

जुलाई
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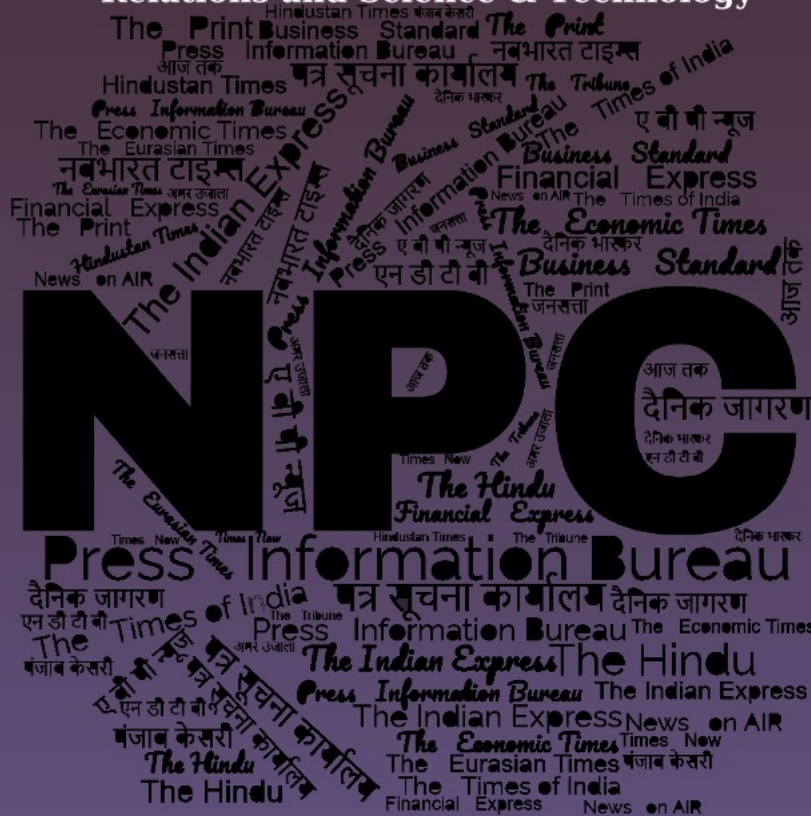
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समाचार पत्रों से चयनित अंश Newspapers Clippings

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

भारत ने मिसाइल 'अस्त्र' का सफल परीक्षण किया

Source: Punjab Kesari, Dt. 12 Jul 2025

नई दिल्ली, (पंजाब केसरी): भारत ने अपनी स्वदेशी रक्षा क्षमताओं का प्रदर्शन करते हुए शुक्रवार को ओडिशा अपतटीय क्षेत्र में सुखोई-30 एमके-आई विमान से मिसाइल 'अस्त्र' का सफल परीक्षण किया जो हवा से हवा में मार कर सकती है। यह मिसाइल दृश्य सीमा से परे सटीक निशाना लगाने में सक्षम है। अधिकारियों ने कहा कि मिसाइल की मारक क्षमता 100 किलोमीटर से अधिक है और यह अत्याधुनिक दिशा-निर्देशन प्रणाली से सुसज्जित है।

रक्षा मंत्रालय ने कहा कि रक्षा अनुसंधान और विकास संगठन (डीआरडीओ) तथा भारतीय वायुसेना ने स्वदेशी 'रेडियो फ्रीक्वेंसी सीकर' के साथ एसयू-30 एमके-आई के जरिए दृश्य सीमा से परे हवा से हवा में मार करने वाली स्वदेशी मिसाइल 'अस्त्र' का सफल परीक्षण किया। परीक्षण के दौरान, विभिन्न रेंज पर उच्च गति वाले



मानवरहित हवाई लक्ष्यों के विरुद्ध दो प्रक्षेपक दागे गए। मंत्रालय ने एक बयान में कहा, "दोनों मामलों में, मिसाइलों ने एकदम सटीकता के साथ लक्ष्यों को नष्ट कर दिया।" रक्षा मंत्री राजनाथ सिंह ने 'रेडियो फ्रीक्वेंसी सीकर' के डिजाइन और विकास में शामिल डीआरडीओ, वायुसेना और उद्योग भागीदारों की सराहना की। उन्होंने कहा कि स्वदेशी 'फ्रीक्वेंसी सीकर' के साथ मिसाइल का सफल परीक्षण महत्वपूर्ण रक्षा प्रौद्योगिकी में मील का पत्थर है।

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DRDO, IAF successfully test indigenous Astra Missile with Radio Frequency Seeker from Su-30 MKI

Source: The Hindu, Dt. 12 Jul 2025

The Defence Research and Development Organisation (DRDO) and the Indian Air Force (IAF) successfully conducted the flight-test of indigenous Beyond Visual Range Air-to-Air missile (BVRAAM) 'Astra' equipped with indigenous Radio Frequency (RF) Seeker from Su-30 Mk-I platform off the coast of Odisha on Friday (July 11, 2025).

During the tests, two launches were carried out against high-speed unmanned aerial targets at different ranges, target aspects and launch platform conditions, a Defence Ministry statement said. In both the cases, the missiles destroyed the targets with pin-point accuracy.

All subsystems performed as per expectations including the RF seeker which has been indigenously designed and developed by the DRDO, the Ministry added.

It further said that the flawless performance of the Astra weapon system was validated through flight data captured by range tracking instruments deployed by the Integrated Test Range, Chandipur.

“Astra BVRAAM has a range exceeding 100 kms and is equipped with state-of-the art guidance and navigation system,” said the statement.



In addition to various laboratories of DRDO, more than 50 public and private industries including Hindustan Aeronautics Limited have contributed towards successful realisation of the weapon system.

Defence Minister Rajnath Singh complimented the DRDO, the IAF and industry involved in the design and development of the RF seeker and stated that the successful testing of the missile with indigenous seeker is a major milestone in critical defence technology.

Secretary, Department of Defence R&D and Chairman, DRDO Samir V. Kamat congratulated all the teams involved in the successful flight-test.

<https://www.thehindu.com/news/national/drdo-iaf-successfully-test-indigenous-astra-missile-with-radio-frequency-seeker-from-su-30-mki/article69801243.ece>

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Defence News

India to fast-track Israeli decoy system for Rafale jets amid West Asia turmoil

Source: The Economic Times, Dt. 12 Jul 2025

India is looking to expedite deliveries of a decoy system that would strengthen the Rafale fighter jet fleet and provide it additional protection against enemy missiles. The X Guard fibre optic towed decoy system had been ordered by the Air Force as an enhancement to the fighter jets and enables them to operate in contested airspace.

Sources said that the system -- manufactured by Israel's Rafael -- has been integrated and demonstrated on the fighter jets but deliveries have been impacted due to supply chain issues and the current turmoil in West Asia.

Efforts are on to press for expedited deliveries as the system strengthens the fighter's ability to ward off enemy missiles. The Air Force did not respond to queries sent by ET on the issue. Israel's Rafael also did not respond to a questionnaire.

Used extensively by the Israeli Air Force, the X Guard is a reusable decoy system that is integrated with the electronic warfare suite of fighter jets. The system, which mimics the signature of a fighter jet, is carried on a pod at a hard point and is deployed during high-risk missions.

During the mission, the device is deployed and is towed by the fighter jet and remains connected to it through a fibre-optic line. It is designed to attract air-to-air and surface-to-air missiles fired at the aircraft, which mistake the decoy for the fighter jet and miss their target. After the mission ends, the system can be retracted during flight and gets stowed inside the pod.

The Indian Rafale fighter jets, which performed with precision during Operation Sindoor, striking terror hubs at Bahawalpur and Muridke with pinpoint accuracy, have several enhancements tailored to Indian needs. This includes a helmet mounted display, an Infra Red Search and Track sensor and the ability to operate from high altitude airfields.

Besides strike missions on the first day of Operation Sindoor, the Rafales were also used to conduct missile strikes on Pakistani airbases as a response to its actions towards Indian military targets. The SCALP long-range missile fired from the Rafales recorded several precision hits on high value targets in Pakistan, including hangars housing early warning aircraft and UAVs, command centres and airfields.

<https://economictimes.indiatimes.com/news/defence/india-to-fast-track-israeli-decoy-system-for-rafale-jets-amid-west-asia-turmoil/articleshow/122393784.cms?from=mdr>

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Framework in place to weed out Chinese parts from drones

Source: The Tribune, Dt. 14 Jul 2025

A comprehensive framework has been set up to filter out any software or hardware of Chinese origin in the drones used by the military. The framework has been suggested by the three armed

forces and would be part of the ongoing review of the Defence Acquisition Procedure (DAP), sources said.

This comes after, last year, an Indian Army drone operating near the northern borders was reportedly hijacked by Pakistan. The vulnerability was due to the use of Chinese made 'auto-pilot' which guides the drone to its destination. The new framework will address the use of Chinese components in drones. This will be part of the detailed risk analysis of Chinese components across critical domains -- communications, sensors, GPS and software.

Disclosure of components' origins must

- The framework will mandate full disclosure of drone hardware origins, embedded software, and the third-party firmware. The scrutiny would include certification programmes requiring traceability reports and component verification
- It will look to enforce strong encryption and secure data transmission protocols. It could also include restriction of drones from syncing with apps or systems developed by non-trusted sources

This would have two types of scrutiny — one for the hardware and other for the software. Specialists from the Ministry of Electronics and Information Technology (MeiTY) would be part of the process to weed-out Chinese origin software and hardware. It will mandate full disclosure of drone hardware origins, embedded software, and the third-party firmware. The scrutiny would include certification programmes requiring traceability reports and component verification.

It will look to enforce strong encryption and secure data transmission protocols. It could also include restriction of drones from syncing with apps or systems developed by non-trusted sources.

Periodic audits of drones in service would be done to evaluate component safety, software integrity and firmware updates. It will establish kill-switch protocols or mandatory remote disablement features for high-risk deployments. Already the services are funding domestic drone component innovation through government grants, public-private partnerships and university-led research.

After Operation Sindoor, the armed forces are looking at specific next-generation technologies for drones to dodge enemy surveillance and then to launch attack. The plan is to get the technology from indigenous sources, including the drone controlling hardware and software. Technologies like these have been developed internationally by a few countries, but the option of foreign sourcing has not been explored.

The forces want three crucial technologies in future drones -- secure communication using software defined radios; GPS free operations; and ability to beat the jamming of radio signals by enemy.

<https://www.tribuneindia.com/news/top-headlines/framework-in-place-to-weed-out-chinese-parts-from-drones/>

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India joins bilateral military exercise in Australia

Source: The Hindu, Dt. 13 Jul 2025

India, along with 18 other nations, is participating in Talisman Sabre 2025, a major bilateral military drill led by Australia that commenced on Sunday (July 13, 2025). Now in its 11th iteration, the

Talisman Sabre is the largest and most sophisticated warfighting exercise ever conducted in Australia, the Department of Defence, Australia, said in a statement. The exercise unites more than 35,000 military personnel from 19 nations.

“Over the next three weeks, more than 35,000 military personnel from Australia and partnering nations will deploy across Queensland, Northern Territory, Western Australia, New South Wales and Christmas Island [in Australia]. For the first time, activities will also be conducted outside of Australia in Papua New Guinea,” the statement said.

In addition to the U.S., military forces from Canada, Fiji, France, Germany, India, Indonesia, Japan, the Netherlands, New Zealand, Norway, Papua New Guinea, the Philippines, the Republic of Korea, Singapore, Thailand, Tonga, and the U.K. would join as partners. Malaysia and Vietnam will attend as observers.

This edition of the military exercise would consist of live-fire exercises and field training activities, incorporating force preparation activities, amphibious landings, ground force manoeuvres, and air combat and maritime operations.

It will also feature a range of new Australian Defence Force capabilities, including UH-60M Black Hawks and the Precision Strike Missile. Vice-Admiral Justin Jones, the Chief of Joint Operations, Royal Australian Navy, will join Lieutenant General Joel B. Vowell, Commanding General of the U.S. Army Pacific, for the official opening at Garden Island, Sydney, Australia.

<https://www.thehindu.com/news/national/india-joins-bilateral-military-exercise-in-australia/article69807241.ece>

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‘BrahMos plant in Lucknow to boost our self-reliance’

Source: The Asian Age, Dt. 14 Jul 2025

Defence minister Rajnath Singh on Sunday said the newly inaugurated integration and testing facility of BrahMos Aerospace in Lucknow will strengthen the country's self-reliance in the defence sector. Mr Singh said this at an event in Lucknow where he unveiled the statue of former Uttar Pradesh chief minister Chandra Bhanu Gupta at the National PG College and released a postage stamp.

“This facility will strengthen our country's self-reliance in the defence sector,” he said.

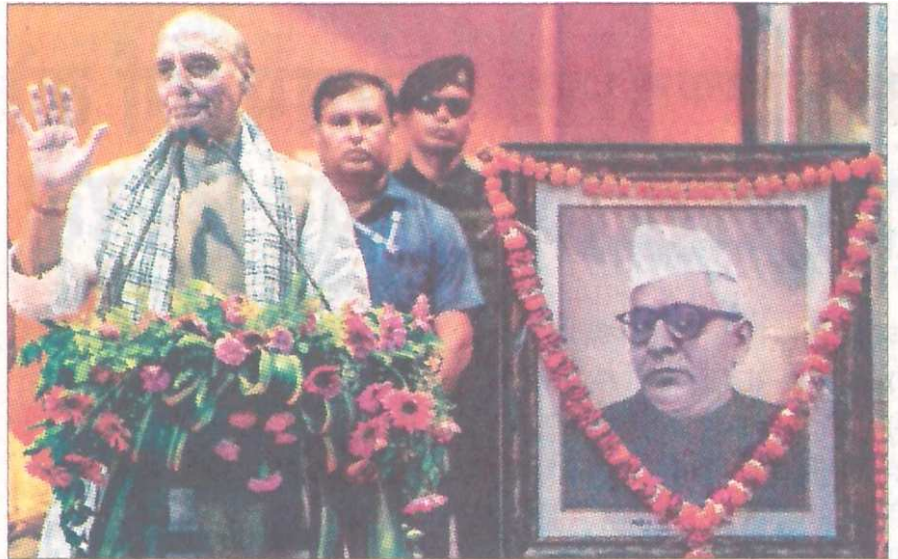
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भारत की आत्मनिर्भरता को मजबूत करेगी नई ब्रह्मोस परीक्षा सुविधा: राजनाथ सिंह

Source: Punjab Kesari, Dt. 14 Jul 2025

लखनऊ, (पंजाब केसरी): रक्षा मंत्री राजनाथ सिंह ने रविवार को कहा कि लखनऊ में ब्रह्मोस एयरोस्पेस की नवनिर्मित एकीकरण और परीक्षण सुविधा रक्षा क्षेत्र में देश की आत्मनिर्भरता को मजबूत करेगी। सिंह ने यह बात लखनऊ में एक कार्यक्रम में कही जहां उन्होंने नेशनल पीजी कॉलेज में उत्तर प्रदेश के पूर्व मुख्यमंत्री चंद्रभानु गुप्त की प्रतिमा का अनावरण किया और एक डाक टिकट जारी किया। कुछ दिन पहले ही, मैंने लखनऊ में ब्रह्मोस एयरोस्पेस की एकीकरण और परीक्षण सुविधा का उद्घाटन किया। यह सुविधा रक्षा क्षेत्र में हमारे देश की आत्मनिर्भरता को मजबूत करेगी। इससे रोजगार भी पैदा होगा। उन्होंने उत्तर प्रदेश में कानून व्यवस्था की स्थिति की सराहना की जिसके कारण राज्य में निवेश बढ़ रहा है और उद्योग फल-फूल रहे हैं।

रक्षा मंत्री ने कहा, बुनियादी ढांचे में ऐतिहासिक बदलाव हो रहे हैं।



एक्सप्रेसवे, हवाई अड्डा, मेट्रो, मेडिकल कॉलेज... ये सभी विकास की नई तस्वीर पेश कर रहे हैं। लखनऊ से लोकसभा सदस्य सिंह ने उत्तर प्रदेश के पूर्व मुख्यमंत्री चंद्रभानु गुप्त की भी प्रशंसा की। गुप्त चार बार उत्तर प्रदेश के मुख्यमंत्री रहे। सिंह ने कहा, चंद्रभानु गुप्त जी ने स्वतंत्रता आंदोलन में एक साधारण कार्यकर्ता के रूप में शुरुआत की और अपने त्याग, प्रतिबद्धता और

नेतृत्व से लाखों लोगों के दिलों में जगह बनाई। चंद्रभानु गुप्त का जीवन हमें बताता है कि सत्ता का मतलब केवल पद या अधिकार नहीं है, बल्कि जिम्मेदारी, त्याग और जनता के हितों की रक्षा करना है। उनका जीवन हमें यह संदेश भी देता है कि राजनीति में मतभेद हो सकते हैं, लेकिन दुश्मनी नहीं होनी चाहिए। सिंह ने यह भी कहा कि गुप्त एक नेता से ज्यादा एक जनसेवक थे।

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Post-Op Sindoor, over 12 nations have sought BrahMos: Rajnath

Source: The Tribune, Dt. 14 Jul 2025

Defence Minister Rajnath Singh on Sunday said the Brahmos missile proved instrumental in Operation Sindoor and since then, more than a dozen countries have expressed interest in it.

Singh said this at an event in Lucknow where he unveiled a statue of former Uttar Pradesh Chief Minister Chandra Bhanu Gupta at the National PG College and released a postage stamp in tribute to him.

"Just a few days ago, I inaugurated a Brahmos airspace integration and testing facility in Lucknow. You must have seen that in Operation Sindoor, Brahmos missile has done a miraculous job and not only this, after the miracle shown by Brahmos missile, about 14-15 countries have demanded Brahmos missile from India," Singh said.

“Brahmos missile will now be exported from Lucknow as well. I believe that this facility will strengthen our country’s self-reliance in the defence sector, and at the same time, it will also create employment. My effort is that more industries should also come here so that, along with Lucknow, the state also develops rapidly,” he said.

The minister claimed that UP was attracting more and more industries on the back of strong law and order and infrastructural robustness.

“Historical changes are taking place in infrastructure. Expressway, airport, metro, medical college, all these are presenting a new picture of development,” he said.

Singh, who is the Lok Sabha MP from Lucknow, also showered praise on Gupta, who served as the CM of Uttar Pradesh for three terms.

“Gupta ji started as a simple worker in the freedom movement and made a place in the hearts of millions of people through his sacrifice, commitment and leadership. His life tells us that power does not mean only position or authority, but responsibility, sacrifice and protecting the interests of the public. His life also gives us the message that there may be differences in politics, but there should not be animosity,” he said.

<https://www.tribuneindia.com/news/india/post-op-sindoor-over-12-nations-have-sought-brahmos-rajnath/>

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ब्रह्मोश की वैश्विक मांग बड़ी, 17 से 18 देश कर रहे मांग: राजनाथ

Source: Dainik Jagran, Dt. 14 Jul 2025



नेशनल पीजी कालेज में चंद्रभानु गुप्त पर डाक टिकट जारी करते रक्षामंत्री राजनाथ सिंह, साथ में उप मुख्यमंत्री ब्रजेश पाठक, उज्जवल रमण सिंह, राज्यसभा सदस्य बृजलाल व पूर्व मंत्री अशोक बाजपेयी • जागरण

जागरण संवाददाता, लखनऊ: रक्षा मंत्री राजनाथ सिंह ने कहा कि भारत अब रक्षा क्षेत्र में आत्मनिर्भर बनता जा रहा है और इसकी गूंज पूरी दुनिया में सुनाई देने लगी है। आपरेशन सिंदूर के दौरान इस्तेमाल हुए ब्रह्मोस की मांग दुनिया के 17 से 18 देशों से आ रही है। उन्होंने बताया कि लखनऊ में ब्रह्मोस का उद्घाटन हुआ और अब उसकी तकनीक व क्षमता देखकर दूसरे देश इसे खरीदने को इच्छुक हैं। भारत में जब ऐसे आविष्कार होंगे तो न सिर्फ आत्मनिर्भर भारत का सपना साकार होगा, बल्कि रोजगार के भी व्यापक अवसर पैदा होंगे। इससे प्रदेश और देश दोनों तेजी से विकास करेंगे।

रविवार को एक कार्यक्रम में राजनाथ सिंह ने उत्तर प्रदेश के पूर्व मुख्यमंत्री व स्वतंत्रता सेनानी चंद्रभानु गुप्त की स्मृति में डाक

टिकट जारी किया। राजनाथ ने चंद्रभानु गुप्त से जुड़ा संस्मरण भी सुनाया। बताया कि एक चुनाव के दौरान गुप्त ने उन्हें गाड़ी में दाहिनी तरफ बिठाया और बिना कुछ कहे पांच हजार रुपये थमा दिए। मैं उन्हें देखता रह गया। कुछ ऐसे थे हमारे सीबी गुप्त। राजनाथ ने कहा, जब देश आजाद हुआ, संविधान लागू हुआ, तब चुनौतियां बहुत थीं, लेकिन चंद्रभानु गुप्त जैसे नेताओं ने नीतियां बनाईं और उन्हें शांति से लागू किया। अंग्रेजों की हुकूमत को तोड़ते हुए उन्होंने कई आंदोलनों में हिस्सा लिया। 1925 में लखनऊ में हुई काकोरी घटना के समय वे राम प्रसाद बिस्मिल और लाला लाजपत राय जैसे क्रांतिकारियों के साथ खड़े रहे। उन्होंने कहा कि इस घटना की 100वीं वर्षगांठ पर हर किसी को अपने स्तर पर कुछ करना चाहिए।

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Operation Sindoor a testament to India's growing strength: Rajnath

Source: Hindustan Times, Dt. 12 Jul 2025

Commending the Indian Armed Forces' recent successful operation against Pakistan-sponsored terrorists, defence minister and Lucknow MP Rajnath Singh called it a testament to India's growing strength.

He praised "Operation Sindoor," describing it as a precise and fitting attack on Pakistan, comparable to the 1971 war. This operation demonstrated India's military capabilities and strategic clarity, showcasing the bravery of the armed forces, he said.

Singh, who reached Lucknow on Saturday on a two-day visit, was addressing BJP workers at the Aishbagh Ramleela ground.

Praising Prime Minister Narendra Modi for changing the world's perception of India, he highlighted India's rapid economic growth, stating that the country has jumped from 11th to 4th place in terms of the size of its economy since Modi took office in 2014.

Singh predicted that India would become the third-largest economy within the next two to three years.

The defence minister stressed on giving due importance to party workers as they are the ones who make corporators, MLAs and MPs.

<https://www.hindustantimes.com/cities/others/operation-sindoor-a-testament-to-india-s-growing-strength-rajnath-101752331811696.html>

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Wildlife body clears 32 defence infra proposals

Source: The Times of India, Dt. 12 Jul 2025

National Board for Wildlife (NBWL), an apex body that makes decisions on matters relating to wildlife conservation and habitat protection, has approved 32 defence infrastructure proposals involving the diversion of land from protected areas and eco-sensitive zones across Ladakh, Sikkim, Arunachal Pradesh and Gujarat.

The projects include those for construction of strategic roads, helipads, ammunition depots, and housing for troops and artillery regiments. The bulk of the projects along the China border are to be executed in Ladakh's ecologically fragile Karakoram (Nubra-Shayok) and Changthang Cold Desert Wildlife sanctuaries.

One of the most critical projects that got approval is a 10.26-km road link between Daulat Beg Oldie (DBO) and the Border Personnel Meeting (BPM) Hut. This is the place where Indian and Chinese army officers meet to discuss border issues.

All the approvals were granted by the board's standing committee, chaired by Union environment minister Bhupender Yadav, that met on June 26. The projects had been recommended subject to conditions such as preparation and enforcement of mitigation measures, restrictions on timing and area of operations, waste disposal plans and regular compliance reporting.

Besides defence infrastructure projects in Ladakh, the committee cleared a proposal to divert 310 hectares of forest land from the core area of Namdapha Tiger Reserve in Arunachal Pradesh for construction of the Arunachal Frontier Highway, and projects in Gujarat for the construction of a Border Out Post (BOP) and a helipad.

For Ladakh, the committee cleared over two dozen proposals. These include 33.4 hectares (ha) for an artillery regiment and field hospital at Bogdang; 47.6 ha for a forward aviation base at Shyok; 25.1 ha for housing Short Range Surface to Air Missile systems; 31 ha for an ammunition storage facility at Gapshan; and 40.47 ha for an Army regiment at Nidder.

The proposal for setting up of a Field Ammunition Storage Facility (FASF) at Hanle and another for reconnaissance and stationing of helicopters at Partapur were also cleared with standard conditions.

In Sikkim, the committee approved the use of 0.29 ha of forest land from Pangolakha Wildlife Sanctuary for operating a hot mix plant under BRO's Project Swastik in Gangtok district.

<https://timesofindia.indiatimes.com/india/wildlife-body-clears-32-defence-infra-proposals/articleshow/122398198.cms>

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बंगाल की खाड़ी में छिपा मिला चीनी रिसर्च जहाज, सुरक्षा एजेंसियां अलर्ट

Source: Navbharat Times, Dt. 12 Jul 2025

■ NBT रपट, नई दिल्ली

बंगाल की खाड़ी में एक चीनी रिसर्च जहाज ने कई दिन तक भारतीय समुद्री सीमा के पास गुप्त गतिविधियां कीं और अपनी पहचान छुपाने के लिए ऑटोमैटिक आईडेंटिफिकेशन सिस्टम (AIS) बंद कर दिया। फ्रांस की समुद्री खुफिया कंपनी Unseenlabs की रिपोर्ट में यह खुलासा हुआ है, जो सैटेलाइट से हाई सीज़ में जहाजों की गतिविधियां ट्रैक करती है। E.T.



की रिपोर्ट के मुताबिक चीनी रिसर्च जहाज भारतीय नौसैनिक गतिविधियों वाले इलाकों के पास सक्रिय था। इसकी उपस्थिति से सुरक्षा एजेंसियों अलर्ट हो गई हैं।

क्या था मकसद?

रिपोर्ट के मुताबिक कंपनी को संदेह है कि यह जहाज रणनीतिक मकसद से वहां मौजूद था। उसके मिशन में समुद्री तल की मैपिंग, ध्वनिक वातावरण का विश्लेषण और पनडुब्बी मार्गों की पहचान शामिल थी। ये सभी गतिविधियां जासूसी और एंटी-सबमरीन वॉरफेयर की तैयारी से जुड़ी हो सकती हैं।

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India should focus on UAVs, satellites — not fighters and tanks

- by K. J. Alphons, former Union minister

Source: The Indian Express, Dt. 12 Jul 2025

I am not a defence expert, even though I was a keen member of the Parliamentary Consultative Committee on Defence. But, can anyone call themselves a defence expert after Operation Spider's Web? Carried out by Ukraine, it saw 117 drones, each reportedly costing less than Rs 50,000, apparently destroying or damaging 41 Russian aircraft — most of them strategic cruise missile carriers — including at a location 4,000 km from the Ukrainian border.

In another instance, several US B-2 stealth bombers flew thousands of kilometres, passed over enemy territory, bombed Iranian nuclear facilities and returned safely, all undetected. Experts will propose dramatic changes in defence strategy, just as the art of war changed with the invention of gunpowder, machine guns, fighter planes, rockets, nuclear bombs, missiles etc. In light of recent developments, I have the following observations on future planning.

First, fighter planes are flying ducks, and horribly expensive, too. Earlier, fighters were lost in dogfights; now, they can be shot down in one's own air space from enemy territory. It is foolish to use them when a Rs 50,000 drone can do the job much better at a fraction of the cost. It could be argued that a fighter plane can carry much bigger payloads, but with precision munitions, this is no longer so critical.

In any case, unmanned aerial vehicles (UAVs) can be designed to carry payloads of any size. Besides, for precision delivery of large payloads, missiles are the best. Our Agni missiles can hit

almost anywhere in the world accurately. They are our pride and the best demonstration of atmanirbharta; we owe a lot to former president A P J Abdul Kalam and Tessy Thomas — the DRDO's former director general of aeronautical systems and project director for Agni-IV — for them.

Even stealth fighters have no place in future warfare — sooner rather than later, better radar technology or satellite-based observation techniques will be developed to detect them. The DRDO and HAL should stop wasting resources on fighters. Only transport planes and transport choppers will be relevant in the future. Even reconnaissance planes will be obsolete, with satellites doing a much better job.

Second, aircraft carriers are sitting ducks for UAVs. A torpedo can also sink even the most protected carrier. And protecting one requires a lot of paraphernalia — it's like an emperor who needs to be closely guarded. They are also enormously expensive: The USS Gerald R Ford cost \$13.3 billion to build.

India has two aircraft carriers: INS Vikramaditya and INS Vikrant. Vikramaditya has a displacement of 44,500 tonnes and Vikrant around 43,000. Both cost a fortune. China has three and is building one more. Their only purpose is to carry fighter planes and helicopters. They are good for national pride and not much else — don't build more. The money can be used to develop equipment that is far more critical.

Third, tanks are expensive. They can be immobilised with drones, and there are a variety of shells that can destroy any battle tank. They can easily be replaced with more effective and less expensive equipment — don't waste money on them.

Fourth, future wars will be satellite/UAV-driven conflicts. Not only will these track everything, they will deliver the munitions as well, including nuclear warheads. Spend lots of money on these.

All over the world, the best defence equipment is manufactured by the private sector. Prime Minister Narendra Modi has focused on the development and production of defence equipment locally. He knows what he wants. It has produced some good results like the Akashteer air defence control and reporting system, designed and produced by BEL, which was very effective during Operation Sindoor.

The DRDO's wings should be clipped drastically and it should stick to its areas of core competence, such as missile technology. Let the private sector do the rest, without any supervision by the DRDO. They will produce world-class products. Give them a free hand and have a large PLI for the sector.

Our armed forces are incredibly competent and we need to give them the best for future warfare.

<https://indianexpress.com/article/opinion/columns/india-should-focus-on-uavs-satellites-not-fighters-and-tanks-10121077/>

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What the Chinese whisper war tells us about our strategic blind spots

Source: *The Times of India*, Dt. 12 Jul 2025

RIGHT & WRONG

SWAPAN DASGUPTA

With two months having passed without any incident, the country is shifting focus from the immediacy of armed conflict to a dispassionate assessment of the lessons from Operation Sindoor. The exercise is important because it is unlikely that the Pahalgam massacre of April 22 will be the last occasion India will experience another terrorist outrage. What India's military did right is now receiving quiet global acknowledgement. However, every crisis also throws up unanticipated challenges, and it is important to assess some of these.

In the past fortnight, thanks to the public disclosure of a French intelligence report, there is greater awareness of the disinformation campaign undertaken by China. The outrageous claim by Pakistan that it destroyed as many as five Rafale fighter aircraft of the Indian Air Force on the first day of Sindoor found few takers, except in a section of the social media. However, Chinese missions craftily used the whispers to undermine confidence in Dassault and boost the efficacy of its own armaments industry. But competition in the defence sector wasn't China's sole

motivation. Beijing played an active role in providing both logistical and political support to Pakistan throughout its face-off with India. Along with Türkiye, China waged an undeclared war on India. This included the activation of China's Indian assets who did their bit to sow disinformation and undermine public morale in India.

It would be fair to say that attempts to undermine the home front didn't quite succeed. Even attempts by eminent Pakistani journalists to argue that Pahalgam was a false flag operation by India were felt to cross the bounds of credulity. At the same time, however, Pakistan registered relatively greater success in presenting itself as a victim of India's overbearing hegemonism in South Asia. There was global outrage against the horrible Pahalgam massacre, but India's insistence that terrorist centres located within Pakistan had to be militarily targeted had a more mixed response.

Part of this owed to the fear that any conflict involving two nuclear-weapons states had the potential of spiralling out of control. But equally significant was the insufficient appreciation of the limited objectives of Operation Sindoor. It is a bit mystifying that Indian envoys were re-

Indian diplomacy isn't being complemented by the existence of political lobbies sympathetic to the aspirations of a New India

strained from media appearances for the first two days of Sindoor. This absence was exploited by Pakistan to present a one-sided narrative that took the focus away from its role as a nursery of Islamist terrorism. The net result was that the call for restraint overshadowed the need to punish the terrorist bodies.

The despatch of parliamentary delegations to sensitise international opinion on India's ongoing war against terror was an inspired initiative that also showcased the country's vibrant democracy. Yet, the fact that these delegations were necessary in the first place suggests that there was a communications gap.

The shortcoming was serious. Over the decades, India's international importance has kept pace with its economic growth. After 2014, there was a new (often grudging) acknowledgement of India's strategic autonomy. However, Operation Sindoor seemed to indicate that India was punching far below its weight. The mismatch doesn't arise from inadequacies of our diplomatic service. It stems from the fact that Indian diplomacy isn't being complemented by the existence of political lobbies that are sympathetic to the aspirations of a New India. There is nothing like



DEVIOUS WAY: China craftily undermined France's Dassault to boost the efficacy of its own weaponry

the American Israel Public Affairs Committee, a pro-Israel lobby group to provide additional support to Indian diplomacy.

There is a key difference between India and Israel, a tiny country that has learnt to punch well above its weight. Jerusalem has developed the ability to offset fashionable hostility and unending UN censure and create a space for the pursuit of its national interests because its diplomacy is

backed by political muscle. This is much more than global Jewish solidarity or what is regarded as 'soft power'. There are important personalities in public life, not to speak of political trends, that have emotionally invested in Israel.

India has a surfeit of goodwill centred on its exotic appeal. Unfortunately, there is a mismatch between India as the repository of mysticism and a timeless way of life and its new role as an economic powerhouse. Equally, since the demise of Communism, there have been no sustained attempts by political groups, activists and think tanks to nurture political links with the like-minded. There has been an over-emphasis on integrating the diaspora with the motherland, at the cost of other initiatives. Centres of 'India Studies' in universities have become clusters of ideological opposition to India's Amritkaal objectives and have proved completely insensitive to the post-Pahalgam outrage. At the same time, groups and individuals (particularly in the US and Europe) who see India as an important global outpost in the fight against extremism remain outside the outreach radar.

In military terms, Operation Sindoor gave Pakistan a bloody nose. But the experience was a foretaste of a future where the adversary is a global superpower. In coping with China, India cannot afford to be amateurish. ■

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India's Missile Strike Shocks Pakistan

-by G Parthasarathy, former High Commissioner to Pakistan

Source: The Pioneer , Dt. 14 Jul 2025

The missile barrage that India mounted on Pakistan on May 8 was unprecedented. While civilian targets were scrupulously avoided, dozens of military installations, ranging from airports to terrorist homes, were devastated. The aerial bombing, primarily executed by missiles and drones, however, damaged or destroyed military airbases and other military installations, apart from the residences of terrorist leaders, across Pakistan.

It was an air strike, the likes of which had not been mounted in earlier years, in the Indian subcontinent. What inevitably followed was the announcement of a ceasefire on May 10, after a telephone call from Pakistan's Director General of Military Operations to his Indian counterpart, asking for a ceasefire. Pakistan had seen the writing on the wall.

Indian firepower was becoming damaging and even sometimes unbearable, necessitating an end to the fighting arising from Pakistan's sponsorship of terrorism. The Indian response included missiles produced indigenously by India, which can hit targets accurately, well beyond its borders.

This has been the major factor in shocking Pakistan, which has in recent years been increasingly equipped with Chinese weapons, apart from its older US F-16 fighters. What has been significant is that a financially bankrupt Pakistan chose to get into this situation. It provoked and forced India to respond strongly by avenging the internationally condemned, brutal killing of Indian nationals, holidaying in Pahalgam, at the heart of the Kashmir Valley.

More surprisingly, the attack took place at a time when a financially bankrupt Pakistan, with an economic growth rate of just around 2.6 per cent, had been constantly begging foreign powers and international financial institutions to provide concessional financial assistance for the country's continuing existence.

Even its allies in the Islamic world are getting tired of being constantly approached for economic assistance, while Pakistan proudly proclaims to be the only country in the Islamic world with nuclear weapons. It forgets to mention that the designs of its nuclear weapons and its missiles have been generously provided by the People's Republic of China.

Adding to India's problems is the fact that while Pakistan has a sane and sober Prime Minister in Shahbaz Sharif, his ability to play an independent role is limited politically by his elder brother and former Prime Minister, Nawaz Sharif, who controls the ruling party. Nawaz Sharif is quite evidently looking forward to grooming his daughter Shahnaz Sharif, now Chief Minister of the populous Punjab Province, to be an early successor to the high office of Prime Minister. In the meantime, Nawaz Sharif himself does not exactly enjoy the confidence of the army, to again assume the high office.

It was the army that had him thrown out in the past. And right now, the army continues to play a dominant role in the national life of Pakistan. As far as India is concerned, Nawaz Sharif, who co-authored the Kargil conflict, has to be dealt with very carefully, though he is unlikely to repeat his Kargil misadventure. It is evident that apart from the limitations in the power of civilian rulers in Pakistan, the country now has a pathologically anti-Indian Army Chief in General Syed Asim Munir Shah (popularly known as Asim Munir), who suffers from a vicious hatred for India and all things Indian.

This has been particularly surprising as his mentor and predecessor, General Bajwa, is known for his realism and restraint in Pakistan's relations with India. One aspect of General Munir's tenure as Pakistan's Army Chief is that it has been increased, now that he has been promoted to the rank of Field Marshal by the weak Shahbaz Sharif Government. The politically weak and economically bankrupt Shahbaz Sharif has been praised for his "exemplary role" in the current "conflict" with India.

Oddly enough, while the Pakistan Air Force can claim some contribution in recent developments and shootouts with India, the contribution of the Pakistan Army has been virtually nil. It was paralysed by the devastation caused by Indian missile attacks in response to its attacks on Indian tourists in Pahalgam, before the Head of its Army's Operations asked for a ceasefire, in a telephone call to his Indian counterpart. Field Marshal Munir would remain a great asset for India. His vicious and crude anti-Indianism will not exactly impress either the US or other responsible powers.

Moreover, the Pakistan Army under his command did not perform spectacularly in recent years, even during the recent Indian attacks on Pakistan, in retribution for the killings of Indian nationals in Pahalgam.

It remains to be seen if the Pakistan Air Force, which is a more professional organisation than the army and has acted professionally, will relish what must have been the professionally crude performance of an immature and somewhat adventurist "Field Marshal," who will seek to directly and fully control it. It also remains to be seen how the "Field Marshal" will react to the sentiments of the restive Pashtuns and Baluchis, both in Pakistan and from neighbouring Afghanistan.

India should, meanwhile, also be prepared for continuing efforts by Field Marshal Munir to promote cross-border terrorism. The promotion and growing powers of an immature and rash "Field Marshal" Munir are also unlikely to be welcomed by the Western world, which has worries about the security, safety and possible misuse of his threats to escalate conflicts, using nuclear weapons.

His rash behaviour makes him a dangerous figure who would seek to completely control Pakistan's Army, Navy, Air Force and its nuclear arsenal. Despite this, an irritated President Trump astonishingly chose to honour General Munir with a presidential luncheon, evidently after not relishing India's denial of his self-proclaimed claims of playing a key role in promoting a mutual withdrawal from the borders.

This was after India had accomplished its aim of retribution for Pakistan-sponsored terrorism. At the end of the day, a politically weak and bankrupt Pakistan, which is facing continued bankruptcy, can hardly benefit from its actions, especially when the country is controlled by a weird Field Marshal, after it was faced by India's devastating firepower, using substantial, "Made in India" weaponry.

<https://www.dailypioneer.com/2025/columnists/india---s-missile-strike-shocks-pakistan.html>

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Science & Technology News

बड़ी उपलब्धि: गगनयान के लिए 'सर्विस मॉड्यूल प्रोपल्शन सिस्टम' विकसित

Source: Punjab Kesari, Dt. 13 Jul 2025

इसरो ने किया कमाल

- 350 सेकेंड के लिए एसएमपीएस का पूर्ण अवधि का 'हॉट परीक्षण'

बेंगलुरु, (पंजाब केसरी) भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) ने शनिवार को कहा कि उसने 'योग्यता परीक्षण कार्यक्रम' (क्वालिफिकेशन टेस्ट प्रोग्राम) पूरा करने के साथ ही गगनयान मिशन के लिए 'सर्विस मॉड्यूल प्रोपल्शन सिस्टम' (एसएमपीएस) को सफलतापूर्वक विकसित कर लिया है। एसएमपीएस के एकीकृत प्रदर्शन को मान्य करने के लिए 350 सेकेंड के लिए एसएमपीएस का पूर्ण अवधि का 'हॉट परीक्षण' आयोजित किया गया। वास्तविक परिस्थिति में किया जाने वाला यह



परीक्षण शुक्रवार को सर्विस मॉड्यूल आधारित मिशन निरस्तीकरण की 'फ्लाइट ऑफ-नॉमिनल मिशन प्रोफाइल' के लिए किया गया। 'फ्लाइट ऑफ-नॉमिनल मिशन प्रोफाइल' का संबंध किसी विमान के उड़ान पथ और उसकी अन्य गतिविधियों से है। गगनयान मिशन भारत का पहला मानव अंतरिक्ष यान मिशन है। इसरो ने एक बयान में कहा, "परीक्षण के दौरान प्रणोदन प्रणाली का समग्र प्रदर्शन पूर्व-

परीक्षण पूर्वानुमानों के अनुसार सामान्य था।" अंतरिक्ष एजेंसी के अनुसार, "गगनयान का सर्विस मॉड्यूल (एसएम) एक विनियमित द्वि-प्रणोदक आधारित प्रणोदन प्रणाली है जो आरोहण चरण के दौरान कक्षा वृत्तीकरण, ऑन-ऑर्बिट नियंत्रण, डी-बूस्ट संचालन और सर्विस मॉड्यूल आधारित निरस्तीकरण के लिए कक्षीय मॉड्यूल की आवश्यकताओं को पूरा करता है।"

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4 experiments done, 3 nearing end; Shux splashdown at 3PM July 15

Source: The Times of India, Dt. 12 Jul 2025

Indian astronaut Shubhanshu Shukla, who is expected to undock from the International Space Station (ISS) at 4.35pm on July 14, has completed four of the seven Isro-led microgravity experiments.

Shukla, who is part of the Axiom-4 (Ax-4) mission, is working on the other three that are nearing completion, Isro has confirmed.

The completed experiments are: Tardigrades (Bengaluru strain): focusing on survival, revival, reproduction, and transcriptomic changes in microgravity; Myogenesis: studying the effect of space

on human muscle cell development; Sprouting of methi and moong seeds: With implications for in-orbit nutrition and food sustainability, and Cyanobacteria: tracking the growth of two variants for potential use in closed-loop life support systems.

"These experiments are now being packed for their return to Earth for further analysis," Isro said.

The three experiments that are nearing completion are: Microalgae: investigating its viability and applications in space; Crop seeds: Studying growth responses to spaceflight conditions, and Voyager Display: details of which remain undisclosed but are part of the scientific payload.

"Together, these investigations are expected to generate critical insights for upcoming programmes including Gaganyaan, the proposed Space Station, and future interplanetary missions," Isro said.

The space agency added that the Shukla remains in good health and high spirits, with flight surgeons continuously monitoring his condition through scheduled private medical and psychological conferences.

The Crew Dragon spacecraft carrying the Ax-4 crew is expected to splash down off the coast of California on July 15, 2025, at around 3pm IST, after a series of re-entry manoeuvres," added Isro.

Following his return, Shukla will undergo a rehabilitation programme lasting approximately seven days to readjust to Earth's gravity, under the supervision of flight surgeons.

<https://timesofindia.indiatimes.com/india/4-experiments-done-3-nearing-end-shuk-splashdown-at-3pm-july-15/articleshow/122400037.cms>

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How 'Grace' will bring Shubhanshu Shukla back to Earth

Source: The Times of India, Dt. 14 Jul 2025

Indian astronaut Shubhanshu Shukla and his three Axiom-4 (Ax-4) mission crewmates are expected to undock from International Space Station (ISS) at 4.35 pm IST on July 14, according to current plans. If everything goes as planned, Crew Dragon - nicknamed "Grace" - is expected to splash down off the coast of California around 3 pm IST on July 15 after a series of re-entry manoeuvres.

Following his return, Shukla will undergo a rehabilitation programme of approximately seven days under supervision of flight surgeons to readjust to Earth's gravity. As the crew prepares to journey homeward, TOI gives a lowdown on how Grace will bring Shukla and others back to Earth:

Prep in new orbit: Grace's return journey begins with a carefully planned departure from ISS. Astronauts will suit up and strap into their seats inside the capsule, after which the hatch connecting Grace to ISS will be closed and sealed.

Engineers on the ground and crew on board will then conduct leak checks and system diagnostics to ensure the spacecraft is ready for autonomous undocking. Once cleared, Crew Dragon will separate from ISS and begin a series of small thruster burns to distance itself and shift into a new orbit in preparation for re-entry.

Orbital Phasing: This orbital "phasing" manoeuvre can last from a few hours to over a day, depending on orbital mechanics and readiness of the designated splashdown site.

When conditions are optimal, SpaceX will command a deorbit burn - the most critical manoeuvre of the return. Just before this, the spacecraft will jettison its trunk section, housing solar panels and radiators. The deorbit burn uses onboard thrusters to slow the capsule down and drop it out of orbit. With it, the spacecraft is committed to Earth re-entry.

Peak Heating Phase: Once Grace begins plunging through the upper atmosphere at speeds near 28,000 km/h, it will encounter intense friction that heats the exterior to over 1,900°C. A protective heat shield will deflect this energy, keeping the cabin safe. During the hottest phase, the spacecraft will be surrounded by ionised gases, leading to a brief communications blackout lasting around six to seven minutes.

Once through peak heating, the spacecraft will slow rapidly. Around 5,500 metres above the ocean, two small drogue parachutes will deploy to stabilise the vehicle. A few seconds later, four large main parachutes will unfurl, significantly reducing descent speed to a safe range of around 24-32 km/h.

Splashdown & Recover: Grace will then splash down in the ocean, usually within a predetermined recovery zone. Waiting nearby will be a SpaceX recovery ship equipped with fast boats carrying medical and technical teams. These teams will be first to reach the capsule, perform safety checks, and prepare it for lifting onto the ship using a hydraulic cradle.

Once aboard, astronauts will be carefully helped out of the capsule and given preliminary medical assessments. They will be then transported back to land - usually via helicopter or ship - and taken for further medical evaluations, mission debriefs, and recovery procedures.

Grace itself is expected to be later refurbished for potential reuse. The entire operation is designed for precision, safety and efficiency, with most of the sequence being fully automated but capable of manual override if needed, and, if it comes to that, it will be Shux's responsibility.

<https://timesofindia.indiatimes.com/science/how-grace-will-bring-shubhanshu-shukla-back-to-earth/articleshow/122426680.cms>

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