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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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CONTENTS

S. No.	Title	Source	Page No.
	DRDO News		1-2
1	लड़ाकू विमानों की बढ़ेगी मारक क्षमता, ग्लाइड बम से होंगे लैस; DRDO में चल रहा काम	Dainik Jagran	1
	Defence News		2-13
2	ऑपरेशन सिंदूर के बाद क्या होगी सेना की रणनीति? आर्मी चीफ जनरल उपेंद्र द्विवेदी ने बताई हर बात	Dainik Jagran	2
3	Former army chiefs briefed on Operation Sindoor's execution, impact	Hindustan Times	3
4	Ministry of Defence moves to shrink time for procurement, replace trials with simulation	The Indian Express	5
5	Indo-Pak deadlock in Shanghai Cooperation Organisation over Pahalgam, Jaffar attacks	The Economic Times	6
6	How Operation Sindoor revalidated principles of war	The Tribune	7
7	Bunker-Buster Bombs & Iran's Fordo Facility	The Economic Times	10
8	चीन-पाक गठबंधन, भारतीय नौसेना की तैयारियों पर मंथन	Dainik Jagran	11
9	Army team leaves for India-French joint exercise	The Hindu	11
10	India increased its nuclear warhead count to 180 in 2024: SIPRI report	The Hindu	12
	Science & Technology News		14-17
11	A simplified method to synthesize nano-cups that can blaze the cancer with heat	Press Information Bureau	14
12	A free hand: Science must be unfettered if it is to be useful	The Hindu	15
13	Universe's 'missing' matter found	Hindustan Times	17



लड़ाकू विमानों की बढ़ेगी मारक क्षमता, ग्लाइड बम से होंगे लैस; DRDO में चल रहा काम

Source: Dainik Jagran, Dt. 18 Jun 2025

भारतीय वायुसेना उन्नत स्वदेशी स्मार्ट एंटी–एयरफील्ड वेपन (एसएएडब्ल्यू) हासिल करने की तैयारी में है। इस ग्लाइड बम से सुखोई–30 एमकेआइ समेत पूरे लड़ाकू विमानों के बेड़े को लैस किया जाएगा, जिससे इन विमानों की मारक क्षमता और बढ़ जाएगी।



एसएएडब्ल्यू की मारक क्षमता 100 किलोमीटर

डीआरडीओ द्वारा विकसित एसएएडब्ल्यू 120 किलोग्राम वजनी यह बम एक स्मार्ट हथियार है। इसकी मारक क्षमता 100 किलोमीटर है। यह हवा से जमीन पर अपने लक्ष्य को सटीकता के साथ निशाना बनाने में सक्षम है। यह हल्का और उच्च सटीकता वाला निर्देशित बम विश्वस्तरीय हथियार प्रणालियों में से एक है।

सूत्रों के अनुसार, वायुसेना के एसएएडब्ल्यू एयर–लांच ग्लाइड बम के सेटेलाइट–गाइडेड वर्जन को हासिल करने के प्रस्ताव पर जल्द ही रक्षा मंत्रालय द्वारा चर्चा की उम्मीद है। यह हथियार पाकिस्तान में बालाकोट एयर स्ट्राइक के दौरान उपयोग में लाए गए हथियारों के समान है।

वायुसेना लंबी दूरी तक मार करने वाले हथियार प्रणालियों के लिए कर रही काम

इस प्रस्ताव पर चर्चा ऐसे समय होने जा रही है, जब वायुसेना लंबी दूरी तक मार करने वाले हथियार प्रणालियों को प्राप्त करने में जुटी है और उसे पिछले महीने ऑपरेशन सिंदूर के तहत पाकिस्तान में आतंकी और सैन्य ठिकानों को निशाना बनाने में बड़ी सफलता मिली थी।

एसएएडब्ल्यू को रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) के रिसर्च सेंटर इमारत (आरसीआइ) हैदाराबाद द्वारा स्वदेशी रूप से डिजाइन और विकसित किया गया है। इस हथियार को जमीन पर दुश्मन के एयरफील्ड की संपत्तियों जैसे रडार, बंकर, टैक्सी ट्रैक्स और रनवे आदि को निशाना बनाने के लिए तैयार किया गया है।

रक्षा एवं अन्य क्षेत्रों में एआइ के प्रभाव पर संसदीय समिति करेगी चर्चा

रक्षा एवं आंतरिक सुरक्षा सहित विभिन्न क्षेत्रों में एआइ के बढ़ते प्रभाव पर इस महीने के अंत में होने वाली संसदीय समिति की बैठक में चर्चा होगी। बैठक में गृह, रक्षा, ऊर्जा और सूचना प्रौद्योगिकी मंत्रालयों के केंद्रीय सचिवों के संचार एवं सूचना प्रौद्योगिकी संबंधी स्थायी समिति के उपस्थित होने की संभावना है। बैठक 26 जून को होने वाली है। बैठक के एजेंडे में आर्टिफिशियल इंटेलिजेंस (एआइ) के उद्भव का प्रभाव और संबंधित मुद्दे शामिल हैं।

भाजपा सांसद निशिकांत दुबे है इस समिति के अध्यक्ष

आधिकारिक सूत्रों ने बताया कि एआइ अब तकनीकी नवाचार के मामले में सबसे आगे है और भाजपा सांसद निशिकांत दुबे की अध्यक्षता वाली समिति को वरिष्ठ सरकारी अधिकारी विभिन्न क्षेत्रों में इसकी भूमिका के बारे में जानकारी देंगे। सूत्रों ने बताया कि उन्हें भारत की प्रगति और भविष्य की योजनाओं के बारे में भी जानकारी दी जाएगी।

https://www.jagran.com/news/national-indian-air-force-will-get-advanced-indigenous-smart-antiairfield-weapon-23966725.html

Defence News

ऑपरेशन सिंदूर के बाद क्या होगी सेना की रणनीति? आर्मी चीफ जनरल उपेंद्र द्विवेदी ने बताई हर बात

Source: Dainik Jagran, Dt. 18 Jun 2025

सेना प्रमुख जनरल उपेंद्र द्विवेदी तथा देश के पूर्व सेना प्रमुखों के बीच दो दिवसीय चिंतन संवाद मंगलवार को राजधानी में शुरू हुआ। पहलगाम आतंकी हमले के बाद पाकिस्तान के खिलाफ हुई ऑपरेशन सिंदूर की सैन्य कार्रवाई के पश्चात वर्तमान सैन्य नेतृत्व तथा पूर्व सैन्य प्रमुखों के बीच इस संवाद के अपने सामरिक–रणनीतिक महत्व हैं।



सेना प्रमुख जनरल उपेंद्र द्विवेदी तथा देश के पूर्व सेना प्रमुखों के बीच हुई दो दिवसीय चिंतन

सेना के अनुसार यह सम्मेलन पूर्व सेना प्रमुखों के संस्थागत ज्ञान और अनुभव का लाभ उठाने के लिए एक मंच प्रदान करता है। सैन्य प्रमुखों की इस चिंतन बैठक के पहले दिन सेना प्रमुख जनरल द्विवेदी ने पूर्व सेना प्रमुखों को भारतीय सेना में नए दौर की चुनौतियों के अनुरूप हो रहे परिवर्तन से अवगत कराया।

साथ ही भविष्य की दिशा को आकार देने में पूर्व सेना प्रमुखों की निरंतर भागीदारी के महत्व को रेखांकित किया।सेना के मुताबिक चिंतन बैठक के पहले दिन के कार्यक्रम का एक मुख्य आकर्षण ऑपरेशन सिंदूर पर एक व्यापक ऑपरेशन ब्रीफिंग रही जिसमें भारतीय वायुसेना और नौसेना की संयुक्त भागीदारी रही थी।

सेना प्रमुखों ने ऑपरेशन सिंदूर को लेकर विस्तार से दी जानकारी

पूर्व सेना प्रमुखों को इस दौरान ऑपरेशन के क्रियान्वयन, रणनीतिक प्रभाव और संयुक्त कौशल मॉडल की विस्तार से जानकारी दी गई ताकि प्रासंगिक समझ प्रदान की जा सके। इसका उद्देश्य पूर्व सेना प्रमुखों के अनुभव आधारित अंतर्दृष्टि के इनपुट को हासिल करना भी रहा।

चिंतन बैठक में पूर्व सेना प्रमुखों को सैन्य ऑपरेशनल क्षमताओं को बढ़ाने के उद्देश्य से नई आधुनिक प्रौद्योगिकियों और आधुनिकीकरण की हो रही पहल की भी जानकारी दी गई। सैन्य प्रमुखों के चिंतन सम्मेलन में तकनीकी पहल: तकनीक अवशोषण की दिशा में किए जा रहे प्रयास और विकसित भारत @ 2047: विकसित भारत के लक्ष्यों में भारतीय सेना के योगदान जैसे विषयों पर भी चर्चा की जा रही है।

साथ ही मानव संसाधन नीतियों में सुधार और वयोवृद्धों के लिए कल्याणकारी योजनाओं की पहल पर भी विचार–विमर्श किया जाएगा। पूर्व सेना प्रमुखों ने अपने अनुभव और अंर्तदृष्टि के साथ इन विषयों पर अपने विचार साझा कर क्षमता वृद्धि और संगठनात्मक सुधार की दिशा में भारतीय सेना के चल रहे प्रयासों में अपना योगदान दिया।

सैन्य प्रमुखों की यह चिंतन बातचीत भारतीय सेना को भविष्य के लिए तैयार रखने के लिए नेतृत्व और सामूहिक प्रतिबद्धता की निरंतरता की पुष्टि भी करता है। इस सम्मेलन में पूर्व सेना प्रमुखों जनरल वीपी मलिक, जनरल एनसी विज, जनरल जेजे "सह, जनरल विक्रम "सह और जनरल मनोज पांडे आदि मौजूद थे।

https://www.jagran.com/news/national-army-chief-general-upendra-dwivedi-and-former-army-chiefs-begin-discussion-on-operation-sindoor-23966701.html

Former army chiefs briefed on Operation Sindoor's execution, impact

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Source: Hindustan Times, Dt. 18 Jun 2025

Several former army chiefs were on Tuesday briefed on different aspects of Operation Sindoor, including its execution, strategic impact and the military's jointmanship, on the opening day of a two-day brainstorming session involving army chief General Upendra Dwivedi and his predecessors, the army said.

"Being held in the aftermath of Operation Sindoor, the conclave (Chiefs' Chintan) aims to provide a platform to leverage the institutional knowledge and experience of the former chiefs," it said in a statement.

India launched the operation in the early hours of May 7 and struck terror and military installations in Pakistan and Pakistan-occupied Kashmir (PoK) following the Pahalgam terror strike in which 26 people were shot dead. It triggered a four-day military confrontation with Pakistan involving fighter

jets, missiles, drones, long-range weapons and heavy artillery before the two sides reached an understanding on stopping all military action on May 10.

A key highlight of the day was a comprehensive operational briefing on Operation Sindoor, including the synergised conduct of operations with the Indian Air Force (IAF) and navy, the army said. "The operation's execution, strategic impact and jointmanship model were presented in detail to provide contextual understanding and invite insights from the former chiefs."

The retired chiefs present included Generals Manoj Pande, Bikram Singh, Deepak Kapoor, JJ Singh, NC Vij and VP Malik.

Between the launch of the operation in the early hours of May 7 and the ceasefire on May 10 evening, Indian forces bombed nine terror camps in Pakistan and PoK and killed at least 100 terrorists.

The IAF struck two terror sites at Markaz Subhanallah in Bahawalpur and Markaz Taiba near Muridke, both in Pakistan's Punjab province, while the army hit targets at seven places, including Mehmoona Joya in Sialkot, Sawai Nala and Syed Na Bilal in Muzaffarabad, Gulpur and Abbas in Kotli, Barnala in Bhimber, and Sarjal.

On May 9-10, the IAF struck military targets in Rafiqui, Murid, Chaklala, Rahim Yar Khan, Sukkur, Chunian, Pasrur, Sialkot, Skardu, Sargodha, Jacobabad, Bholari and Malir Cantt in Karachi. Later it emerged that India's targeting of locations within Pakistan during the May 7-10 clash was more extensive than was previously known, with a Pakistani document acknowledging that Indian drones had struck locations ranging from Peshawar in the northwest to Hyderabad in the south.

The graphics in the May 18 Pakistani document detailing India's drone strikes on May 8, 9 and 10 listed seven locations --- Peshawar in Khyber-Pakhtunkhwa province, Attock, Bahawalnagar, Gujrat and Jhang in Punjab province, and Chhor and Hyderabad in Sindh province --- that were not acknowledged as targets by Indian officials at any briefings held during or after the hostilities.

Pakistan's Operation Bunyan-um-Marsoos, which was mounted in response to Operation Sindoor, "folded in eight hours" on May 10 belying Islamabad's ambitious target of bringing India to its knees in 48 hours, chief of defence staff General Anil Chauhan said on June 3.

Jointness among the three services --- an essential prerequisite to the creation of theatre commands --- was in focus during Operation Sindoor.

The forward presence of INS Vikrant, along with its Mig-29K fighters and airborne early warning helicopters, prevented hostile aircraft from coming within several hundred kms of the carrier battle group consisting of several warships.

Dwivedi underlined the importance of the former chiefs' continued engagement in shaping the ongoing transformation and future direction of the army. The former chiefs were updated on the induction of niche technologies and modernisation initiatives aimed at enhancing the force's operational capabilities. The topics discussed included steps being taken by the army for technology absorption, the force's contributions to the goals of Viksit Bharat, and reforms in human resource policies and welfare initiatives for veterans.

https://www.hindustantimes.com/india-news/former-army-chiefs-briefed-on-operation-sindoor-sexecution-impact-101750167917673.html

Ministry of Defence moves to shrink time for procurement, replace trials with simulation

Source: The Indian Express, Dt. 18 Jun 2025

Compression of procurement timelines, faster contract awards and quicker payments to private vendors are among specific steps listed by the Ministry of Defence in meetings that it has had with the Finance Ministry in the run-up to and post Operation Sindoor.

Specific measures cited by the Ministry of Defence include the replacement of field evaluation trials, which sometimes take a couple of years or more, with digitisation and simulation to get around long-drawn trials, alongside fast-tracking negotiations to speed up procurement and incentivising the private sector to step up production of vital inputs such as anti-drone equipment and smart ammunition, sources said.

Officials aware of the discussions said work has been fast-tracked to ensure speeding up procurement deadlines to the end of this year, with special focus on pushing the domestic defence industry, especially private players, and the purchase of equipment that have interoperability between the different services of the armed forces. This is linked to specific instructions being issued by the Ministry of Defence to private vendors for upscaling supplies of certain ammunition, including for anti-drone and smart ammunition, alongside equipment such as armored vehicles that can be integrated with different weaponry – loitering munitions and guided missiles.

The Ministry of Defence has, in the meetings, pitched this as a radically new approach to defence procurement. The Ministry of Finance, in turn, is learnt to have given its explicit support to help meet whatever capex requirement is there from the armed forces, even as it does not see the allocated amount shooting up sharply beyond the allocation in Budget for the ongoing financial year 2025-26, officials said.

Officials of the Ministry of Defence are learnt to have acknowledged the slow absorptive capacity for capex, especially in terms of the ability to spend the budgeted amount quickly, both in the domestic industry and in terms of global orders because of various geopolitical factors.

"Work is being done towards compressing the procurement timelines by removing the barriers and delays, especially in areas relating to RFPs (requests for proposal), and negotiations," an official said. However, officials pointed out that purchasing mechanisms for contingencies are in place with emergency purchasing powers approved up to Rs 40,000 crore, adding that the additional demand by armed forces will not be limited by the budgeted amount. "I don't think defence expenditure should increase sharply. There is adequate amount for business and contingency measures. Even though we do not anticipate a very big demand, demands for strategic requirements will not be constricted," another official said.

The Defence and Finance ministries have had these discussions in the days before and after Operation Sindoor. They are looking to speed up procurement deadlines to the end of this year. Simulation and digitisation will get around long-drawn field evaluation trials to fast-track the process. The discussions have centred around the need to focus on contract fulfilment and on project management to ensure meeting the delivery schedules. Based on the milestones of the delivery schedules, payments would also be required to be made quickly in time, officials said.

As per the latest data by Controller General of Accounts, the Ministry of Defence has spent 9 per cent or Rs 64,221 crore of its overall budget allocation of Rs 6.81 lakh crore in the first month of

April of the ongoing financial year. On the capex front, the Ministry has spent 2 per cent or Rs 4,384 crore in April, out of the total budgeted amount of Rs 1.8 lakh crore. In April 2024, the capex had been 1 per cent of the budgeted amount for FY25.

While experts have pointed out the requirement for India's defence expenditure to be at least 2 per cent of the GDP for credible deterrence against its neighbouring countries, the defence expenditure has remained below 2.5 per cent over the last five years as a share of the country's GDP. For FY25 and the ongoing financial year 2025-26, it has been even lower than 2 per cent, estimated to be 1.98 per cent and 1.91 per cent as a share of the GDP, respectively.

https://indianexpress.com/article/india/ministry-of-defence-moves-to-shrink-time-for-procurementreplace-trials-with-simulation-10072976/

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Indo-Pak deadlock in Shanghai Cooperation Organisation over Pahalgam, Jaffar attacks

Source: The Economic Times, Dt. 18 Jun 2025

The terror attack in Pahalgam has emerged as a point of contention in the Shanghai Cooperation Organisation in the runup to the summit under the Chinese presidency with India calling for a mention of the April 22 terror strike in one of the documents, following which Pakistan demanded mention of the Jaffar express incident in the same document.

While India has requested that a crucial SCO meeting later this month have references in the outcome statement condemning the Pahalgam terror attack, Pakistan is pitching for the inclusion of references to the Jaffar express hijacking and an attack on a bus by Baloch rebels, ET has learnt. Currently intense negotiations are ongoing to include India's request in the document, according to some persons familiar with the development. If the references on the Pahalgam terror attack are missing from this document, it can cast a shadow on the SCO proceedings.

SCO is the only plurilateral grouping that has a separate body - RATS - which deals with terror threats and therefore India's request to have references on condemning the Pahalgam terror attack is justified, a source explained. The Pahalgam terror attack and Jaffar express incident cannot be compared, a source said, adding that India is unnecessarily being dragged into Pakistan's internal matters.

Union defence minister Rajnath Singh is expected to visit China for the SCO Defence Minister meet later this month. It will be immediately followed by the SCO NSA meet. Last Saturday, India distanced itself from the SCO statement on Iran-Israel hostilities, saying it has already articulated its position on the issue. External affairs minister S Jaishankar had discussed this matter with his Iranian counterpart on Friday (June 13) and conveyed the deep concern of the international community at the turn of events. He also urged the avoidance of any escalatory steps and an early return to diplomacy.

https://economictimes.indiatimes.com/news/india/indo-pak-deadlock-in-shanghai-cooperationorganisation-over-pahalgam-jaffar-attacks/articleshow/121915781.cms?from=mdr

How Operation Sindoor revalidated principles of war

Source: The Tribune, Dt. 18 Jun 2025

ARJUN SUBRAMANIAM MILITARY HISTORIAN AND STRATEGIC ANALYST HOUGH the character of war has undergone several changes over millennia, most of the cardinal principles of war as elucidated by ancient and modern strategists such as Kautilya, Sun Tzu, Clausewitz and Liddell Hart have stood the test of time. Some important principles of war that merit a revisit in contemporary times in the backdrop of several conflicts that the world has experienced over the last few years are: selection and maintenance of aim, concentration of force, offensive action, surprise, unity of command, security, simplicity, morale and adaptability. Let us contextualise some of these principles in the aftermath of Operation Sindoor.

Frustrated by years of not being able to hit the epicentre of the Pakistan-based anti-India terrorist organisations such as the LeT and JeM, the strategic aims and objectives laid out by Prime Minister Narendra Modi and his national security team were unambiguous - punish the LeT and JeM directly for their repeated terrorist attacks and send a signal to Rawalpindi that there would be costs that Pakistan would have to pay for its continued support to these organisations. It is to the credit of India's armed forces' leadership, particularly that of the Indian Air Force, that it was able to convert these strategic aims into operational outcomes despite the degree of difficulty they presented.

For too long (1947, 1965, 1971 and 1999), Pakistan has attempted to seize the initial initiative through offensive action but failed to follow through because of India's superior combat resilience, depth and national power. Operation Sindoor heralded a fresh military approach that saw India initiate escalatory military action on May 7, albeit as a response to a dastardly terrorist provocation.

However, this offensive action was executed with 'Indian characteristics' of responsibility and restraint. Offensive action in isolation that exists within a defensive framework will rarely yield any outcomes.

Had India continued to absorb Pakistan's drone blitz without responding in the manner it did on May 10 with offensive action of greater intensity than the previous attacks, conflict cessation may not have taken place.



CRUCIAL: The IAF demonstrated a high degree of adaptability during Op Sindoor. ANI

India achieved strategic surprise with the scale and intensity of its precision attacks at Bahawalpur and Muridke. Considering that in comparison to the Balakot strike, these strikes marked a huge shift in India's retaliatory appetite, the surprise and shock that manifested itself within Pakistani society will be a significant strategic marker in the years ahead.

Considering statements made by Pakistan PM Shehbaz Sharif that India had pre-empted Pakistan's offensive plans, the IAF has raised the bar for preventive strikes to achieve operational surprise. However, it must be accepted that some degree of tactical surprise was lost owing to the continuous domestic chatter in India of

The game-changer in Op Sindoor was the unity of command, both at the strategic and operational levels. an imminent strike that ensured a high-alert status of Pakistan's air defence ecosystem. This could have played a critical role in the possible losses suffered by India.

The game-changer in Operation Sindoor was the unity of command, both at the strategic and operational levels. The concept of centralised command, distributed control and decentralised execution paid rich dividends. While the finer details of the planning process may not be revealed for decades, the dominant personality of PM Modi and his trust in his Defence Minister and National Security Adviser conformed to the traditional personality-centric Indian style of apex decisionmaking. At the operational

level, the CDS seems to have emerged as a binding factor that facilitated a quick choice of the instrument needed to deliver the first punch.

Air defence systems operated in a far more streamlined and integrated manner as compared to the day after the as Balakot strike India ensured the security of its bases and military installations in the face of a relentless barrage of UAVs, drones and ballistic missiles. It was ensured that all aerial activity either by own manned or unmanned platforms was kept subordinate to groundbased air defence systems when Pakistan launched its unmanned aerial offensive on the nights of May 7, 8 and 9. This was a move that paid off for India as Pakistan was equally cautious not to escalate with intrusive or stand-off attacks by manned platforms.

Simplicity of strategic guidance and operational plans are critical for the achievement of outcomes and once the strategic guidance is given, there must also be an unwavering belief and trust that the instrument chosen will deliver the results.

After the IAF suffered a few setbacks on the opening night, precipitated by what appears to have been a 'highpayoff-high-risk' plan, instead of weighing the tremendous payoffs that accrued after the strikes, the strategic establishment could

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have easily switched to a more risk-averse strategy for any following counter-strike.

However, as the CDS pointed out in a recent interview, the IAF, backed by a resolute political leadership, demonstrated a high degree of adaptability, quickly plugged whatever loopholes were discovered during the first strike and delivered a hammer blow with greater intensity on May 10 in what is surely an air campaign that will be closely studied in the coming months.

India's national and military morale was several notches higher than that of Pakistan, considering that the latter was facing the heat on several fronts, ranging from economic decline to severe internal strife that undermined the hitherto 'invincible' status of the Pakistan Army. The 15-day gap between the Pahalgam massacre and the commencement of Operation Sindoor offered the three services a valuable window to enhance training and preparedness and mentally prepare its forces for a warlike situation.

In the final analysis, while India's success in Operation Sindoor pushed the boundaries of escalation and deterrence, it could do so because it adhered to the time-tested principles of war and decision-making in times of crisis.

Bunker-Buster Bombs & Iran's Fordo Facility

Source: The Economic Times, Dt. 18 Jun 2025



military involvement in Israel's campaign

Source: AP

"I don't want to talk about that."

चीन-पाक गठबंधन, भारतीय नौसेना की तैयारियों पर मंथन

Source: Dainik Jagran, Dt. 18 Jun 2025

नई दिल्ली, प्रेंट्रः संसद की विदेश मामलों की स्थायी समिति की बैठक में मंगलवार को चीन और पाकिस्तान के बीच बढ़ते सैन्य गठबंधन, खासकर आपरेशन सिंदूर के दौरान दिखी उनकी साझेदारी पर गंभीर चर्चा हुई। समिति के सदस्यों ने इस पर चिंता जताई और भारत की सैन्य तैयारियों व भविष्य की योजनाओं को लेकर जानकारी मांगी। इस संसदीय समिति का नेतृत्व कांग्रेस सांसद शशि थरूर कर रहे हैं और इसका एजेंडा था भारत की हिंद महासागर रणनीति का मूल्यांकन'। ईरान में भारतीयों की सुरक्षा का मुद्दा संसदीय समिति की बैठक में उठा, एजेंडा था 'भारत की हिंद महासागर रणनीति का मूल्यांकन'

बैठक में रक्षा सचिव राजेश कुमार सिंह, विदेश मंत्रालय के सचिव (पूर्व) और नौसेना के वरिष्ठ अधिकारी मौजूद थे। सूत्रों ने बताया कि कुछ विपक्षी सदस्यों ने बांग्लादेश की चीन के साथ कथित निकटता को भी उल्लेख किया, जबकि एक सांसद ने कहा कि सकल घरेलू उत्पाद के प्रतिशत के रूप में भारत का रक्षा बजट पिछले कई दशकों में सबसे कम है। कुछ सदस्यों ने इजराइल-ईरान सैन्य संघर्ष की पृष्ठभूमि में वहां रहने वाले भारतीय नागरिकों की सुरक्षा को लेकर चिंता जताई और उनको सुरक्षित बाहर निकालने की जरूरत पर जोर दिया। कांग्रेस सांसद शशि थरूर की अध्यक्षता वाली समिति की बैठक में हिंद महासागर से संबंधित भारत की रणनीति के मूल्यांकन पर मुख्य रूप से चर्चा की गई। करीब ढाई घंटे तक चली बैठक में कुछ सांसदों ने पाकिस्तान के साथ सैन्य टकराव से जुड़े कुछ बिंदुओं का उल्लेख किया।

Army team leaves for India-French joint exercise

Source: The Hindu, Dt. 18 Jun 2025

An Army contingent left for France on Tuesday (June 17, 2025) to participate in the eighth edition of the India-French joint military exercise named 'Shakti', which will be conducted at Camp Larzac, La Cavalerie, from June 18 to July 1.



The Indian contingent comprises 90 personnel, primarily from a battalion of the Jammu and Kashmir Rifles, besides personnel from other services and the French contingent has 90 personnel from the 13th Foreign Legion Half-Brigade.

The Indian contingent comprises 90 personnel, primarily from a battalion of the Jammu and Kashmir Rifles, besides personnel from other services. The French contingent has 90 personnel from the 13th Foreign Legion Half-Brigade (13th DBLE), the Defence Ministry said.

The exercise is a biennial training engagement between the Indian and French armies, aimed at enhancing interoperability, operational coordination, and military-to-military connection. This edition will focus on joint operations in a sub-conventional environment under Chapter VII of the United Nations Charter, with training being conducted in semi-urban terrain.

https://www.thehindu.com/news/national/army-team-leaves-for-india-french-joint-exercise/ article69705941.ece

India increased its nuclear warhead count to 180 in 2024: SIPRI report

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Source: The Hindu, Dt. 18 Jun 2025

Nearly all of the nine nuclear-armed countries, including India and Pakistan, continued intensive nuclear modernisation programmes in 2024, upgrading existing weapons and adding newer versions, the Stockholm International Peace Research Institute (SIPRI), a global think tank, says in its 2025 report.

India is believed to have once again "slightly expanded" its nuclear arsenal in 2024 and continued to develop new types of nuclear delivery system. "India's new 'canisterised' missiles, which can be transported with mated warheads, may be capable of carrying nuclear warheads during peacetime, and possibly even multiple warheads on each missile, once they become operational," the SIPRI says.

"Pakistan also continued to develop new delivery systems and accumulate fissile material in 2024, suggesting that its nuclear arsenal might expand over the coming decade," it says, observing that in early 2025, tensions between India and Pakistan briefly spilled over into armed conflict.

"The combination of strikes on nuclear-related military infrastructure and third-party disinformation risked turning a conventional conflict into a nuclear crisis," says Matt Korda, associate senior researcher with SIPRI's Weapons of Mass Destruction Programme and associate director for the Nuclear Information Project at FAS. "This should act as a stark warning for states seeking to increase their reliance on nuclear weapons," he says.

The findings, SIPRI says, are that a dangerous new nuclear arms race is emerging at a time when arms control regimes are severely weakened. The nine nuclear-armed countries are the United States, Russia, the United Kingdom, France, China, India, Pakistan, the Democratic People's Republic of Korea (North Korea), and Israel.

According to the SIPRI estimates, India's stored warheads increased to 180 in January 2025, from 172 in January 2024; whereas that of Pakistan remained at 170. The U.S. has 1,770 deployed and 1,930 stored warheads, while its inventory stands at 5,177 in 2025 compared with 5,328 in 2024.

Russia has 1,718 deployed and 2,591 stored warheads and its inventory stands at 5,459, as against 5,580 in 2024. China has 24 deployed warheads and 576 stored ones, with its inventory rising to 600 in January 2025 from 500 in 2024.

The total inventory stands at 12,241, of which 9,614 warheads are in "military stockpiles for potential use". An estimated 3,912 warheads are deployed with missiles and aircraft and the rest are in central storage, and about 2,100 of the deployed ones have been kept in a state of high operational alert on ballistic missiles. Nearly all of them belong to Russia or the U.S.,, but China might now keep some warheads on missiles during peacetime, notes the SIPRI.

The report observes that since the end of Cold War, the gradual dismantlement of retired warheads by Russia and the U.S. has normally outstripped the deployment of new warheads, resulting in an overall year-on-year decrease in the global inventory. However, the trend is likely to be reversed in the coming years, as the pace of dismantlement is slowing, while the deployment of new nuclear weapons is accelerating.

"Russia and the USA together possess around 90% of all nuclear weapons. The sizes of their respective military stockpiles (i.e. useable warheads) seem to have stayed relatively stable in 2024 but both states are implementing extensive modernisation programmes that could increase the size and diversity of their arsenals in the future," it says.

The report cautions that if no new agreement is reached to cap their stockpiles, the number of warheads deployed on strategic missiles might increase after the expiry of the bilateral 2010 Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START) in February 2026.

"China's nuclear arsenal is growing faster than any other country's, by about 100 new warheads a year since 2023. By January 2025, China had completed or was close to completing around 350 new ICBM silos in three large desert fields in the north of the country and three mountainous areas in the east," it says.

"Depending on how it decides to structure its forces, China could potentially have at least as many ICBMs as either Russia or the USA by the turn of the decade. Yet even if China reaches the maximum projected number of 1,500 warheads by 2035, that will still amount to only about one third of each of the current Russian and U.S. nuclear stockpiles," it says.

"Revitalised national debates in East Asia, Europe and the Middle East about nuclear status and strategy suggest there is some potential for more states to develop their own nuclear weapons," it adds.

https://www.thehindu.com/news/national/india-maintains-nuclear-edge-over-pakistan-with-morewarheads-next-gen-canisterised-mirv-capable-missiles-sipri-report/article69703913.ece

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Science & Technology News

A simplified method to synthesize nano-cups that can blaze the cancer with heat

Source: Press Information Bureau, Dt. 17 Jun 2025

Researchers have developed a novel one-step colloidal synthesis method for nanoparticles with a unique shell structure with nano-cup morphology that is partly covered with polyethylene glycol (PEG) that can help with photothermal therapy (PTT) to treat cancer.



Fig: Illustration of semi-shell formation using rhombic dodecahedron (RD) shaped ZIF-8 as a sacrificial template and its PEGylation-assisted blood compatibility, cryopreservation, systemic safety and ondemand reconstitution towards pronounced photothermal therapy of advanced cancer.

Conventional fabrication techniques of these so-called semi shells (SS) with nano-cup morphology are multi-step, labour-intensive, or require harsh etching agents like hydrofluoric acid at high temperatures and toxic precursors.

Scientists from the Institute of Nano Science and Technology (INST), Mohali, an autonomous institute under the Department of Science and Technology (DST), in collaboration with researchers from Advanced Centre for Treatment Research & Education in Cancer, Tata Memorial Centre (ACTREC) and Indian Institute of Technology Bombay (IITB), have developed a novel one-step colloidal synthesis method for fabricating PEGylated semi-shells (SS) with nano-cup morphology at room temperature.

The research published in Communication Chemistry, an open access Nature group journal involved optimizing synthesis parameters, characterizing optical and structural properties, and conducting extensive in vitro and in vivo assessments to confirm the therapeutic efficacy of SS.

Fig: Illustration of semi-shell formation using rhombic dodecahedron (RD) shaped ZIF-8 as a sacrificial template and its PEGylation-assisted blood compatibility, cryopreservation, systemic safety and on-demand reconstitution towards pronounced photothermal therapy of advanced cancer. The simplified yet highly unique approach circumvents all the drawbacks of previously reported processes by using a biocompatible metal-organic framework (MOF), ZIF-8, as a sacrificial template. The synthesis employs mild reducing agents like ascorbic acid (Vitamin C) at room temperature.

The method also eliminates the need for specialized equipment. This innovation was achieved by simultaneously carving out the ZIF-8 crystal, a process known as 'etching' while gold nanoparticles grow in place of these etched ZIF-8 yielding SS with a strong absorption and scattering of light in the invisible near infra-red window of electromagnetic spectrum, which is ideal for highly effective photothermal therapy.

Surface passivation with PEG enhances cryo-preservability, aqueous stability, and blood compatibility of these SS, ensuring an extended shelf life and safe intravenous administration. The PEGylated SS synthesised, was nontoxic, had high photothermal conversion efficiency and was found to have high therapeutic efficacy.

They have shown that the SS is capable of destroying metastatic breast tumours through a medical procedure called photothermal ablation. The procedure significantly improved survival rate and minimised tumour relapse in preclinical mice model indicating their potential to significantly improve outcomes in advanced breast tumours.

Compared to existing technologies, this method ensures superior stability, ease of administration, and enhanced photothermal performance. Future studies aim to explore chemo-photothermal therapy for highly selective oncological applications and investigate the potential of these semi shells in Surface-Enhanced Raman Spectroscopy (SERS) biosensing, leveraging their unique optical properties for advanced biomedical applications.

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https://www.pib.gov.in/PressReleasePage.aspx?PRID=2136980

A free hand

Science must be unfettered if it is to be useful

Source: The Hindu, Dt. 18 Jun 2025

Last week, the government issued a set of orders that scientists have heralded as 'revolutionary'. A major change is in allowing scientific institutions to bypass the Government e-Marketplace (GEM),

a Commerce Ministry initiative that is meant to prioritise made-in-India equipment. GEM norms require all government purchases — from laptops to furniture — to be routed through the GEM-portal, with a mandate to buy from the vendor offering the lowest price.

While technocrats in government amplified this bypass as a "landmark" initiative to promote 'ease of doing research and development,' the fact is that until GEM-based procurement was made mandatory from 2020, the default option was to allow individual scientific institutions the freedom to make their choices regarding the vendors they procure.

Take for example, sodium chloride. Something as common as table salt must be available in infinite supply and it is only proper that laboratories — they require great quantities for its myriad applications in research — source it from the supplier who offers it the cheapest.

However, much like the avatars of salt — kosher, flat or sea — are uncommonly unique to the chef, the differences in purity even within common salt are critical to scientific research as well as the manufacture of pharmaceuticals. This translates to some vendors being more reliable and, therefore, more preferred.

A major aspect of scientific research is about being able to reproduce results of experiments described in publications. Often, this requires fidelity to the methods and materials of the original experimenter. Given the challenge of budgets, the inability to source the right material results in experiments being junked halfway, or crimping on experimental ambition, resulting, overall, in a net loss of resources, time and effort.

If this is extended to materials more complicated than salt — precision lathes, customised labproduced diamonds, biological molecules, for example — it is easy to understand the gripe of scientists. It is understandable, and pardonable, when a government experiments with an untested policy and runs into uncharted waters or unknown unknowns.

In the case of GEM, it was a known fact that India lacked an industrial base for sophisticated machinery, and it was inevitable that the hammer-head policy that saw all products as cookie-cutter nails would impede scientific research.

India's scientific ministries are unique in that they are led by scientists, instead of the usual norm of having career bureaucrats. This was due to a recognition, dating back to the early years of the republic, that while science and technology can be employed to serve the state, science itself is unfettered and must be specially nurtured to be useful. A free hand is worth more than two fettered arms.

https://www.thehindu.com/opinion/editorial/a-free-hand-on-scientific-institutes-and-gem-norms/ article69704952.ece

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Universe's 'missing' matter found

Source: Hindustan Times, Dt. 18 Jun 2025

WASHINGTON: The universe has two kinds of matter. There is invisible dark matter, known only because of its gravitational effects on a grand scale. And there is ordinary matter such as gas, dust, stars, planets and earthly things like cookie dough and canoes.

Scientists estimate that ordinary matter makes up only about 15% of all matter, but have long struggled to document where all of it is located, with about half unaccounted for. With the help of powerful bursts of radio waves emanating from 69 locations in the cosmos, researchers now have found the "missing" matter.

It was hiding primarily as thinly distributed gas spread out in the vast expanses between galaxies and was detected thanks to the effect the matter has on the radio waves travelling through space, the researchers said. This tenuous gas comprises the intergalactic medium, sort of a fog between galaxies.



The Deep Synoptic Array (DSA), a network of 110 radio telescopes, point to the sky near Bishop, California, US. REUTERS

Scientists previously had determined the total amount of ordinary matter using a calculation involving light observed that was left over from the Big Bang event roughly 13.8 billion years ago that initiated the universe. But they could not actually find half of this matter.

"So the question we've been grappling with was: Where is it hiding? The answer appears to

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be: in a diffuse wispy cosmic web, well away from galaxies," said Harvard University astronomy professor Liam Connor, lead author of the study published on Monday in the journal Nature Astronomy.

The researchers found that a smaller slice of the missing matter resides in the halos of diffuse material surrounding galaxies, including our Milky Way.

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