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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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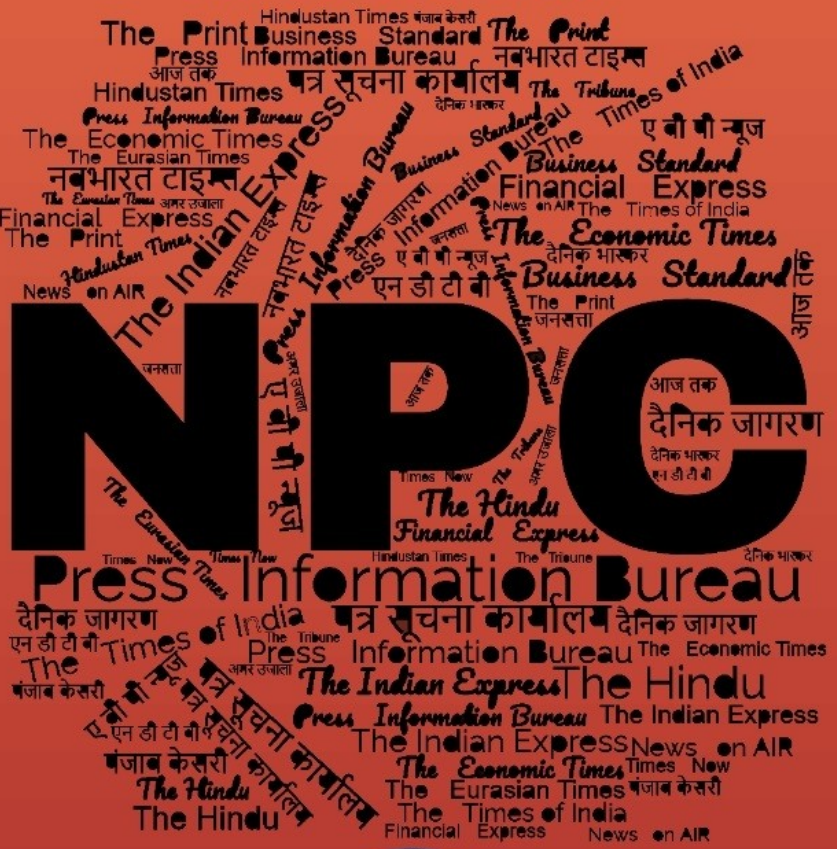

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Defence Strategic: National/International

Indian Army briefs 70 nations on successful conduct of Operation Sindoor

Source: The Times of India, Dt. 13 May 2025,
URL: https://timesofindia.indiatimes.com/india/india-army-briefs-70-nations-on-successful-conduct-of-operation-sindoor/articleshow/121141159.cms

A top Indian military officer on Tuesday briefed defence attaches and representatives from around 70 countries on the "successful conduct of Operation Sindoor", officIals said. The session was held at the Manekshaw Centre in Delhi Cantonment and led by Lt Gen D S Rana, director general of the defence intelligence agency. The briefing lasted about 30 minutes.

Defence attaches from several key global and Islamic nations were present, including representatives from Sweden, Nepal, the Philippines, and Egypt, sources told PTI news agency.

The Headquarters Integrated Defence Staff shared on X, "Lt Gen DS Rana, Director General Defence Intelligence Agency DG_DIA briefed the Foreign Service Attaches of 70 nations on the successful conduct of Operation Sindoor that has set New Normals in India-Pakistan relations, highlighting India's demonstrated strength and national resolve through military superiority in the new-age warfare."

Officials said Lt Gen Rana said the "deliberate planning process" behind the selection of targets that had "confirmed terror linkages". He also outlined the Indian armed forces' "integrated, precise and prompt response" to achieve the stated objectives, which were carried out through intense multi-domain operations.

According to the Integrated Defence Staff's post, "Synergised Force application through jointness and integration achieved in Operation Sindoor with demonstrated battle effectiveness of indigenous kinetic force multipliers was showcased to the FSAs, while highlighting Technological Superiority of the Indian armed forces in niche non-kinetic domains of space, cyber and electronic warfare."

The DG DIA also presented a "credible record of the relentless anti-India misinformation campaign conducted by the adversary and its ramifications on regional peace and stability," the post added.

Officials further stated that the briefing included details of the "whole-of-nation approach which effectively and swiftly countered the false narrative."

A defence attaché based in Delhi who attended the briefing said, "It was good to get information on what has transpired in the last several days, directly from the Indian military side."

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Operation Sindoor: Indian air defence renders Turkish drones ineffective

Source: The Times of India, Dt. 14 May 2025,
URL: https://timesofindia.indiatimes.com/india/operation-sindoor-indian-air-defence-renders-turkish-drones-ineffective/articleshow/121147836.cms

Turkish drones, extensively used by the Pakistani army during the recent limited conflict with India, came into prominence for the first time when Ukraine used them to destroy Russian defence assets in the initial phases of Russia-Ukraine war.

However, these drones, which can stay airborne for up to 27 hours, as claimed by their manufacturer, failed to penetrate targets when Russia bolstered its air defence. Ukraine, as per reports, has since been using them for reconnaissance and repositioning its artillery. India may have learnt a lesson from the Ukraine war, it seems, as it destroyed Turkish drones as well as China's missiles midair, thus denying the advantage that Pakistan had hoped to gain by unleashing them in swarms in retaliation against Operation Sindoor.

True, the drones supplied to Pakistan by Turkiye - which under President Recep Tayyip Erdogan has been nursing the dream of becoming the new leader of the Muslim world - were not of the same calibre as the ones it had sold Ukraine but it was pointed out that they were taken out mostly by cheaper 'Made-in India' drones - a blow to Erdogan's aspiration to emerge as the new Caliph.

No wonder Turkiye deputed a junior representative for India's defence ministry briefing on Operation Sindoor - a move seen as frustration over its drones' failure.

The Indian armed forces also have sophisticated and deadly Israeli Harop drones, also known as "loitering munition", which identifies a target and crashes into it with loaded explosives. These have proved to be a potent weapon in India's arsenal, with some of them believed to have destroyed Pakistan's air-defence systems and key military sites during May 7-10 conflict.

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Operation Sindoor: Details of Pak losses emerge; 20% of PAF infra, several warjets, officer among 50 killed

Source: The Indian Express, Dt. 14 May 2025,
URL: https://indianexpress.com/article/india/details-of-pak-losses-emerge-20-of-paf-infra-several-warjets-officer-among-50-killed-10002083/

India’s precision strikes at over a dozen military bases across Pakistan led to the destruction of nearly 20 per cent of Pakistan Air Force infrastructure and several PAF fighter aircraft, official sources disclosed Tuesday. Sources said that the strikes, in retaliation for Pakistani attempts to hit

Indian military installations and civilian areas with armed drones and missiles, targeted major ammunition depots and air bases such as Sargodha and Bholari where PAF's F-16 and J-17 fighter aircraft were stationed.

Over 50 individuals, including Squadron Leader Usman Yusuf and four airmen, were killed in the strike on the Bholari air base in Jamshoro district of Sindh. Several PAF fighter jets were destroyed in the attack, sources said. As part of retaliatory strikes during Operation Sindoor, India targeted military installations and the air bases of Nur Khan in Chaklala, Rafiqui in Shorkot, Murid in Chakwal, Sukkur, Sialkot, Pasrur, Chunian, Sargodha, Skardu, Bholari and Jacobabad.

Satellite images before and after the strike showed the scale of destruction at the Shahbaz air base in Jacobabad. Sources said several terrorist bunkers and Pakistani Army positions were destroyed in retaliatory fire by Indian forces at the Line of Control. Indian military commanders had earlier said that the Pakistan Army lost 35-40 personnel along the LoC in heavy crossfire, and the PAF lost "a few" aircraft. On Monday, the Armed Forces released visual evidence of the damage inflicted at Pakistani air bases and of various Pakistani drones and missiles that were successfully intercepted and destroyed by Indian air defence systems. On Tuesday, Lt General D S Rana, Director General, Defence Intelligence Agency, briefed Foreign Service Attaches of 70 countries on the successful conduct of Operation Sindoor.

In a post on X, Headquarter IDS said Lt General Rana elaborated on the planning process for selection of targets with confirmed terror linkages, and highlighted the integrated, precise and prompt response by the Indian Armed Forces to achieve its military objectives, which were executed through intense multi-domain operations.

"Synergised Force application through Jointness and Integration achieved in Op Sindoor with demonstrated battle effectiveness of indigenous kinetic Force Multipliers was showcased to the FSAs, while highlighting Technological Superiority of Indian Armed Forces in niche non-kinetic domains of Space, Cyber & Electronic Warfare," it said. Lt General Rana also spoke on the anti-India misinformation campaign by Pakistan and its ramifications on regional peace and stability. "Modalities of India's Whole Of Nation approach which effectively and swiftly countered the false narrative, was also highlighted," the IDS said.

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'Chosen by 'Missile Man' APJ Abdul Kalam': Who is Prahlada Ramarao, man behind India's homegrown Akash Missile Defence System

Source: The Times of India, Dt. 14 May 2025,
URL: https://timesofindia.indiatimes.com/city/bengaluru/chosen-by-missile-man-apj-abdul-kalam-who-is-prahlada-ramarao-man-behind-indias-homegrown-akash-missile-defence-system/articleshow/121150216.cms

Long before the Akash missile defence system etched its name into India's military history, Prahlada Ramarao had already built his legacy. Personally chosen by India's 'Missile Man' Dr APJ

Abdul Kalam in the early 1990s, Ramarao was appointed as the youngest project director at just 35 to lead the Akash programme. At the time, Kalam was heading the Defence Research Laboratory (DRL) in Hyderabad — much before he became the scientific adviser to the defence minister and later the President of India.

“Kalam was a true leader. A leader brings team spirit and inspires all to work towards a common goal. The country now requires 10 Abdul Kalams to grow and develop in various fields like the way the aerospace and defence sectors grew under him,” Ramarao said. Reflecting further on Kalam’s leadership, he added, “The biggest difficulty for India is that we are individually good, but cannot work together as a team. Kalam was very good at addressing this.He taught me how to bring the energy of individuals synergistically to achieve a purpose. That is why I feel, if we have 10 Kalams, India will truly lead,” he told PTI.

Now 78 and a Padma Shri recipient, Ramarao was overwhelmed with pride when Akash proved its worth under fire, successfully intercepting waves of Pakistani drones and missiles during the night of May 8 and 9 along the western border.

“My eyes welled up when my baby worked so well. It is the happiest day of my life. This is bigger than my Padma award,” he told TOI.

The Akash Project

The Akash project, which spanned 15 years, involved over a thousand scientists and numerous DRDO labs across the country under Ramarao’s leadership.

The indigenous missile shieldwas launched in 1994 with an initial budget of Rs 300 crore. “When you invent something, you fail several times. We also failed. But we learnt from our mistakes,” he said, highlighting that the biggest hurdle was developing Rajendra — a complex multifunction electronically scanned phased array radar. The budget was later revised to Rs 500 crore. “I guarantee you, nowhere in the world a missile defence system could have been invented in just Rs 500 crore. Our Akash is the cheapest but most effective missile shield. It can detect a hostile missile from a distance of 70km and kill it at a 30km range,” Ramarao added.

Despite undergoing several trials and eventual user acceptance, the May 8-9 incident marked Akash's first real-world combat test. Indian defence officials hailed the performance of Akash and other systems like S-400 Triumf. IAF DGMO Air Marshal AK Bharti stated, "India's defence systems stood like a wall," successfully neutralising the attack.

Akash's capabilities have evolved significantly since its development in 2009, resulting in newer variants such as Akash-1S with an indigenous seeker, Akash Prime for high-altitude and extreme weather use, and Akash-NG with extended range and advanced features. The IAF currently operates 15 squadrons, while the Army has inducted four regiments and is looking to expand further.

The missile system's efficiency even impressed Armenia, which became the first foreign buyer in 2022, signing a Rs 6,000 crore deal. The first batch was delivered last year to secure Armenia's borders.

From being mentored by Kalam to seeing Akash perform flawlessly in actual combat, Ramarao's journey is a testament to perseverance, innovation, and the power of indigenous development.

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Amid India-Pakistan tensions, Akash missile passes its 'agni-pariksha'

Source: The Economic Times, Dt. 13 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/amid-india-pakistan-tensions-akash-missile-passes-its-agni-pariksha/articleshow/121135559.cms

With the four-day India-Pakistan conflict drawing to a close, one standout performer has captured national attention- Akash, India's homegrown missile defence system, which proved its battlefield strength when it mattered the most.

It took 15 years, over a thousand scientists, and a unified effort by defence labs across the country to bring that bold dream to life. But on the night of May 8 and 9, that dream soared with Akash successfully intercepting waves of incoming drones and missiles along the western border with Pakistan, proving itself in the crucible of real battle.

"It was like watching my child take its first steps—only this child stopped enemy fire," said Prahlada Ramarao, the man who once led the Akash project under the guidance of Dr APJ Abdul Kalam, India's beloved Missile Man. "This is the happiest day of my life. It means more than my Padma Shri," TOI quoted Ramarao as saying.

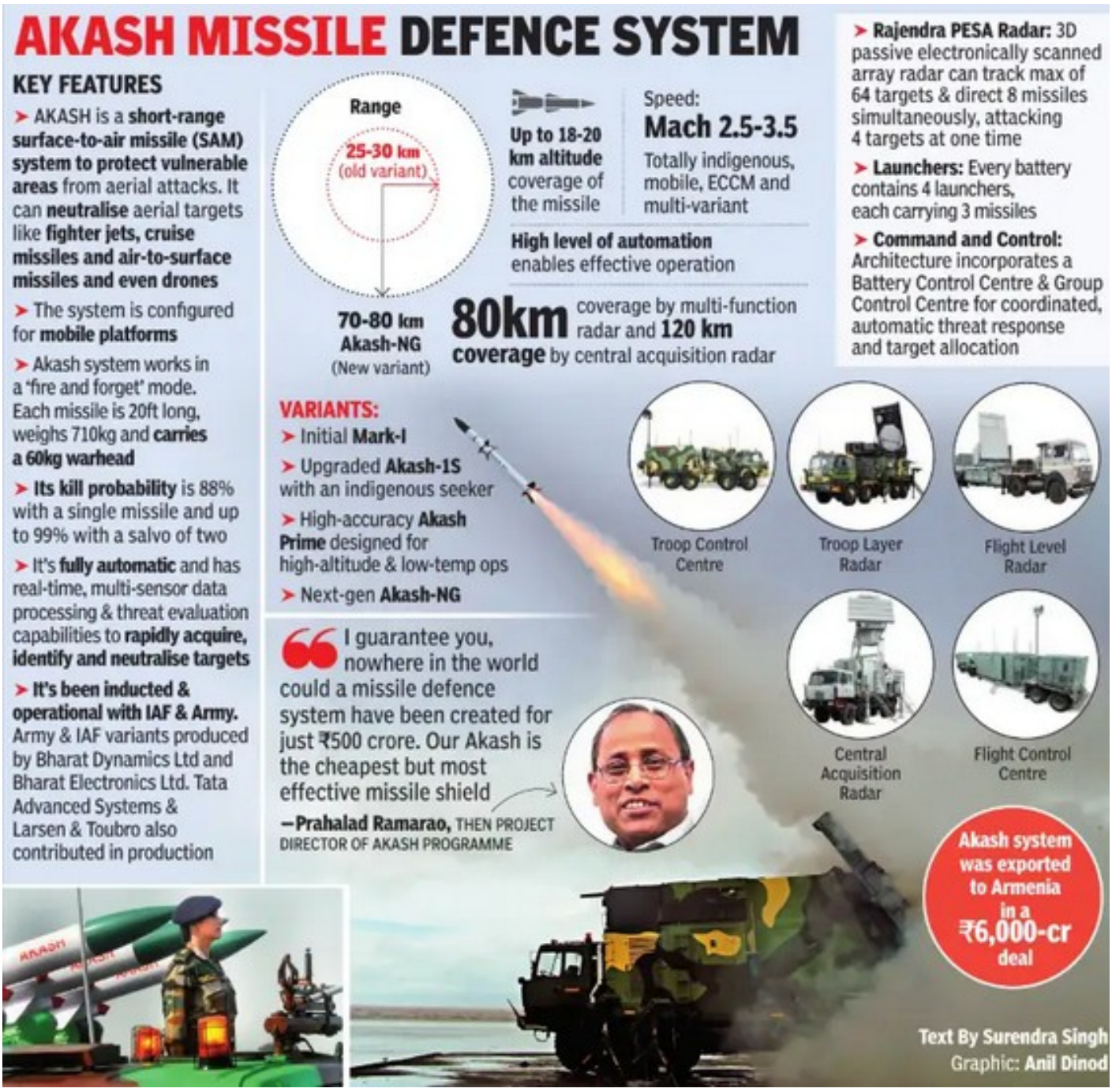
Ramarao's 'Akash' journey

From being handpicked by Kalam at the age of 35 to leading the ambitious programme in the 1990s, to finally witnessing Akash's 'agni-pariksha', Ramarao's journey mirrors the missile's own path- relentless, resilient, and deeply rooted in Indian innovation.

Conceived in 1994 with a budget of Rs 300 crore, the Akash project faced numerous failures, but never faltered. "We failed. A lot. But every failure was a step forward," Ramarao said, recalling the

painstaking development of the Rajendra radar, a critical component that enables Akash to track and engage multiple targets in real time from any direction.

Today, Akash stands tall as a key pillar of India's Atmanirbhar Bharat vision- delivering unmatched performance at an unmatched cost. "Nowhere in the world has a missile defence system been developed for just Rs 500 crore," Ramarao told TOI. "And yet, it can detect a missile 70 km away and destroy it at 30 km," he added.



Akash's battlefield debut was hailed by top military brass. IAF DGMO Air Marshal AK Bharti declared that India's defence systems, including Akash and S-400 Triumf, "stood like a wall," blocking enemy incursions and proving India's readiness.

Originally inducted in 2009, Akash has evolved into a family of systems:

- Akash-1S with an indigenous seeker
- Akash Prime for high-altitude, low-temperature ops
- The Akash-NG, boasting greater range and upgraded capabilities

The IAF currently operates 15 squadrons, while the Army commands four regiments, with more on the way. India's missile mastery has also found admirers abroad. In 2022, Armenia became the first foreign buyer, inking a Rs 6,000 crore deal for 15 Akash systems. The first batch was delivered last year, further boosting India's credentials as a global defence exporter. And while Akash may now guard skies around the world, for the man who helped bring it to life, it remains personal.

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Indian armed forces used domestic strategic space assets, foreign commercial satellites for Operation Sindoor: Report

Source: The Economic Times, Dt. 13 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/indian-armed-forces-used-domestic-strategic-space-assets-foreign-commercial-satellites-for-operation-sindoor-report/articleshow/121131502.cms

Indian defence forces used several space assets, both domestic and international commercial, for Operation Sindoor, TOI reported citing sources. "All of our strategic assets were put to use in different ways by our armed forces for Operation Sindoor. Our teams have been working round the clock and we are proud that Isro could help our forces in missions important for the country," a senior official from Isro told TOI.

India has 9-11 military satellites directly available with the armed forces. An official said that Isro also facilitated "repeatable" data from a commercial global operator. "While data from our satellites from the Cartosat series and others were also used for planning, images were procured from Maxar," the senior official said.

US-based satellite imagery provider, Maxer, supplies images to multiple governments and non-government entities across the world. It, however, remains unclear if Pakistan used its services for any of its operations during the current conflict. Pakistan, too, has access to the extensive military space assets of China. Indian armed forces have access to other satellite data from Sentinel from Europe and another commercial operator from the US.

Indian assets

"Indian satellites provide periodic data - with downloads of specific areas possible about once in 14 days. This data was made use of, while they used commercial data that's available once a day too," the official said.

The Cartosat family of satellites, with high-resolution imagery and dual-use (image & video) capabilities, has been a key asset in India's military intelligence. It was first launched in 2005 and has progressively been upgraded with satellites like the Cartosat-2C (for military),. These satellites have provided crucial imagery for operations.

Cartosat-2C, for example, delivers images with a resolution of 0.65 metres. This is an improvement over previous models- and has been vital in reconnaissance and surveillance operations.

The high-resolution images from Cartosat can capture areas of interest with incredible clarity, enabling commanders to make precise decisions based on intelligence from space. These were used for the 2016 Surgical Strike. Aside from Cartosat, the Risat family of satellites would have provided radar images useful to track movement, while the Gsat family of satellites were used for communications. “In all, a variety of Indian space assets have been useful and efforts are on to increase support to the armed forces in the years to come,” the official said.

Future build-up

Indian Space Association (ISpA) director-general Lt Gen (retd) AK Bhat, said, “There would have been extensive use of space assets for imagery, sat-com (satellite communication) and PNT (positioning, navigation and timing). Space technology is an integral part of modern warfare.”

Isro chairman V Narayanan, who said on Sunday that 10 satellites are working round the clock for the armed forces, did not comment on Operation Sindoor. He, however, told TOI, “We will be launching another important satellite on May 18, the EOS-09 or Risat-1B, which will add teeth to our armed forces.”

“The satellite features an advanced C-band synthetic aperture radar system that delivers high-resolution Earth surface imagery in all weather conditions. This capability significantly enhances India’s surveillance capabilities,” he added.

Risat-1B’s radar technology penetrates these obstacles effectively unlike conventional optical satellites limited by cloud cover or darkness.

Earlier this month, Narayanan had said that India would launch 100-150 satellites in the next five years. Among these would be the 52 satellites part of the Space-Based Surveillance-3 (SBS-3) programme and 31 of these will be developed by the private sector.

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India-Pakistan tensions: Rajnath Singh reviews security, tells-forces to maintain highest vigil

Source: The Times of India, Dt. 14 May 2025,
URL: https://timesofindia.indiatimes.com/india/india-pakistan-tensions-rajnath-singh-reviews-security-tells-forces-to-maintain-highest-vigil-operation-sindoor/articleshow/121147890.cms

With PM Narendra Modi drawing a new red line against Pakistan-backed terrorism, defence minister Rajnath Singh on Tuesday reviewed the operational situation along the western front with Pakistan and directed the armed forces to maintain their highest state of vigil.

The top-level meeting came a day after director general of military operations Lt General Rajiv Ghai and his Pakistani counterpart Major General Kashif Abdullah discussed the modalities for

ensuring the understanding reached on the cessation of hostilities - which came into effect on May 10 - is not breached.

"While all cross-border military action has come to a halt after 5 pm on May, Operation Sindoor is still underway in the sense that the armed forces remain in full operational readiness to take care of any contingency. Every move of Pakistan is being watched closely," an official said.

The meeting chaired by Singh was attended by chief of defence staff General Anil Chauhan, Navy chief Admiral Dinesh K Tripathi, Army chief Gen Upendra Dwivedi, defence secretary Rajesh Kumar Singh and IAF vice chief Air Marshal Narmdeshwar Tiwari.

As per the understanding between the DGsMO, both India and Pakistan have agreed to refrain from any aggressive action along the Line of Control and the international boundary as well as work towards reducing the number of their troops and heavy weapon systems deployed in forward areas along the western front.

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9,500 bunkers set up along Indo-Pak border, more bunkers to come up: J&K Chief Secy

Source: The Economic Times, Dt. 13 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/9500-bunkers-set-up-along-indo-pak-border-more-bunkers-to-come-up-jk-chief-secy/articleshow/121144184.cms

Asserting that 9,500 bunkers have been set up along India-Pakistan border in Jammu and Kashmir, Chief Secretary Atal Dulloo on Tuesday reached out to shelling-affected people along the Line of Control in Rajouri district and said that more bunkers would be constructed for the safety of border dwellers. The chief secretary said that Pakistan has resorted to shelling in the civilian areas, causing huge damage to livestock and properties.

Asserting that there is a need for more bunkers along the borderline, Dulloo said, "I want to tell you that 9,500 bunkers are there along the borderline in J&K." "There is more demand for bunkers and more bunkers will be constructed. There will be no shortfall of bunkers," he told reporters here.

The chief secretary visited Kalsian panchayat in Nowshera tehsil, located near the Line of Control (LoC), where some houses have been damaged due to recent cross-border shelling. "I have come here to Rajouri and Nowshera sectors to assess the ground situation. The shelling that took place from across the border has hit civilian areas," he said.

Dulloo said that some people have been injured and added "there is loss of livestock and huge damage caused to properties".

The chief secretary said the administration will soon disburse compensation after conducting an assessment of the losses. During his visit, Dulloo interacted with the affected residents and assured them of all possible support from the administration. He expressed solidarity with people in this hour of distress and emphasized the government's commitment to ensuring their safety and welfare.

The chief secretary later visited the Government Medical College (GMC) in Rajouri, where he met with patients, including those injured in the shelling incident. Commending the district administration's efforts in managing the situation effectively, he lauded the swift and coordinated response to the recent shelling incidents.

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The strategic logic behind India's ceasefire with Pakistan

Source: The Tribune, Dt. 14 May 2025,
URL: https://www.tribuneindia.com/news/comment/the-strategic-logic-behind-indias-ceasefire-with-pakistan/

There has been extensive animated debate in the country as to why India prematurely reached an understanding with Pakistan to stop firing on May 10 and halt all operations in the domains of land, sea and air in the ongoing Operation Sindoor. Even maximalist phrases like "snatching defeat from the jaws of victory" have been used to describe this decision. The sequence of events given out in the official briefing clearly establishes that this temporary cessation of firing was proposed directly by Pakistan to India, though the US has also claimed credit for mediation.

What did we do differently in the military application of force from previous occasions post Uri and Pulwama?

Firstly, this time we have been able to break the 'J&K trap' by striking sufficiently deep targets all along the Pakistan border rather than restricting our retaliatory actions to J&K in general and the LoC in particular. This has unintentionally aided Pakistan in the past by advancing the argument of J&K being a disputed territory.

Secondly, while the operation commenced with strikes on nine terrorist camps and training areas, it graduated to devastating attacks on vital military infrastructure, including airfields, radars, command and control sites and missile/ammunition storage sites, complemented by the destruction of posts on the LoC.

To arrive at a reasonable assessment of the soundness of this decision, we need to understand the national objectives of Operation Sindoor. The DGMO, in his press briefing on May 11, outlined the military objective: "Op Sindoor was conceptualised with a clear military aim to punish the perpetrators and planners of terror and to destroy their terror infrastructure."

Therefore, our retaliatory strikes were at the mid-level of the spectrum of conflict, below an all-out war.

The military action was integrated with other elements like economic, political and diplomatic, including holding the Indus Waters Treaty in abeyance. India has also reinforced the salience of the IB and LoC by closing trade points and people-to-people contacts.

While the strategic political objectives were not given out in definitive terms, these can be logically culled out. Based on the limited application of military force, our strategic aims were to demonstrate resolve, raise costs, impose caution on Pakistan and, thus, restore deterrence, which had waned since the Balakot air strikes five years ago.

What would have happened if we had continued to press Pakistan for a few more days/weeks or expanded the scope of Op Sindoor by launching an all-out war?

In that case, our objective would have been to force Pakistan to assure dismantling of terror infrastructure by discrediting the Pakistan Army. In the Indo-Pak context, war can change the status quo but may not resolve the political issue, which is J&K. The capture of large parts of its territory in war as a leverage for post-conflict bargaining may also not change Pakistan's mindset. Pakistan did not stop supporting Afghan Taliban despite the sustained use of drones by the US and the killing of its civilians over a number of years before the disorderly exit of the US forces in September 2022.

Getting Pakistan to give and adhere to an assurance to stop using terrorism as an instrument of its state policy is, perhaps, unachievable. It had made such promises earlier as well in 2002. Pakistan has been routinely reneging on various agreements as it relies on outright deniability and obfuscation. Recently, this was evident in its PM claiming victory and the press briefings by service officers during the period of Operation Sindoor.

A sustained military campaign at this stage with Pakistan will undoubtedly be detrimental to our aim of uplifting the teeming masses out of poverty and being a developed country by 2047. Pakistan has little to lose, being a basket case already. Moreover, the initiative to escalate is with India. Escalation dominance is the key to orchestrating such operations. Too severe a response can also lead to counter-productive escalation.

How can we be future-ready?

Even if the J&K issue is settled to Pakistan's satisfaction, peace between the two neighbours is unlikely to prevail as it is not a territorial dispute but an ideological jihad. We need to recognise the inevitability of terrorist attacks by Pakistan in the foreseeable future. Low response, like resorting to firing on the LoC or no response to terrorist acts, is taken by Pakistan as a sign of weakness and meets its cost-benefit threshold and does not deter future escalation.

We need to develop the capability to hit Pakistan routinely, cause the destruction of military infrastructure with an intent to hurt, without large-scale posturing and deployment on the borders.

Retaliation to high-profile terrorist acts by Pakistan should not have the narrative of a retributive punishment but impose high costs for the breach of red lines and influence its decision calculus to deter future attacks.

India's narrative of attacking terrorist infrastructure also needs calibration as these targets may be vacated, will move deeper over a period of time and targetable infrastructure will reduce. To maintain deterrence against the deep state in Pakistan, we should not differentiate between terrorists and the Pakistan Army. This leads to advancing the alibi that non-state actors are not under its control.

India also adopted a declaratory policy on May 10 — that any future act of terror will be considered an act of war against the country and will be responded to accordingly. With this, the India-Pakistan equation has permanently changed by bringing in the element of the certainty of

retaliation to every attack. This will stop belligerent behaviour by Pakistan for as long as possible. Retaliation by Pakistan, especially on the LoC in J&K, is not a complete loss of deterrence.

At the strategic level, victory means achieving political goals. That is what Operation Sindoor, an inflection point, has done decisively and unequivocally.

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Did China send its largest military cargo aircraft with arms supplies to Pakistan?

Source: The Week, Dt. 13 May 2025,
URL: https://www.theweek.in/news/defence/2025/05/13/did-china-send-its-largest-military-cargo-aircraft-with-arms-supplies-to-pakistan.html

The Chinese military refuted reports that its largest military cargo plane— Xi'an Y-20 military transport aircraft—carried arms supplies to Pakistan and warned of legal action against those spreading such rumours. China is the largest weapons supplier to Pakistan, accounting for 81 per cent of the arms procurement of Islamabad.

Seeking to counter reports of Chinese aid to Pakistan during the recent India-Pakistan military engagement, PLAF said in a statement that such claims were untrue. The PLAF also posted several screenshots of photos and words that shared the incorrect information, with each stamped with the red word "rumour".

"The internet is not beyond the law! Those who produce and spread military-related rumours will be held legally responsible!" a report on the official website of the Chinese defence ministry said. The clarification comes two days after India and Pakistan agreed to cease all military actions after four days of hostilities.

Chinese Foreign Ministry spokesperson Lin Jian told a media briefing that the "ceasefire" between India and Pakistan is in the fundamental and long-term interest of both nations and is conducive to regional peace and stability.

Pakistan is largely dependent on China for its arms supplies, including fighter jets, radars, naval ships, submarines and missiles. Both countries jointly manufacture J-17 aircraft, the mainstay of the Pakistan Air Force.

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India’s Defence Exports Jump 34 Times In 11 Years, Budget Sees 2.7x Boost — Ministry Data Follows Operation Sindoor

Source: Swarajya, Dt. 13 May 2025,
URL: https://swarajyamag.com/news-brief/indias-defence-exports-jump-34-times-in-11-years-budget-sees-27x-boost-ministry-data-follows-operation-sindoor

Ministry of Defence (MoD) reported a 34-fold increase in the value of India's defence exports, from Rs 686 crore in 2013-14 to Rs 23,622 crore in 2024-25. The notable point is that private

sector exports have a greater share with Rs 15,233 crore export in 2024-25, as compared to Defence Public Sector Units (DPSU), whose export value was Rs 8,389 crore for the same year.

However, DPSU exports grew by 42.85 per cent in 11 years, export authorisations rose by 16.92 per cent, and exporters increased by 17.4 per cent. "India exports to around 80 countries aiming for Rs 50,000 crore in exports by 2029, strengthening its global defence manufacturing footprint," MoD posted on X.

In another post, it said, "The defence budget increased from Rs 2.53 lakh crore in 2013-14 to Rs 6.81 lakh crore in 2025-26," adding that India is a globally trusted defence exporter, strengthening national security and economic growth. The MoD credited strategic reforms, private sector participation, and innovation for boosting indigenous manufacturing and making India self-reliant in defence sector.

The revelations come in the backdrop of India-Pakistan tensions, which escalated after Operation Sindoor, although a ceasefire understanding has been reached now. Explaining the recent armed operations, Prime Minister Narendra Modi, as well as Director General of Indian Air Force operations, Air Marshal A N Bharti mentioned the progress made in the last decade.

Today (13 May), PM Modi said that in the last decade, the world's best technologies have reached our forces, while addressing our defence personnel at the Adampur Air Force Station. On similar lines, in yesterday's press briefing, Air Marshal Bharti said that the air defence system, which helped India foil Pakistan's attack attempts could be achieved in the last decade.

"This has been possible over the last decade, due to unwavering budgetary and policy support provided by the Government of India, in acquiring state-of-the-art equipment and weapon systems," he said.

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हार्बर से बाहर नहीं निकल पाए पाकिस्तानी वॉरशिप, ऑपरेशन सिंदूर में 'साइलेंट' रहकर नेवी ने PAK पर ऐसे बनाया प्रेशर

Source: Navbharat Times, Dt. 14 May 2025,
URL: https://navbharattimes.indiatimes.com/india/pakistani-warships-could-not-come-out-of-the-harbour-navy-created-pressure-on-pak-in-operation-sindoor/articleshow/121146138.cms

ऑपरेशन सिंदूर में इंडियन नेवी ने 'साइलेंट' रहकर अपना रोल निभाया और इस तरह निभाया कि पाकिस्तान के पास मौजूद सीमित वॉरशिप भी अपने हार्बर से बाहर नहीं आ पाए। इंडियन नेवी का दबाव इतना ज्यादा था कि पाकिस्तान ने समंदर में कोई हरकत करने की सोची भी नहीं। साथ ही इंडियन नेवी के कैरियर बेटल ग्रुप और दूसरे वॉरशिप ने जिस तरह पेट्रोलिंग की और निगरानी की उससे कई मर्चेंट शिप ने अपना रास्ता बदल लिया और पाकिस्तान के पोर्ट पर जाने से बचने लगे। जिससे पाकिस्तान की इकॉनमी भी हिट होने लगी।

क्यों पाकिस्तान पर था नेवी का भारी दवाब

इंडियन नेवी की तैनाती ने पाकिस्तान को साफ संदेश दे दिया था कि अगर पाकिस्तान ज्यादा तनाव बढ़ाता है यानी स्थिति ज्यादा एस्केलेट होती है तो नेवी के निशाने पर सिर्फ उसके वॉरशिप ही नहीं बल्कि पाकिस्तान के जमीनी ठिकाने भी हैं। एक तरफ पाकिस्तान की एयरफोर्स और आर्मी को भारत की एयरफोर्स और आर्मी करारा जवाब दे रही थी, वहीं इंडियन नेवी की तरफ से साफ था कि अगर पाकिस्तान बाज नहीं आएगा और इंडियन नेवी ने एक्शन शुरू कर दिया तो पाकिस्तान की एयरफोर्स को दो हिस्सों में बंटकर काम करना होगा, जो पाकिस्तान के लिए बहुत ही खराब स्थिति होती। ऐसा इसलिए क्योंकि पाकिस्तान की नेवी के पास कोई एयरक्राफ्ट कैरियर नहीं है। इसलिए पाकिस्तान नेवी को अपने एयर ऑपरेशन के लिए अपनी एयरफोर्स पर ही निर्भर रहना होता। जबकि इंडियन नेवी का एयरक्राफ्ट कैरियर विक्रांत फॉरवर्ड एरिया में लगातार चक्कर लगा रहा था।

कैरियर बेटल ग्रुप के साथ कई वॉरशिप भी

इंडियन नेवी के कैरियर बेटल ग्रुप में एयरक्राफ्ट कैरियर विक्रांत के साथ ही कई वॉरशिप तैनात कर दी गई। एयरक्राफ्ट कैरियर में फाइटर जेट और हेलिकॉप्टर दोनों ही होते हैं। मिग-29K फाइटर जेट के साथ रोमियो हेलिकॉप्टर पाकिस्तान की नीदें उड़ा रहा था। एयरक्राफ्ट कैरियर में 30 से ज्यादा एयरक्राफ्ट आ सकते हैं। साथ ही लंबी दूरी की ब्रह्मोस मिसाइल की मौजूदगी ने पाकिस्तान को लगातार दबाव में रखा। नेवी के एयर बॉर्न अर्ली वॉर्निंग सिस्टम लगातार हवा में थे और लगातार लंबी दूरी तक उनकी चौकस नजरें थी। कैरियर बेटल ग्रुप में एयरक्राफ्ट कैरियर के चारों तरफ सबमरीन भी होती हैं, साथ ही 8 से 10 वॉरशिप भी इसका हिस्सा होते हैं।

इंडियन नेवी की क्षमता और नंबर दोनों ज्यादा

नेवी ने वेस्टर्न कोस्ट में एयरक्राफ्ट कैरियर के साथ कम से कम 7 डिस्ट्रॉयर तैनात किए, इसमें सबसे आधुनिक ड्रिस्ट्रॉयर भी शामिल हैं। साथ ही करीब सात फ्रिगेट भी लगातार पाकिस्तान को दबाव में रख रही थी। डिस्ट्रॉयर में सर्फेस टू सर्फेस और सर्फेस टू एयर अटैक की क्षमता है। इसमें एंटी सबमरीन कैपिसिटी के साथ दो हेलिकॉप्टर भी कैरी किए जा सकते हैं। इसके अलावा कई फास्ट अटैक क्राफ्ट, मिसाइल बोट भी बड़ी संख्या में तैनाती में थी। जबकि पाकिस्तान की क्षमता देखें तो उसके पास एक भी डिस्ट्रॉयर नहीं है। फ्रिगेट कुछ पुरानी हैं और नई फ्रिगेट सिर्फ चार ही हैं। 3 से 4 सबमरीन ही ऑपरेशनल हैं।

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Science & Technology News

India's first manned deep ocean mission at 6,000 m depth to be launched by 2026 end: NIOT

Source: The Economic Times, Dt. 13 May 2025,
URL: https://economictimes.indiatimes.com/news/science/indias-first-manned-deep-ocean-mission-at-6000-m-depth-to-be-launched-by-2026-end-niot/articleshow/121143759.cms

India's first manned deep ocean mission 'Samudrayaan' into a 6,000-metre depth using the manned submersible vehicle 'Matsya' is expected to be launched by the end of 2026, National Institute of Ocean Technology (NIOT) Director Balaji Ramakrishnan said on Tuesday. He was speaking after

inaugurating a five-day national training programme on the 'role of fisheries in the blue economy' at the ICAR-Central Marine Fisheries Research Institute (CMFRI) here.

"The mission will enable deep-sea exploration down to 6000 metres, carrying three scientists on board 'Matsya.' The NIOT, under the Ministry of Earth Sciences, is the implementing nodal agency of the deep ocean mission," he said. Developed with India's indigenous technology, this advanced 25-tonne 4th generation vehicle is specifically engineered to withstand extreme pressure and temperature in the deeper ocean, with a hull made of titanium.

"This mission is expected to be a game-changer for India's deep-sea research, opening avenues for the assessment of both living and non-living resources in the deep ocean, comprehensive ocean observation, and the potential for deep-sea tourism," Ramakrishnan said.

The launch is planned as a step-by-step process, and a crucial phase of the 500 m depth trial is anticipated by the end of this year," he said, adding the journey to dive deep will take four hours, and the same time is expected to come out. The mission will be instrumental in collecting critical samples from the deeper oceanic zone, offering opportunities for scientists to understand the unique characteristics of the organism and the water in the region, the NIOT director said.

Citing another breakthrough in the sector, he said an innovative technology named 'Samudrajivah' has been developed to focus on improved large-scale open sea age farming. "The technology is currently in the demonstration phase," he said, pointing out that these electronically monitored submerged fish cages are designed for offshore regions, capitalising on the nutritionally rich deep-sea environment to optimise the fish growth.

Having different sensors, Samudrajivah is capable of remote monitoring of individual fish biomass, growth and movement and water quality parameters, he added. "The technology is expected to be one of the major developments in India's food security," he said. These emerging technologies would be crucial for sustainable development in the marine fisheries sector and will significantly support the country's blue economy initiatives, Dr Ramakrishnan said.

The training programme on fisheries is being jointly organised by the CMFRI and Vijnana Bharati (VIBHA). In his presidential address, CMFRI director Dr Grinson George said integrating NIOT's technology with CMFRI's marine research achievements would be instrumental in the advancement of a healthy blue economy in India.

"Technological enhancement is an urgent need to fully exploit the potential of mariculture activity in India, especially seaweed cultivation", he said and stressed the need for advisories or early warning systems for jellyfish blooms and harmful algal blooms to support fishermen and fish farmers.

Former director of Indian National Centre for Ocean Information Services Satheesh Shenoi, VIBHA secretary general Vivekananda Pai, and former director of National Institute of Oceanography (NIO) Dr S Prasanna Kumar also spoke on the occasion, a release from the CMFRI here said.

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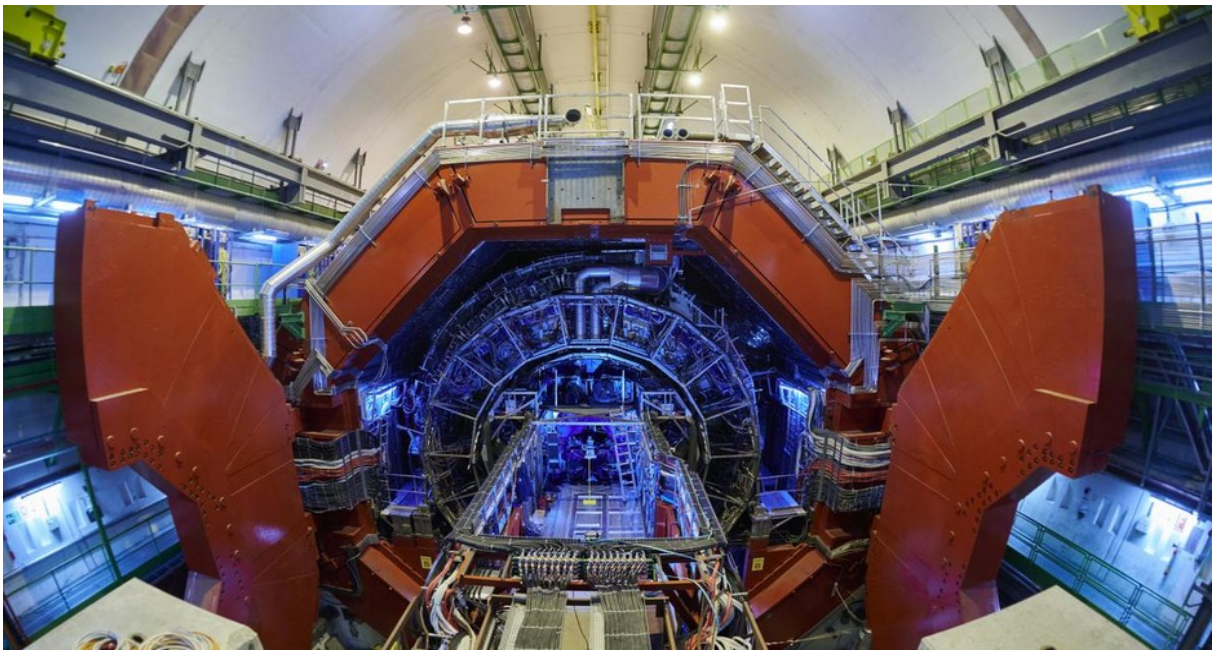
Is it possible to turn lead into gold?

Source: The Hindu, Dt. 13 May 2025,
URL: https://www.thehindu.com/sci-tech/science/is-it-possible-to-turn-lead-into-gold/article69571061.ece



An image of the ALICE detector, which researchers used to track near-miss collisions between lead nuclei in the LHC

In India and other parts of the world, some ancient natural philosophers practised an enterprise called alchemy. It was in some ways an early form of chemistry, but guided by less-than-scientific ideas of the time. One form of alchemy was concerned with converting base metals like lead into gold. We know today that doing this requires us to change the composition of the nucleus of the lead atom, which is not easy.

In a new study, scientists working with the Large Hadron Collider (LHC) in Europe have reported turning lead atoms into gold atoms for a fraction of a second.

The LHC is famous for accelerating protons to high energies and smashing billions of them head on. But in the study, the researchers energised heavy lead nuclei and had them pass close to each other, without colliding, giving rise to so-called ultra-peripheral collisions. Even though the nuclei don't physically touch, they interact via their powerful electromagnetic fields, which caused some of the nuclei to break up. The team found that when a lead nucleus emitted protons, it essentially became a gold nucleus.

Also, current theoretical models could only roughly predict these emissions: the researchers said this was because their models tended to underestimate how often one or two protons were emitted. In other words, scientists have room to improve their understanding of how these electromagnetic breakups work.

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