



THE BIG PICTURE : DRONE DRAFT RULES: IMPETUS TO FUTURE TECH

CONTEXT:

- The Union Civil Aviation ministry released the **draft of the national drone policy, making it significantly easier for people and companies to own and operate drones, while also streamlining the certification process for manufacturers, importers and users.**
- The rules are **based on “trust, self-certification and non-intrusive monitoring”.**
- The new rules would **replace the existing Unmanned Aircraft System (UAS) Rules, notified in March, 2021.**
- Over the past two years, **drones have been deployed regularly by Pakistan-based outfits to smuggle arms, ammunition and drugs into Indian territory.**
- Recently, **Drones were used for the first time to drop explosive devices, triggering blasts inside the Air Force Station’s technical area in Jammu.**

AIM:

- With the aim of **making India a drone-friendly nation, the draft rules abolish the need of various approvals.**
- To **create a “digital sky platform” as a business-friendly single-window online system for procuring various approvals.**
- There will be **minimal human interface** on the digital sky platform and most **permissions will be self-generated.**
- Whereas, drones offer immense opportunities for economic growth and employment generation, there is need to **regulate the drone related activities in a manner such that they do not pose any risk to safety or security of people and assets.**

KEY PROVISIONS:

- **APPLICABILITY:**
 - All persons owning or possessing or engaged in exporting, importing, manufacturing, trading, leasing, operating, transferring or maintaining a drone in India; and all drones that are being operated for the time being, in or over India.
 - The **provisions contained in the Aircraft Rules, 1937 shall not apply to drones**
 - In case of a drone with **maximum all-up-weight more than 500 kilogram, the provisions of the Aircraft Rules, 1937 shall apply.**
 - These rules shall **not apply to drones used by the naval, military or air forces of the Union.**
- **CATEGORIES:** Remotely piloted aircraft have been divided into **five categories based on their weight (existing rules)-**
 - Nano : Less than or equal to 250 grams.
 - Micro : From 250 grams to 2kg.
 - Small : From 2 kg to 25kg.
 - Medium : From 25kg to 150kg.
 - Large : Greater than 150kg.
- **APPROVALS:** Abolish the need for various approvals, including certificate of conformance, certificate of maintenance, import clearance, acceptance of existing drones, operator permit, authorisation of R&D organisation and student remote pilot licence.
- Fee reduced to nominal levels. No linkage with the size of the drone.
- **DIGITAL SKY PLATFORM:** The government will be developing a digital sky platform that **will have an interactive airspace map dividing the country into green, yellow, and red zones.**



- It will provide a secure and a scalable platform that supports drone technology frameworks, such as NPNT (no permission, no take-off), designed to enable flight permission digitally and manage unmanned aircraft operations and traffic efficiently.
- **REDUCED AIRPORT PERIMETER:** The draft rules **reduced the airport perimeter from 45 km to 12 km.**
 - The rules state that **no flight permissions would be required to fly up to 400 feet in green zones and up to 200 feet in the area between 8 and 12 km from the airport perimeter.**
- **PILOT LICENSE:** **No pilot licence would be needed for micro drones for non-commercial use, nano drones and for R&D organisations.**
- There would be **no restriction on drone operations by foreign-owned companies** registered in India.
- **DRONE CORRIDOR:** The Ministry will also facilitate development of drone corridors **for cargo deliveries and a drone promotion council will be set up to facilitate a business-friendly regulatory regime.**
- **SAFETY FEATURES:** The draft rule also provides for safety features such as real-time tracking beacon, and geo-fencing, which are expected to be notified in future and a six-month lead time will be provided for compliance.
- **INCREASED COVERAGE OF DRONES:** The coverage **has been increased from 300 kg to 500 kg and will cover drone taxis**, while the Issuance of Certificate of Airworthiness has been delegated to Quality Council of India and certification entities authorized by it.
- The **number of forms to be filled to operate drones in the country have been reduced** to six when compared to 25 earlier.
- Import of drones and drone components to be regulated by DGFT.
- No security clearance required before any registration or licence issuance.
- Manufacturer may generate their drone's unique identification number on the digital sky platform through the self-certification route.
- **Maximum penalty under Drone Rules, 2021 reduced to INR 1 lakh.** This shall, however, not apply to penalties in respect of violation of other laws.

WHAT IS A DRONE?

- Drone is a layman terminology for Unmanned Aircraft (UA). There are **three subsets of Unmanned Aircraft- Remotely Piloted Aircraft, Autonomous Aircraft and Model Aircraft.**
- Remotely Piloted Aircraft consists of remote pilot station(s), the required command and control links and any other components, as specified in the type design.

APPLICATIONS:

- Besides combat use, drones are used for a range of purposes like **package delivery, in agriculture (spraying pesticides etc), monitoring environmental changes, aerial photography, and during search and relief operations, among others.**
- Drones can be used for collecting **breath samples from spouting whales for DNA analysis.**
- Drones can **capture images of erupting craters** that would be impossible to get otherwise.



BENEFITS:

- **MAINTAINING SAFE ENVIRONMENT** - Drones monitor locations, communicate possible hazards, and notify threatening conditions such as oil and gas refineries, pipelines and flare stacks.
- **COST SAVING TECHNOLOGY** - As drone's applicability becomes more extensive, their prices also drive towards being more pocket-friendly. Drone is more economical to buy, sustain, and fuel than airplanes for inspections.
- **QUALITY OF AERIAL IMAGING**- With their high-resolution cameras furnished with top-notch sensors, UAVs can take excellent Aerial Photographs, aerial videos and accumulate large volumes of accurate data.
- **PRECISION** - UAVs appropriate GPS (the Global Positioning System) in their software, which is why they can be programmed and guided precisely to specific locations.
- **EASY CONTROLLABLE OR DEPLOYABLE** - The regular advancement in drone-control technology allows operators to quickly deploy and operate drones even with a relatively minimal technical background.
- **SECURITY** - Drone operators can utilize an Unmanned Aircraft System (UAS) to render safety and surveillance to private organizations, potential venues, and other expenses. Drones can also accumulate reliable information from natural catastrophes to support safety and recovery efforts.
- **MINIMIZES OBVIOUS DANGER AND HEALTH RISKS** - With the support of a Drone, numerous dangers like elevation, wind, weather, and radiation that were earlier suffered by crew members have been replaced with more viable and safer alternatives.
- **IN-DEPTH AND DETAIL DATA INPLACE** - They capture high-resolution images that explicitly reveal cracks, damages, displaced wires, and additional defects that we cannot detect through our naked eye.
- **FLEXIBILITY FOR QUICK INSPECTIONS** - The versatility of characteristics empowers clients to customize the tools with ease for their projects.

DISADVANTAGES:

- **PRIVACY** - UAVs can quickly fall prey to manipulation and trespass a group or individual's privacy.
- **LEGISLATIVE UNCERTAINTY** - The use of Unmanned Aircraft Systems (UAS) has become widespread; however, the law is still developing, considering it is a novel technology in the industry.
- **SAFETY** - Drones operated in heavily-populated regions have an amplified risk of ground impact or damage, mainly due to system malfunction or hacking.
- **SOFTWARE ISSUES OR MALFUNCTION** - There have previously been many drones that have fired weapons to commoners, generating a significant amount of casualties, injuries, and damages due to malfunctions or software blunders.
- **VULNERABLE TO WILD ANIMALS** - Drones are susceptible to wild animal attacks and are sometimes also dangerous to nature.
- **SPYING**- Many offenders employ drones as a strategy to target their victims and to maintain a track on them.
- **WEATHER DEPENDENT** - Drones are more vulnerable to weather conditions when contrasted to traditional aircraft.
- **KNOWLEDGE AND SKILL** - if one necessitates seizing accurate, high-quality data, they need to possess the demanded skillset.
- **DATA TRANSFER SPEED IS SLOW** - One of the cons in expanding drone technology in precision agriculture is its data transmission speed, which some suppose could be a week.



RULES FOR DRONE REGULATIONS IN INDIA:

- **Unmanned Aircraft System (UAS) Rules, 2020:** It is a set of rules notified by the government that aims to regulate the production, import, trade, ownership, establishment of the drone ports (airports for drones) and operation of UAS.
- **National Counter Rogue Drones Guidelines 2019:** The guidelines had suggested a number of measures to counter rogue drones depending on the vitality of assets being protected.
- **Other initiatives:**
 - **Directed-Energy Weapon:** DRDO has developed two anti-drone Directed-Energy Weapon (DEW) systems, with a 10-kilowatt laser to engage aerial targets at 2-km range and a compact tripod-mounted one with a 2-kilowatt laser for a 1-km range.
 - **Smash-2000 Plus:** The armed forces are now also importing a limited number of other systems like Israeli 'Smash-2000 Plus' computerized fire control and electro-optic sights, which can be mounted on guns and rifles to tackle the threat from small hostile drones in both day and night conditions.

ANALYSIS:

- The decision to liberalize the drone policy even after the recent drone incidents in Jammu showcases the **government's bold approach to promote the use of the drone and focus on the development of counter-drone technology to address the threat posed by rogue drones.**
- The current draft will go a long way in **facilitating investments in drone technology** in India.
- The central government expects the new set of rules **to increase the sales of drones in the country and create a market for drones in India.**
- The adoption of drones in R&D is also expected to **boost the way for pilot projects in India that are likely to help the government come out with a policy for the commercial use of drones as well.**
 - The Indian Railways, National Highway Authority of India, along with many private companies are already working on pilot projects for the commercial use of drones.

WAY FORWARD-TACKLING THE CHALLENGES THAT REMAIN:

- While the Indian drone industry has been the fastest-growing global market since drones were legalized in the country in 2018, the **overall size of the Indian market is much smaller when compared to global markets.**
 - The Indian unmanned aerial vehicle market is expected to reach \$1.8 billion by 2025-26 growing at a CAGR of 14.61 percent; it would only make up less than 3 percent of the world market which is estimated at \$63.6 billion by 2025.
- Drone industry is looking for a lot **more clarity on the timelines on permissions to operate commercial drones, as well as the permissions where drones will be allowed to operate.**
- Currently in India drones **are not being permitted in densely populated urban areas** because safety and privacy issues remain. Tackling these is the need of hour.
- The industry is also likely to wait for **more clarity on the taxation rate of drones.**
- Given the fragmented nature of India's agriculture sector, **educating Indian farmers remain a major challenge for the government.**
- Another major issue surrounding the Indian drone market is the **dependence on imports for drone components.**



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