

DRONE LAWS IN INDIA

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Abstract

The Laws regulating the airspace of India is handled by Minister of Civil Aviation. It is also responsible for all drones and other forms of Unmanned Aerospace Vehicle (UAV) that can be used by civilians. It's a fast pacing world and India is a top contender in the race of scientific and technological advances. The usage of drones in India has only increased in the past decade and there is no stopping now. The cheaper prices of drones and the smart minds of youth never ceases to disappoint. With such budding talent, drones are now made within houses, schools and colleges across India. Hence, a certain kind of regulation had become mandatory. As advances and innovation of drones increased, the usage of the same for negative and criminal intentions also saw an uprise.

Crimes of serious nature like terrorist attacks, exchange of information of national security, stalking of important people, women and children were only a few to name. Hence, the Director-General of Civil Aviation (DGCA), came up with a set of regulations specifically for the drone-Civil Aviation Regulation (CAR), 2018. It specified all types of drones, their allowed uses, the license of using a drone and the punishments in case of not following the regulations implied. This was a landmark, as no other country had been able to do this. Unfortunately so, it was not followed through due to lack of knowledge among the civilians about the same and manpower in the government-run system.

INTRODUCTION

Unmanned Aerial Vehicle (UAV) or Drone, is an unmanned aircraft which is either operated manually from ground or autonomously thought onboard computer system or an onboard robot pilot. UAV itself is a component of an Unmanned Aircraft System (UAS), along with ground based operator and a mode of communication between the UAV and the operator. Originally made for military purposes, for missions which were considered to be dangerous, impossible

and cause mass casualties to life. Rapid development in technology sector has made the public more curious in the application and usage of drones.

Today drones are used for a variety of civil and commercial purposes like agriculture, policing, tourism, pickup and delivery, aerial photography and videography, and even for safety and helping during natural calamities. Unfortunately, it is also being used for illegal and criminal purposes like, smuggling, unauthorized surveillance, stocking, illegal drugs transportation, theft and robbery, terrorism and trading national secrets. Hence, to keep a track on the civilian usage of drones in India, drone laws were introduced by the [Ministry of Civil Aviation, India](#).

Drones in India

Flying drones in India was legalized in the year 2018 by the Ministry of Civil Aviation when the [Directorate General of Civil Aviation](#) announced India's first Civil Aviation Requirements (CAR). Under this, one can't simply buy a drone and pilot it into the air space without any compliances. The government has included a first of its kind, national [Unmanned Traffic Management](#) (UTM) which is known as the "[Digital Sky Platform](#)". Without clearance from Digital Sky Platform, drones can't fly into the air space or unauthorized territories. The Digital Sky Platform had divided the air space in India into three categories: Red, Yellow and Green.

Drone categories:

Drones today are being used as toys. But one cannot forget about the possibilities of it being used for commercial, military and illegal purposes. Hence, different kind of drones are made for various purposes and that acts as a basis for their categorization. The Nano category drone doesn't need to be registered as it's the common toy drone. Its weight and airspace distance are limited to pilot sight with a flight distance of 50m. There are also bigger and heavier drone that happen to have capabilities to pick up a human. The drone of medium and large category are to be used for special purpose and so need special clearance from the DGCA. The primary 3 categories of drone are of civil and commercial purposes and do not need special clearance.

Section 3 describes the categories of the RPA used for civil purposes in accordance with maximum all-up-weight is indicated.

- Nano: Less than or equal to 250 grams (.55 pounds)
- Micro: From 250 grams (.55 pounds) to 2kg (4.4 pounds)
- Small: From 2kg (4.4 pounds) to 25kg (55 pounds)
- Medium: From 25kg (55 pounds) to 150kg (330 pounds)
- Large: Greater than 150kg (33 pounds)

Drone Registration Protocols

Remotely Piloted Aircraft (RPA), Autonomous Aircraft and Model Aircraft are various subsets of a UAV. A Remotely Piloted Aircraft, its associated remote pilot station, command and control links and any other components forms the Remotely Piloted Aircraft System (RPAS). The CAR was issued under the provision of Rule 15A¹ and Rule 133A² of the Aircraft Rules, 1937. According to this, drones in India are of two basic types- Made in India, Imported. Both the kinds need to be registered under section 6 of drone law with its application procedure explained in section 5³. Through this, the public can have easy access to both the imported and locally purchased drones and get it registered with ease.

“Section 6 Civil RPA (except those indicated in Section 6.4 and 6.5) of CAR, shall require Unique Identification Number (UIN) from DGCA. UIN will be granted where the RPAS is wholly owned either :

¹ <https://indiankanoon.org/doc/167031304/>

² "Section 133A in The Aircraft Rules, 1937 - Indian Kanoon." <https://indiankanoon.org/doc/188680291/>. Accessed 3 Aug. 2020.

³ 5. APPLICATION PROCESS

5.1 For RPA imported to India:

a) Any entity intending to import RPAS in India shall obtain Equipment Type Approval (ETA) from WPC Wing, Department of Telecommunication for operating in de-licensed frequency band(s). Such approval shall be valid for a particular make and model.

b) The applicant, other than Nano category, shall apply to DGCA for import clearance. Based upon the import clearance issued by DGCA, DGFT shall issue license for import of RPAS. c) Upon receipt of import license, the applicant shall apply to DGCA for UIN/

UOAP, as applicable.

5.2 For RPA locally purchased in India: a) The applicant shall ensure that locally purchased RPAS shall have ETA from WPC Wing, DoT operating in de-licensed frequency band(s). Such approval shall be valid for a particular make and model. b) The applicant shall submit information along with application for issue of UIN / UAOP, as applicable.

CIVIL AVIATION REQUIREMENTS SECTION 3 – AIR TRANSPORT SERIES X PART I 27TH AUGUST, 2018 5.3 All applications shall be processed on case-to-case basis through “Digital Sky Platform”.

- A. By an Indian citizen;
- B. By the Central Government or any State Government or any Company or Corporation owned or controlled by either of the said governments;
- C. By a company or a body Corporate provided that:
 - I. It's registered and has its principle place of business within India,
 - II. It's chairman and at least two thirds of its directors are citizens of India,
 - III. It's substantial ownership and effective control is vested in the hands of an Indian National
- D. By a company or Corporation registered else where than India, provided that such company or Corporation had leased the RPAS to any organization mentioned in Section 6.1B or C.”

The basic understanding of this section is that every drone except the Nano category drone needs to be registered under the provisions of CAR and have it's own UIN and UAOP from the DGCA. No foreigners have the authority to fly an unregistered drone or a registered drone in India. To do so they will need to lease the registered drone to an Indian entity who will gain the authority to pilot the drone for commercial purposes.

Section 7 of Drone laws, 2018, describe the requirements for issuing of an Unmanned Aircraft Operator Permit (UAOP). It describes a necessary guideline for all drone operators to have a permit which is more like a license to fly a drone. Similar to driving license, acquiring a permit also needs to fulfill a certain criteria like,

1. Nano RPA should be operated below 50 feet of the airspace.
2. Micro RPA should be operated below 200 feet of the airspace
3. When an RPA is owned and operated by an agency (as indicated in Section 6), need to intimate the local police office and concerned ATS units prior to conduct an actual operation.
4. Permission of land and property of the owner has to be taken in prior (only for the area used for the take off and landing of RPA)
5. Details of the remote pilot along with security clearance from MHA or self attested copies of at least 2 out of 3 valid identity proofs should be provided.
6. Security program and insurance should be approved by the BCAS.

7. The UAOP should be renewed in every 5 years and is non transferable.
8. The operator must be above 18 years of age.

These guidelines work like guidelines that one needs to fulfill and be aware of. It works similar to a driving license application but this time, it's for flying drones.

Section 9⁴ describes the remote pilot training requirements. Under this the various requirements that the operator needs to have to fulfill their training under CAR is detailed. The training is given by the CAR authorities. There are also private training institutes like a driving school where one can enroll before getting their UAOP.

Required features for drones

With growing technology, people have grown to experiment with it based on their needs, likes and demands. Many drone enthusiasts happen to create drones at home. To keep a control and check of such the CAR has made it compulsory for all drones to have particular features that need it to be cleared by the DGCA. Without any of these features, the drone will be rejected for UIN and the pilot will be prohibited from flying it. Let's look at some of the key necessary features of drones:-

1. **Section 8 Security and Safety Requirements:** These are the necessary requirements for the means of security and safety of the drone and the public. A

⁴ 9. REMOTE PILOT TRAINING REQUIREMENTS

9.1 Remote pilot shall have attained 18 years of age, having passed 10th exam in English, and undergone ground/ practical training.

9.2 The ground training shall be obtained at any DGCA approved Flying Training Organization (FTO), and include the following theory subjects:

- a) Basic Radio Telephony (RT) techniques including knowledge of radio frequencies. b) Flight Planning and ATC procedures. c) Regulations specific to area of operations. d) Basic knowledge of principles of flight and aerodynamics for fixed wing, rotary wing, and hybrid aircraft. e) Airspace Structure and Airspace Restrictions with knowledge of No Drone Zones f) Basic Aviation Meteorology.

9.3 The practical training shall comprise of RPA in flight having live component, and/ or simulated flight training to demonstrate control of RPA throughout its operating conditions, including safe recovery during emergencies and system malfunction. Minimum syllabus and curriculum for training capsule for Remote Pilot is given at Annexure-IX.

9.4 The requirements contained in Para 9.1 through 9.3 of this CAR are not applicable for Nano and Micro category RPA pilots intending to operate in uncontrolled airspace. However, the owner and user shall be fully aware of responsibilities for all aspects of flight safety during such operations.

drone needs to have these feature so that it doesn't become a casualty or risk of itself or anyone else. They are:

- In case the RPA is damaged and can't be restored to its original condition, the same has to be notified to the DGCA by the owner/operator for the cancellation of the UIN. This is to ensure that the UIN number is not misused by any other operator or an unregistered RPA.
- The RPA will not be sold out disposed of in any way to any person or firm without the permission from the DGCA.
- Any changes in the contract details specified in UIN shall be immediately notified to DGCA and all other concerned agencies.

2. **Section11 Equipment Requirements:** According to this sections, all RPA except the Nano category drones should be equipped with the following requirements:

- GNSS for horizontal and vertical position.
- Autonomous Flight Termination System or Return Home (RH) option
- Flashing anti collision strobe lights.
- RFID and GFN sim card/ NPNT compliant for App Based Real Time Tracking.
- For resistant identification plate, inscribed with UIN.
- Flight controller with flight data logging capability.
- SSR transport or ADS-B OUT equipment.

The following requirements are specific for medium to large sized drone with special abilities and purpose and so need special clearance from the DGCA :

- Barometer equipment, it's capability for remote subscale setting
- Geo sensing capability
- Detect and avoid capability
- Remote pilots shall be equipped with a communication facility to establish two way communication with the concerned ATS unit.
- The trading system of the RPA will be self powered and tamper proof to ensure data relay even in the event of RPA accident
- Indian air force shall monitor RPA movement in the country in coordination with AirPorts Authority of India.

3. **Section 12 Operating Requirements:** The RPA operator need to prepare themselves and the drone according to the Standard Operating Procedure (SOP), which are:

- Take off/landing
- Collision avoiding
- Noise abatement
- Flight plan piling
- Local airspace restriction
- Right-of-way
- Communication
- RPA emergency including loss of C2 link
- Safe recovery of RPA through controlled airspace in case RPA system failure precludes the ability to remain outside controlled airspace.
- All RPA operation shall be restricted to day only with in Visual Line of Sight (VLOS)
- The meteorological condition need to be monitored as
 - i. During daylight
 - ii. In Visual Meteorological Condition (VMC)
 - iii. With a minimum ground visibility of 5 Kilometers and Cloud ceiling not less than 1500 feet.
 - iv. Surface wind of not more than 10 knots or as specified by the manufacturer
 - v. No perception of thunder storm activities or exceeding those specified by the manufacturer

4. **Section 14 General Requirements:** The RPA needs to have certain features beyond the conditions described in Section 12, which are:

- To ensure new technology, Indian organization and institution involved in R&D related activities of RPAS shall use the test sites for testing and demonstrating purposes.
- The organization can also utilize unused air strips or Government educational institutional campuses, provided they follow adequate safety precautions.

- The operators in R&D institutions are responsible that no manned or unmanned aircrafts is flying during such operations in the intended test areas.

All these features and requirements ensure the safety of drones, the pilot and the public at all time. It helps the government to be aware of all the tasks being done with the help of drones and keep a track on all illegal activities too.

No Permission, No Take-off Policy

India has its uniquely added '[No permission No take off](#)' (NPNT) clause added to its CAR policy this means that the drone needs to be configured with a special software and hardware in such a manner that unless the regulatory permission is given through the Digital Sky Platform, the drone can't fly. According to this, the NPNT has added an implemented advantage to the law because by this no drone manufacturer can sell drones in India without the permission of the DGCA. While both the online and offline markets are flooded with Drones, where NPNT is not even heard of. Yet, drones need a UIN to fly in India. Hence, they've to follow the NPNT protocol. The Digital Sky Platform had divided the air space of India into three categories

1. Red- no fly zone.

This includes airspace near international borders, near air ports and other strategic locations like the government and judiciary building.

2. Yellow- restricted zone

It includes air spaces which require an Air Defense Clearance/ [Flight Information Center \(FIC\)](#) number from [Air Traffic Control](#).

3. Green- unrestricted zone


Even though it is an unrestricted zone, one still needs to obtain permission from the Digital Sky Platform to fly in the zone.

The massive framework of the Digital Sky Platform is one of the most comprehensive and complex in the world. Unfortunately, there is a general absence of awareness about the Digital Sky

Platform amongst the drone users and manufacturers that's burdening the CAR and Aviation Authority. Though enforcing NPNT at the manufacturer's end seems to be the plausible way ahead, the regulators are themselves struggling to maintain a system of authority over the hardware and software capabilities of drones as there are no labs to ascertain these standards. According to a recent estimate, there are more than 40,000 drones in India as of now. This number is only expected to increase over a Million in the coming years. Almost none of these are NPNT compatible and it remains to be seen what the regulators will do with these existing drones and their second-hand sales vulnerable to unscrupulous elements.

Enforcement Action

Section 18 describes the various enforcement actions that explains the various possible criminal charges and appropriate punishment, in case there is a violation in any of the provisions of CAR. Some of them are as follows:

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- In case of violating any provision of CAR, the UIN and the UAOP issued by the DGCA shall be suspended or cancelled.
 - Section 17⁵ describes all civil RPA operators shall have insurance with the liability that they might incur for any damage the third party resulting from an accident or incident.
 - Beach of compliance to any of requirements and Falsification of records and documents shall attract penal actions including imposition of penalties as per applicable IPC section. (Such as IPC287⁶, IPC336⁷, IPC337⁸, IPC338⁹ of any relevant section of IPC).
 - Necessary actions shall be taken as per relevant sections of the [Aircraft Act 1934](#) and The [Aircraft Rule 1937](#) or any other statutory provisions.

⁵ All civil RPA operators shall have insurance with the liability that they might incur for any damage to third party resulting from the accident/incident.

⁶ "Section 287 in The Indian Penal Code - Indian Kanoon." <https://indiankanoon.org/doc/180291/>. Accessed 3 Aug. 2020.

⁷ "ipc 336 - Indian Kanoon." <https://indiankanoon.org/search/?formInput=ipc%20336>. Accessed 3 Aug. 2020.

⁸ "Section 337 in The Indian Penal Code - Indian Kanoon." <https://indiankanoon.org/doc/1402213/>. Accessed 3 Aug. 2020.

⁹ "IPC 338 - The Indian Penal Code (IPC)." <http://www.indianpenalcode.in/ipc-338/>. Accessed 3 Aug. 2020.

There are many criminal aspects to using a drone. If we go exploring all the ways a simple top drone can be manipulated to be used as a weapon, we will end up having a debate or a really long conversation. The government and Ministry of Aviation were well versed with this idea. Now the question that arises with the judiciary is that, if it needs to amend it's IPC and CrPC to add specified criminal charges and punishment against offence including drones and other technologies. Is it important? Maybe not today. But in the future, it may come in handy to have pre-advised law crimes involving modern technologies.

Conclusion

During my research, I talked to people in the field of law and technology sector regarding drone laws. To my surprise only a few were aware of its existence! There are not many online sources available either. Fortunately the government site has all the necessary details and guidelines available. It's a new law and we as Indians should be proud of it as it is the first of its kind. When we talk about our lives being dependent on robots and technology in the future, we forget about the legal aspects of it. We forget about the criminal aspects of it. It's important for us to understand these laws and propagate them. The more we talk about it, the more aware we are. Awareness helps build a society. This is a stepping stone for technology laws, a giant leap into our future.

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I would also like to give credits to video based information that helped me write this paper.

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