flight conditions that depend on the drone's maximum takeoff weight and allows flights at a maximum height of 120 meters and a maximum distance from the pilot of 500 meters for operations with aircraft that have a maximum takeoff weight under 25 kg. However, the law allows flights outside the pilot's range of vision when the aircraft weigh less than 2 kg. The law also stipulates that flights can only take place during the day, in favorable weather conditions and at a minimum distance of 8 kilometers from any type of airfield or airport and prohibits flights over urban population centers, cities or crowded outdoor locations.

Moreover, the use of drones with a maximum takeoff weight under 25 kg requires notifying the Spanish Aviation Safety and Security Agency beforehand (AESA) and, in the case of drones that are heavier, it will also be necessary to have an authorization from that Agency.

3. THE DRONE:

It is important that the drone and its operator be identified. Therefore, the law sets forth that if the maximum takeoff weight exceeds 25 kg, the drone must be registered in the aircraft license registry and have the corresponding aviation certificate. However, drone weighing less than this are exempt from complying with this requirement.

It is also set forth that all drones must have an "identification plate" that identifies both the drone and the operating company.

In addition to these three aspects, Act 18/2014 mandates that operators of civil aircraft operated by remote control must underwrite an insurance policy or some other financial guarantee to cover third-party liability for damages that may occur during or as a result of the flight. This aspect is very important to guarantee proper drone activity, since greater intensity and diversity of drone use lead to an increase in the possibility of conflicts with the interests of third parties.

The limits for coverage by the insurance policy or other types of financial guarantees depend on the maximum takeoff weight of the aircraft:

- Drones with a maximum takeoff weight under 20 kg are governed by the provisions set forth in Royal Decree 37/2001, which defines objective third-party liability with a minimum coverage of 220,000 Special Drawing Rights (approx. 300.000€).
- Drones with a maximum takeoff weight in excess of 20 kg are governed by the provisions set forth in EC Regulation No. 785/2004 of the European Parliament and Council, which also defines objective third-party liability with minimum coverage according to a scale, depending on the maximum takeoff weight of the aircraft , with a minimum of 750,000 Special Drawing Rights (approximately 1,000,000 euros) for aircraft with a maximum takeoff weight under 500 kg and a maximum of 700 million Special Drawing Rights (approximately 900 million euros) for aircraft weighing more than 500,000 kg.

It should be noted that there are other risks derived from drone operation that are not covered by this third-party liability insurance required by law. Among others, these risks include material or physical damage to the drone, the coverage for which must be underwritten directly through what is commonly known as hull insurance, or third-party claims for invasion of privacy, assuming that the drone takes unauthorized pictures or videos of an individual.

Likewise, and in addition to insurance policies that protect the drone operator, there are other insurance policies intended to protect the interests of drone manufacturers that are not allow for in Act 18/2014. Drone manufacturer protection can be covered by product third-party liability insurance that covers an eventual claim derived from damage caused by a delivered product that is defective or due to a fault in drone design.

By 2050, Europe is expected to generate 150,000 jobs and more than 15 billion euros in revenue thanks to drones; however, these estimates will only become real if there is a common regulation that attracts investors. In March 2015, the capital of Letonia, Riga, hosted the main actors involved in the development of this industry. A consensus was reached on the five basic principles that should guide the guidelines framework of civil operations with drones over Europe from 2016 onward.

These principles are as follows:

The first agreement was that drones should be treated as a new type of aircraft and that rules should be established in proportion to the risk of each operation; in other words, that these aircraft should be as safe as conventional manned aircraft and subject to a regulation similar to that applied in aviation using pilots on board aircraft.

Secondly, it was agreed that the European rules governing drone operations should be developed immediately, as well as a specific guidelines on safety and security to invite investment in this sector.

The third principle agreed to was the need to develop technologies and regulations for complete integration of drones in the European airspace for secure coexistence with traditional aviation.

The fourth principle highlighted the importance for the increased use of these new systems to obtain public approval and refers to the dangers that drones may represent for fundamental rights such as privacy and personal data protection, which could be threatened by filming private settings.

Lastly, the fifth principle of the RIGA DECLARATION establishes that the responsible party for the use of an unmanned aircraft will be its operator. Therefore, should the latter commit an irregularity, such as flying over a forbidden area, the legal consequences will apply to the owner or operator, who must be identifiable.

As mentioned above, these are only general principles that must be developed by the European Union with specific and uniform legislation for all member countries, leading to the harmonization of regulations and procedures that will enable the development of this cutting-edge sector for the economy.

MAPFRE is a leading insurance company in the global aviation risks market and closely follows the progress of this market to offer insurance solutions adapted to this business segment, thereby meeting the expectations generated by this new challenge for the aviation insurance market.