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The Drone's Gaze, Religious Perspective on Privacy and Human Dignity in the Age of Surveillance Mentioning Security Threats & Regulatory Gaps

Hassan Rasheed Siddiqui
Author, Educationist & Aviation Law Expert
Ms. Maria Muniza
Educationist, Author & Resident Editor for South Asia of KT Media Group

Abstract

Without managing regulatory framework's evolution simultaneously, the rapid commercialization of drones has supported prevalent accessibility. Due to the scarce of strict policies on the drone sales, registration and operations has resulted in noteworthy privacy breaches and security concerns. This kind of illegal prevalence of technology challenges to law enforcement, empowering illegitimate surveillance, airspace desecrations, and unofficial data collection. The paper investigates about the deficiency of lawful ethical concerns, and suggests about the essential advancements for true operational drone governance. The study offers recommendations for severer policies and enforcement mechanisms after analysis of comparative religious perspectives, case studies and international regulatory frameworks.

Key Words: Drone; Commercialization; Technology; Surveillance; Religious

Introduction

Unnamed Arial Vehicles abbreviated UAVs commonly known as drones are now used for government, commercial and recreational purposes, however,

their availability has caused unintentional results including privacy violations, security threats and operative threats. The misuse of these devices for illicit activities are initiated by individuals due to the absence of unchanging regulation on drone sales, registration, and operations. The planning for smuggling and even terrorism is based on the instigation of high-resolution equipped cameras attached with drones can be used for illegal search

The paper investigates the anomalies in drone commerce, privacy breaches, and the security threats introduced by unregistered drone activities. For better governess, it presents recommendations after analyzing the current legal frameworks. The basic apprehension is the extensive availability of drones and many countries have made it easy to purchase these online without checking its verification. The checking for drone's usage has bypassed unlike the necessity of background check of firearm or vehicles that make these liable to misuse (Federal Aviation Administration, 2023).[1]

Second-Hand Drone Market

The other concern to investigation is the resale market of drones. Without transferring the ownership or re-registering, many sellers offer used drones on different online platforms like eBay and Craigslist. Tracking the users engaged in illegal activities makes it difficult for authorities and this causes an ambiguity where drones can operate secretly (smith, 2022).[2]

The use of un-registered or un transferred Privacy Breaches and Security Risks Unauthorized Surveillance

The life of individuals has been recorded without their permission using these high-resolution cameras and infrared sensors.

Several cases have emerged where drones have been used for:

- Spying on private property
- Recording sensitive locations
- Tracking individuals without permission

Such type of several cases has arisen where drones are used for spying on private property, recording of sensitive locations and tracking individual's life without consent. Research finding of 2022 unveil that more than 60 % of

respondents residing Uk had worries about the usage of drones that is based on the invading their privacy (Johnson, 2022).[3] Law breaking by these drones remain hidden in many legal proceedings even the worries and concerns of the people suffered.

Security Threats and Misuse of Unregistered Drones

The misuse of drones for smuggling and illegal import of objects into prison, across borders and into restricted areas has been observed.

Reports indicate that drones have been used to transport:

- Drugs and weapons
- Illegal surveillance equipment
- Confidential information

The research exposes the misuse of drones for the following purposes:

1. For import of drugs and weapons
2. For Illegal investigation or search equipment
3. For breaching privacy and confidential information

BBC News (2018) reports that a noteworthy case of Gatwick Airport shutdown occurred due to unauthorized use of drones that lead to financial crises and broke security apprehensions (BBC News, 2018).[4]

Civil Aviation Laws for Drones in Pakistan

Regulatory Framework by the Pakistan Civil Aviation Authority (PCAA): Pakistan Civil Aviation Authority regulates the operation of drones. The PCAA is responsible for introducing Civil unnamed Air craft Rules 2024, which introduces the guidelines for drone operations (The Pakistan Civil Aviation Authority, 2024).[5]

Key regulations include:

Registration: Within the 15 days of purchase, the drone must be registered.

Licensing: Categories II, III and IV must be registered and gained licensing from the PCAA.

Operational Restrictions: The drones must be operated following the visual line of the sight of pilot and do not exceed 400 feet in altitude.

Restricted Areas: Prohibited areas for drones are military zones and airports. Despite the implement of these rules and regulations, the implementations remain week that led to constant violations of airspace rules and privacy concerns (Pakistan Civil Aviation Authority, 2024).

Kite Flying and Its Impact on Drones; How Kites Can Destroy Drones

In many countries, kite flying which a popular activity imposes a momentous threat to drones. Damaging both drones and kites, the interaction between kites and drones can prove a serious accident.

Kite flying causing a strong effect; Potential Hazards

Kite Entanglement: Kite control leads to loss due to drones being entangled in kite strings. Further drone paddles can be broken due to kite strings and make these impracticable. The obstruction that leads to crash cause these drones and so are programmed to reduce power (DIY Drones, 2022).[6]

Case Study: Farmers Using Kites Against Drones

According to a report, during a protest in India, the police drones used for investigation were brought down by using kites.[7] They got success to entangle the drones using kites flying with long strings. The drones were entangled and caused to crash (Reuters, 2024).[8]

Safety Recommendations

It is suggested that to avoid with the risks with kite flying, authorities should designate sperate areas for kite flying and drones and the drone's operator should be aware of these areas. Educational campaigns should be operated to raise the awareness about the risks to drones.

Religious Perspective; Islamic Perspective on Drone Technology and Ethics

Rooted in Shariah, Islam with its great niceties and ethical principles implement great stress on the protection of privacy, security and human dignity.

According to the discourse provided by Surah An-Nur (24:27-28) [9] and Surah Al-Hujurat (49:12) highlight the ban of spying and interference into private matters which aligns with the concerns over drones being used for illegal investigation or spy.[10]

The drones that should be regulated to avoid misuse and potential harm, should be evaluate for justice in all aspects under the governance and the Islamic teachings (shah, 2019).[11] For the purpose of military strikes or targeted killings, drones are used irresponsibly, the principles are often violated that are included in Islamic teachings and work for protection of life and human welfare (Rasul, 2018).[12]

According to the Maqasid al- Shariah (Objectives of Islamic Law) the usage of technology in good terms is required and for public benefits ensuring its good usage and avoiding its misusage. Other religion like Christianity with its stress on human self-esteem, sacredness of life, and ethical responsibility has been vigorously engaged in addressing about the moral implications of modern technology.[13]

The use of drones posed challenges to ethical concern introduced by Catholic Church particularly in military contexts. According to Papal Encyclical Laudato Si' there is need to keep the significance and importance of both dignity and the environment, further it is important to align technological development with ethical responsibility (Francis, 2015).[14]

It is observed that mostly Christianity laid stress on the just war theory and saving life. Drones used for military operations raised anxiety and questions about the security damage, common fatalities and violence (Pope John Paul II, 2000).[15] Furthermore, the use of drones weakens the concept of privacy and the sacredness of personal space.

The teachings of Jesus Christ, such as "Do unto others as you would have them do unto you" (Matthew 7:12)

The sermon laid emphasize on the importance of empathy and respect for others 'rights' further it is signified that the technology must be used in a way that minimize harm and maximize human welfare.

Jewish Perspective on Drone Technology and Ethics

The tradition of rich ethical teachings in Torah and Talmud introduced by Judaism which unveils facts of technology that how it should be used to promote justice, compassion, and the defense of life.

The concept of "pikuach nefesh" means the obligation to save life, which is the focused point of decision making for the matter of life and death (Talmud, yoma 85b).[16] In reference to drone warfare, the rule laid emphasis on careful attention on the disproportionate power usage and civilian casualties as result.

Another quotation describes the importance of personal privacy that is highlighted by Jewish ethics that raises awareness against the drone's unethical search. According to Jewish concept of "tikkun Olam" which means repairing the world appreciates the usage of technology for common good for example disaster relief or environmental checking, aligning the use of drones with humanitarian purposes (Talmud, Berakhot 58b).[17]

Recommendations for Stricter Drone Governance; Mandatory Registration and Digital Identification

It is recommended that government should implement the registration policies and digital identification system to detect drone activity in real time.

AI-Powered Drone Detection Systems

It will be beneficial if investing in AI- driven drones will be done because monitoring tools do great help to detect unauthorized drones near sensitive locations, including airports and government buildings.[18]

Public Awareness and Education Campaigns

It is crucial to educate about the ethical and legal responsibilities in fostering the correct usage.

Introduction to UAV Licensing and Regulatory Frameworks

For the establishment of wide-ranging licensing and governing regular frameworks to ensure the safe and lawful operations, the frequent development and spread of complete licensing has become necessary. Licensing addresses about the concerns related to privacy, security, and public safety, it is not only focusing the ensuring the competence of UAV operators. The chapter covers the examination of the licensing system for UAV operators, outlines operational guidelines and discusses the international

operational regularity standard that cause the shaping of legal framework in Pakistan.

It is noteworthy that ensuring acquiescence with national and international law, and safeguarding the rights of individuals and communities, the establishment of a robust licensing mechanism is crucial for regulating UAV usage. The international standards of Civil Aviation Organization (ICAO) and various national aviation authorities influence the evolving UAV regulations by Pakistan. There is a significant role of international guidelines in shaping the frequently used regular framework for UAVs, in which the licensing of operators, registration of drones, and safety setting is included.

Licensing of UAV Operators and Manufacturers

For ensuring safe and legal operations, the licensing of UAV operator is fundamental. Including Pakistan, in many countries regulatory bodies have been established to create and implement licensing standards for both UAV operators and manufacturers. The UAVs are operated in agreement with legal frameworks is ensured by licensing and further it ensures the safety and minimizing risks to privacy, national security, and public wellbeing.

UAV Operator Licenses in Pakistan

For regulating the use of UAVs in Pakistan, the Pakistan Civil Aviation Authority (PCAA) is responsible and it has set the standards of guidelines that govern the licensing of UAV operators and drone manufacturers. Any person wishing to operate a UAV for commercial purposes must obtain a license issued by PCAA and it has become mandatory under the guidelines of National Aviation Policy (NAP) 2020.[19]It has become mandatory for UAV operators to obtain UAV operator certificate and for obtaining this certificate, the applicant must meet specific requirements. The registration process is aligned with international practices and is vital for certifying the responsible use of UAVs, furthermore these are accountable for their action.

UAV Registration Process

Before they can be operated commercially or in restricted airspaces, UAVs weighing more than 250 grams must be registered with PCAA in Pakistan.

The process of registration involves submitting the following documentation:

1. Proof of purchase and ownership.
2. UAV specifications, including weight, size, and model.
3. Details of the operator, including their UOC and training credentials.

The UAV is dedicated a unique identification number displayed on drone to ensure the legality after successful registration. The authenticity helps authorities in tracking the drone in case of violation of rules and it improves accountability.

Operational Guidelines for UAV Operators

The guidelines for UAV Operators in Pakistan have been outlined by PCAA. These are in line with ICAO's rules for unnamed aircraft system (UAV) operations.

Key guidelines include:

Without special permission and authorization, UAVs are prohibited from flying above a certain altitude that is 400 feet. These are also prohibited to fly near airports, military installations and other sensitive areas. During operation at all times, UAV operators must maintain a visual line of sight with their drones. This may help operators to take action to any emergency situation or risks that may occur.

No- Fly Zones: Some specific sensitive areas like no-fly zones, military zones and private property are restricted. It is duty of UAV operators that they must ensure that drones do not enter these zones without proper clearance.

Safety Protocols: The safety protocols were necessary to fulfil, including have a distance from public, concrete structures and vehicles as well as ensuring that drones were equipped with essential safety features like emergency landing mechanism.

Protection regulations

Data Protection: There is prohibition to UAV operators for capturing images or videos of private properties or individual without consent and that aligns with privacy laws.

International UAV Regulations and Their Impact on Pakistan's Legal

Framework: Due to becoming of UAV technology's globalized, the regulatory landscape in Pakistan has been shaped up to the international standards. Among these international standards, International Civil Aviation Organization (ICAO) performs a vital role in developing guidelines for operations of UAVs with signifying on air safety, privacy and security.

ICAO and International Standards for UAVs

In establishing global standards of the operations of UAVs, the ICAO a specialized agency of the United Nations has been instrumental. The safety integration of UAVs into national airspace systems are possible due to the provision of safety guidelines by Remotely Piloted Aircraft system. The licensing, airworthiness standards, operator training and privacy protections are the main contents.

Allowing countries to address their specific needs and concerns, and aligning with international standards, the ICAO has also emphasized the significance of creating legal frameworks. The privacy and security matters are main concerns and crucial needs of Pakistan.[20]

The Role of the European Union (EU) and United States (US) Regulations

The comprehensive UAV regulations that are the reason of influence on regulatory frameworks around the globe have been developed by the Federal Aviation Administration (FAA) of United States alongside the European Union Aviation Safety Agency (EASA) and ICAO. [21]Both the EASA and FAA have developed guidelines that govern Licensing and training requirements for UAV operators.[22]

Rules for UAV registration.

Along with the concern of privacy, safety, and security and aligning with the international standard model to create a framework for balancing the need of the UAV industry, Pakistan still in process of refining its own UAV regulations.[23]

Challenges and Gaps in the UAV Licensing System in Pakistan

Several challenges persist in Pakistan, despite the efforts made by the PCAA and other regulatory bodies to implement UAV licensing and registration system. These Include as following:

Lack of Comprehensive Data Protection Laws

Along with Pakistan's PECA 2016 explaining cybercrime, that emphasize the need of data protection law especially focused on UAVs. A clear legal framework that ensures individuals & rights to privacy are protected is essential for the collection of personal data through drone search.

Regulatory Gaps for Commercial UAV Operations

Pakistan's significant steps in regulating UAVs are commendable, but as the concern of commercial UAV operation is particularly in delivery services and media sections, these are still under regulatory process. It is essential to define clear rules for commercial UAV applications otherwise lack of clear regulations could lead to safety apprehensions and delay in industry growth.

Enforcement and Compliance Challenges

In Pakistan, despite the existence of licensing systems, the instances of non-compliance with UAV regulations exists. For example, where UAV usage is not clearly monitored, often the reason is lack of inconsistence. Therefore, there is need of a stronger enforcement framework to ensure the compliance with operational guidelines.

Conclusion

In Pakistan as the country seeks to create a balanced innovation with safety, security compliances and maintenance of secrecy, the licensing and regulatory frameworks for UAVs are evolving. In regulating UAV operations, PCAA has made significant strides, furthermore, the refinement of regulatory framework is essential. This embraces the strengthening data protection laws, commercial UAV applications with closing gaps and guaranteed robust enforcement of agreement. While protecting civil liberties and national security, Pakistan can create a more inclusive and operative governing framework that nurtures innovation by aligning with international standards set by ICAO, EASA and the FAA.

For outpaced and rapid growth of drone technology, the legal frameworks needed to regulate these effectively. The impact of privacy and security risks are due to lack of enforcement mechanism registration loopholes, and irregularities in sales. To address these issues, the stricter laws, better technological monitoring and international cooperation are essential factors and are shared apprehensions regarding humanitarian safety, the safeguarding of life, and the protection of privacy.

To act with compassion, justice, and respect for others right, every religion emphasized the importance of the moral responsibility of technology users to comply with the mentioned above. On the other side, there exists divergent views on specific application of drone technology. All four traditions show the agreement on the view that technological advancement must be guided by ethical principles that has concerns and priority regarding human welfare, justice and the greater good.

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