



Comparitive study of drone laws in USA, Canada and Russia

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Abstract

The following article discusses various laws implemented by the government of Russia, USA and Canada for commercial use of drones. The reason that how come the drone flyers are liberated in these countries, but are unable to pave their way in India has also been dealt with. There is a need of implementation of such laws providing benefit to commerce companies, without infringing any right to privacy of our citizens, and this article brings out the very need of such implementations in India as well. Laws and regulations made in these three countries are an ideal to be followed and implemented therefore.

Keywords: Canada, discusses, government, Russia

Introduction: What is a Drone?

Drone is also known as Unmanned Aerial Vehicle (UAV) which are pilotless and non-crewed aircraft that are capable of flying either with the use of remote control or through the use of on-board computers. They are also known as Remotely Piloted Aircraft (RPA), Remotely Piloted Vehicle (RPV) and Remotely Operated Aircraft (ROA).

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All the three nations follow Experimental beyond visual line of sight (BVLOS) ^[1]. It is defined as exceptions to the constant visual line of sight requirement are possible with certain restrictions and pilot ratings.

Regulations in USA ^[2]

All the rules and policies regarding drones are made by the Federal Aviation Authority in USA. Section 333 of the Federal Aviation Administration Modernization and reforms act, 2012 grants the secretary of Transportation the authority to determine whether an airworthiness certificate shall be required for an Unmanned Aerial System (UAS) to operate safely. This section is taken from Article 31 of Chicago Convention held on 7th December, 1944 formed in consonance with International Civil Aviation Organisation (ICAO). This section has helped in laying easy and relaxed atmosphere for commercial use of drones. It strictly prohibits flying of drones over people and mandates the requirement of registration for flying drones while, no license is required for drones below 55 lb (referred as small UAS by FAA) and the license is granted only after passing the paper examination conducted after every two years. Federal Aviation Authority (FAA) denotes single drones as Unmanned Aerial Vehicle (UAV), while class of more than one drone is referred as Unmanned Aircraft System (UAS) and drone pilot's certificate is called as Remote Pilot Certificate (RPC). As per section 44103(d), a drone operator who flies drone weighing more than 0.55 lbs must be registered, failing which civil penalties amounting to \$32,666 per incident may be imposed. The FAA may also

impose criminal sanctions amounting penalty up to \$250,000 and a prison sentence of up to 3 years upon conviction.

There are 4 types of drone flyers:

1. Recreational flyers and modeller community-based organization ^[3]

There is a law ^[4] which defines when and where one can fly drone for recreational purposes. If one is flying drone for fun, he is meant to be flying drone for recreational purposes, but still, he/she is bound to know when and where drones can fly and how to register it.

Rules to be followed:

1. One must register the drone and mark the number outside the drone and always carry the registration proof.
2. One must only fly for recreational purposes.
3. The drone must fly below 400 feet, when it is in uncontrolled airspace. One needs authorization for flying drone in controlled airspace.
4. Drone must fly within visual line of sight.
5. Drone must not fly at night until it has its own lightning and allows pilot to know its location at all times.
6. Drone must not fly over any person or moving vehicle and must not interfere with any manned aircraft.
7. One must not interfere with emergency responses and must not fly under the influence of drugs or alcohol.

If the safety requirements are intentionally violated or operated in a careless manner, they could be held for criminal and civil penalties.

2. Certified remote pilots including commercial operators ^[5]

One can fly drone below 55lbs for business purposes, but by following Part 107 rules ^[6]. The rules specify three steps to be followed for flying drone

1. He/she must be thorough with the Part 107 rules
2. He/she must be an FAA- certified drone pilot by passing the knowledge test
3. He/she must register his/her drone with FAA

3. Public safety and government users ^[7]

Public safety agencies such as law enforcement are there to detect and investigate unauthorised or unsafe UAS operations. These agencies protect public at large from unauthorised and unsafe drone operations.

4. Educational Users ^[8]

These types of users fly drones for knowledge purposes. But even in the learning process, knowing about the Part 107 rules and following it stands a pre requisite.

Regulations in Canada ^[9]

Canada has forbidden flying of drones in densely populated area and only allows them to fly in some specialized zones created by government. This legislation keeps the country in yellow zone, i.e. a country with certain restrictions on flying of drone. Registration and insurance is required to fly drones weighting more than 250 g and less than or equal to 25 Kg. A drone pilot certificate is also must for flying drones between 250 g and 2 Kg. The only limitation to Canada's legislation is that BVLOS, i.e. beyond visual line of sight operations are not yet standardized. Transport Canada is the department which works on policies and regulations on law related to drones. All the drones are restricted to fly below 400 feet, i.e. 122 meters. A minimum distance of 30 meters shall be maintained from any bystander for basic operations. Flying of drones is not allowed at sites of emergency, forest fires, outdoor concerts and parades. Drones are required to maintain 3 nautical miles distance from airport and 1 nautical miles distance from helicopters. The most important thing is respecting the privacy of others while flying.

Basic operations as per Transport Canada:

- Flying drone in uncontrolled airspace
- Not flying drone over bystanders, and
- Flying drone more than 100 feet horizontally from bystanders.

If you are not doing any of the above three, then you are carrying advanced operations. Rules for basic drone operations

- Pilots must have pilot certificate- basic operations. 14 years is the minimum age of getting license for basic operations.
- Pilots must be able to show the certificate before flying- basic operation and proof of registration when you fly.

Rules for advanced drone operations

- Pilots conducting advance operations need a pilot certificate in advanced operations. The pilot has to pass through a small advanced exam and then an in-person flight review, wherein flight review assess pilots ability to operate drone safely. 16 years is the minimum age of getting license for advanced operations.
- Drone must meet Remotely Piloted Aircraft System (RPAS) Safety Security Assurance Standards. A list of drone manufacturer and model rated to be approved for search operations has also been provided by the government ^[10].
- Pilot must survey the area before hand to avoid any obstacle.

No Drone Zones ^[11]

These are the zones which are held illegal or are unsafe for

flying drones by the government. Some of the zones so mentioned are Airports, populated areas, national parks and over border crossings. However, if one needs to fly drone in such area, an explicit permission from Transport Canada is essential, which may permit on certain special circumstances.

Penalties:

Certain penalties have been designed, in case the rules are broken.

Penalties ranging from \$1000-\$3000 have been set for individuals breaking the rules, while penalties ranging from \$5000-\$15000 have been set for corporations. If one breaks multiple rules, then accordingly multiple penalties may be imposed.

Regulations in Russia ^[12]

Russia has enabled strict laws for drones. Registration, flight plan, details about the crew members and observer are required. Russia is on the way of developing drone control network to enable delivery drones. Even in Russia, all the drones above 250g must be registered with State Civil Aviation Authority of Russia (SCAA), while drones below 250g do not require registration. Pilots are only allowed to fly drones in daylight hours and in good weather conditions, maintaining direct visual line of sight is essential. Drones are not allowed to fly over people, congested areas, airports, sensitive areas such as military areas, Moscow Kramlin and Red square. It is pre-requisite to submit flight plan to the local air traffic controller before flying. Respecting privacy of others is the first and foremost condition.

Permit for flying drone ^[13]

To obtain a permit for flying drone, one must submit his/her application to the local office of Air Traffic Management System. For getting an application, one needs to provide his/her personal information along with details of flight and drone.

Bringing drone on Airplane:

All automatons ought to be welcomed on portable baggage if conceivable. This is on the grounds that as per the Montreal Convention, aircrafts are just subject for misfortunes up to \$1,000 USD. When voyaging globally, robbery and lost gear can be normal issues, especially if one's flight has numerous associations. In the event that one's automaton is worth more than \$1,000 USD and he/she can't bring it onto the plane, he/she is ought to consider transporting it with DHL, Fedex, or UPS rather and completely take care of the shipment. One ought not to put drone batteries with checked baggage. All automaton batteries ought to be put in a Medium Size Lipo Battery bag and brought onto the plane in a portable suitcase. Lithium-particle batteries are considered "risky products" via aircrafts and rules encompassing these batteries on planes are extremely severe because of various occurrences of these batteries bursting into flames. Inability to appropriately pack lithium-particle batteries in a sack can result in he/she getting fined, or being denied boarding.

Conclusion

All the three nations are quite larger by area and follow quite same procedure and rules for aviation. After doing a study on drones based upon these three nations, it is evident that the drone is a deciding element for future, and it is very essential to make use of such instrument in a systematic and

productive way. Despite, keeping leniency with drones for commercial rules, no nation is sacrificing with its public safety and security. Thus, keeping drones at a safe stack. Even countries like India, shall also look into the features of drone and shall make and implement laws on usage of drones commercially without sacrificing public security. It is high time for India to make laws accordingly and help in ease of doing business and lead the nation to new heights. DGCA must look into the foreign laws and try to bring in India the new innovations.

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