

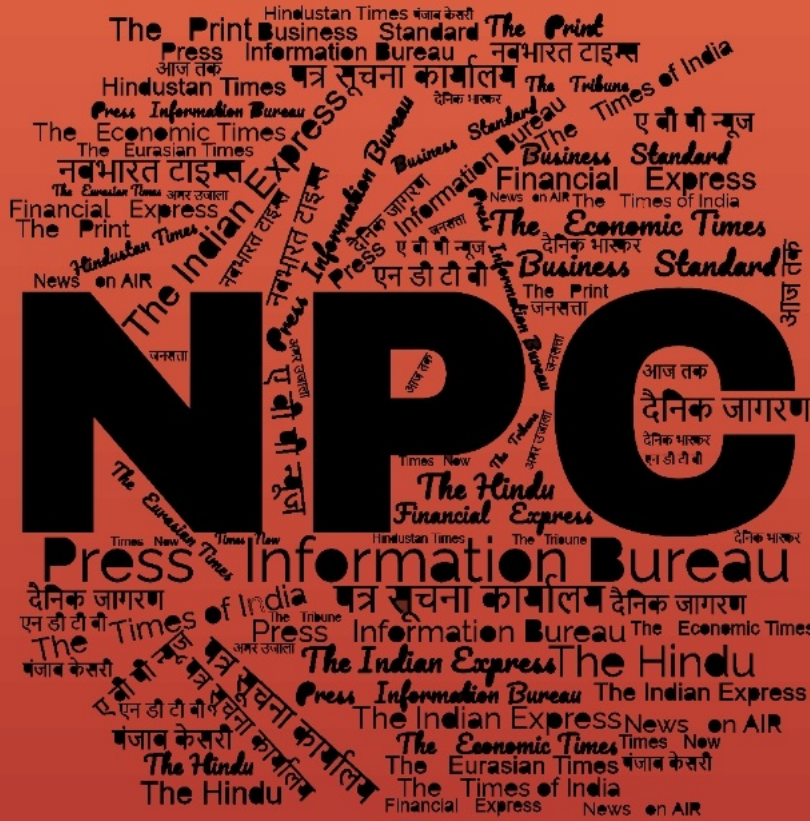
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समाचार पत्रों से चयनित अंश Newspapers Clippings

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

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology



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Defence News

वायुसेना ने लद्दाख में अपनी ताकत बढ़ाई

Source: Dainik Jagran, Dt. 29 Jan 2026

राज्य ब्यूरो, जागरण • जम्मू : चीन व पाकिस्तान की दोहरी चुनौती से निपटने के लिए लद्दाख में भारतीय वायुसेना अब और मजबूत हो रही है। लेह एयरफोर्स स्टेशन पर समानांतर रनवे और पांच टैक्सी वेज के निर्माण से अब विमानों का आवागमन और सुगम होगा। युद्ध जैसी चुनौती में वायुसेना के बड़े विमान बिना समय गंवाए सैनिकों, साजो सामान, टैंक, तोपें लेकर एक के बाद एक लेह में उतर सकेंगे। साथ ही नागरिक विमानन सुविधाओं का विस्तार होगा। बड़े मालवाहक विमानों के लिए यहां उतरना भी अब और सुगम हो गया है।

बुधवार को वायुसेना ने लेह में अपना मालवाहक विमान सी-130 हरक्यूलिस उतारकर नए रनवे का आपरेशन शुरू कर दिया। लद्दाख के

- लेह एयरपोर्ट पर समानांतर रनवे के निर्माण से बढ़ेगी गतिशीलता
- दुश्मन पर करारा आघात करने को अब लगातार उड़ान भर सकेंगे विमान
- वायुसेना ने लेह में अपना मालवाहक विमान सी-130 हरक्यूलिस उतारा



लेह एयरफोर्स स्टेशन में नए रनवे पर उतरा वायुसेना का सी-130 हरक्यूलिस विमान • सौ. सूचना विभाग

उपराज्यपाल कविंद्र गुप्ता ने वेस्टर्न एयर कमांड के सीनियर एयर स्टाफ ऑफिसर, एयर मार्शल जेए मान की उपस्थिति में रनवे व टैक्सी वेज का औपचारिक लोकार्पण किया। इससे वायुसेना की गतिशीलता में कई गुणा वृद्धि हुई है। अब युद्ध चुनौती का सामना करने के लिए लद्दाख में सैनिकों, साजो सामान हथियारों से

लदे वायुसेना के बड़े विमानों की तरह फाइटर विमानों का त्वरित संचालन भी संभव होगा।

क्यों अहम है यह एयरफील्ड :

पाकिस्तान और चीन से लगती सीमाओं पर सतत निगरानी के साथ यहां सैन्य आपूर्ति सुनिश्चित करने के लिए यह एयरफील्ड बेहद अहम है।

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HAL counts on SJ-100, Dhruv NG to grow civil biz

Source: Hindustan Times, Dt. 29 Jan 2026

Hindustan Aeronautics Limited (HAL) on Wednesday signed an agreement with Russian firm United Aircraft Corporation (UAC) to pursue the licensed production of the regional commercial aircraft SJ-100, and another deal with Pawan Hans Limited for supplying 10 Dhruv NG (new generation) choppers to the helicopter service provider, officials said.

The developments signal HAL's new push to boost its minuscule civil business, which accounts for barely 5% of its total turnover. "Our business is structured around military platforms, and we are now looking at diversifying into the civil sector as a corporate strategy.

Around 25% of our turnover is likely to come from non-military business in another 10 years,” HAL chairman DK Sunil said at Wings India 2026, the four-day civil aviation show that began at Begumpet airport in Hyderabad on Wednesday, January 28, 2026.

The SJ-100, Dhruv NG and Hindustan-228 light transport aircraft — all on display at the show — will spearhead HAL’s ambitious civil campaign, he said. The teaming agreement signed with UAC seeks to lay the groundwork for production of the SJ-100, a twin-engine narrow-body aircraft, in India within three years.

Before production of the 103-seater aircraft begins, HAL will facilitate the lease of up to 10 SJ-100s to Indian operators directly from UAC over the next 18 months—a step aimed at gaining a better grasp of issues related to aircraft maintenance and ground support. The regional jet, Sunil said, will fill a key gap in short-haul connectivity and boost self-reliance in the civil aviation sector.

The teaming agreement follows a memorandum of understanding signed by the two firms in Moscow on October 2025 for SJ-100 production. HAL’s internal estimates suggest the Indian aviation sector will require around 200 jets in this category over the next 10 years, and another 350 to serve international tourist destinations in the vast Indian Ocean region.

India will also require around 400 helicopters in the Dhruv NG category in the coming years, Sunil said, adding that deliveries to Pawan Hans Limited will be completed by the end of the financial year 2026-27. Those interested in buying these helicopters include the Border Security Force, several states, including Karnataka and Odisha, and some south-east Asian countries, he said. HAL also plans to tap the potential of heli-tourism in the north to boost sales. To be sure, earlier variants of the Dhruv are operated by the three services and the Coast Guard.

In December 2025, HAL received certification from the Directorate General of Civil Aviation for indigenous manufacturing of the Shakti civil engine—the first time the DGCA has certified an aero engine for indigenous production. According to HAL, the move represents a major leap forward in India’s pursuit of self-reliance in critical technologies.

The twin-engine helicopter features a world-class, civil-certified glass cockpit and a modern avionics suite for superior situational awareness. It also incorporates crashworthy seats and self-sealing fuel tanks for enhanced safety. HAL is targeting Caribbean nations, Indonesia, Malaysia and some other countries to export the Hindustan-228, whose amphibious variant is likely to be rolled out next year, Sunil added.

<https://www.hindustantimes.com/india-news/hal-counts-on-sj-100-dhruv-ng-to-grow-civil-biz-101769628184499.html>

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Govt weighs raising defence FDI cap to 74pc in budget push

Source: *The Statesman*, Dt. 29 Jan 2026

JAYANTA ROY CHOWDHURY
New Delhi, 28 January

The government is mulling a far more liberalised foreign direct investment (FDI) regime for its defence sector in the forthcoming budget.

Top officials said that among a bunch of Budget proposals is a move to raise the FDI limit to 74 per cent under the automatic route for existing licensed defence manufacturers.

"The move aims at accelerating technology inflows, joint ventures and domestic production in a strategically sensitive industry. We need to woo both capital and new technology into high-tech defence areas and this is one step which is being actively considered," a senior official said.

The move would lift the current ceiling of 49 per cent for such firms and allow foreign investors to acquire majority stakes without requiring prior approval

from either the Reserve Bank of India or the government.

Currently, only new firms coming into high-tech defence manufacturing can apply for a 74 per cent FDI under the automatic route.

Officials familiar with the discussions said the change is "also intended to create parity between new and existing licence-holders, while simplifying conditions that have long been seen as ambiguous or cumbersome."

The government is also considering dropping requirements such as the need to demonstrate access to "modern technology" for foreign investments beyond 74 per cent, which have often led to "subjective interpretations" affecting investments in key components needed for the defence industry.

Besides giants like Lockheed Martin, GE, Thales, Dassault, Rostec conglomerate, the move is expected to help smaller



firms making components and accessories for defence industry buy into Indian component manufacturing.

European defence firms, which may feel reassured by the Security and Defence Partnership Agreement signed earlier this week and the 'security of information' agreement currently under negotiation, could be among the first to use the new facility, officials said.

India currently imports around 70 per cent of its military hardware, despite rising defence budgets and an ambitious push to build an export-oriented domestic industrial base.

Analysts said allowing up to 74 per cent FDI under the automatic route would enable global defence majors to secure controlling stakes more quickly, potentially unlocking larger capital commitments, faster decision-making and deeper technology transfers.

Analysts see the move positively impacting larger groups such as Tata Advanced Systems, Mahindras, Larsen & Toubro as also smaller and mid-sized licensed manufacturers that are seeking capital to scale up production and exports.

(Representational image)

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Discombobulator: The system that US likely used in Venezuela attack

Source: *The Indian Express*, Dt. 29 Jan 2026

President Donald Trump said last week that American forces had used a weapon called "the discombobulator" during the military strike on Venezuela on January 3, in which the country's leader Nicolás Maduro and his wife, Cilia Flores, were captured. Speaking to *The New York Post*, Trump stated that the weapon was designed to disable enemy defensive infrastructure, and he was "not allowed" to talk about it. The President had earlier told *NewsNation*, a US news channel, that a "sonic weapon" had been used in the operation. However, there is still no clarity about what the discombobulator used by the US in the latest operation comprises.

The discombobulator

Experts told The Indian Express that the discombobulator may or may not be a single weapon and could comprise more than one capability. It could have jointly disabled Venezuela's military defensive systems in a highly defended area. The discombobulator could also have included systems that produce high-pitched sounds and blinding effects to temporarily deafen, blind, or disorient people during an operation.

All of these systems could have been deployed individually or in combinations to achieve the desired effect of disorienting people and disabling military defences.

Systems that disorient people

- **Active denial system:** Also called a heat ray, it is a directed energy weapon that can deeply penetrate skin to create a burning sensation. This can force people to flee, and trigger confusion and panic.
- **Vortex ring generator:** It typically uses high-pressure pulses to either hit a person or deliver a payload of stink bombs. This causes disorientation and, in some cases, nausea.
- **Acoustic hailing devices (or long-range acoustic device):** Also known as sonic cannons, these systems can emit a highly directional, piercing sound, which is loud enough to disorient people by causing nausea, vertigo, and confusion.
- **Visual dazzlers:** These are high-intensity, pulsing laser weapons, which can cause a blinding impact on a person, rendering them disoriented on a battlefield. Reports from Venezuela spoke of soldiers bleeding, vomiting or being incapacitated, likely to be caused by the use of high-intensity acoustic waves.

Systems that disable equipment

A discombobulator could also involve a range of electronic warfare systems that can jam air defences, including radars and sensors. The US created the Counter-electronics High Power Microwave Advanced Missile Project, which can render electronics ineffective by projecting microwave pulses. In the past, the US has also carried out sophisticated cyber operations. Cyber attacks are part of the 'suppression of enemy air defences' missions.

Graphite munitions, non-lethal weapons to disable power grids, can also be a part of a discombobulator. The US uses a programme called Suter, which is integrated into the country's aircraft. It attacks enemy networks and communications, including air defence networks. Operators running Suter 1 can see what enemy radar operators are looking at. Suter 2 seizes control of enemy networks and can direct their sensors. Suter 3 penetrates links to surface-to-air missile launchers.

<https://indianexpress.com/article/explained/discombobulator-the-system-that-us-likely-used-in-venezuela-attack-10500403/>

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Science & Technology News

Novel supercapacitors with dual-functional porous graphene can provide EV with faster acceleration

Source: Press Information Bureau, Dt. 28 Jan 2026

A high-voltage supercapacitor based on a dual-functional porous graphene carbon nanocomposite (PGCN) electrode has been developed which could facilitate stabler supercapacitors for applications like solar panels and also provide electric vehicles with increased range and faster acceleration. Conventional electrolytes used in commercial supercapacitors can operate between 2.5–3.0 V and begin to decompose or face safety issues (such as flammability) at higher voltages.

Researchers at the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), an autonomous institute of the Department of Science and Technology (DST) used dual-functional PGCN electrodes to reach an unprecedented 3.4 V overcoming the 3.0 V limitation of conventional supercapacitors along with significantly improved energy storage.

This innovation addresses electrolyte instability, doubling energy density to provide electric vehicles with increased range and faster acceleration while simplifying module design through reduced cell stacking. The enhanced performance originates from the engineered surface of the PGCN material, which is both water-repellent and highly compatible with organic electrolytes. This dual functionality suppresses water-induced degradation and enables rapid electrolyte penetration into the porous structure, improving ion transport and electrochemical efficiency. As a result, the supercapacitor delivers 33% higher energy storage, high power output, and excellent long-term stability, making it suitable for electric vehicles, grid-scale storage, and portable electronics.

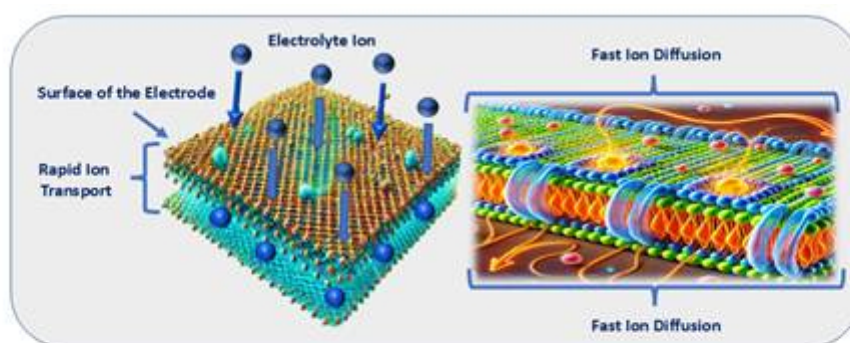


Fig 1: Schematic representation for facilitating rapid electrolyte infiltration and diffusion within the porous structure of PGCN.

The PGCN electrodes are produced through an eco-friendly hydrothermal carbonization process using 1,2-propanediol as the precursor. Conducted at 300°C for 25 hours in a sealed vessel, the process eliminates the use of harsh chemicals and external gases, minimizes environmental impact, achieves yields exceeding 20%, and is scalable from laboratory to industrial production.

The resulting material exhibits a micro- and mesoporous architecture that supports rapid ion transport and high energy storage, delivering a power density of up to 17,000 W/kg. Consistent performance is ensured through precise control of synthesis parameters. Compared with commercial carbon-based electrodes, the PGCN electrode simultaneously enhances operating

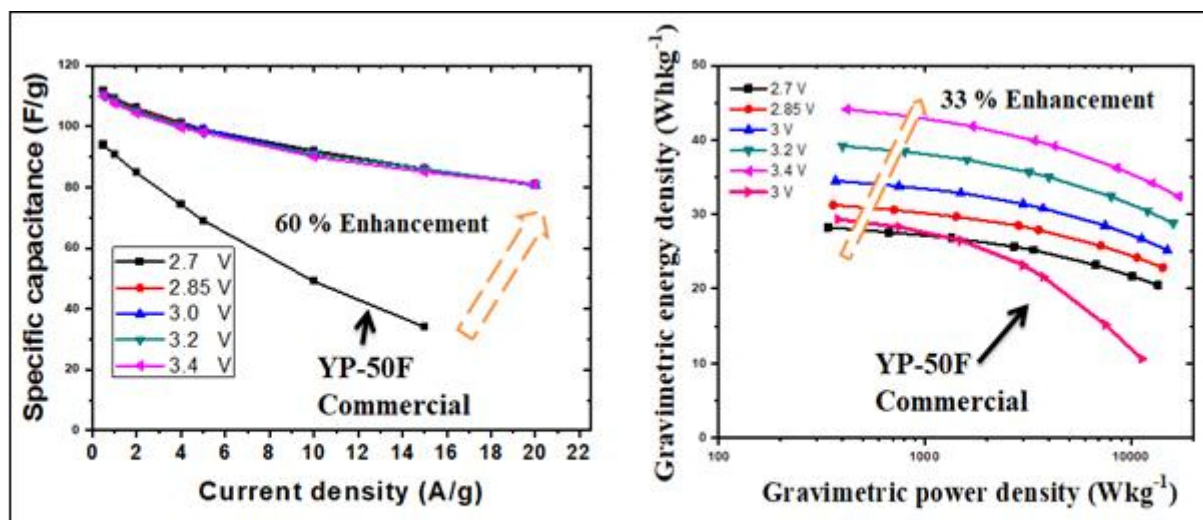


Fig 2: Comparison of specific capacitance and energy density of the PGCN with the commercial YP-50F electrode.

voltage and power output. PGCN-based supercapacitor stores 33% more energy than conventional devices and retains 96% of its performance after 15,000 charge–discharge cycles, demonstrating exceptional durability, as shown below.

This work supports India's clean energy goals and the Aatma Nirbhar Bharat initiative by strengthening indigenous capabilities in advanced energy-storage technologies. The higher operating voltage reduces the need for stacking multiple low-voltage cells, enabling more compact and efficient energy-storage modules. The study published in the *Chemical Engineering Journal* (Elsevier) has been supported by the Department of Science and Technology (DST), Government of India, under the Technical Research Centre (TRC) initiative.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2219463®=3&lang=1>

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The Tribune
The Statesman
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The Hindu
The Economic Times
Press Information Bureau
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