



GENERAL ARTICLE

Development of Unmanned Aerial Vehicles and its Effect on Privacy in the Light of Indian Laws

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Abstract

Unmanned Aerial Vehicles popularly known as drones are gadgets that do not require an onboard pilot and can move in the air either by the guidance of an operator or on their own. These are made of composite material to ensure that they are light weighted and can fly at high altitudes. In the present scenario, the use of drones is not restricted to the military but includes various other purposes such as delivery, journalism, filmmaking, rescue operations, natural calamities, archaeological surveys, geographical mapping, agriculture, wildlife monitoring, aerial photography etc.

With the coming of this new technology, it has paved the way for many new crimes, one of which is the breach of privacy. Privacy has been made a Fundamental Right under Article 21 of the constitution. But the means through which this privacy can be breached is not categorized in any statute, it is decided by the judiciary on a case-to-case basis.

Introduction

Unarmed Aerial Vehicles popularly known as Drones are pilotless vehicles. These vehicles fly in the air either with the guidance of an operator or on their own. These vehicles are made up of composite materials which can absorb vibrations and reduce sound. While manufacturing it is made to make sure that the vehicle is light weighted and can manage to reach higher altitudes.

Unarmed Aerial vehicles are equipped with infrared cameras, GPS (Global Positioning System) and Laser. They are managed by remote ground control systems which are also known as the ground cockpit. These vehicles are divided into two parts, the vehicle itself and the control system. As Unarmed Aerial Vehicles are pilotless there is no space for humans which allows the manufacturers to make them small and compact. All the sensors and navigational systems are present on its nose and the rest of the body is full of technology and systems.

Because of UAV's wide range of utilization, it is hard to classify them. These are used by both military people and civilians. In the military, it is used during war and surveillance on the other hand civilians use it for several purposes. UAVs are broadly divided into four categories based on their size (Bilder, 2015).

Very Small UAV: Very small UAVs are very compact in size, light in weight and are generally used for spying and

biological warfare. Their size falls between 30 and 50 cm.

Small UAVs: Small UAVs are based on the model of fixed-wing. One dimension of which is more than 50 cm but not larger than 2 meters. The design of such UAVs is based on a rotary-wing design.

Medium UAVs: They are heavy to be carried by one person but are smaller and lighter than a light aircraft.

Large UAVs: These UAVs are mostly used for military operations.

Classification of UAVs based on Range and Endurance

Very low-cost or close-range UAVs have a range of 5 Km and an endurance time of 20 to 45 minutes.

Close-range UAVs have a range of 50 Km and an endurance time of 1 to 6 hours. They are mainly used for surveillance purposes.

Short-range UAVs have a range of 150 Km and an endurance time of 8 to 12 hours. These UAVs are mainly used for surveillance purposes.

Mid-range UAVs have high speed and a working radius of 650 Km. They are mainly used for surveillance and to gather meteorological data.

Endurance UAVs have an endurance of 36 hours and a working radius of 300 Km. They are mainly used for surveillance purposes.

Uses of UAVs

Defence: Unmanned aerial vehicles were used for the first

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time for war and surveillance (Boyle, 2013).

- Emergency Purpose: these Aerial Vehicles play a very important role in cases of emergencies. They help in identifying the victims who are stuck due to any natural calamity (earthquake, floods, drought, tsunami, cyclone etc.) or mishappening which is man-made. With the help of UAV's easy to identify people who need help with the help of the cameras and GPS enabled in them.
- Conservation: environment is the most important thing in everyone's life, it is the environment that has made every life on earth possible. With the increasing population and pollution, our natural resources are depleting, and many species of plants and animals have either extinct or are endangered. To protect all these flora and fauna and to protect all of them we can use this new technology of Unmanned Aerial Vehicles. These pilotless vehicles can easily get access to every part of the forest to identify and track the species which are vulnerable and endangered (Choi-Fitzpatrick, 2014).
- Healthcare: medical facility and infrastructure are very important in a country as it decides the health and wellbeing of the citizens of that country. Unmanned Aerial Vehicles can be used in the medical industry for the urgent delivery of medical packages. In times of emergency when a parcel needs to be delivered on an urgent basis can be done via this technology. This technology will save resources as well as time.
- Advertising: advertising can be done through various means such as printed, social media, etc. One such means is to do real-time advertising via drones/pilotless vehicles. This helps in taking the immediate attention of the viewers (Choi-Fitzpatrick, 2014).
- Retail: e-commerce industries are focussing on initiating the delivery of packages via unmanned aerial vehicles. This new technology will help in doing the work at a faster pace and much more efficiently.
- Food Services: many restaurants are trying to cut down their real estate price and paying for the delivery boys. The coming trend could be the parcel service available via drones, which will minimise the cost of real estate and delivery boys. Dominos partnered with Flirtey in 2016 to deliver pizza via drone but the pie dropped on a couple in New Zealand. Efforts are being made to introduce this technology in the market.
- Aerial Photography: pilotless vehicles are commonly used for aerial photography which was otherwise very expensive because it required helicopters and cranes. They are very helpful film making. Journalists are also using this technology for collecting footage and information during live broadcasts.
- Geographic Mapping: UAVs are used to acquire data relating to locations. This technology helps in taking high-resolution images of mountaintops, coastlines and

islands. They can also create 3D maps.

- Law Enforcement: UAVs can be used for the purpose of law enforcement by tracking the surveillance of large crowds for the purpose of ensuring public safety. UAVs can be used for the purpose of patrolling fire investigations, migrant smuggling, and transporting drugs illegally.

Privacy and UAV

Privacy is the personal space that one enjoys and doesn't want to be intruded on. The fundamental right of the right to privacy is provided under Article 21 of the constitution. Right to privacy is not a contemporary concept, it is present in society for a long time but is now being recognized due to the development of technology. Supreme Court declared the right to privacy was declared as a fundamental right On 24th August 2017 in the historic judgement of K.S. Puttuswamy v. Union of India. This judgment was in response to the objection raised on the legality of the government's Aadhaar Portal. Right to privacy is in discussion in 1952 when the case of MP Sharma v. Satish Chandra and Kharak Singh v. State of Uttar Pradesh was brought before the Supreme Court. In both these cases, the concept of the right to privacy was recognized but the inability to recognize this right was because it was not available in our constitution. The right to privacy is not directly given in our constitution or any statute. It is interpreted by the judiciary from a case-to-case basis with the help of Article 19, 20, 21. Some guidelines demarcate what will come under the category of breach of privacy and what not. This was after the 2017 Judgment that this right got widespread recognition all over the country but still, we are lacking in regulations and statutes.

Privacy has a broader aspect; it includes many instances which can be counted as a breach of privacy and that's the reason that proper guidelines couldn't be made to identify a breach of privacy. Privacy plays a very important role in one's behaviour as said by Chief Justice N.V. Ramana in the Pegasus case "Privacy is not the singular concern of journalists or social activists. "Every citizen of India ought to be protected against violations of privacy. Surveillance and the knowledge that one is under the threat of being spied on can affect the way an individual decides to exercise his or her rights".

Technology comes with both merits and demerits. The increasing use of technology is changing our day-to-day lives. All of us are becoming dependent on technology and can't even think of our lives without its use. Mobile phones, laptops, Air Pods, computers etc. are the basic technological uses without which our day-to-day chores are not possible. One such technology is the use of Unmanned Aerial Vehicles which are popularly known as drones, unmanned aircraft systems, Remotely Piloted Aircraft Systems (RPAS), and pilotless vehicles. This technology is getting recognition and is highly useful but

every good thing comes with some side-effect (Duraiswami, 2017).

Unmanned Aerial Vehicles were first developed by Britain and USA during the first world war. The military has been using these vehicles since then for surveillance and keeping a track of their enemies.

A popular use drone that became a piece of news and helped track down the most wanted criminal was used by the USA to kill the al-Qaeda leader Osama bin Laden. They sanctioned the use of drones after the 9/11 horrifying event which shook the entire world. After that event, only USA was after Osama Bin Laden. In India, this technology was used to do a surgical strike as a response to the attacks done by terrorists. All these examples are the ones where drones were used by the military for the sake of their country. But as we know its utilisation is not limited to that. In 2013 Amazon decided to start testing this technology to deliver goods via drones. Dominos and other food giants also want to come into this market. With all these examples as discussed above, we can see the range of utilities these unmanned aerial vehicles enjoy, not only by the military but also by the commercial sector around the world.

With the new technology comes new responsibility on the shoulders of the government to be prepared for the new challenges which might come as a result of its utilisation. The use of unmanned aerial vehicles results in two issues one is the use of this technology by civilians and the possibility of its misuse and threat to the sovereignty and security of the country and the second one is its threat to the general public in concern to their breach of privacy. There might be many other challenges that the public might face once the utilization of this technology comes into being at a normal course. Though regulations have been framed for the utilization of this technology still lacks a very important aspect i.e. the right to privacy (Bélanger & Crossler, 2011).

The use of Unmanned Aerial Vehicles is not new its application is present for a long time and that's the reason that regulations were required. In 2014 regulations were made by the government which stated that the Air Navigation Service provide, defence, the Ministry of Home Affairs and other concerned security agencies were required to approve certification & operation for use of Unmanned Aerial Vehicle in the Indian Civil Airspace.

In 2017, DGCA released guidelines that focussed on preventing any hindrance or disturbance to aircraft used for commercial purposes due to Unmanned Aerial Vehicles. The main objective of these guidelines is to ensure that UAVs do not interfere in the functioning of commercial flights. It also required drone operators to obtain a Unique Identification Number after submitting all the required documents for their UAV and also get security clearance from the Ministry of Home Affairs (MHA) before they can fly their drone in the air.

In March 2021, the ministry of civil aviation came up with the rules based on self-certification, trust and non-intrusive monitoring". These rules focus on making a digital platform that will be divided into three zones i.e., red, yellow and green. The red zone is a zone where the commercial activity will not be allowed, in the yellow zone activity will be allowed but only with the permission and in the green zone activity can be done even without prior permission. Often the permissions available on this platform are self-generated. The objective behind these guidelines is to provide a single-window online system for getting approvals. All these relaxations are given to relax the complexities that the operators face before coming out in the market (Padmanabhan, 2017).

With the increasing use of the Unmanned Aerial Vehicle Technology government is considering it and making rules which promote commercial activity. These rules make sure that permissions are beyond a point, keeping in mind the security of the nation.

The airport perimeter has been reduced from 45 Km to 12 Km under these draft rules and no permission will be needed. According to the new rules permissions will not be required to fly in green zones (400 feet) and upto 200 feet in the area between 8-12 km of the airport perimeter. For non-commercial use, micro drones, nano drones and for research and development organisations, pilots won't need any license. Any foreign company which is registered in India will not face any kind of restrictions on its movement of drones.

The Ministry of Civil Aviation is working on developing a drone corridor for cargo deliveries and promoting the setup of a drone council. A business-friendly regulatory regime will be provided by this drone council. The coverage area of drones has been increased from 300 Kg to 500 Kg under the new drone rules. This has been increased to cover drone taxis within its ambit. Quality Council of India and certification entities have delegated the work to authorise and issue airworthiness certificates (Mahapatra, 2021).

Regulations in other countries

US Regulations: in the US are the most commercial-friendly. Because they promote commercial activity via unmanned aerial vehicles. The US is promoting the activity to boost their economy by using these vehicles. The Federal Aviation Administration made rules which deal with the operation of drones that come under the ambit of commercial work. If the vehicles are being used for fun purposes or hobbies in such cases vehicles should operate within the visual line of sight and manned aircraft should be given way, along with prior notification to airport and air traffic control (Mishra, 2019).

Regulations in Australia: one of the first countries which made regulations with respect to Unmanned Aerial

Vehicles in Australia. The objective of their regulations is to ensure safety while utilising these vehicles during different activities such as for fun, hobbies or commercial purposes. The focus is to simultaneously balance the safety measures as well as ease the restrictions imposed. Restrictions are eased for small drone operators to pay fees. All these efforts are being done to promote the commercial utilisation of this technology.

Regulations in Japan: regulations here were not made for the first time on a happy note but due to some serious incidents, in which a drone was found on the prime minister's office roof in 2015. This incident led to an urgent reaction to bring regulations regarding the utilisation of drones. Japan has made their regulations by keeping into consideration the commercial context. Regulations include restrictions on the use of drones in the hours of dawn and dusk, to ensure a 30-metre distance from people and objects. In case of violation of any rules fine will be imposed upon the operator.

Regulations in China: China is a hub in manufacturing drones. Some of the major companies in this industry are in China such as DJI (Dajiang) Innovations, Zero Zero Robotics, Yuneec, and Hubsan belong to China. Five out of 11 global VC-funded drone companies are in China and foreign companies are targeting to have more presence in the country. With the increasing interest in this industry, China's commercial sector is making the most out of this industry. But still, there are certain issues related to safety that are left without any proper discourse.

Regulations in China differ from city to city, e.g., drone regulations in Beijing are different from that of Shanghai. Regulations are different for small consumers and Large consumers.

Lacuna in Regulations: all the regulations which are discussed above emphasise the functioning of the drones but none of them focuses on the breach of privacy which may result in from their use. Earlier drones were majorly utilised by governments for spying purposes, but now the user has completely changed as it is entering the commercial world. People using drones for commercial purposes do not pay heed to issues such as privacy and are only concerned about their profits, so the government must consider this matter and make rules accordingly. But none of the above-mentioned countries has taken into consideration the issue of a privacy breach (Padmanabhan, 2019).

Drones in court room

Long Lake Township v. Maxon, 2021 WL 1097336: here, the Michigan court has taken into consideration the issues related to privacy where an Unmanned Aerial Vehicle was involved. In this case, aerial pictures were taken for tracing the illegal increase of junk on the defendant's property. The court took into consideration the fourth amendment

of Federal Aviation Administration (FAA) regulations. According to it the most important basis to decide a case is based on whether the information was gained by trespassing someone's property or not. The court ruled that the time has changed and Unmanned Aerial Vehicles are different from aircraft, which impacts the landowner's expectation of privacy. In such cases, the scope of privacy is given a wider scope.

California v. Ciraolo (May 19, 1986): in this case, a tip was received by the officers regarding a person who was cultivating marijuana in his backyard, but the police were not able to see the backyard so they used an aeroplane and found marijuana plants growing. The aeroplane flew at an altitude of 1000 feet which was within the permissible limit as provided by Federal Aviation Administration (FAA) regulations. In this case, the court ruled that the defendant is not entitled to expect privacy in his backyard, that too within the permissible altitude as it comes under the "public view".

Dow Chemical v. the United States: here, an aerial photographer was hired by The Environmental Protection Agency to click pictures of the Chemical Plant after the search of the property by the Environmental Protection Agency was refused by Dow. It was held by the court that the use of the aeroplane for conducting surveillance was not a search as provided under the Fourth Amendment, because the open area inside the industrial plant was not analogous to the curtilage of a dwelling for purposes of aerial surveillance".

Florida v. Riley (Jan. 23, 1989): in this case, a tip was received by the officers about Mr Riley regarding cultivating marijuana in a greenhouse near a mobile home. To view the marijuana plants, officers used an aircraft- a helicopter, they acted within the navigable airspace under Federal Aviation Administration (FAA) regulations, hence it was held that under the Fourth Amendment the law enforcement surveillance did not constitute a search. All the cases discussed are mainly related to privacy and its scope. In every case, the facts and circumstances are important in determining whether the privacy of an individual is infringed or not.

In India issues related to privacy in consonance with drones are not raised, as the realisation of breach of privacy is not realised by many. But the government must take into consideration such aspects and make laws concerning them rather than waiting for such issues to come before the court.

CODA

Unmanned aerial vehicles commonly known as Drones are the future technology in terms of the commercial market which will rule the world. With the increasing pollution, traffic and technology this gadget is not just limited to military use or war use but has expanded its horizons to the

marketplace and is ruling over it. This research paper researcher the research has analysed the various the use of drones, their kind and their connection with the right to privacy. In the current era of digitalisation, privacy plays a very important role in one's life. Though there are no specific laws in India concerning privacy it can be understood impliedly via the constitution and case laws. In the present research paper, the importance of privacy is understood concerning Unmanned Aerial Vehicles. These Unmanned Aerial Vehicles are posing threat to the privacy of individuals because of their small size and easy accessibility. Keeping this aspect of the technology in mind, it is very important to draft laws concerning privacy and also to make laws that will govern them over their use and territory. Recently with the increasing commercial use of Drones government has reduced the restrictions imposed upon them but the government is not considering the privacy aspect and is not making laws concerning that. The data protection bill is one such law that emphasises the importance of privacy but it is still in the process and not in force. In this research paper, the researcher has also analysed the laws in different countries concerning drones and cases related to them. After researching this topic researchers have concluded that unmanned aerial vehicles are the need of the hour as commercialisation is increasing its utilization is also increasing but at the same time, it's high time to codify laws for regulating the utilization of drones concerning privacy.

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Relavant Links

- <https://www.eeducation.psu.edu/geog892/node/5>
- <https://www.allerin.com/blog/10-stunning-applications-of-drone-technology>
- <https://www.cbinsights.com/research/drone-impact-society-uav/>
- <https://thewire.in/law/supreme-court-aadhaar-right-to-privacy>
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