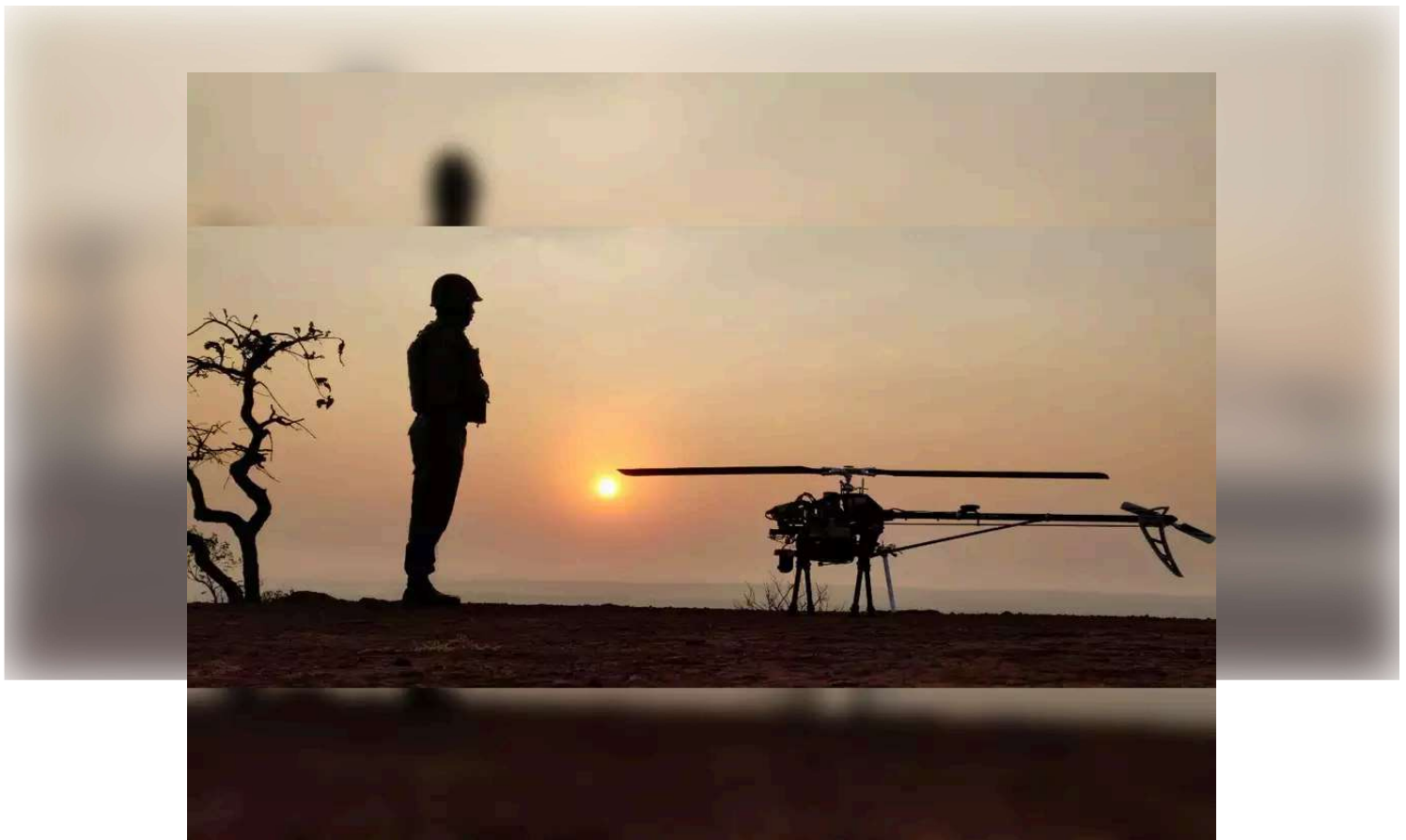


Lessons from Israel's exploding pagers: India needs patience and parts to curb reliance on Chinese drone imports



Synopsis

The government is right in enforcing that defence drones do not have Chinese components. But it should also look at encouraging the establishment of a robust drone component system.

The recent explosions of pagers and walkie-talkies used by Hezbollah in Lebanon — apparently orchestrated by Mossad — show the vulnerability of using imported equipment. For the Indian defence

BY
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ET Online
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establishment, it highlights the risk of using Chinese equipment and the need to develop indigenous capabilities in sensitive areas such as surveillance drones.

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A few weeks before the explosions, India's Ministry of Defence halted an order for logistics drones to be deployed along the border areas as the equipment had components made in China. It raised concerns around national and data security. In June, the ministry wrote to industry bodies such as the Federation of Indian Chambers of Commerce and Industry (FICCI), ASSOCHAM and the Society of Indian Defence Manufacturers (SIDM) warning their member companies about the risks of including Chinese components in their drones. The government has been working on a mechanism to impose a strict ban on the use of Chinese components in military drones for some time.

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Appreciating the intent behind these moves, industry stakeholders point out that keeping China's drone parts away is a challenge, as these have a substantial share in the market. Shenzhen-based drone company DJI, for example, has a 70% share of the global drone market, says Rama Krishna, Co-Founder & CEO, Noida-based drone manufacturer EndureAir. The armed forces of the US and India have banned its use.

Industry stakeholders also say that indigenisation is not impossible, but it will need patience, financial support, and a concerted effort to find ways to overcome short-term challenges.



EndureAir's military drone Vibhram. The company currently imports 30% of their bill of materials from OEMs in the US, Israel and Singapore, among others.



Patience and parts

Krishna says the drone industry is aware of the

government's intent to not import components from border nations. "The mechanism is being laid out with collaborations of the DRDO (Defence Research and Development Organisation) and the armed forces. They're now coming up with a working group that can clear the execution strategy as well," he says.

The Noida-based drone maker, founded in 2018 by IIT-Kanpur alumni, has done trials for the Army, Navy and for the National Disaster Response Force (NDRF). It has developed two drones — one for high-altitude logistic delivery with payload capabilities of up to 20 kg and the other for long-range surveillance, where trials have been successful for up to 40-50 km with an endurance of three hours.

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Krishna explains that drone components can be divided into two broad categories — critical and non-critical components. Critical components such as communication modules, cloud data or GPS are prone to cyber-attacks and can be controlled by others. Non-critical components include rare earth metals, lithium ion batteries and motors.

The government's directive should be strictly followed but at the same time, the domestic industry has to also take stock of its position, says Rajkumar Pandey, CEO and Executive Director of Airbornics Defence & Space Private Limited (**ADSL**), part of JCBL Group. "We need to develop our own capabilities and an ecosystem to develop drone components," he says.



Raj Kumar Pandey CEO and Executive Director of Airbornics Defence and Space Pvt Ltd (ADSL).

Cost of indigenisation

Its payload drones use frames made in-house and do not use any components from China. "Manufacturing drones with non-Chinese parts was challenging due to the supply chain limitations. It required significant effort, which extended the timeline by 6-8 months. As for the cost, it is 20-30% higher but may come down with better economies of scale."

The development of an ecosystem to exclude Chinese parts in defence drones should be accompanied with a larger effort to secure supply chains and ensure strategic autonomy in sensitive industries, says Premchand Chandrasekharan, Partner at Mumbai-based Avalon Consulting, which has been providing consultancy in automobile, logistics, transport, chemicals, engineering, and others for nearly 30 years.

"Such a vision is feasible in the medium to long term, but will require significant investment and reorganisation, particularly in developing a reliable domestic or allied supplier base," he says.

The challenges here will include replacing cheaper Chinese components with either domestic or other parts made in friendly geographies. But these parts should also not compromise on quality, scalability and pricing, he says.

Many critical components, like sensors, communication modules, and propulsion systems, are likely to be imported even in the near future. "Estimates vary, but it's likely that Indian manufacturers may not have the full capability to source all components locally or from non-Chinese suppliers without significant supply chain adjustments. Local suppliers for import substitution must be identified from the automotive and engineering ecosystem and incentivised to invest in the defence components ecosystem," he says.



ADSL's payload drone AV35-E which has been made by in-house components.

The drone component ecosystem in India is still in a very nascent stage and needs a lot of support and development. Industry players point out that the electronics component system is developing and a similar push is necessary for strategic equipment, especially drones.

Market size

According to the Civil Aviation Ministry, the Indian drone industry is expected to reach \$1.5-1.9 billion by 2026. A KPMG report citing Allied Market Research has stated that the drone service market in India was valued at \$130.4 million in 2020 and is expected to reach \$4.9 billion by 2030, at a CAGR of 44.4%. The report cited key areas of applications as industrial inspection, mapping of properties, spraying fertilisers and pesticides and delivery solutions, among others.

Prateek Srivastava, Founder & Managing Director of Gurugram-based **DroneAcharya**, says India's defence drone component ecosystem is at a nascent stage but evolving rapidly. It has significant potential for growth, especially for small enterprises that mean business. "While traditional MSMEs currently dominate manufacturing, innovative startups are emerging, driven by a need for advanced technologies. To accelerate this transformation, focused investments in R&D are essential, along with robust policy support and incentives for local manufacturing. The recent Ministry of Defence circular banning established drone companies from using Chinese parts has prompted many to seek alternatives from the West, Japan and Europe. But these sources often struggle to match Chinese's volumes and pricing," he says.

The defence sector should take proactive measures. He suggests encouraging and supporting component manufacturing through initiatives like IDEX and Technology Development Funds; providing startups with financial backing and assured orders; and facilitating strategic collaborations with global companies to enhance expertise.

While certain critical parts for DroneAcharya's drones are sourced from China, Srivastava says the company is actively working on sourcing these from local and allied countries. "The percentage of Chinese components in our drones varies across models. But we are rapidly transitioning towards non-Chinese suppliers for critical components, especially in the defence segment," he says.

EndureAir's Krishna says such a move will take time and a lot of R&D investment. There is also a need for a mechanism that can actually validate the "IDDM (indigenously designed, developed, and manufactured) category". This is a category under Defence Acquisition Procedure-2020 for the procurement of indigenously designed and manufactured products from Indian vendors. "There are different categories of procurement for OEMs in India through which the Indian defence establishment, as mentioned in DAP 2020, procures drones. How to implement that has to be very clearly laid out. Some players in India are just making a flying box that contains components from across the world and no one knows how to exactly validate those components. So that is where more checkpoints are needed. This will really help the OEMs, startups and other players," he says.



EndureAir co-founders Chirag Jain, Abhishek, Rama Krishna (L-R).



Imports cannot be ruled out

Even in the near future, drones and other equipment may not be completely indigenous, he says, but rather than importing from China, there will be imports from other countries like the US and Israel.

Pandey says that indigenous drones have a low volume in the industry, so there is a need to raise that number through the right infrastructure and ecosystems.

“Someone will have to start focusing on these areas and there must be some incentive to work on it. We must tackle and start with building the critical technologies in India first,” he says.

Building an indigenous drone can also be costly, as Chinese imported parts are much cheaper due to their high scale of manufacturing. Pandey said indigenous components are 20-30% costlier.

EndureAir's Krishna says it's difficult to compare the price difference now as the volumes are yet to kick in. He points out that different kinds of drones require different parts, so the low volume of different manufacturing has led to higher manufacturing costs. “Now, there are a lot of non-Chinese vendors — in Israel, Singapore and even some Indian vendors and startups. Though these are costlier, the parts have better specifications. So, yes, drones will get slightly costlier. But I think the defence forces are looking at price benchmarking, specifically the non-Chinese components, and talking to vendors about these. Internal panel discussions are also going about the pricing and manufacturing budgets,” he explains.

Promising future

Even Chandrasekharan says excluding Chinese parts is likely to increase the production costs in the short to medium term. However, as the local ecosystem strengthens, costs would reduce if the domestic manufacturing capabilities increase.



Prateek Srivastava, Founder & Managing Director, DroneAcharya.



This increase in cost must be viewed as an investment in security and long-term sustainability, says DroneAcharya's Srivastava. Such a move is happening among US manufacturers, too, as the country has also put restrictions on certain Chinese products.

Srivastava estimates that 30-40% of Indian drone manufacturers could be equipped to build defence drones without Chinese components in the next five years.

“With the right policy support, incentives and collaboration, many manufacturers are already reorienting their focus toward local supply chains. For instance, regions like Coimbatore, known for its auto ancillary industry, are beginning to pivot towards drone-parts manufacturing. The defence corridors in Uttar Pradesh and Tamil Nadu are fostering an environment conducive to this transition, attracting investments and infrastructure development,” he says.

Many startups in India have raised significant funds to at least start indigenisation with payloads, day-and-night cameras and communication modules, etc, Krishna says, adding that this has led to 50-70% of the key components being sourced from India in some cases.

“In the next two to three years, I expect 80% of the components to be indigenous if the ecosystem or the subsystem manufacturers or component

manufacturers keep developing at this pace," he adds.

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A government decision taken to help improve farmers' income is likely to increase the household expense of the common man.

On September 13, the government decided to increase the basic import duty on crude oil and refined **edible oil** by 20%. The move is likely to help the farmers struggling due to lower oilseed prices as it would

BY
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