Page 267 - 280 **DOI:** *https://doi.org/10.63108/IJLMH.13130*

INTERNATIONAL JOURNAL OF LAW MANAGEMENT & HUMANITIES

[ISSN 2581-5369]

Volume 9 | Issue 6

2026

© 2026 *International Journal of Law Management & Humanities*

Follow this and additional works at: https://www.ijlmh.com/
Under the aegis of VidhiAagaz (https://www.vidhiaagaz.com/)

This article is brought to you for free and open access by the International Journal of Law Management & Humanities at VidhiAagaz. It has been accepted for inclusion in the International Journal of Law Management & Humanities after due review.

In case of **any suggestions or complaints**, kindly contact **support@vidhiaagaz.com**.

To submit your Manuscript for Publication in the **International Journal of Law Management & Humanities**, kindly email your Manuscript to **submission@ijlmh.com.**

Governing the Drone Era in Modern India: A Comprehensive Constitutional, Legal, Technological, Security and Socio-Economic Study with Comparative Insights from the USA, UK and European Union

KUNAL AGARWAL[*], TRINAYAN BORA[**], AND NEELABH NAYAN KALITA[***]

ABSTRACT

In the past decade, India's drone policy has changed gear twice. The near-total prohibition of 2014 gave way to a policy of outright promotion in 2021, and the draft Civil Drone (Promotion and Regulation) Bill, 2025 now signals a move towards control and criminal punishment. This paper considers whether the Indian framework, as it stands and as proposed, withstands constitutional scrutiny and whether it has the capacity to address the security, technological and social issues raised by drones. It reads the Drone Rules, 2021 and the draft Bill against Articles 14, 19 and 21 of the Constitution, examines the gap between the civil aviation regime and counter-drone security, and evaluates programmes in agriculture, land records and health delivery. The comparative part focuses on the United States, the United Kingdom and the European Union. The paper argues that liberalisation and indigenisation have been a success for India, but that State surveillance, counter-drone authority and proportionate enforcement have received far too little attention. It proposes a risk-based classification in place of the present weight-based classification, an independent statutory code for State drone surveillance, and a recalibrated penalty system.

Keywords: *Drone Rules, 2021, Civil Drone Bill, 2025, Right to Privacy, Counter-Drone Law, Risk-Based Regulation, Comparative Aviation Law*

I. INTRODUCTION

In the early hours of 27 June 2021, explosives reportedly dropped by two suspected drones struck the Air Force Station in Jammu.[1] Officials described it as the first incident of its kind in

[*] Author is a Student at Amity University, Noida, Uttar Pradesh, India.
[**] Author is a Student at Centre for Management Studies, Dibrugarh University, Dibrugarh, Assam, India.
[***] Author is a Student at Royal Global University, Guwahati, Assam, India.

[1] *Govt Hands Over Probe into Jammu Airport Drone Attack to NIA*, THE TRIBUNE (June 29, 2021), https://www.tribuneindia.com/news/j-k/govt-hands-over-jammu-air-force-station-attack-case-to-nia-275756 (last visited Nov. 4, 2026).

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

the country.[2] Just under two months later, the Ministry of Civil Aviation notified the Drone Rules, 2021, which reduced paperwork and eliminated several approvals.[3] The Ministry's release on the notification said that India had the potential to be a global drone hub by 2030.[4] Coming so close together, the two events of 2021 highlight the problem at the core of this paper. A machine used to spray pesticide on a paddy field in Bihar can also be used to smuggle drugs across the border in Punjab or to monitor a public protest from above. The law must be flexible enough to accommodate the first use without ignoring the others.

Indian writing on drones has largely dealt with these questions in isolation. Aviation lawyers write about registration and licensing,[5] security experts about counter-drone technology,[6] and privacy commentators about surveillance.[7] Little effort has been made to assess the coherence of the framework as a whole. This paper attempts that task by asking whether the Indian drone regime satisfies the constitutional requirements of legislative competence, reasonableness and proportionality, how well it responds to the security and technological realities of drone use, and what India can learn from the USA, the UK and the EU.

India's framework has been generous in promotion but sparing in protection. The 2021 Rules opened the sky to commerce, yet remarkably little has been said about protecting citizens from State surveillance, about the powers of the State in dealing with hostile drones, or about the calibration of penalties. The draft Bill of 2025 corrects some of this, but overcorrects in other respects.

---

[2] *Indian Air Force Base in Kashmir Hit by Explosions*, AL JAZEERA (June 27, 2021), https://www.aljazeera.com/news/2021/6/27/india-probes-suspected-use-of-drones-in-blast-at-jammu-air-base (last visited Nov. 4, 2026).

[3] The Drone Rules, 2021, G.S.R. 589(E), GAZETTE OF INDIA, Extraordinary, Part II, s. 3(i) (Aug. 25, 2021); PRESS INFORMATION BUREAU, MINISTRY OF CIVIL AVIATION, *Ministry of Civil Aviation Notifies Liberalised Drone Rules, 2021* (Aug. 26, 2021), https://www.pib.gov.in/Pressreleaseshare.aspx?PRID=1749154&reg=48&lang=2 (last visited Nov. 4, 2026).

[4] PRESS INFORMATION BUREAU, *supra* note 3; Gunja Sharan, *India Can Become a Global Drone Hub by 2030: Jyotiraditya Scindia*, INC42 (May 11, 2022), https://inc42.com/buzz/india-can-become-a-global-drone-hub-by-2030-jyotiraditya-scindia (last visited Nov. 4, 2026).

[5] Siddharth Ratho & Huzefa Tavawalla, *Drones in Indian Skies: Now a Reality!*, NISHITH DESAI ASSOCIATES (Aug. 30, 2018), https://nishithdesai.com/research-and-articles/hotline/regulatory-hotline/drones-in-indian-skies-now-a-reality-5743 (last visited Nov. 4, 2026).

[6] Akshat Upadhyay, *Counter UAS Technologies for India: A Prognosis*, 16 J. DEF. STUD. 181 (2022), https://www.idsa.in/system/files/jds/jds-16-4_Akshat-Upadhyay_11.pdf (last visited Nov. 4, 2026).

[7] Renu Gupta & Akshat Bhushan, *How the Drone Rules, 2021 Threaten the Right to Privacy*, THE LEAFLET (Oct. 22, 2021), https://theleaflet.in/analysis/how-the-drone-rules-2021-threaten-the-right-to-privacy (last visited Nov. 4, 2026).

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

II. The evolution of India's drone framework

A. From prohibition to permission

The first official statement on civilian drones was restrictive. In October 2014, the Directorate General of Civil Aviation (DGCA) issued a Public Notice stating that no non-government agency, organisation or individual would launch an unmanned aircraft for any purpose until regulations were put in place.[8] In practice there was never a complete ban, but the industry was left in a legal grey area for four years. On 27 August 2018, the Civil Aviation Requirements (CAR), popularly known as Drone Regulations 1.0, were released, introducing registration, the No Permission No Take-off (NPNT) protocol and the Digital Sky platform to the regulatory landscape.[9] The design itself was sound. In practice, however, one drone company reported that permissions had become harder to obtain,[10] Digital Sky missed its launch deadlines,[11] and in February 2021 the platform was still reported to be unready to support authorisations for NPNT-compliant drones.[12] The Unmanned Aircraft Systems Rules, 2021 that followed increased compliance obligations and drew significant criticism from industry.[13] Within six months they were repealed.[14]

B. The Drone Rules, 2021

The Drone Rules, 2021 marked a conscious break from their predecessors. The number of forms was reduced from 25 to 5 and the number of fee types from 72 to 4.[15] Drones of up to 500 kg were classified by weight as nano (up to 250 grams), micro (above 250 grams and up to 2 kg), small (above 2 kg and up to 25 kg), medium (above 25 kg and up to 150 kg) and large (above 150 kg).[16] No remote pilot certificate is required for nano drones or for micro drones flown for

---

[8] Directorate General of Civil Aviation, Public Notice on the Use of Unmanned Aerial Vehicles (UAV)/Unmanned Aircraft Systems (UAS) for Civil Applications (Oct. 7, 2014).

[9] Directorate General of Civil Aviation, Civil Aviation Requirements, Section 3, Series X, Part I, *Requirements for Operation of Civil Remotely Piloted Aircraft System (RPAS)* (Aug. 27, 2018), effective from Dec. 1, 2018.

[10] Soumik Dey, *Why Drones Are Yet to Take Off in Big Way in India*, The Week (June 22, 2019), https://www.theweek.in/theweek/business/2019/06/21/why-drones-are-yet-to-take-off-in-big-way-in-india.html (last visited Nov. 4, 2026).

[11] Nilesh Christopher, *Drone Woes: As Regulatory Delays Persist, Companies Seek Provisional Fixes to Fly Drones in India*, FactorDaily (Apr. 2, 2019), https://archive.factordaily.com/drone-woes-as-regulatory-delays-persist-companies-seek-provisional-fixes-to-fly-drones-in-india/ (last visited Nov. 4, 2026).

[12] Soumyarendra Barik, *Government Approves More 'Green Zones' for Drones to Fly Over*, Medianama (Feb. 3, 2021), https://www.medianama.com/2021/02/223-govt-approves-more-green-zones-drones/ (last visited Nov. 4, 2026).

[13] The Unmanned Aircraft Systems Rules, 2021, G.S.R. 174(E) (Mar. 12, 2021).

[14] The UAS Rules, 2021 were superseded by the Drone Rules, 2021, *supra* note 3.

[15] Press Information Bureau, *supra* note 3; *Drones Can Fly on Five Forms, Lower Fee as Centre Amends Rules*, The Federal (Aug. 27, 2021), https://thefederal.com/news/aviation-ministry-eases-new-drone-rules-2021 (last visited Nov. 4, 2026).

[16] The Drone Rules, 2021, *supra* note 3, rr. 2(2), 5.

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

non-commercial purposes.[17] An interactive airspace map divides Indian airspace into green, yellow and red zones, and the yellow zone around airports was reduced from 45 kilometres to 12 kilometres from the airport perimeter.[18] Penalties were capped at one lakh rupees and were civil in nature.[19] The Drone (Amendment) Rules, 2022 went a step further, abolishing the drone pilot licence and replacing it with a remote pilot certificate issued by an authorised remote pilot training organisation.[20]

Promotion of the domestic industry went hand in hand with its protection. A Production Linked Incentive (PLI) scheme for drones and drone components, with an outlay of Rs. 120 crore spread over three financial years, was notified in September 2021.[21] A Drone Certification Scheme followed in January 2022,[22] and in February 2022 the Directorate General of Foreign Trade (DGFT) prohibited the import of foreign drones, with exceptions for research and development, defence and security, while leaving drone components freely importable.[23]

C. The Bharatiya Vayuyan Adhiniyam and the draft Bill of 2025

The Drone Rules were framed under the Aircraft Act, 1934, which has since been replaced by the Bharatiya Vayuyan Adhiniyam, 2024.[24] On 16 September 2025, the Ministry of Civil Aviation published the draft Civil Drone (Promotion and Regulation) Bill, 2025 for public comments.[25] The Bill seeks to move drone regulation out of delegated legislation into a standalone statute for civil drones below 500 kilograms, with new rules framed under it replacing those of 2021.[26] Its key provisions include registration of all drones before they are owned or operated, type certification of drones before they can be manufactured, sold or operated unless exempted, mandatory third-party insurance with no-fault compensation, and a

---

[17] *Id.* r. 36, as amended by The Drone (Amendment) Rules, 2022, *infra* note 20.
[18] *Drones Can Fly on Five Forms*, *supra* note 15; The Drone Rules, 2021, *supra* note 3, rr. 19–20.
[19] The Drone Rules, 2021, *supra* note 3, r. 50.
[20] The Drone (Amendment) Rules, 2022, G.S.R. 108(E) (Feb. 11, 2022).
[21] MINISTRY OF CIVIL AVIATION, Notification on the Production Linked Incentive (PLI) Scheme for Drones and Drone Components (Sept. 30, 2021); PRESS INFORMATION BUREAU, *Ministry of Civil Aviation Disbursed About Rs 30 Crores During FY 2022-23 Under PLI Scheme for Drones and Drone Components* (Apr. 4, 2023), https://plidrone.ifciltd.com/docs/PIB1913565.pdf (last visited Nov. 4, 2026).
[22] MINISTRY OF CIVIL AVIATION, Notification on the Certification Scheme for Unmanned Aircraft Systems (Jan. 26, 2022).
[23] DIRECTORATE GENERAL OF FOREIGN TRADE, Notification No. 54/2015-2020 (Feb. 9, 2022); *Indian Govt Bans Import of Drones, Provides Certain Exceptions*, THE NEWS MINUTE (Feb. 10, 2022), https://www.thenewsminute.com/news/indian-govt-bans-import-drones-provides-certain-exceptions-160817 (last visited Nov. 4, 2026).
[24] The Bharatiya Vayuyan Adhiniyam, 2024.
[25] MINISTRY OF CIVIL AVIATION, Circular No. AV-29012/2/2023-SDIT-MOCA, *Inviting Comments/Suggestions on the Draft Civil Drone (Promotion and Regulation) Bill, 2025* (Sept. 16, 2025), https://www.civilaviation.gov.in/sites/default/files/2025-09/Draft%20Civil%20Drone%20(Promotion%20and%20Regulation)%20Bill%202025.pdf (last visited Nov. 4, 2026).
[26] *Id.* cls. 2(2)-(3), 3(1)(aa), 51(1).

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

considerably stronger penal regime.[27] The Director General of Civil Aviation, a person he authorises or the officer in charge of a police station may also detain a drone on a complaint or on reasons to believe that specified provisions have been violated, for up to three days, or seven with higher approval, and beyond that only on the direction of a court, subject to provisional release on bond and security.[28] One law-firm summary describes this as detention on mere suspicion.[29] The draft has drawn sharp criticism from industry, and NASSCOM has reportedly urged that it be withdrawn.[30] At the time of writing, the Bill has not been enacted.

III. CONSTITUTIONAL DIMENSIONS

A. Legislative competence and federalism

Entry 29 of List I of the Seventh Schedule, which covers airways, aircraft and air navigation, makes Parliament clearly competent to legislate on drones as aircraft.[31] Defence and the armed forces fall under Entries 1 and 2 of the same List. Yet drones are also instruments of policing, and public order and police are Entries 1 and 2 of List II.[32] The overlap is not merely academic. States including Andhra Pradesh have announced their own drone policies,[33] and police forces across the country use drones for crowd management, traffic monitoring and investigation. The doctrine of pith and substance tends to keep central aviation law safe,[34] but it does not tell us who regulates why States deploy drones and what they do with the data those drones collect. No statute or rule at present allocates that responsibility between the Union and the States. The Union controls the flight, but the surveillance carried out through that flight remains largely unregulated.

The draft Bill does get one thing right. Drone regulation has so far been almost entirely a matter of subordinate legislation, made and remade by executive notification, sometimes within months, as the short life of the March 2021 Rules illustrates. A parliamentary statute is a different matter: it brings debate, publicity and a degree of certainty that the drone industry,

---

[27] *Id.* cls. 6, 7, 9, 11, 25, 27(8), 35(1); *see also* NISHITH DESAI ASSOCIATES, *Grounded or Soaring? Inside the Draft Drone Bill 2025* (Oct. 27, 2025), https://www.nishithdesai.com/research-and-articles/hotline/technology-law-analysis/grounded-or-soaring-inside-the-draft-drone-bill-2025-15463 (last visited Nov. 4, 2026).

[28] Draft Civil Drone (Promotion and Regulation) Bill, 2025, *supra* note 25, cl. 35(3)-(4).

[29] Akshat Tennetti, IKIGAI LAW, *Summary: The Civil Drone (Promotion and Regulation) Bill, 2025* (Sept. 29, 2025), https://vlex.com/vid/summary-the-civil-drone-1092216594 (last visited Nov. 4, 2026).

[30] *A New Bill Could Sink India's Drones from the Sky*, THE DAILY BRIEF (Nov. 21, 2025), https://thedailybrief.zerodha.com/p/a-new-bill-could-sink-indias-drones (last visited Nov. 4, 2026).

[31] INDIA CONST. sched. VII, list I, entry 29.

[32] *Id.* list I, entries 1 and 2; list II, entries 1 and 2.

[33] GOVERNMENT OF ANDHRA PRADESH, Andhra Pradesh Drone Policy 2024-29; *AP Looks to Generate Rs 3k Crore in Revenue with New Drone Policy*, BIZZ BUZZ (Nov. 7, 2024), https://www.bizzbuzz.news/national/andhrapradesh/ap-looks-to-generate-rs-3k-crore-in-revenue-with-new-drone-policy-1341458 (last visited Nov. 4, 2026).

[34] *Prafulla Kumar Mukherjee v. Bank of Commerce Ltd., Khulna*, AIR 1947 PC 60; *State of Bombay v. F.N. Balsara*, AIR 1951 SC 318.

with its need for long-term investment, requires. The difficulty is that the draft leaves much of the substance to be filled in by rules, so that the move to primary legislation is largely cosmetic. Matters such as the classification of drones, the manner of registration and the authorities who are to exercise statutory powers should be laid down in the statute itself and not left to open-ended delegated legislation.[35] As it stands, the draft Bill merely relocates the same discretion.

B. Article 19(1)(g), Article 14 and the regulatory burden

The occupation of operating, manufacturing and trading in drones is protected by Article 19(1)(g) of the Constitution, subject to reasonable restrictions in the interests of the general public under Article 19(6). The safety of the airspace is plainly such an interest. The real question is one of degree. The 2021 Rules, with their light requirements and civil penalties, are easy to defend. The 2025 Bill is more exposed. Mandatory registration of every drone, however small or low-risk, and type certification, subject only to such exemptions as the Central Government may make by rules or order, coupled with imprisonment for what is essentially a compliance failure,[36] may not satisfy the requirement of the least restrictive measure. In *Modern Dental College*, the Supreme Court held that a restriction must not only pursue a legitimate aim but must also be necessary, in the sense that no less intrusive measure could achieve that aim to the same degree.[37] If a toy drone is treated in the same way as a 25 kg agricultural sprayer, that necessity is very hard to demonstrate.

Article 14 is also engaged. A power to detain equipment on a complaint or on an officer's reasons to believe, with those reasons recorded for later proceedings, provisional release on bond and security left to rules, and no provision for judicial involvement during the first seven days, opens the door to arbitrary use. In *Shayara Bano*, Nariman J., writing for himself and Lalit J., recognised manifest arbitrariness as a ground for striking down legislation.[38] A detention power framed this loosely risks that description.

C. Article 21 and the privacy problem

The real constitutional problem is surveillance. In *Puttaswamy*, the Supreme Court declared privacy to be a fundamental right. The plurality required legality, a legitimate aim and proportionality for any State interference, Kaul J. added procedural guarantees against abuse,

[35] Draft Civil Drone (Promotion and Regulation) Bill, 2025, *supra* note 25, cls. 5, 6(1), 45(2)(a); *see In re Delhi Laws Act, 1912*, AIR 1951 SC 332; *Hamdard Dawakhana (Wakf) Lal Kuan v. Union of India*, AIR 1960 SC 554.
[36] Draft Civil Drone (Promotion and Regulation) Bill, 2025, *supra* note 25, cls. 6(1), 7(1), 25(1), 35(1), 45(2)(b), 48.
[37] *Modern Dental College & Research Centre v. State of Madhya Pradesh*, (2016) 7 SCC 353.
[38] *Shayara Bano v. Union of India*, (2017) 9 SCC 1.

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

and the Aadhaar decision later read these together.[39] Drones sit uneasily within this model because they make watching cheap. A police drone hovering over a market, a protest or a residential colony records thousands of people who are suspected of nothing. Combined with facial recognition, the drone ceases to be an eye and becomes a database.

The Drone Rules do not meet the legality requirement, since they govern how a drone is flown but not why the State flies it. No law specifies when the police may use a drone, who may authorise its use, how long the footage may be retained or who may access it. The Digital Personal Data Protection Act, 2023 does not fill this gap. Much police surveillance could fall within the exemption under section 17(2)(a), which allows the Central Government to notify instrumentalities of the State to which the Act will not apply, in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order or preventing incitement to related cognizable offences.[40] The Act also excludes personal data processed by an individual for a personal or domestic purpose,[41] which means that a neighbour flying a camera drone over the next terrace may fall entirely outside it.

Article 19(1)(a) cuts both ways. In *Anuradha Bhasin*, the Court insisted that restrictions on free expression be proportionate and open to judicial scrutiny.[42] That insistence applies equally to aerial watching of protests, though the same judgment left open the standard for proving a chilling effect and rejected the claim before it for want of evidence, so a challenge on that ground would need evidence of an actual restrictive effect.[43] At the same time, flying camera drones at public gatherings may itself engage Article 19(1)(a), which protects the right to impart and receive information, including by telecast,[44] and embraces the freedom of the press.[45] These authorities do not concern drones, but blanket restrictions on press use could burden that freedom; as the Court said in *Anuradha Bhasin*, "Journalists are to be accommodated in reporting".[46] Any sound framework must safeguard both.

IV. THE SECURITY DIMENSION

India faces drone threats on three fronts. The first is cross-border smuggling. Drones carrying narcotics, arms and ammunition have become common along the Punjab border, and the number

[39] *K.S. Puttaswamy v. Union of India*, (2017) 10 SCC 1, ¶ 325 (Chandrachud, J., plurality), ¶ 638 (Kaul, J., concurring); *see also K.S. Puttaswamy (Aadhaar-5J.) v. Union of India*, (2019) 1 SCC 1.
[40] The Digital Personal Data Protection Act, No. 22 of 2023, INDIA CODE (2023), s. 17(2)(a).
[41] *Id.* s. 3(c)(i).
[42] *Anuradha Bhasin v. Union of India*, (2020) 3 SCC 637.
[43] *Anuradha Bhasin v. Union of India*, W.P. (C) No. 1031 of 2019, slip op. ¶¶ 147-51 (S.C. Jan. 10, 2020).
[44] *Secretary, Ministry of Information & Broadcasting v. Cricket Association of Bengal*, (1995) 2 SCC 161.
[45] *Bennett Coleman & Co. v. Union of India*, (1972) 2 SCC 788.
[46] *Anuradha Bhasin*, slip op., *supra* note 43, ¶ 151.

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

of drones recovered or neutralised by the Border Security Force has risen sharply, from 107 in 2023 to 294 in 2024.[47] The second is terrorist use, as the Jammu attack showed.[48] The third is armed conflict. During Operation Sindoor and the hostilities of May 2025, both India and Pakistan used drones and loitering munitions,[49] and swarms of low-cost drones, some of them decoys, were reportedly used to probe Indian air defences.[50]

The legal architecture for dealing with these threats is weak. The Drone Rules exclude military drones and say little about neutralising hostile drones in civilian airspace.[51] The National Counter Rogue Drone Guidelines of 2019 are guidelines, not law.[52] Counter-drone measures raise real legal questions. Jamming interferes with radio spectrum governed by telecommunications law, which forbids the possession or use of equipment that blocks telecommunication unless the Central Government permits it,[53] spoofing can disrupt navigation devices, and bringing down a drone over a populated city carries dangers of its own. An officer who disables a drone stands on uncertain legal ground, and a citizen whose property is damaged in the process has no clear remedy. The draft Bill addresses only part of the problem. Its detention power is tied to regulatory contraventions and is exercisable by the Director General of Civil Aviation, a person he authorises or the officer in charge of a police station, and not by security agencies charged with intercepting hostile drones; the detection and countering of rogue drones is left to rule-making, although clause 44(2) would bar suits against officers and persons they authorise for damage caused in good faith to protect persons or property from a drone threat.[54]

---

[47] *Over 100 Pakistani Drones Recovered from Punjab Border in 2023: BSF*, THE WEEK (Jan. 1, 2024), https://www.theweek.in/news/india/2024/01/01/over-100-pakistani-drones-recovered-from-punjab-border-in-2023-bsf.html (last visited Nov. 4, 2026); *In Six Months, BSF Seizes 130 Drones, 135 kg Narcotics Along Punjab Border*, THE TRIBUNE (June 30, 2025), https://www.tribuneindia.com/news/defence/in-six-months-bsf-seizes-130-drones-135-kg-narcotics-along-punjab-border (last visited Nov. 4, 2026).

[48] *Govt Hands Over Probe*, *supra* note 1.

[49] PRESS INFORMATION BUREAU, *Operation SINDOOR: The Rise of Aatmanirbhar Innovation in National Security* (May 14, 2025), https://static.pib.gov.in/WriteReadData/specificdocs/documents/2025/may/doc2025514554901.pdf (last visited Nov. 4, 2026).

[50] Haritha Sharly Benjamin, *How Drones Changed the Game in India–Pakistan Conflict, and Exposed Gaps in Electronic Warfare*, ONMANORAMA (May 30, 2025), https://www.onmanorama.com/news/india/2025/05/30/drones-india-pakistan-conflict-gaps-electronic-warfare.html (last visited Nov. 4, 2026).

[51] The Drone Rules, 2021, *supra* note 3, r. 2(3).

[52] MINISTRY OF CIVIL AVIATION, National Counter Rogue Drone Guidelines (2019); *see* Harshil Agarwal, Prashant Prakhar & Huzefa Tavawalla, *Drone Law & Policy Developments in India: Welcoming Drones in 2020*, NISHITH DESAI ASSOCIATES (Jan. 20, 2020), https://nishithdesai.com/research-and-articles/hotline/technology-law-analysis/drone-law-policy-developments-in-india-welcoming-drones-in-2020-4409 (last visited Nov. 4, 2026).

[53] *See* The Telecommunications Act, No. 44 of 2023, INDIA CODE (2023), ss. 42(3)(a), 48.

[54] Draft Civil Drone (Promotion and Regulation) Bill, 2025, *supra* note 25, cls. 35(3), 44(2), 45(2); *see also id.* cls. 32-33 (directions and emergency orders in the interests of security).

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

The Defence Research and Development Organisation and Bharat Electronics Limited have jointly developed an indigenous counter-drone system,[55] and in November 2025 the Union Home Ministry and the Bureau of Civil Aviation Security were reported to have decided to deploy anti-drone systems at civil airports in phases.[56] But the technology is outpacing the law. India needs a clear statutory framework specifying which agencies may detect, track, intercept and destroy drones, in what circumstances, under whose supervision, and who bears responsibility for collateral damage.

V. THE TECHNOLOGICAL DIMENSION

India's regulatory design is genuinely technology-led. NPNT was meant to ensure that a drone could not take off without a digital permission, and Digital Sky was conceived as a single online platform for registration, permissions and flight logs. The National Unmanned Aircraft System Traffic Management Policy Framework of 2021 envisaged private service providers managing low-altitude traffic under State oversight.[57] These were progressive ideas, in some respects ahead of other jurisdictions.

Implementation has been uneven. Digital Sky was slow to become functional, missing successive deadlines and drawing reports of glitches,[58] and the traffic management architecture remains untested at scale. Beyond visual line of sight (BVLOS) flights have largely been confined to trials and exemptions, including the "Medicine from the Sky" project in Telangana.[59] Two further concerns arise. The first is supply-chain security. The import ban applies to finished drones, not components, and many of the motors, batteries and flight controllers in Indian drones are still imported, which raises the question of where the data goes and what hidden vulnerabilities exist. The second is autonomy. As artificial intelligence is increasingly used for target recognition and navigation, questions of responsibility for machine-driven actions will arise in both civilian and military settings. Neither the 2021 Rules nor the draft Bill squarely addresses this.

---

[55] DEPARTMENT OF DEFENCE PRODUCTION, *Anti-Drone System*, https://www.ddpmod.gov.in/hi/node/6881 (last visited Nov. 4, 2026).

[56] *India to Install Anti-Drone Systems at All Civil Airports*, CONSTRUCTION WORLD (Nov. 26, 2025), https://www.constructionworld.in/transport-infrastructure/aviation-and-airport-infra/india-to-install-anti-drone-systems-at-all-civil-airports/82148 (last visited Nov. 4, 2026).

[57] MINISTRY OF CIVIL AVIATION, National Unmanned Aircraft System (UAS) Traffic Management Policy Framework (Oct. 24, 2021).

[58] Dey, *supra* note 10; Barik, *supra* note 12.

[59] GOVERNMENT OF TELANGANA, Information Technology, Electronics and Communications Department, "Medicine from the Sky" Initiative (launched Sept. 11, 2021); Aihik Sur, *New Rules Expedite Telangana's Project to Deliver Medicines via Drones*, MEDIANAMA (Sept. 9, 2021), https://www.medianama.com/2021/09/223-telangana-drones-medicine-delivery/ (last visited Nov. 4, 2026).

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

VI. THE SOCIO-ECONOMIC DIMENSION

The clearest example of India's liberal turn lies in rural India. Under the SVAMITVA scheme, drones have been used to survey inhabited village land and to issue property cards to households that previously had no formal record of title.[60] A recorded title allows families to use their homes as collateral and reduces boundary disputes. "Kisan drones" are used in agriculture to spray pesticides and fertiliser, which the Government says reduces human exposure to chemicals and saves water and pesticide.[61]

The most ambitious programme is Namo Drone Didi, approved by the Union Cabinet in November 2023 with an outlay of Rs. 1,261 crore for 2024-25 and 2025-26, to provide drones to 15,000 women's self-help groups between 2023-24 and 2025-26.[62] The scheme links technology to women's livelihoods and, if well executed, could shift the gender composition of a predominantly male sector. Whether the drones become a source of income or idle assets will depend on training, maintenance and local demand for spraying services.

There is a cost as well. Labourers who once sprayed fields by hand have been reported to be losing that work to drone operators,[63] and small operators may be priced out if certification and insurance under the new Bill prove expensive. Liability is another concern. A person injured by a crashing drone today may look to rule 44 of the Drone Rules, which applies the Motor Vehicles Act, 1988, *mutatis mutandis*, to third-party insurance and compensation and exempts nano drones from insurance.[64] The draft Bill's compulsory insurance and fixed compensation scheme is one of its genuine virtues, since it gives victims of death or grievous hurt a speedy statutory remedy without proof of fault,[65] and it should be retained even if the penalties are scaled back.

---

[60] MINISTRY OF PANCHAYATI RAJ, SVAMITVA (Survey of Villages Abadi and Mapping with Improvised Technology in Village Areas) Scheme (launched Apr. 24, 2020).

[61] PRESS INFORMATION BUREAU, *English Rendering of PM's Speech During Witnessing Flight of 100 Kisan Drones by Garuda Aerospace* (Feb. 19, 2022), https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1799531 (last visited Nov. 4, 2026); PRESS INFORMATION BUREAU, *Drone Policy: A Step Towards Making India a Global Drone Hub by 2030* (Apr. 2023), https://static.pib.gov.in/WriteReadData/specificdocs/documents/2023/apr/doc2023424185301.pdf (last visited Nov. 4, 2026).

[62] PRESS INFORMATION BUREAU, *Cabinet Approves Central Sector Scheme for Providing Drones to the Women Self Help Groups* (Nov. 29, 2023), https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=1980683 (last visited Nov. 4, 2026).

[63] Arbab Ali & Nadeem Sarwar, *Indian Farm Workers Are Being Replaced by Drones. They Fear a Much Darker Future*, SLATE, *excerpted in* BUSINESS & HUMAN RIGHTS RESOURCE CENTRE (Jan. 20, 2024), https://www.business-humanrights.org/en/latest-news/india-profound-consequences-from-drone-use-in-agriculture-threatening-farmworker-livelihoods-while-solutions-reportedly-fall-short/ (last visited Nov. 4, 2026).

[64] The Drone Rules, 2021, *supra* note 3, r. 44(1).

[65] Draft Civil Drone (Promotion and Regulation) Bill, 2025, *supra* note 25, cls. 9, 11; *cf.* The Motor Vehicles Act, No. 59 of 1988, INDIA CODE (1988), s. 164(1) (five lakh rupees for death and two and a half lakh rupees for grievous hurt, against two and a half lakh and one lakh under cl. 11(1)).

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

But India's drone insurance market remains small,[66] and the Union should enable standardised insurance products for small operators before the Bill's mandate takes effect, or at least incentivise their purchase.

VII. COMPARATIVE INSIGHTS

A. United States

In the United States, small commercial drones are regulated under Part 107 of Title 14 of the Code of Federal Regulations, in force since 2016.[67] Part 107 rests on operating limits and pilot certification and permits operations beyond the standard conditions through waivers. Since September 2023, most drones have been required to broadcast their identity and location in flight under the Remote ID rule, with the FAA's enforcement discretion ending in March 2024.[68] A dedicated BVLOS rule was proposed in August 2025 and had not been published in final form at the time of writing.[69]

The richer lesson lies in the courts. In *California v. Ciraolo*, the Supreme Court, and in *Florida v. Riley*, a plurality of the Court, held that naked-eye observation from public airspace does not require a warrant.[70] Those cases concerned manned aircraft, and their logic breaks down when applied to persistent surveillance. In *Leaders of a Beautiful Struggle v. Baltimore Police Department*, the Fourth Circuit, sitting en banc, held that the city's aerial surveillance programme, which tracked movements across the city over time, violated the Fourth Amendment, recognising that cumulative tracking is different from a passing glance.[71] This reasoning would assist Indian courts in applying *Puttaswamy*. Federal law also gives named agencies explicit authority, subject to oversight, to detect and mitigate drones that threaten covered facilities.[72] India has no equivalent.

---

[66] Madhusree Goswami, *Drone Insurance Gets More Takers: What Does It Cover? Why Is It Necessary?*, THE QUINT (Jan. 9, 2023), https://www.thequint.com/explainers/drone-insurance-india-status-where-why-how-coverage (last visited Nov. 4, 2026); Eshaan Bansal, *Deepening the Safety Net*, MILLENNIUM POST (May 29, 2025), https://www.millenniumpost.in/opinion/deepening-the-safety-net-612764 (last visited Nov. 4, 2026).

[67] 14 C.F.R. Part 107 (Small Unmanned Aircraft Systems), 81 Fed. Reg. 42064 (June 28, 2016).

[68] 14 C.F.R. Part 89 (Remote Identification of Unmanned Aircraft), 86 Fed. Reg. 4390 (Jan. 15, 2021); enforcement commenced on Mar. 16, 2024.

[69] FEDERAL AVIATION ADMINISTRATION, Notice of Proposed Rulemaking, *Normalizing Unmanned Aircraft Systems Beyond Visual Line of Sight Operations* (Aug. 2025) (proposed 14 C.F.R. Part 108); *FAA Says Part 108 Is on the "10-Yard Line," but the BVLOS Rule Is Still Stuck at the White House*, UAV COACH (Sept. 16, 2026), https://uavcoach.com/part-108-stuck/ (last visited Nov. 4, 2026).

[70] *California v. Ciraolo*, 476 U.S. 207 (1986); *Florida v. Riley*, 488 U.S. 445 (1989) (plurality opinion).

[71] *Leaders of a Beautiful Struggle v. Baltimore Police Department*, 2 F.4th 330 (4th Cir. 2021) (en banc).

[72] 6 U.S.C. § 124n; 10 U.S.C. § 130i.

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

B. United Kingdom

In the United Kingdom, drones are regulated by the Civil Aviation Authority under the Air Navigation Order 2016, as amended, and the retained version of Implementing Regulation (EU) 2019/947.[73] Following the disruption at Gatwick Airport in December 2018, when reported drone sightings repeatedly halted flights over three days, Parliament enacted the Air Traffic Management and Unmanned Aircraft Act 2021.[74] The Act empowers the police to require a drone to be grounded, to stop and search, and to seize equipment, and these powers reach offences such as flying in an aerodrome flight restriction zone without permission and certain prison offences.[75] Data protection is governed by the UK GDPR and the Data Protection Act 2018, and the Information Commissioner's Office has issued guidance on drone use.[76] The British model shows how security powers can be set out in primary legislation with clear limits, something India has yet to do.

C. European Union

The European Union offers the most coherent model. Implementing Regulation (EU) 2019/947 classifies operations not by weight alone but by operational risk, into the "open", "specific" and "certified" categories.[77] Low-risk flights in the open category require little beyond registration and basic training. The specific category requires a risk assessment, usually through the Specific Operations Risk Assessment (SORA) methodology, while the certified category applies aviation-grade certification to the riskiest operations. Delegated Regulation (EU) 2019/945 sets product requirements,[78] and the U-space Regulation creates a framework for traffic management in designated airspace.[79] All of this operates alongside the GDPR, which applies to drone imagery that identifies individuals, outside purely personal or household activity.[80]

The EU approach answers the main weakness of India's draft Bill. It treats risk, rather than the mere existence of a drone, as the trigger for regulation. It also shows that a market can be open and governed at the same time.

---

[73] The Air Navigation Order 2016, S.I. 2016/765 (UK); The Unmanned Aircraft (Offences and Consequential Amendments) Regulations 2025, S.I. 2025/1284 (UK).
[74] Air Traffic Management and Unmanned Aircraft Act 2021, c. 12 (UK).
[75] *Id.* sch. 8, pt. 1.
[76] Data Protection Act 2018, c. 12 (UK); INFORMATION COMMISSIONER'S OFFICE, Guidance on the Use of Drones; *see Drone Laws, GDPR and Practical Advice*, WALKER MORRIS (July 7, 2026), https://walkermorris.co.uk/?p=33288 (last visited Nov. 4, 2026).
[77] Commission Implementing Regulation (EU) 2019/947 of 24 May 2019 on the Rules and Procedures for the Operation of Unmanned Aircraft, O.J. L 152/45 (2019), arts. 3-11.
[78] Commission Delegated Regulation (EU) 2019/945 of 12 March 2019 on Unmanned Aircraft Systems and on Third-Country Operators of Unmanned Aircraft Systems, O.J. L 152/1 (2019).
[79] Commission Implementing Regulation (EU) 2021/664 of 22 April 2021 on a Regulatory Framework for the U-space, O.J. L 139/161 (2021).
[80] Regulation (EU) 2016/679 (General Data Protection Regulation), O.J. L 119/1 (2016), art. 2(2)(c).

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

VIII. Recommendations

This study leads to five recommendations. First, India should move from weight-based classification to a risk-based classification of the kind adopted in the EU. Weight can remain one factor, but location, altitude, proximity to people and the nature of the operation matter just as much. This would permit light-touch regulation for low-risk uses and tight control where it is warranted.

Second, Parliament should enact a separate law on State surveillance using unmanned aircraft. It should specify the purposes for which a drone may be deployed, require prior authorisation by a senior officer or judicial body for targeted surveillance, limit the retention of footage, prohibit the use of facial recognition without specific legal authority, and provide for an independent audit mechanism. This would satisfy the legality and safeguards limbs of *Puttaswamy*.

Third, a counter-drone statute should set out who is authorised to detect, intercept and neutralise drones, how spectrum interference is to be authorised, and how third parties harmed in the process are to be compensated. Fourth, the penal clauses of the draft Bill need to be reworked. Technical and minor violations should attract civil penalties; imprisonment should be reserved for wilful endangerment, weaponisation and security breaches; and any detention power should rest on reasons recorded at the time of detention and be subject to early independent review. Fifth, a mechanism should be established between the Union and the States, perhaps a standing council under the Ministry of Civil Aviation, to ensure that State drone policies, police practice and central aviation law dovetail rather than collide.

IX. Conclusion

India's drone journey has been a success in several respects. Within a few years, the country moved from near prohibition to one of the more open drone regimes in the world, building a domestic industry and putting drones to work in land records, farming and health delivery. Much of the credit belongs to the 2021 Rules. The framework, however, was never designed to safeguard rights or to counter threats. The draft Bill of 2025 recognises the need for control but reaches too far into criminal law where calibrated regulation would suffice. Comparative experience points to a better path. The EU shows that risk can structure regulation, the UK shows how security powers can be codified in statute with clear limits, and American courts offer a way of thinking about surveillance as continuous rather than episodic. Given its strength in digital public infrastructure, India is well placed to secure both innovation and accountability

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]

in the drone era. The larger question is whether the law will see the citizen as clearly as it sees the machine in the air.

*****

© 2026. International Journal of Law Management & Humanities [ISSN 2581-5369]