

## **“Comparative Study of Drone Regulations in India and China”**

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It was a bright sunny day in August 1849 and the streets of Venice (Italy) were flooded with people who were celebrating the famous carnival - Festa della Madonna della Salute. These people had little idea that their joy was soon to turn into horror; as the sky began to fill with time-bomb laden hot air balloons from their war rival - Austria. Thanks to a sudden turn of winds, these unmanned bomber balloons were swept away from the main population centres and the inhabitants had a narrow escape.<sup>1</sup> This was the very first time in history, where unmanned flying objects were used to drop bombs on the enemy territory. Due to the ability of unmanned flying objects to reach inaccessible places at low costs, this technology evolved with time and today, these unmanned flying objects are known as ‘Drones’.

A ‘Drone’ refers to any vehicle that can operate on multiple surfaces and/or in the air without a human being on board to control it. They vary in size, shape, form, speed, and a host of other attributes. However, most jurisdictions categorize and regulate them by weight.<sup>2</sup> In simple words, they are unpiloted aircrafts, which are commonly referred to as "unmanned aerial vehicles" or "UAVs" in short. They are remotely controlled from the ground, using the latest technologies in hardware, embedded software and wireless / telecommunication technology.

With the society developing rapidly, the importance and benefits of the use of drones is coming to light. They are the ideal devices to patrol large areas, in order to protect property and the state borders. They can also perform aerial photographs used for geodesy, archaeological, advertising purposes, etc. With its small dimensions and high manoeuvrability they can operate the flights between obstacles, buildings, and even are able to fly to rooms, through the open gates, windows and doors. Models equipped with thermal and night vision cameras can be used as prospecting machine in rescue operations, with a daily patrolling of the chosen area and can operate round the clock above the woody areas. They transmit an image in a real time allowing on an immediate reaction of relevant services in case of emergency, an accident or a crisis situation requiring intervention.<sup>3</sup> Today, with the fast growing technology, drones are being used for the instant delivery of blood vessels, harvested organs, and other critical medical supplies<sup>4</sup>, as they have the ability to deliver

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<sup>1</sup> Shrijan Pal Singh, Drones in India: Weighed down by regulation, sector struggles to find wings, Economic Times (Dec. 21, 2019, 12:22 PM), <https://economictimes.indiatimes.com/small-biz/startups...>

<sup>2</sup> Gregory S. McNeal, A Primer on Domestic Drones: Legal, Policy and Privacy Implications (Apr. 10, 2012, 08:12PM), <https://www.forbes.com/sites/gregorymcneal/2012/04/10/a-primer-on-domestic-drones-and-privacy-implications/#28e416053c7a>.

<sup>3</sup> Kardasz P, Doskocz J, Hejduk M, Wiejktut P, Zarzycki H, Drones and Possibilities of Their Using, J Civil Environ Eng 6:3, 1000233 (2016).

<sup>4</sup> Jeremy Tucker, Role for Drones in Healthcare, Drones in Healthcare, <https://www.dronesinhealthcare.com/>.

critical supplies without the risk of traffic delays to potentially save numerous lives.<sup>5</sup> The same has also been highlighted in the case of Vishvanath Singh v. State of Uttarakhand & Ors.<sup>6</sup>, wherein the Uttarakhand High Court directed the State to deploy drones and CCTV cameras to detect poaching and illegal mining activities which were rampantly being held in Corbett National Park and Rajaji National Park.<sup>7</sup>

## GLOBAL STANDARDS

The International Civil Aviation Organization (“ICAO”) is the international body which has the responsibility of codification and regulation of airways. The organization identifies drones as Unmanned Aerial Systems and has coined the term RPAS (Remotely Piloted Aerial Systems) for drones that are operated with the aid of a remote pilot. The ICAO Circular on Unmanned Aircraft Systems, 2011 defines an RPAS as ‘[a] set of configurable elements consisting of a remotely piloted aircraft, its associated remote pilot station(s), the required command and control links and any other system elements as may be required, at any point during flight operation’.<sup>8</sup>

On November 28, 2018 the International Organization for Standardization (ISO) released the first of its kind draft global standard for drone operations, titled ‘Draft International Standard for Unmanned Aircraft Systems Operations’. Although ISO has published the standard for global adoption in 2019, compliance is not made mandatory.<sup>9</sup> These standards propose “no-fly zones” to ensure adequate distance from critical and high-risk locations. It suggests that operators should respect privacy and data protection of the individuals. Crucially, it also seeks to formulate a set of uniform industry regulations for drone technology, to ensure safety and security of citizens.<sup>10</sup>

## REGULATIONS IN INDIA AND CHINA

In India, the regulator of civil aviation is the Directorate General of Civil Aviation (“DGCA”), a statutory body formed under the Aircraft (Amendment) Bill, 2020. This directorate investigates aviation accidents and incidents and also issues guidelines for the operation and regulation of drones in India.<sup>11</sup> The Chinese counterpart of DGCA is Civil Aviation Administration of China (“CAAC”), the aviation authority under the Ministry of

<sup>5</sup> Daily Mirror, In a first, Drone delivers kidney for transplant, Times of India (May 1, 2019, 11:07AM) <https://timesofindia.indiatimes.com/home/science/in-a-first-drone-delivers-kidney-for-transplant/articleshow/69124170.cms>.

<sup>6</sup> Vishvanath Singh v. State of Uttarakhand & Ors., Writ Petition No. 47 of 2016 (2018).

<sup>7</sup> Srinivas Kotni & Anuraag Mehta, Legal & Regulatory Framework of Drones, Live Law (May 11, 2020, 09:28AM) <https://www.livelaw.in/know-the-law/legal-and-regulatory-framework-of-drones-156559>.

<sup>8</sup> ICAO Circular on Unmanned Aircraft Systems, ICAO Circular 328-AN/190, [https://www.icao.int/Meetings/UAS/Documents/Circular%20328\\_en.pdf](https://www.icao.int/Meetings/UAS/Documents/Circular%20328_en.pdf).

<sup>9</sup> ISO, Unmanned aircraft systems — Part 1: General specification, TC > ISO/TC 20/SC 16, <https://www.iso.org/standard/70835.html?browse=tc>.

<sup>10</sup> Malek Murison, ISO Proposes Global Drone Standards, Drone Life, (Nov. 22, 2018) <https://dronelife.com/2018/11/22/iso-proposes-global-drone-standards/>.

<sup>11</sup> Directorate General of Civil Aviation, <https://dgca.gov.in/digigov-portal/>.

Transport of the People's Republic of China which oversees civil aviation and investigates aviation accidents and incidents, and is the governing body for all UAV operations in the China.<sup>12</sup>

In April 2016, India’s civil aviation regulator, the Directorate General of Civil Aviation (DGCA) issued draft guidelines for the regulation of drones in India which are to be complied with by all drone pilots in controlled and uncontrolled airspaces across India. They made draft guidelines which proposed a framework to regulate the civil and commercial use of drones in India. Pursuant to a circular issued by the Director General of Civil Aviation (“DGCA”) dated August 27, 2018,<sup>13</sup> the Government introduced the Civil Aviation Requirements for remotely piloted aircrafts systems (“CAR 1.0”), ending a long period of ambiguity and paving the way for civil use of drones in India. CAR 1.0 defines what will be classified as RPAS, how they can be flown and the restrictions they will have to operate under. In order to further develop the laws governing operation of drones, Draft of Drone Policy 2.0 was given in January 2019. The Drone Policy 2.0 seeks to function as a policy roadmap for the next stage of drone regulations, which would relax some of the restrictions under CAR 1.0. Drone Policy 2.0 aims to promote innovation in the drone market by enabling commercial use of drones including autonomous drones and expanding its operability beyond visual line of sight.

In India, drones are classified based on their total weight, which is also called the “all-up weight” which includes not just the weight of the drone itself but also of the weight of the extra materials that it may be carrying, including the weight of the fuel that it may hold. These classes are, Nano i.e drones weighing upto 250 gm, Micro i.e drones weighing from 250 gm upto 2 kg, Small i.e drones weighing from 2 kg upto 25 kg, Medium i.e drones weighing from 25 kg upto 150 kg and Large i.e drones weighing greater than 150 kg. In China, CAAC released the Provisions for the Operation of Light and Small Unmanned Aircraft in November, 2015 and classified drones based on their net weight and take-off weight as follows:

Class	Net Weight (kg)	Take-off Weight (kg)
I	0 < W ≤ 1.5	
II	1.5 < W ≤ 4	1.5 < W ≤ 7
III	4 ≤ W ≤ 15	7 < W ≤ 25
IV	15 < W ≤ 116	25 < W ≤ 150
V	Plant protection (agriculture/crop-related) drones	
VI	Unmanned airship	
VII	BVLOS Class I and II	
XI	116 < W ≤ 5700	150 < W ≤ 5700
XII	W > 5700	

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<sup>12</sup> Civil Aviation Administration of China, <http://www.caac.gov.cn/en/GYMH/LDJS/>.

<sup>13</sup> *Supra* 11.

<sup>14</sup> CAAC, <http://www.caac.gov.cn/en/HYYJ/NDBG/201802/P020180227616856973062.pdf>.

The process for registering, operating and monitoring drones in India is completely digital,<sup>15</sup> for registering, operating and monitoring drones in India. A portal namely the ‘DigitalSky Platform’<sup>16</sup> enabling a one-time digital registration process for drones, pilots and owners as well as monitoring drone traffic. The purpose of the Unmanned Traffic Management Platform is to ensure that each time an operator decides to fly a drone, they would require requisite permission to fly. Such permission is to be obtained through a mobile application with the permission or denial of the request to be granted vis-à-vis an automated process. Any drone that does not have a digital permit will not be able to take-off. It would only take off on obtaining requisite permission. Such a digitized process intends to prevent unauthorized flights altogether and avoid regulatory red-tape, while at the same time enabling efficient registration, regulation, monitoring and ensuring public safety.

To be able to operate a drone in India (except Nano category drones), the drone must have a Unique Identification Number (“UIN”), which is similar to the number plate that a car needs, to be issued for all drones from DGCA. The number so issued needs to be engraved on a fire-resistant plate and pasted on the drone. To be eligible to apply for a UIN, the Drone must be wholly owned by a Citizen of India; or the Central Government or State Government or any company or corporation owned or controlled by either of the said Governments; or a company or a body corporate provided that it is registered and has its principle place of business within India or its chairman and at least two-thirds of its directors are citizens of India or its substantial ownership and effective control is vested in Indian Nationals or a company or company registered elsewhere than in India provided that it has leased the drone to any organization mentioned above.<sup>17</sup> In China, any drone that weighs over 250 gm must be registered with the CAAC. Registration will only be granted if the individual has a Chinese phone number and an understanding of the Chinese language. It requires the personal information of the individual as well as details about the drone and its usage. Once the drone is registered, the registration sticker with the QR code and must be attached it to the drone in a clearly visible manner. All drones flown for commercial use, weighing 7 kg to 116 kg require a license from the CAAC and drones weighing over 116 kg require a pilot’s license and an additional UAV certification for operation.<sup>18</sup>

For becoming a drone operator/pilot in India, every individual will have to undergo training at a DGCA approved flying training organization (FTO), has to be 18 years of age and should’ve studied up to a minimum of class 10 in English language. The pilot needs to be certified with a ‘Remote Pilot licence’ or an ‘Unmanned Aerial Operator Permit’ (UAOP) which cost Rs 25,000 if you are operating above 200 feet. Even with all these licenses and documents in place, the DigitalSky can deny a drone permission to fly at any given time with the No Permit No Take-off rule. In China, the drone operator must be certified through a

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<sup>15</sup> Civil Aviation Requirements 1.0.

<sup>16</sup> DigitalSky Platform, Government of India, <https://digitalsky.dgca.gov.in/>.

<sup>17</sup> DigitalSky Platform, Frequently Asked Questions, <https://digitalsky.dgca.gov.in/faq>.

<sup>18</sup> UAV Coach, Drone Laws in China, <https://uavcoach.com/drone-laws-in-china/#:~:text=Any%20drone%20weighing%207%20kilograms,and%20UAV%20certification%20for%20operation>.

training process which is recognised by the Chinese government. Applicants can apply for licences via the CAAC UAV Real-name Registration System and fill in the basic information such as the legal body of the enterprise, the real-name registration number of the drone and so forth. The four basic conditions for getting a business license in China are, first, the subject to carry out the operational activities should be a legal person, and the legal representative should be a Chinese citizen. Second, the enterprise should have at least one drone and be registered under a real name in the system. Also, the operator shall be covered by insurance against liability for third parties on the surface. For conducting training activities, the operator shall also have the qualification recognized by the relative department.<sup>19</sup>

India also has a ‘No Permission- No Takeoff’ (NPNT) clause. This means that the drone needs to be configured with a special software and/or hardware in such a manner that unless the regulatory permission is given through Digital Sky Platform, the drone cannot fly, i.e, until the NPNT add-on is implemented, no drone manufacturer would be able sell drones in India.

Digital Sky platform<sup>20</sup> has divided the airspace of India into three categories: Red, Yellow and Green. Red means “no fly zone” and includes airspace near international borders, near airports and other strategic locations. Yellow is “restricted zone” which includes airspaces which require an Air Defence Clearance/ Flight Information Centre (FIC) number from Air Traffic Control. Green is “unrestricted zone”, however, one still needs to obtain permission from Digital Sky Platform to fly in this zone. In China, all drones are subject to NFZs or “No Fly Zones”. These zones include the area around airports, military installations and specified cities such as Beijing and in sensitive areas like Xinjiang or Tibet, where drones are not allowed to fly.

In India, a Flight plan has to be logged through DigitalSky Platform before the drone goes for a flight. Drone operations are restricted to day time and within the visual line of sight. However, if one wishes to shoot in well-lit enclosed premises using a micro drone up to 200 feet above ground level, DGCA may authorize such operations on a case to case basis, which would come with additional conditions. Informing the local police 24 hours prior to flying is a must. A distance of 25 km must be maintained from the international border, LOC and Line of Actual Control. A drone should not be operated within an area of 5 km from airports, 500 m from perimeter of strategic locations notified by Ministry of Home Affairs or from a perimeter of military installations/ facilities; within 5 km radius from Vijay chowk. Foreigners are currently not allowed to fly drones in India. For commercial purposes, they need to lease the drone to an Indian entity that in turn will have to obtain a UIN and UAOP from DGCA. In China, drone flights are allowed over controlled airspace subject to prior approval from CAAC. Any drone weighing over 116 Kg requires a pilot’s license and UAV

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<sup>19</sup> UAS Traffic Management News, China Introduces New Rules for Commercial Drone Operators, Unmanned Airspace (Apr. 17, 2018), <https://www.unmannedairspace.info/uncategorized/china-introduces-new-rules-commercial-drone-operators-june/>.

<sup>20</sup> *Supra* 16.

certification for operation. As per the 2019 regulations, 120 m (400ft) is the maximum altitude permitted for undertaking operations. For drones operating higher than the limit would qualify as commercial operations which are allowed only subject to approval from CAAC.

Drones in India require an insurance cover, which should be of an adequate amount to cover risks, damages or other factors that are posed by operation. Drone Insurance covers third party bodily injury, third party injury to property, consequential losses and claims against the owner.<sup>21</sup> Similarly, in China drone operators are obligated to cover their liability for third parties on the ground through insurance.

Like many countries, drones in India as well as those in China have to be flown within the Visual Line of Sight. In India, drones have to fly within 500 m of visual line of sight for the full length of the flight. Drones can be operated only during daylight when the ground visibility is 5 kms and surface winds do not exceed 20 knots. Drones flying below 200 ft above ground level in uncontrolled airspace and drones described as drones without payload, created solely for the purpose of recreational activities will be exempted from having to obtain an UAOP registration. In China as well, you need to fly with your drone in sight. Maximum permissible altitude in China is 400 ft; anything higher requires a commercial license from the CAAC. Most drones manufactured in China, including those from the popular DJI brand, automatically set the 120 m max altitude and will warn you if you try to manually adjust the max altitude settings.

## CONCLUSION

Over the past few years, drone have become central to the functioning of various businesses and government organisations all over the globe and have managed to pierce through areas where the development was either lagging well behind time or was stagnant. According to the Drone Deploy report<sup>22</sup>, automation is the next step in the evolution of drone tech. “Soon, self-driving drones will be programmed to fly a consistent path on their own, even taking off, landing and charging itself autonomously,” the report concludes.<sup>23</sup> The rise of drones has presented several policy challenges in terms of personal privacy, public safety, international airspace, civil rights, etc. Thus, the success of drones would depend on achieving a symbiotic integration of law, both domestic and international and civil liberties. As drones gain more popularity in the eyes of the public and garner support for potential markets, a timely institution of robust and flexible drone regulations would go a long way towards tapping into

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<sup>21</sup> Berns Brett, Drone Insurance, <https://www.bbicover.com/drone-insurance-cover>.

<sup>22</sup> DroneDeploy State of the Industry Report 2020, Drone Deploy (Feb. 12, 2020), <https://www.dronedeploy.com/blog/dronedeploy-state-of-the-industry-report-2020/>.

<sup>23</sup> Evan Milberg, The Future of Drones and where the Market Currently stands (Mar. 5, 2020), <https://www.smartbrief.com/original/2020/03/future-drones-and-where-market-currently-stands>

and building upon this opportunity.<sup>24</sup> By keeping dialogue open between innovative companies and the governments of various nations, businesses that are researching and developing UAV technology that can change the world.<sup>25</sup> As long as innovation continues to develop and legislation evolves, drones will soon become just as indispensable as the mobile phones we carry everyday – tools that make us more productive, safer, and more connected.

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<sup>24</sup> Unravelling the Future of Drones, Nishith Desai Associates (Apr. 2018), [http://www.nishithdesai.com/fileadmin/user\\_upload/pdfs/Research%20Papers/Unravelling\\_The\\_Future\\_Game\\_of\\_Drones.pdf](http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Research%20Papers/Unravelling_The_Future_Game_of_Drones.pdf).

<sup>25</sup> Roderick O'Dorisio, The Current State of Drone Law and the Future of Drone Delivery, *Denver Law Review*, Vol. 94, No. Online, 2016.