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DRONE REVOLUTION: REGULATION & MANAGEMENT

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The "Tweets"

On November 13, 2017 Prime Minister (PM) Shri Narendra Modi on a visit to the International Rice Research Institute (IRRI) at Los Baños, Phillipines inaugurated the Resilient Rice Field Laboratory. The IRRI has a South Asia Research Centre in Varanasi, which in turn partners the Indian Centre for Agriculture (ICAR) for ensuring better productivity for farmers.[1] After the visit he tweeted:

"*was shown drones that could be used in the agriculture sector and help farmers*"[2].

To this tweet the minister of state for civil aviation Shri Jayant Sinha immediately responded with a tweet of his own stating:

"*our new drone policy will enable all these valuable solutions*"[3].

This exchange on twitter played a significant role in refocusing the attention on the drone policy, which was lying in a dormant state with Directorate General of Civil Aviation (DGCA) since October 07, 2014.[4]

DGCA Draft & Airspace Management

The DGCA is the regulating authority which governs the safety aspects of all flying being undertaken in the civil sector. These aspects include registration, standards of airworthiness, licensing of operators, and promotion of indigenous design and manufacture of aircraft and components, as well as co-ordinating with Indian Air Force (IAF) for flexible use of airspace by both civil and military air traffic agencies.[5]

Thus the responsibility for regulating the operation and manufacture of drones was of the DGCA which thereafter re-issued the draft Civil Aviation Requirement (CAR) on November 02, 2017 and invited suggestions and comments on the draft from the public by December 01,2017.[6]

On November 22, 2017 the Minister of State for Civil Aviation Shri Jayant Sinha chaired a

discussion meeting seeking inputs on the draft CAR on Civil Remotely Piloted Aircraft System (RPAS) of several drone operators organised by the DGCA and spoke about his vision of "digital sky" with position of every flying object in airspace being digitally mapped and monitored.[7] He also indicated that the draft CAR has been issued with the approval of various stakeholders such as the Ministry of Home Affairs (MHA) and Ministry of Defence (primarily IAF) due to the safety and security issues.

Drones: Safety & Security Concerns

Both IAF and Indian Army (IA) have operated remotely piloted Aircraft (RPA) and systems since their induction in late 1990s.[8] The rapid development of drone technology and its usefulness was recognised and prompted the induction of indigenously manufactured mini-UAVs (Unmanned Aerial Vehicles) into the inventory of Central Reserve Police Force (CRPF) in 2012.[9] This was followed by inductions of more such systems into the inventory of various government-controlled establishments such as the Border Security Force (BSF) and National Disaster Response Force (NDRF).

The usefulness of such systems for myriad applications was not lost on the civil sector too. This was also seen as a business opportunity by indigenous manufacturers which then bid for a regulatory framework supporting such operations in the civil sector, which itself could only be done under the aegis of DGCA.

However, of primary concern to the security establishment continues to be the exponential growth of payload carrying capacity of drones and at the same time miniaturisation of various components. This coupled with their easy availability also opens the possibility of use of such machines for nefarious purposes. An example of this was displayed by the Islamic state fighters in Iraq who are known to have used it to deliver explosives while filming the entire operation from another drone while attacking coalition troops.[10]

Such security concerns are also compounded with the absence of suitable detection and surveillance systems with the Air Traffic Services (ATS), both civil as well as military, which are responsible to ensure safe operations of all the traffic transiting through their area of responsibility. This concern therefore has resulted in the seemingly severe, but necessary procedural control conditions having been stipulated in the draft CAR.

The Path Ahead

In November 2015, ICAO had issued Doc 10019 (Manual of RPAS Operations) which intended to provide a broad guideline for RPA operations worldwide, however it has kept operations by smaller UAVs out of its purview and is likely to come out with its final regulations only by 2023.[11] DGCA is also a part of the JARUS (Joint Authorities for Rulemaking on Unmanned Systems), which is part of an international effort

to regulate the use of RPAS worldwide and is still debating on the desired course of action.[12] However, the industry and civil sector is unlikely to wait and hence the CAR is likely to be in force by early 2018. Thus the airspace management issue assumes significance owing to the large numbers of drone operators likely to seek permit and in turn heavily encumber the system in vogue.

It is reasonably expected that these numbers would be large enough to warrant establishment of a separate RPA governing and monitoring authority with elements and representatives drawn from MHA as well IAF. The IAF while shouldering the responsibility of the air defence of the country also needs to procure ground based systems capable of monitoring RPAS and more importantly, acquire anti-RPAS technologies which will also aid in the execution of its primary task.

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])

Notes

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[12] JARUS, "Directorate General of Civil Aviation-India", http://jarus-rpas.org/organization/directorate-general-civil-aviation-india accessed on Dec 05,2017