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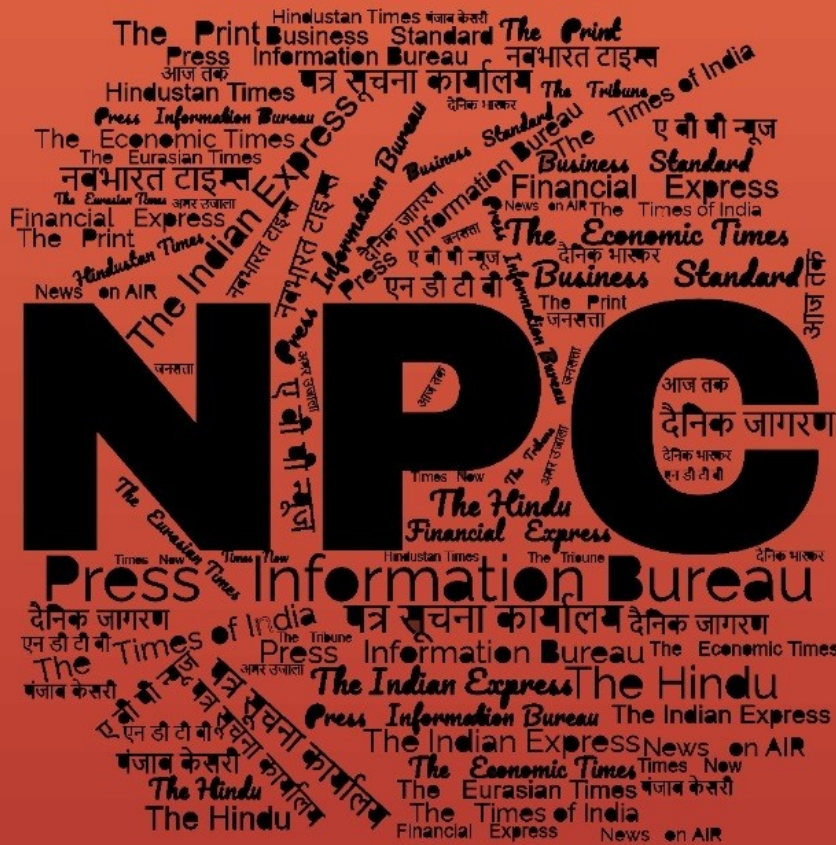
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समाचार पत्रों से चयनित अंश Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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DRDO News

जिस कामिकेज ड्रोन से भारत ने PAK में टारगेट किए तबाह... अब DRDO बना रहा है उसका स्टील्थ वर्जन

Source: Aaj Tak, Dt. 21 May 2025,

URL: <https://www.aajtak.in/defence-news/story/drdo-now-developing-stealth-version-of-kamikaze-drone-that-hit-pakistan-targets-dskc-2245319-2025-05-21>

बेंगलुरु में स्थित डिफेंस रिसर्च एंड डेवलपमेंट ऑर्गनाइजेशन (DRDO) की प्रयोगशाला एयरोनॉटिकल डेवलपमेंट एस्टैब्लिशमेंट (ADE), एक नए कामिकेज ड्रोन पर काम कर रही है, जिसका नाम है स्विफ्ट-के. यह ड्रोन भारत का पहला कामिकेज ड्रोन है, जो 0.6 मैक (लगभग 735 किमी/घंटा) की रफ्तार से उड़ सकता है. इसमें ऑटोनॉमस और छिपने की खास तकनीक (स्टील्थ) है.



स्विफ्ट-के क्या है?

स्विफ्ट-के एक खास तरह का ड्रोन है, जो कामिकेज ड्रोन कहलाता है. यह दुश्मन के महत्वपूर्ण ठिकानों पर हमला करने के बाद खुद नष्ट हो जाता है. यह ड्रोन स्विफ्ट (Stealth Wing Flying Testbed) प्रोग्राम का हिस्सा है. इसमें एक विस्फोटक हथियार (वॉरहेड) लगा होता है, जिससे यह दुश्मन के हवाई रक्षा सिस्टम जैसे कि पाकिस्तान के पास मौजूद चीनी HQ-9 सिस्टम को निशाना बना सकता है. हाल ही में ऑपरेशन सिंदूर में इस तरह के सिस्टम को नाकाम करने में भारत ने सफलता पाई थी.

स्विफ्ट-के की खासियतें

- रफ्तार: यह ड्रोन 0.6 मैक की रफ्तार से उड़ता है, जिससे इसे पकड़ना मुश्किल होता है.

- स्टील्थ तकनीक: इसका डिज़ाइन ऐसा है कि रडार इसे आसानी से नहीं पकड़ सकता.
- स्वचालित उड़ान: यह पूरी तरह से ऑटोनॉमस है, यानी इसे चलाने के लिए पायलट की जरूरत नहीं होती.
- लॉन्चिंग सिस्टम: अभी यह सामान्य रनवे से उड़ान भरता है, लेकिन भविष्य में इसे बूस्टर या कैटपॉल्ट लॉन्चर से छोड़ा जाएगा, जिससे इसे किसी भी जगह से इस्तेमाल किया जा सकेगा.

कैसे बन रहा है स्विफ्ट-के?

ADE ने इस ड्रोन के दो प्रोटोटाइप बनाए हैं, जो इसकी तकनीक को परखने के लिए हैं. बेंगलुरु के इंडियन इंस्टीट्यूट ऑफ साइंस (IISc) के साथ मिलकर इसका ढांचा तैयार किया गया है. सिर्फ नौ महीनों में इसका शुरुआती डिज़ाइन और प्रोटोटाइप तैयार कर लिया गया, जो भारत की तेज़ तकनीकी प्रगति को दिखाता है.

इस ड्रोन का परीक्षण कर्नाटक के चित्रदुर्ग के पास एयरोनॉटिकल टेस्ट रेंज (ATR) में हुआ, जहां इसने हाई-स्पीड टैक्सी ट्रायल (HSTA) पास किया. यह टेस्ट ड्रोन की स्थिरता और खास लैंडिंग गियर की जांच के लिए था. इसे और बेहतर करने के लिए गैस टर्बाइन रिसर्च एस्टैब्लिशमेंट (GTRE) का स्वदेशी स्मॉल टर्बो फैन इंजन (STFE) इस्तेमाल किया जाएगा.

स्विफ्ट-के और घातक प्रोग्राम

स्विफ्ट-के, घातक अनमैन्ड कॉम्बैट एयर व्हीकल (UCAV) प्रोग्राम का एक छोटा संस्करण है. घातक एक बड़ा और उन्नत ड्रोन होगा, जो मिसाइल और बम ले जा सकता है. स्विफ्ट-के इसके लिए तकनीकों को परखने का काम कर रहा है. इसका डिज़ाइन एक खास फ्लाइट-विंग शेप में है, जो इसे और छिपने में मदद करता है.

क्यों है यह खास?

स्विफ्ट-के दुश्मन के ठिकानों को नष्ट करने का एक सस्ता और प्रभावी तरीका है. यह उन हवाई रक्षा सिस्टम को निशाना बना सकता है, जो भारत की सुरक्षा के लिए खतरा हैं. यह ड्रोन ऊंचाई पर उड़ सकता है. 200 किमी की दूरी तक कमांड ले सकता है. इसका वजन लगभग 1,050 किलो है. यह एक घंटे तक उड़ सकता है.

भारत का भविष्य है ये ड्रोन

21वीं सदी के युद्धों का मानव रहित हवाई वाहन यानी यूएवी एक अभिन्न हिस्सा हैं. इस दशक में हुए सभी युद्ध-संघर्षों में यूएवी के इस्तेमाल का चलन देखा गया है. युद्ध के एक निर्णायक हथियार के तौर पर यूएवी को बीते साल के आर्मीनिया और अजरबैजान के बीच हुए नागोर्नो-कराबाख संघर्ष के दौरान पहचान मिल गई है, जिसमें युद्ध के मैदान पर ड्रोन पूरी तरह से हावी हो गए थे.

पड़ोसी देश ड्रोन मामले में भारत से आगे हैं

भारत ड्रोन और यूएवी के मामले में पाकिस्तान से एक दशक और चीन से और भी ज्यादा पीछे है. पाकिस्तान और चीन लड़ाकू ड्रोन समेत कई सैन्य प्लेटफार्मों और हथियारों को विकसित और पाने के लिए एकदूसरे के करीबी सहयोगी की भूमिका निभा रहे हैं. भारतीय नौसेना में शामिल करने के लिए इसके एक डेक-आधारित लड़ाकू यूएवी वेरिएंट की संभावनाएं भी तलाशी जा रही हैं.

कैसा होगा घातक UCAV

यह 30 हजार फीट की ऊंचाई तक जा सकता है. इसका वजन 15 टन से कम है. इस ड्रोन से मिसाइल, बम और प्रेशियन गाइडेड हथियार दागे जा सकते हैं. इसमें स्वदेशी कावेरी इंजन लगा है. यह 52 किलोन्यूटन की ताकत

विमान को मिलती है। अभी जो प्रोटोटाइप है उसकी लंबाई 4 मीटर है। विंगस्पैन 5 मीटर है। यह 200 किलोमीटर की रेंज तक जमीन से कमांड हासिल कर सकता है। अभी एक घंटे तक उड़ान भर सकता है।

चुनौतियां और भविष्य

हालांकि स्विफ्ट-के का विकास तेजी से हो रहा है, लेकिन इसे अभी तक सेना की ओर से औपचारिक मंजूरी या फंडिंग नहीं मिली है। ADE और भारतीय उद्योग इसे तेजी से विकसित कर रहे हैं। हाल के ऑपरेशन सिंदूर ने दिखाया कि ड्रोन युद्ध में कितने महत्वपूर्ण हैं, जिससे इस प्रोजेक्ट को और तेज करने की उम्मीद है।

स्विफ्ट-के भारत की रक्षा तकनीक में एक नया कदम है। यह न केवल भारत को आत्मनिर्भर बनाता है, बल्कि आधुनिक युद्ध में भी देश को मजबूत स्थिति देता है। DRDO, ADE और भारतीय उद्योगों की मेहनत से यह ड्रोन जल्द ही भारत की सेना का हिस्सा बन सकता है, जो दुश्मनों के लिए एक बड़ा खतरा होगा।

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Defence News

Defence Strategic: National/International

Traditionally Built 'Ancient Stitched Ship' Inducted Into The Indian Navy As Insv Kaundinya

Source: Press Information Bureau, **Dt.** 21 May 2025,

URL: <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2130294>

The Indian Navy formally inducted and named the Ancient Stitched ship as INSV Kaundinya today at a ceremonial event held at Naval Base, Karwar. The Hon'ble Minister of Culture Shri Gajendra Singh Shekhawat presided over the event as the Chief Guest, marking the culmination of an extraordinary project that celebrates India's rich shipbuilding heritage.

INSV Kaundinya is a stitched sail ship, based on a 5th century CE ship depicted in the paintings of Ajanta Caves. The project was initiated through a tripartite agreement signed in Jul 2023 between the Ministry of Culture, the Indian Navy, and M/s Hodi Innovations, with funding from the Ministry of Culture. Following the keel laying in September 2023, the vessel's construction was undertaken using a traditional method of stitching by a team of skilled artisans from Kerala, led by master shipwright Shri Babu Sankaran. Over several months, the team painstakingly stitched wooden planks on the ship's hull using coir rope, coconut fibre and natural resin. The ship was launched in Feb 2025 at Goa.

The Indian Navy played a central role in the project, overseeing the design, technical validation, and construction process. With no surviving blueprints of such vessels, the design had to be inferred from iconographic sources. The Navy collaborated with the shipbuilder to recreate the hull form and traditional rigging, and ensured that the design was validated through hydrodynamic

model testing at the Department of Ocean Engineering, IIT Madras, and internal technical assessment.



The newly inducted vessel incorporates several culturally significant features. Her sails display motifs of the Gandabherunda and the Sun, her bow bears a sculpted Simha Yali , and a symbolic Harappan style stone anchor adorns her deck, each element evoking the rich maritime traditions of ancient India. Named after Kaundinya, the legendary Indian mariner who sailed across the Indian Ocean to Southeast Asia, the ship serves as a tangible symbol of India's long-standing traditions of maritime exploration, trade, and cultural exchange.

Inducted as an Indian Naval Sailing Vessel (INSV), Kaundinya will be based at Karwar. The ship will now embark on her next historic phase, involving preparations for a transoceanic voyage along the ancient trade route from Gujarat to Oman, scheduled for later this year.

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LoC fortified: T-72s to anchor India's future border defence

Source: The Economic Times, Dt. 21 May 2025,

URL: <https://economictimes.indiatimes.com/news/defence/loc-fortified-t-72s-to-anchor-indias-future-border-defence-after-operation-sindoor/articleshow/121311352.cms>

India moved its T-72 main battle tanks right up to the Line of Control in Jammu & Kashmir's Akhnoor sector as part of Operation Sindoor. This was a direct response to unprovoked Pakistani aggression and attempts to support terrorist infiltration into Indian territory. The tanks—fitted with

125mm guns and missiles capable of hitting targets 4,000 metres away—formed the core of a joint deployment of air defence, artillery, and infantry, as reported by TOI.

“T-72s are integral. Fitted with 125mm guns and missile capability up to 4,000m, they were moved in as part of joint force deployment,” a senior Army officer told TOI on Tuesday.

Ground armour and infiltration control

The T-72s, alongside BMP-2 armoured vehicles, remain stationed along key points of the LoC. Their mission: seal off infiltration routes and maintain constant operational readiness. These armoured units were critical in neutralising Pakistani posts that served as platforms for cross-border terror movements.

An Army officer involved in the operation told NDTV, “We also hit enemy posts which were facilitating infiltration. We know which posts are used as bases for infiltration by the enemy. An informed call was taken – and the targets were hit.”

Precision fire and unmanned threats

Indian air defence units intercepted multiple drone swarm threats during the operation. “As the enemy unleashed a new threat of drone swarms, it was the Indian Army’s air defence that truly emerged as the shining shield — demonstrating exceptional skill, resilience, and cutting-edge coordination to intercept every aerial menace,” said Brigadier Mudit Mahajan, Commander of the Poonch Brigade, in a TOI report.

Artillery coordination and air support enabled strikes on nine high-value terror targets across Pakistan-occupied Kashmir (PoK), six of which were successfully neutralised. These were situated opposite the Poonch, Rajouri, and Akhnoor sectors.

Heavy casualties and strategic pause

In retaliatory action across north Kashmir, including Kupwara and Tangdhar, Indian forces destroyed nine more terror hideouts. These were in difficult terrain, yet Indian troops sustained zero casualties. In contrast, the Pakistani military reportedly suffered 65 fatalities. “So far, we have inputs of imposing heavy numbers in fatal and non-fatal casualties upon the enemy,” Brigadier Mahajan stated.

Indian forces have been on constant alert. “Operation Sindoor is not over but only remains suspended for the time being,” he added. “The Indian Army remains alert and ready, and if challenged again, we will respond yet again not with words but fire and resolve of the nation.”

Pakistan’s artillery failings exposed

In the Mendhar sector, Indian teams discovered a 155mm Pakistani shell that failed to detonate. Shockingly, it was fitted with a plug instead of a fuse. “This is the most basic error,” said Lieutenant Colonel Suneel Bartwal, defence spokesperson in Jammu. “Fitting a fuse is basic training for gunners worldwide. This highlights shallow training standards and Pakistan’s hollow claims on global platforms.”

Bomb disposal teams are still combing areas in Poonch, Krishna Ghati, and Mendhar, following strict safety protocols to remove unexploded shells without risking civilian lives.

Air strikes and shifting gears

As the operation intensified, the Indian Air Force launched strikes on key Pakistani airbases, crippling infrastructure at Chaklala, Rafiqui, Rahim Yar Khan, Sargodha, Bhulari, and Jacobabad. “Aggression was met with calibrated and coordinated force,” said Air Marshal A.K. Bharti.

Brigadier Mahajan revealed that Indian forces had originally planned a limited strike. “The Army struck with unmatched precision and purpose – six of nine critical terrorist targets struck were opposite Poonch, Rajouri and Akhnoor and these were neutralised effectively that night.” Only after Pakistan escalated by targeting civilian areas did Indian forces shift to hitting military installations.

Russian T-72s: The power behind the tank

India’s T-72s are Soviet-designed tanks first inducted into service in the early 1980s. With a combat range of 500km, a top speed of 60 kmph, and explosive reactive armour, they are built for high-intensity engagements. The Indian Army operates about 2,500 of these, built domestically at Avadi’s Heavy Vehicles Factory.

A new \$248 million deal with Russia’s Rosoboronexport will replace existing engines with 1,000 HP upgrades, enhancing battlefield mobility. The agreement also includes technology transfer to India’s Armoured Vehicles Nigam Limited, part of the ‘Make in India’ initiative.

India has already announced a plan to build nearly 600 indigenous tanks to replace ageing T-72 units. This move is in response to Russia’s limited supply capacity due to its war in Ukraine. As India diversifies its defence partnerships, its focus remains on modernisation without compromising strategic autonomy.

Although military operations have been paused since 10 May, Indian troops maintain 24x7 surveillance. “We did not wait to react; we prepared to respond,” said Brigadier Mahajan. He stressed that the Poonch Brigade “was not a part but the heart of Operation Sindoor.”

While the ceasefire holds for now, India’s position is clear. As the Defence Ministry warned, any future terror attack will be considered “an act of war”.

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Ajit Doval to Visit Moscow, likely to push for early delivery of remaining S400 air defence systems

Source: The Economic Times, Dt. 21 May 2025,

URL: <https://economictimes.indiatimes.com/news/defence/ajit-doval-to-visit-moscow-likely-to-push-for-early-delivery-of-the-remaining-s400-air-defence-systems/articleshow/121323068.cms>

National Security Adviser Ajit Doval is likely to visit Moscow next week. He is likely to push the Russian government for early delivery of the remaining two S400 air defence system amid reports of fresh orders for the same system for the Indian military.

Doval's visit will be preceded by a visit of Indian MPs to Moscow beginning Thursday.

The visit assumes significance in the backdrop of Indian air strikes in Pakistan under Operation Sindoor and the role played by BrahMos missiles, an India-Russia joint venture, and the S-400 system. A few other Russian-origin defence systems also came handy during the conflict.

What India now seeks is a stronger political understanding from Russia in countering Pakistan-based terror infrastructure in keeping with India-Russia strong security and strategic partnership. Russia is not only a P5 state but it remains a significant Eurasian power and the India-Russia partnership has often counter-balanced other big powers in Eurasia. Moscow has been among India's closest counter-terror partners for decades, a source informed.

NSA is expected to participate in the 13th International Meeting of High Representatives for Security Issues that will take place in Moscow from May 27 to 29, chaired by Russia's Security Council secretary Sergey Shoigu and will hold bilateral meetings with his various counterparts on the sidelines, including with Shoigu.

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What we know about Trump's 'Golden Dome', futuristic US missile defence seeking to make 'space wars' a reality

Source: The Indian Express, Dt. 22 May 2025,

URL: <https://indianexpress.com/article/explained/what-is-trumps-golden-dome-futuristic-u-s-air-defence-system-10020862/>

Donald Trump, Donald Trump Golden Dome, Trump Golden Dome, Golden Dome, air defence system, us air defence system, American air defence system, Indian express explained, explained news, current affairs U.S. President Donald Trump (REUTERS)

US President Donald Trump on Tuesday (May 20) said he has shortlisted a design for the 'Golden Dome' missile defence shield, and made General Michael Guetlein of the US Space Force in-charge of the project.

First floated by Trump this January, the Golden Dome is inspired by Israel's much lauded Iron Dome system — a short-range, ground-to-air, air defence system. But it is far more ambitious in scale and scope, and seeks to integrate "next-generation" technologies across land, sea, and even space. Here's what we know so far.

Making 'space wars' a reality

Trump said that the system will comprise, among other things, space-based sensors and interceptors. If this were to be true, this would make the Golden Dome the very first truly space-based weapon system.

As of right now, the use of space technology in defence has largely been restricted to reconnaissance. Satellites provide crucial targeting and other data for Earth-based weapon systems such as long-range missiles, guided munitions, etc.

The proposed Golden Dome goes one step further, with the introduction of interceptors to be launched from space. Exactly how they will work is still unclear. But according to the initial plans, the system will comprise thousands of small satellites orbiting Earth, which will intercept an enemy missile mere moments after it is launched, NPR reported.

This is not an altogether novel idea, however. Orbital weaponry, that is, weapon systems placed in an orbit around Earth, have been conceptualised and even designed by the US and Soviet Union during the Cold War, and even Nazi Germany during World War II.

Trump himself invoked former US President Ronald Reagan while discussing the missile system. “Ronald Reagan wanted it many years ago, but they didn’t have the technology,” Trump said, referring to the space-based missile defense system, popularly called “Star Wars”, that Reagan proposed.

Inspired by Israel’s Iron Dome

As the name suggests, the idea behind Golden Dome is inspired by Israel’s much lauded Iron Dome system. Developed in the aftermath of the 2006 Israeli-Lebanon War, the system comprises ground-launched Tamir interceptor missiles and an array of radar installations that capture and track enemy aerial threats, from rockets, missiles, and artillery shells to low-flying aircraft, helicopters, and unmanned aerial vehicles (UAVs).

But the Iron Dome’s capabilities pale in comparison to what Trump wants with the Golden Dome.

* The Iron Dome is a short-range, ground-based aerial defence system. It does not rely on satellites for any aspect of its functionality, even tracking. It primarily relies on radars to identify and track enemy targets.

Although Trump’s Golden Dome will likely comprise radar and other ground-based targeting systems as well, its main selling point, thus far, is the deployment of space-based systems.

Story continues below this ad

* Israel is nearly 400 times smaller than the US, and consists of mostly flat desert terrain, which makes short-range interceptors ideal and cost-efficient for air defence. Moreover, its primary threats come from non-conventional actors like Hezbollah and Hamas.

The US requires a far more expansive air defence system. Most notably, the US must be able to defend against Intercontinental Ballistic Missiles (ICBMs), technology which both China and Russia — Washington’s two main geopolitical rivals — possess.

ICBMs can be launched from tens of thousands of kilometres away, and travel to space as a part of their flight trajectory. Tracking ICBMs necessitates the use of satellites. And while they can be neutralised using ground-based interceptors, space-based weapons have long been thought to be more effective for this task given that they re-enter Earth’s atmosphere at hypersonic speeds.

Long way from being operational

Trump said the defense shield would cost some \$175 billion, and will be operational by January 2029, when his term ends. But industry experts are skeptical of both this timeline and estimated cost, Reuters reported.

Republican lawmakers have proposed a \$25-billion initial investment for Golden Dome as part of a broader \$150-billion defense package. But this funding is tied to the contentious “One Big, Beautiful Bill” that is expected to face significant hurdles in Congress, including from Republican lawmakers.

Technologically speaking, the idea behind Golden Dome is not far-fetched. But it is untested, and at the moment, more of a “concept”. “Right now, Golden Dome is, it’s really an idea,” one source had told CNN in March. This also makes projecting timelines and costs very difficult, the article added.

However, high profile defence contractors are already making their pitches directly to Defence Secretary Pete Hegseth. Apart from legacy defence giants, Silicon Valley companies are expected to participate in the program.

Democratic lawmakers have voiced concern about the procurement process and involvement of Trump ally Elon Musk’s SpaceX, which has emerged as a frontrunner alongside Palantir (PLTR.O), and Anduril to build key components of the system, Reuters reported.

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Operation Sindoor के बाद सेना ने भारतीय ड्रोन कंपनियों को दिया 4000 करोड़ का ऑर्डर, पढ़ें आखिर क्या है वजह

Source: Jagran, Dt. 21 May 2025,

URL: <https://www.jagran.com/news/national-operation-sindoor-boosts-indian-drone-industry-rupees-4000-crore-order-expected-23943418.html>

पहलगाम में आतंकी हमले के बाद पाकिस्तान के खिलाफ चलाए गए ऑपरेशन सिंदूर की सफलता के बाद ड्रोन इंडस्ट्री को बड़ा बूस्ट मिलने जा रहा है। उम्मीद की जा रही है कि अगले एक से डेढ़ साल में भारतीय ड्रोन कंपनियों को कम से कम 4000 करोड़ के ड्रोन मैनुफैक्चरिंग के ऑर्डर सेना व रक्षा विभाग की तरफ से मिल सकते हैं।

ड्रोन मैनुफैक्चरिंग करने वाली कंपनियों से सेना व रक्षा विभाग की तरफ से लगातार पूछताछ की जा रही है जिसे देखते हुए कंपनियां अपने उत्पादन के विस्तार में जुट गई हैं। सेना की तरफ से आगामी 26 मई को ड्रोन कंपनियों को अपने-अपने ड्रोन की नुमाइश करने के लिए आमंत्रित किया गया है।

ऑपरेशन सिंदूर के बाद घरेलू ड्रोन सेक्टर के विकास को नई ऊर्जा मिली

ड्रोन मैनुफैक्चरिंग बढ़ने से ड्रोन निर्माण से जुड़े कंपोनेंट्स का भी कारोबार बढ़ेगा। भारत में ड्रोन उद्योग का पूरा कारोबार फिलहाल 2.7 अरब डालर का है जो वर्ष 2030 तक 13 अरब डालर तक जाने की संभावना है। ड्रोन फेडरेशन ऑफ इंडिया के अध्यक्ष स्मित शाह ने बताया कि आपरेशन सिंदूर के बाद घरेलू ड्रोन सेक्टर के विकास को नई ऊर्जा मिली है। आगामी 12-24 महीने में ड्रोन इंडस्ट्री को 4000 करोड़ तक के नए ऑर्डर मिल सकते हैं।

सरकार ड्रोन के मेक इन इंडिया को प्रोडक्शन लिंकड इंसेंटिव के माध्यम से पहले से प्रोत्साहित कर रही है और अब ड्रोन के सामरिक महत्व को देखते हुए निश्चित रूप से इसके मैनुफैक्चरिंग को और प्रोत्साहन मिलेगा। ड्रोन निर्माता कंपनी आयोटेक वर्ल्ड एविगेशन के निदेशक दीपक भारद्वाज ने बताया कि आपरेशन सिंदूर के बाद रक्षा

विभाग व सेना की तरफ से ड्रोन को लेकर लगातार पूछताछ हो रही है और उन्हें जल्द ही बड़े आर्डर मिलने की उम्मीद है।

भारत में 400 से अधिक ड्रोन निर्माता कंपनी काम कर रही

आगामी 26 मई को इस सिलसिले में आर्मी की तरफ से ड्रोन निर्माता कंपनियों को ड्रोन की प्रदर्शनी के लिए बुलाया गया है। उन्होंने बताया कि उनकी तरह अन्य ड्रोन निर्माता कंपनियों ने भी अपनी उत्पादन क्षमता का विस्तार शुरू कर दिया है। भारत में 400 से अधिक ड्रोन निर्माता कंपनी काम कर रही है। ड्रोन का निर्माण बढ़ने से इसमें इस्तेमाल होने वाले संवेदनशील कंपोनेंट्स के निर्माण का भी विस्तार होगा क्योंकि इस प्रकार के कंपोनेंट्स के लिए आयात पर निर्भर नहीं रहा जा सकता है।

हालांकि अब ड्रोन में इस्तेमाल होने वाले 70 प्रतिशत कंपोनेंट्स का निर्माण भारत में हो रहा है। अभी मुख्य रूप से खेती, मत्त पशु और कुछ उद्योग से जुड़े सेक्टर के लिए ही ड्रोन का निर्माण किया जा रहा है। भारद्वाज ने बताया कि ड्रोन निर्माता कंपनियों को सबसे बड़ी दिक्कत फंड की आ रही है। पीएलआई के तहत सिर्फ 120 करोड़ रुपए का आवंटन किया गया था जो काफी कम है।

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Small private players are a rising force in India's defence tech

Source: The Hindu BusinessLine, **Dt.** 21 May 2025,

URL: <https://www.thehindubusinessline.com/opinion/editorial/small-private-players-are-a-rising-force-in-indias-defence-tech/article69598109.ece>

The recent 100-hour war with Pakistan has shone a torchlight on one heartening feature of India's punching power — the diffusion of defence production into MSMEs. Earlier, the production of weaponry used to be an almost exclusive preserve of government-owned entities; the private sector, again mostly the large players, was in the fringes, supplying components rather than systems. Now, the private sector is active in the supply of equipment and tier-1 subsystems.

India may not yet have the likes of a Lockheed Martin or Dassault Systems, but the breadth of private sector participation is growing in a whole host of areas such as radars, drones, satellites, satellite imagery and electronic hardware. A widespread domestic production base gives the defence a rapid ramp-up ability in times of war. But, more importantly, this brings into the sector higher cerebral power, as more players means more thinking heads, implying more innovation. Some innovations, such as stealth-giving polymers that make tanks, guns and aircraft invisible to enemy radar, and satellite-based navigation, are at the cutting edge of technology. Nowhere is the private sector participation more visible than in unmanned aerial vehicles, which have become the leading-edge weapons in today's wars. A hundred UAV start-ups have mushroomed all over the country in the last four or five years, dozens of whom have become defence suppliers. And, this is just the beginning. Amidst rising conflicts, India is sure to continue to grow its defence budget, which means a larger playground for the private sector. There are miles to cover, and Indian companies are capable of building India's defence muscle.

However, there is a flip side. Defence procurement is still mired in archaic rules. It is hard to find a single defence start-up that has not tripped over red tape. Defence procurement involves multiple layers of approval — from Services HQ to Ministry of Defence to Cabinet Committee on Security

— leading to years-long timelines. The Make-I and Make-II categories of the Defence Acquisition Procedure, frequently suffer from bureaucratic delays in the disbursement of sanctioned funds or milestone-based payments. Restrictive eligibility criteria, like turnover and prior experience, often exclude start-ups. The requirement to have multiple suppliers for a product leaves start-ups with unique, innovative products out in the cold.

In some cases, contracts are awarded through ‘reverse auction bidding’, which hammers down prices so low as to discourage serious players from participating. There are instances of start-ups that have lined up overseas investments but have been waiting for FDI approval for years. Some numbers mirror the reality. Defence procurement in 2023-24 stood at ₹1.27 lakh crore, a 174 per cent increase from ₹46,000 crore in 2014-15; but adjusted for inflation, the growth comes to around 65 per cent. With an enterprising MSME sector, a lot more can be done if procurement rules are made easy.

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All Hype & No Bite! Why China’s Jiutian SS-UAV, Dubbed World’s 1st Drone Mothership, Is A Paper Tiger: OPED

Source: The EurAsian Times, Dt. 21 May 2025,

URL: <https://www.eurasiantimes.com/all-hype-no-bite-why-chinas-jiutian-ss-uav/>

China’s Jiutian SS-UAV, dubbed the world’s first “drone mothership,” promises to rewrite the rules of aerial warfare. But before you buy into the hype, let’s rip the veil off this supposed game-changer. Is this massive UAV a revolutionary leap in military tech, or just a bloated, overhyped target practice for modern air defenses? Buckle up, because I’m about to read into why this so-called “mothership” might, believe me, crash and burn before it even gets off the ground.

Introduction: The Hype of the Jiutian SS-UAV

China’s military machine is at it again, flexing its muscles with the Jiutian SS-UAV, a high-altitude, long-endurance (HALE) unmanned aerial vehicle billed as the world’s first “drone mothership.” Unveiled at the Zhuhai Air Show in November 2024 and set for its maiden flight in June 2025, this beast is designed to carry up to 100 smaller drones, including kamikaze UAVs, and a mix of air-to-air, air-to-ground, and anti-ship missiles. With a reported range of 7,000 kilometers (4,350 miles), a 12-hour endurance, and the ability to fly at 15,000 meters, it’s being sold as a force multiplier for the People’s Liberation Army (PLA). Chinese state media and defense outlets are hyping it as a game-changer, capable of saturating enemy defenses with swarms of AI-guided drones and precision-guided munitions.

Sounds terrifying, right? Wrong. I’m not buying it, and neither should you. The Jiutian SS-UAV, for all its grandiose promises, is a flawed concept that’s more likely to be a sitting duck than a battlefield dominator. Let’s break down why this drone mothership is a failure before it even starts, from its vulnerability in contested environments to its questionable endurance and overhyped capabilities. Buckle up for a deep dive into why China’s latest military toy is more flash than substance.



Jiutian SS-UAV

- **A Sitting Duck In Contested Skies**

First off, let's talk about the elephant in the room: the Jiutian's survivability in a contested environment. China claims this mothership can operate at super-high altitudes, evading many air defense systems. But here's the cold, hard truth: modern air defenses and fighter jets are more than capable of turning this lumbering giant into a fireball before it can deploy its precious drone swarm.

Tom Shugart, an adjunct senior fellow at the Center for a New American Security, nailed it when he told Newsweek that the Jiutian "doesn't appear to be particularly stealthy" and could be "subject to destruction by enemy aircraft or air defenses" before it gets close enough to release its drones. Let's unpack that. The Jiutian is a massive platform with an 82-foot wingspan and a 16-tonne frame. That's not exactly a needle in a haystack. Its radar cross-section (RCS) is likely significant, making it a juicy target for advanced radar systems like those on the U.S. F-35, India's Rafale, or even Taiwan's upgraded F-16s.

Modern air-to-air missiles, like the Meteor carried by Rafale jets, have ranges exceeding 200 kilometers and can engage targets at high altitudes. The Meteor's active radar homing and ramjet propulsion make it a nightmare for slow, non-stealthy platforms like the Jiutian. Add to that the networked air defense systems of adversaries like the U.S., Japan, or India—think Aegis-equipped destroyers or India's D4 anti-drone system—and the Jiutian's chances of surviving long enough to deploy its swarm are slim to none.

India's recent success in neutralizing Pakistan's drone swarms during Operation Sindoor, using a mix of sensors, jammers, and missiles, proves that coordinated air defenses can shred drone-heavy assaults. In a contested environment—say, over the Taiwan Strait or the South China Sea—the Jiutian would face a gauntlet of layered defenses: long-range surface-to-air missiles (SAMs) like the Patriot PAC-3, ship-based SM-6 missiles, and fighter jets with advanced sensors. Even if it flies at 15,000 meters, it's not out of reach. High-altitude SAMs and interceptors are designed for exactly this kind of threat. And let's not forget electronic warfare. Systems like India's D4 or the

U.S.'s Next Generation Jammer can disrupt the Jiutian's command-and-control links, rendering its drone swarm useless before it even launches.

The Jiutian's reliance on quantum-encrypted communication and AI for swarm control sounds fancy, but it's not invincible. Electronic countermeasures (ECM) can jam or spoof these systems, and no amount of Chinese propaganda can change the fact that a big, slow UAV is a magnet for trouble in a high-threat environment. This isn't a stealthy RQ-170 Sentinel; it's a glorified cargo plane trying to play Rambo.

- **Swarm Drones: More Show Than Substance**

Next up, let's talk about those "100 kamikaze drones" the Jiutian is supposed to unleash. The idea is that these smaller UAVs, some modeled after the Iranian Shahed-136, can overwhelm enemy defenses through sheer numbers. But here's the kicker: these micro-drones have limited range and endurance, making them more suited for a flashy drone show than a serious military operation. Reports suggest the Jiutian's drones are deployed from dual bays on its underside, designed for "distributed or saturation attacks." This sounds impressive until you consider the practical limitations. Kamikaze drones like the Shahed-136 have a range of about 2,000 kilometers in ideal conditions, but when launched from a mothership at high altitude, their endurance is likely far less due to the energy required to reach operational altitudes and speeds. Shugart's skepticism about their "fairly short range" is spot-on. These drones aren't crossing the Taiwan Strait or hitting U.S. bases in Guam without running out of juice.

Moreover, swarm tactics rely on numbers and coordination, but quantity doesn't always trump quality. Modern air defenses, like India's D4 system or China's own "Bullet Curtain" anti-drone system, are designed to counter exactly this kind of threat. The Bullet Curtain, for instance, uses 35mm rounds that explode mid-air, creating a "lethal cloud" to obliterate drone swarms. If China's own tech can counter swarms, imagine what the U.S. or Israel could do with their laser-based systems or advanced CIWS (close-in weapon systems). The Jiutian's drones also face the problem of payload. Kamikaze UAVs typically carry small warheads, which are great for precision strikes on soft targets but useless against hardened military installations. To overwhelm a modern air defense network, you'd need hundreds, if not thousands, of drones—far more than the Jiutian's 100-unit capacity. And once those drones are launched, the mothership is left vulnerable, having spent its primary offensive capability. It's a one-trick pony with a very short leash.

- **Endurance & Payload: Overpromised, Underdelivered**

China claims the Jiutian can fly for 12 hours and cover 7,000 kilometers while carrying a six-tonne payload, including drones and missiles. But let's do some back-of-the-envelope math. A 16-tonne UAV carrying six tonnes of ordnance—drones, missiles, or a mix—means it's operating at near-maximum capacity. That's a lot of weight for a single rear-thrust engine, even one designed for efficiency. High-altitude, long-endurance UAVs like the U.S. RQ-4 Global Hawk already push the limits of fuel efficiency, and they don't carry anywhere near six tonnes of payload. The Jiutian's hydrogen engine and stealth features might help, but physics is a harsh mistress. Fully loaded, its endurance and range will likely be far less than advertised. A 12-hour flight time might shrink to a fraction of that under combat conditions, especially if it's maneuvering to avoid threats or climbing to evade SAMs.

Then there's the missile payload. The Jiutian can reportedly carry air-to-air missiles like the PL-12E, anti-ship missiles, and 1,000-kilogram guided bombs. But here's the rub: missiles are heavy. A single PL-12E weighs around 200 kilograms, and a 1,000-kilogram bomb is, well, 1,000 kilograms. If the Jiutian is carrying a mix of these plus 100 drones (each likely weighing 50-100 kilograms), it's quickly hitting its payload limit. There's no way it's flying 7,000 kilometers with all that gear. More likely, it's limited to shorter missions or lighter loads, which undercuts its strategic value. Compare this to proven platforms like the MQ-9 Reaper, which carries a fraction of the Jiutian's payload but has been battle-tested in real-world conditions. The Jiutian's specs sound like they were dreamed up in a propaganda office, not a testing ground. And if it has to sacrifice drones to carry missiles or vice versa, it loses the versatility that's supposed to make it a "multirole" platform.

- **Strategic Overreach: A Propaganda Ploy?**

Let's zoom out and look at the bigger picture. China's military strategy is all about anti-access/area-denial (A2/AD), using missiles, drones, and naval assets to keep adversaries like the U.S. or Japan at bay. The Jiutian fits into this playbook, theoretically enabling long-range strikes and swarm attacks to overwhelm defenses in places like Taiwan or the South China Sea. But its practical utility is questionable. For one, the Jiutian's role as a "force multiplier" assumes it can operate unchallenged. In a real conflict, it would need escorts—manned fighters or other drones—to survive. That's a logistical nightmare, tying up resources that could be better used elsewhere. And if China's banking on the Jiutian to tip the scales in a Taiwan invasion, it's betting on a platform that hasn't been tested in combat. Compare that to the U.S.'s DARPA Gremlins program, which is still in development but focuses on recoverable drones—a more flexible and sustainable approach.

Then there's the propaganda angle. Chinese state media, like CCTV and the South China Morning Post, have been relentless in hyping the Jiutian as a revolutionary leap. But this smells like classic CCP posturing: announce a shiny new toy, slap some CGI footage on X, and watch the world freak out. Posts on X have already called it out, with users like @Patriot_Josh11 mocking it as "big, slow, and not stealthy" and predicting it'll "quietly crash during the test." This isn't the first time China's overhyped its tech. Remember the J-20 stealth fighter? Touted as an F-22 killer, it's been plagued by engine issues and questionable stealth performance. The Jiutian feels like more of the same: a bold claim to rattle adversaries, but one that might not hold up under scrutiny. If it's anything like China's past projects, expect delays, technical hiccups, and a reality far less impressive than the press releases.

- **The Counter-Drone Reality Check**

Finally, let's talk about the broader context of drone warfare. The Jiutian's swarm tactics are inspired by conflicts like Ukraine, where cheap drones have reshaped the battlefield. But what China seems to ignore is that counter-drone technology is evolving just as fast. India's D4 system, which neutralized Pakistan's swarm attacks in May 2025, is a prime example. Using a mix of sensors, jammers, and missiles, it took out over 50 drones and Chinese-supplied PL-15 missiles in a single night. China itself is investing heavily in anti-drone tech, like the "Bullet Curtain" system,

which can shred swarms with a barrage of 35mm rounds. If China's own defenses can counter drone swarms, what's stopping adversaries from doing the same?

The U.S. has laser-based systems and advanced CIWS, while Israel's Iron Dome has proven adept at handling missile and drone threats. Even smaller players like India are fielding laser weapons capable of slicing through drones. The Jiutian's swarm strategy assumes enemies will be overwhelmed, but modern air defenses are built for exactly this scenario. A 100-drone swarm sounds scary, but when you're facing networked radars, jammers, and interceptors, it's just a bigger target. And once the Jiutian deploys its drones, it's left with little to no offensive capability, making it a liability rather than an asset.

Conclusion: A Paper Tiger In The Sky

So, is the Jiutian SS-UAV the future of warfare or an overhyped flop? I'm leaning hard toward the latter. Its vulnerabilities in contested environments, limited drone endurance, questionable payload and range, and reliance on unproven swarm tactics make it a risky bet for the PLA. Add to that the rapid evolution of counter-drone systems, and the Jiutian starts to look like a paper tiger—a flashy concept that crumbles under scrutiny. China's not wrong to invest in drone technology; drones are reshaping modern warfare. But the Jiutian feels like a rushed attempt to steal the spotlight rather than a mature, battle-ready platform. Its June 2025 test flight might dazzle with CGI and state media fanfare, but in a real conflict, it's more likely to be a cautionary tale than a game-changer. The West, Taiwan, and others should keep an eye on it, but they shouldn't lose sleep. This mothership is more likely to crash into reality than dominate the skies.

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Science & Technology News

India Moving Ahead With Chandrayaan-4 And Chandrayaan-5 Missions: ISRO Chief In Odisha

Source: Deccan Chronicles, **Dt.** 21 May 2025,

URL: <https://www.deccanchronicle.com/nation/india-moving-ahead-with-chandrayaan-4-and-chandrayaan-5-missions-isro-chief-in-odisha-1880420>

India's space ambitions continue to soar as the Indian Space Research Organisation (ISRO) gears up for its next major lunar mission, Chandrayaan-4. This landmark mission aims to collect samples from the Moon's surface and bring them back to Earth — a first for the nation's space programme.

The announcement was made by ISRO chairman, Dr V Narayanan, during his visit to the Central Tool Room and Training Centre (CTTC) in Bhubaneswar. He highlighted that Chandrayaan-4 would involve landing on the lunar surface, gathering soil and rock samples, and safely returning them to Earth. This will mark a significant milestone in India's lunar research and contribute valuable insights into the Moon's geology.

“After Chandrayaan-3’s historic soft landing near the Moon’s south pole, which brought glory to our nation, we are now working on Chandrayaan-4, a sample-return mission. We aim to land, collect samples, and bring them back to Earth,” Dr Narayanan stated.

Looking ahead, he also spoke about Chandrayaan-5, an upcoming collaborative mission between ISRO and the Japan Aerospace Exploration Agency). Expected to be even more ambitious than its predecessors, Chandrayaan-5 will see a significant increase in launch weight — rising to 6,400 kilograms from Chandrayaan-3’s 5,000 kilograms.

A major upgrade in this mission will be the lunar rover, which will weigh 350 kilograms, a substantial increase from Chandrayaan-3’s 25-kilogram rover. The new rover will also boast an operational lifespan of around 100 days on the Moon, compared to the previous mission’s 14 days, enabling extended exploration of the lunar terrain.

“We are simultaneously working on Chandrayaan-5, a joint effort with JAXA. This time, the rover will weigh 350 kilograms and operate for approximately 100 days,” the ISRO chief added.

Dr Narayanan emphasised that these progressive missions reflect India’s expanding capabilities in space research. “The advancements we are making with each mission underscore India’s growing prowess in space exploration,” he remarked.

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