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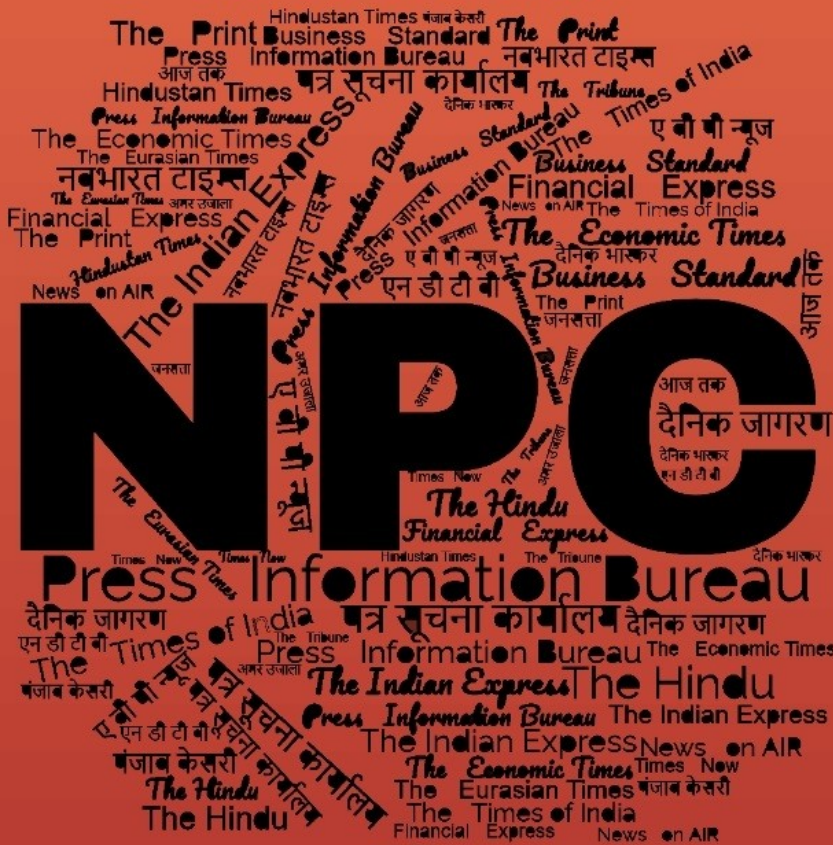
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समाचार पत्रों से चयनित अंश

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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CONTENTS

S. No.	Title	Source	Page No.
DRDO News			1-5
1	भारत की बड़ी कामयाबी: DRDO ने किया स्ट्रैटोस्फेरिक एयरशिप का सफल परीक्षण	<i>Punjab Kesari</i>	1
2	DRDO conducts maiden flight trials of Stratospheric Airship Platform in MP	<i>The Times of India</i>	2
3	भारत की 'गांडीव' मिसाइल से थराई पाक आर्मी, 300 किमी दूर बैठे दुश्मन का भी होगा सफाया!	<i>Zee Bharat</i>	3
4	आंध्र प्रदेश में बना DRDO का नया शक्तिस्थल, पीएम मोदी बोले- दुर्गा जैसी शक्ति देगा नवदुर्गा रेंज	<i>NavBharat Live</i>	4
Defence News			5-33
Defence Strategic: National/International			
5	Raksha Mantri to hold bilateral talks with his Japanese counterpart in New Delhi	<i>Press Information Bureau</i>	5
6	IOS SAGAR in Port Victoria, Seychelles	<i>Press Information Bureau</i>	5
7	Indian Air Force eyes surveillance UAVs to fly in stratosphere	<i>The Economic Times</i>	6
8	Govt to procure next-generation Very Short Range Air Defence System	<i>The Economic Times</i>	7
9	India secures HawkEye 360 tech deal with US for maritime surveillance of 'dark ships' in Indo-Pacific	<i>The Economic Times</i>	9
10	Rafale-M once inducted, will ensure full fighter strength on both aircraft carriers	<i>The Hindu</i>	11
11	PM Modi announces \$200 mn for modernisation of Angolan armed forces	<i>The Economic Times</i>	12
12	Indian Army receives new supplies of Russian-origin Igla-S shoulder-fired air defence missiles	<i>ANI News</i>	13
13	Defence pact with India to be presented in Parliament, says Sri Lankan president	<i>The Hindu</i>	14
14	IAF, Navy chiefs brief PM Modi as forces prepare response to Pahalgam terror attack	<i>The Indian Express</i>	15
15	Underwater breathing gadgets enhance survivability of tank crew during deep fording operations	<i>The Tribune</i>	16
16	IAF to get pseudo satellites, Army missile system	<i>The Tribune</i>	18
17	China may only offer surveillance support to Pak	<i>The Tribune</i>	19
18	Indian Navy's "Trident Of Power" Post Follows "Combat-Ready" Message	<i>NDTV</i>	20

19	Pakistan conducts training launch of surface-to surface ballistic missile amid rising tensions with India	<i>The Economic Times</i>	21
20	Pakistani media spread fake news on Indian Armed Forces senior officials amid cross-border tensions: Sources	<i>The Economic Times</i>	23
21	Iran unveils new solid-fueled ballistic missile, state TV reports	<i>The Economic Times</i>	24
22	Making F-35 & Eurofighter “Invisible”, UK Rolls Out ‘StormShroud’ Drones That Could Blind Enemy Radars	<i>The EurAsian Times</i>	25
23	Biggest Test Awaits ‘Make In India’ Weapons As India, Pakistan Could Be Headed For A Limited War; Here’s A List To Watch Out For	<i>The EurAsian Times</i>	28

Science & Technology News

33-37

24	Why do scientists want to spend billions on a 70-year project in the Swiss Alps?	<i>The Hindu</i>	33
25	UoH faculty member elected as Fellow of Royal Society of Chemistry	<i>The Hindu</i>	35
26	Do public-funded R&D units innovate enough? Explained	<i>The Hindu</i>	36

DRDO News

भारत की बड़ी कामयाबी: DRDO ने किया स्ट्रैटोस्फेरिक एयरशिप का सफल परीक्षण

Source: Punjab Kesari, Dt. 04 May 2025,

URL: <https://www.punjabkesari.in/national/news/drdo-successfully-tests-stratospheric-airship-2146096>

भारत ने रक्षा प्रौद्योगिकी के क्षेत्र में एक और महत्वपूर्ण कदम आगे बढ़ाया है। रक्षा अनुसंधान और विकास संगठन (DRDO) ने 3 मई को मध्य प्रदेश के श्योपुर परीक्षण स्थल पर एक स्ट्रैटोस्फेरिक एयरशिप प्लेटफॉर्म का पहला सफल परीक्षण किया। इस खास प्लेटफॉर्म को आगरा स्थित एरियल डिलीवरी रिसर्च एंड डेवलपमेंट एस्टेबलिशमेंट (ADRDE) ने विकसित किया है।



रक्षा मंत्रालय ने इस उपलब्धि की जानकारी देते हुए बताया कि DRDO ने श्योपुर में इस स्ट्रैटोस्फेरिक एयरशिप प्लेटफॉर्म का पहला ट्रायल सफलतापूर्वक पूरा किया। यह एयरशिप एक विशेष प्रकार का उपकरण (पेलोड) लेकर लगभग 17 किलोमीटर की ऊंचाई तक उड़ा और इसने करीब 62 मिनट तक उड़ान भरी। इस दौरान जो भी डेटा मिला है, उसका इस्तेमाल भविष्य में और भी अधिक ऊंचाई पर होने वाले एयरशिप मिशनों के लिए बेहतर सिमुलेशन मॉडल बनाने में किया जाएगा।

उड़ान के दौरान एयरशिप के अंदर दबाव को नियंत्रित करने वाली प्रणाली (एन्क्लोजर प्रेशर कंट्रोल) और किसी आपात स्थिति में हवा निकालने के सिस्टम (आपातकालीन डिफ्लेशन सिस्टम) की भी जांच की गई। परीक्षण पूरा होने के बाद इस प्रणाली को सुरक्षित रूप से वापस लाया गया।

DRDO ने सोशल मीडिया प्लेटफॉर्म 'X' पर लिखा कि यह हवा से हल्का (लाइटर देन एयर) सिस्टम भारत की पृथ्वी का अवलोकन करने, खुफिया जानकारी जुटाने, निगरानी करने और टोही (ISR) क्षमताओं को बहुत बढ़ा देगा। इस सफलता के साथ भारत उन गिने-चुने देशों में शामिल हो गया है जिनके पास यह स्वदेशी तकनीक मौजूद है।

रक्षा मंत्री राजनाथ सिंह ने DRDO को इस शानदार उपलब्धि के लिए बधाई दी है। उन्होंने कहा कि यह प्रणाली भारत की ISR क्षमताओं को महत्वपूर्ण रूप से मजबूत करेगी और देश को रक्षा क्षेत्र में तकनीकी रूप से आत्मनिर्भर बनने की दिशा में आगे ले जाएगी।

रक्षा अनुसंधान और विकास विभाग के सचिव और DRDO के अध्यक्ष डॉ. समीर वी. कामत ने भी इस सिस्टम के डिजाइन, विकास और परीक्षण में शामिल टीम की सराहना की। उन्होंने इस प्रोटोटाइप उड़ान को हवा से हल्के, उच्च ऊंचाई वाले प्लेटफॉर्म के विकास में एक मील का पत्थर बताया, जो स्ट्रैटोस्फियर में लंबे समय तक टिके रहने में सक्षम है। यह एयरशिप भविष्य में निगरानी, संचार और आपदा प्रबंधन जैसे कई महत्वपूर्ण क्षेत्रों में भारत को रणनीतिक लाभ दिला सकती है।

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DRDO conducts maiden flight trials of Stratospheric Airship Platform in MP

Source: The Times of India, Dt. 05 May 2025,

URL: <https://timesofindia.indiatimes.com/city/bhopal/drdo-conducts-maiden-flight-trials-of-stratospheric-airship-platform-in-mp/articleshow/120879414.cms>

The Defence Research and Development Organisation (DRDO) has successfully conducted the maiden flight trials of its Stratospheric Airship Platform from the Sheopur Trial Site in Madhya Pradesh on Saturday.



Developed by the Aerial Delivery Research and Development Establishment (ADRDE) in Agra, the airship was launched with an instrumental payload, reaching an altitude of approximately 17 kilometers.

Data from onboard sensors were received during the flight and will be used to develop high-fidelity simulation models for future high-altitude airship operations.

The flight also tested the performance of envelope pressure control and emergency deflation systems, which were deployed as part of the trial. Following the flight, the system was recovered for further analysis. The flight lasted about 62 minutes, agencies report.

Congratulating DRDO on the successful trial, Raksha Mantri Shri Rajnath Singh stated, "This system will significantly enhance India's Earth observation, Intelligence, Surveillance, and Reconnaissance (ISR) capabilities, positioning India among the few nations globally with such indigenous high-altitude platforms."

Dr Samir V Kamat, Secretary of the Department of Defence R&D and Chairman of DRDO, also congratulated the team for their efforts. He highlighted that the successful prototype flight is a critical step towards realizing lighter-than-air high-altitude platform systems capable of remaining airborne for extended durations at stratospheric heights.

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भारत की 'गांडीव' मिसाइल से थर्राई पाक आर्मी, 300 किमी दूर बैठे दुश्मन का भी होगा सफाया!

Source: Zee Bharat, Dt. 02 May 2025,

URL: <https://zeenews.india.com/hindi/zee-hindustan/national/india-drdo-astra-mk-3-gandiva-missile-of-300-km-range-in-last-development-step-fear-for-pakistan-army/2739316>

भारत और पाकिस्तान के बीच चल रहे तनाव में इंडियन एयरफोर्स के लिए एक खुशखबरी है. भारत एक ऐसी मिसाइल तैयार कर रहा है, जिसकी प्रभावशाली रेंज 300 किलोमीटर के करीब है. इस मिसाइल को DRDO विकसित कर रहा है, ये अपने विकास के अंतिम चरण में है. यह मिसाइल न केवल भारतीय वायु सेना (IAF) की ताकत को बढ़ाएगी, बल्कि क्षेत्रीय और वैश्विक स्तर पर हवाई युद्ध को नई दिशा भी देगी.

तैयार होने वाली है Astra MK-III मिसाइल

जिस मिसाइल की हम बात कर रहे हैं. उसका नाम Astra MK-III है. ये मिसाइल 'गांडीव' नाम से भी जानी जाती है. 'गांडीव' नाम महाभारत के प्रसिद्ध किरदार अर्जुन के धनुष से प्रेरित है. जैसे योद्धा अर्जुन का धनुष शक्तिशाली, सटीकता और अजेयता का प्रतीक माना जाता है, वैसे ही ये मिसाइल भी अपनी ताकत के लिए जानी जाती है. ये एक बियॉन्ड विजुअल रेंज एयर-टू-एयर मिसाइल (BVRAAM) है. इसमें ऐसी तकनीक है, जो मिसाइल को पारंपरिक रॉकेट मोटर की तुलना में अधिक दूरी तक तेज गति बनाए रखने में मदद करती है.

भारत की Astra MK-III 'गांडीव' में ये खूबियां

- यह मिसाइल 300 किलोमीटर से अधिक की दूरी तक लक्ष्य को भेद सकती है. यह विशेष परिस्थितियों में 340 किमी तक की रेंज भी हासिल कर सकती है.
- यह मैक 4.5 (ध्वनि की गति से 4.5 गुना अधिक) तक की रफ्तार से उड़ान भर सकती है. दुनिया की सबसे तेज हवा से हवा में मार वाली मिसाइलों में से एक है.
- इसका वजन केवल 220 किलोग्राम है. इसे लड़ाकू विमानों से लैस करना आसान है.
- यह मिसाइल ± 10 किलोमीटर की ऊंचाई में बदलाव कर सकती है. यानी ऊंचे-नीचे उड़ान भर रहे टारगेट्स को निशाना बना सकती है.
- इस मिसाइल में एक्टिव रडार सीकर और दो-तरफा डेटा लिंक का इस्तेमाल किया गया है.

पाक को खतरा महसूस हो रहा

गांडीव की 300-340 किमी की रेंज इसे चीन की PL-15 और अमेरिका की AIM-174 मिसाइलों से कई गुना तेज बनाती है, पाकिस्तानी विश्लेषकों ने भी इस मिसाइल को अपनी वायु सेना के लिए खतरा माना है. उनकी मौजूदा मिसाइलें जैसे AIM-120C AMRAAM (105-120 किलोमीटर) और PL-12 (100 किलोमीटर) भारतीय Astra MK-III के सामने कमजोर पड़ जाएंगी.

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आंध्र प्रदेश में बना DRDO का नया शक्तिस्थल, पीएम मोदी बोले- दुर्गा जैसी शक्ति देगा नवदुर्गा रेंज

Source: NavBharat Live,

Dt. 02 May 2025,

URL: <https://navbharatlive.com/india/drdo-new-power-centre-built-in-andhra-pradesh-pm-modi-says-navdurga-range-give-power-like-durga-1206857.html>

पीएम मोदी ने आंध्र प्रदेश के अमरावती में एक जनसभा को संबोधित किया। इस दौरान पीएम मोदी ने रक्षा और अंतरिक्ष क्षेत्र में भारत की उपलब्धियों का उल्लेख करते हुए नागयालंका में बने नवदुर्गा टेस्टिंग रेंज को राष्ट्र की शक्ति में नया शक्ति रूप बताया। उन्होंने कहा कि यह टेस्टिंग रेंज मां दुर्गा की तरह भारत की रक्षा क्षमता को सशक्त बनाएगा और आने वाले वर्षों में यह रणनीतिक रूप से भारत के लिए बेहद अहम साबित होगा।

पीएम मोदी ने कहा, “आंध्र प्रदेश ने दशकों से भारत को एक स्पेस पावर बनाने में अहम भूमिका निभाई है। श्रीहरिकोटा से हर रॉकेट लॉन्च देश के युवाओं को प्रेरित करता है और आज DRDO के नए मिसाइल टेस्टिंग रेंज की नींव डालकर हमने एक और ऐतिहासिक कदम उठाया है।”

पीएम मोदी ने अपने संबोधन में यह भी बताया कि कैसे केंद्र सरकार की पहल से आंध्र प्रदेश में बुनियादी ढांचे का विस्तार, नौकरी के नए अवसर और कृषि के क्षेत्र में सुधार हो रहा है। उन्होंने कहा कि पोलावसम प्रोजेक्ट, जो लंबे समय से अटका हुआ था, अब नई राज्य सरकार के सहयोग से गति पकड़ चुका है और लाखों लोगों के जीवन को बदलने वाला है।

प्रधानमंत्री ने बताया कि जल्द ही विशाखापत्तनम में एकता मॉल की स्थापना की जाएगी, जहां भारत के विभिन्न हिस्सों के शिल्पकार और कलाकार अपने उत्पाद एक छत के नीचे बेच सकेंगे। इससे मेक इन इंडिया, वन डिस्ट्रिक्ट वन प्रोडक्ट (ODOP) जैसी योजनाओं को बढ़ावा मिलेगा और भारत की सांस्कृतिक विविधता को वैश्विक मंच मिलेगा।

पीएम मोदी ने यह भी बताया कि बीते 10 वर्षों में भारत ने फिजिकल, डिजिटल और सोशल इंफ्रास्ट्रक्चर पर विशेष ध्यान दिया है और आंध्र प्रदेश को भी इसमें भरपूर लाभ मिला है। उन्होंने रेनिगुंटा-नायडुपेटा हाईवे का उदाहरण देते हुए कहा कि अब तिरुपति बालाजी के दर्शन करने वालों को यात्रा में काफी सुविधा होगी।

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Defence News

Defence Strategic: National/International

Raksha Mantri to hold bilateral talks with his Japanese counterpart in New Delhi

Source: Press Information Bureau, **Dt.** 04 May 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2126778>

Raksha Mantri Shri Rajnath Singh will hold a bilateral meeting with Japan's Minister of Defense Mr Gen Nakatani in New Delhi on May 05, 2025. Both sides will exchange views and ideas on the current regional & international security situation and discuss ways to further deepen the bilateral defence cooperation.

India and Japan share a long-term friendship, which has further gained qualitative momentum after the elevation of this collaboration to Special Strategic & Global Partnership in 2014. Defence and security are important pillars of the ties between the two countries.

Defence exchanges between India and Japan have gained strength in recent years due to the growing convergence on strategic matters. Its significance is increasing from the common outlook on issues of peace, security and stability of the Indo-Pacific Region.

This will be the second meeting between the two Defence Ministers within six months after their maiden interaction in November 2024 on the sidelines of ASEAN Defence Ministers' Meeting-Plus at Lao PDR.

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IOS SAGAR in Port Victoria, Seychelles

Source: Press Information Bureau, **Dt.** 02 May 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2126198>

Indian Ocean Ship (IOS) SAGAR, arrived at Port Victoria, Seychelles on 01 May 25, marking another important milestone in her ongoing operational deployment across the South-West Indian Ocean Region. The ship's arrival follows the successful completion of an Exclusive Economic

Zone (EEZ) surveillance mission of Mauritius, undertaken in coordination with National Coast Guard Mauritius.

The ship was accorded a warm welcome and received by the Chief of Defence Forces (CDF), the High Commissioner of India to Seychelles, and the Defence Adviser. The port call will feature a host of professional and cultural exchanges, including cross-deck visits involving multinational crew, and interactions with the CDF and senior officers of the Seychelles Defence Forces (SDF) and a joint Yoga session.

These engagements aim to reinforce longstanding defence ties and mutual trust between India and Seychelles while deepening the spirit of cooperation among regional maritime partners.

INS Sunayna, designated as IOS Sagar, has embarked a multinational crew comprising 44 naval personnel from 09 friendly foreign nations of the South-West Indian Ocean Region. The deployment exemplifies India's commitment to fostering regional maritime cooperation and capacity-building in the spirit of Security and Growth for All in the Region (SAGAR).

Earlier, the ship made port calls at Dar es Salaam (Tanzania), Nacala (Mozambique), and Port Louis (Mauritius), engaging with local navies and maritime security stakeholders to train together, exchange best practices, and enhance interoperability and mutual understanding.

The ship is scheduled to depart Port Victoria on 02 May 25 for her final port of call, Male, Maldives, where she will continue her collaborative maritime security and regional outreach mission.

INS Sunayna, a state-of-the-art Saryu class NOPV is equipped with medium and close-range gunnery weapons and modern electronic warfare suites, including missile defence measures. She can also carry a helicopter, which enhances her operational and surveillance capability.

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Indian Air Force eyes surveillance UAVs to fly in stratosphere

Source: The Economic Times, Dt. 03 May 2025,

URL: <https://economictimes.indiatimes.com/news/defence/indian-air-force-eying-surveillance-uavs-flying-in-stratosphere/articleshow/120842454.cms>

The Indian Airforce is keen on acquiring three high-altitude platform system (HAPS) aircraft, which are unmanned aerial vehicles or 'pseudo-satellites' operating in the stratosphere for long durations for intelligence, surveillance and reconnaissance (ISR) missions, TOI reported.

"Capable of operating at an altitude of about 20km, which is much higher than the flightpaths of commercial planes, the HAPS aircraft will be used for persistent ISR as well as act as airborne data relay for other unmanned platforms for electronic and communications intelligence," an officer told TOI. IAF has issued an initial request for information (RIF) for vendors to submit their responses by June 20 amid heightened tensions with Pakistan and a de-escalation along the Line of Actual Control with China.

HAPS aircraft are generally solar powered and are considered to be much cheaper to deploy and operate compared to satellites. "Capable of automatic take-off and landing, HAPS aircraft do not

require launch vehicles or rockets like satellites. They can be deployed from different locations as well as repaired and maintained easily as compared to satellites," the officer said.



High altitude performance system

The IAF wants HAPS aircraft to have a minimum operational endurance of 48 hours with data links and telemetry range of at least 150 km in a "line of sight" environment while it is also seeking launch-on-demand satellites.

"The desirable Satcom (satellite communication) is at least 400 km," the RFI said. The aircraft should come with a detection range of at least 50 km from operating altitude and must with electro-optical and infrared cameras as well as electronic and communication intelligence payloads. They should be capable of effectively operating even during night and low-visibility conditions. "The complete delivery is expected to be completed in 18 months from the date of the contract," the RFI added.

The IAF is also pursuing a case for three ISTAR (intelligence, surveillance, targeting and reconnaissance) aircraft to provide accurate "actionable intelligence" acquired through synthetic aperture radars, electro-optical and infrared sensors. Under the much-touted Defence Technology and Trade Initiative between India and the US, ISTAR platforms were among the different projects identified for co-development and co-production.

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Govt to procure next-generation Very Short Range Air Defence System

Source: The Economic Times, Dt. 03 May 2025,

URL: <https://economictimes.indiatimes.com/news/defence/govt-to-procure-next-generation-very-short-range-air-defence-system/articleshow/120853561.cms>

The government has started the process to procure a next-generation Very Short Range Air Defence System or VSHORADS (NG), which should be able to engage aerial targets "both by day and night" and under all weather conditions, including in snow-bound locations. The defence

ministry has issued a request for proposal (RFP) for the procurement, which was uploaded on the Indian Army's website on Saturday.

In the RFP, the ministry said it intends to procure "48 launchers, 48 night-vision sights, 85 missiles and one missile test station of Very Short Range Air Defence System (New Generation) or VSHORADS (NG) under Buy (Indian) category" and seeks participation from prospective bidders in the procurement process, subject to requirements.

Under the "operational characteristics and feature" head, the RFP document says, "To meet the evolving dynamic air threat, Army Air Defence requires Very Short Range Air Defence (VSHORADS) manportable missile system for effective terminal and point defence."

Pak diplomacy touches new low, Pakistani official makes 'throat slit' gesture at London protesters

Pak diplomacy touches new low, Pakistani official makes 'throat slit' gesture at London protesters
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"These VSHORADS, based on infra-red homing (IR) technology, are effective fire-and-forget type of missile systems and are being referred to as VSHORADS (NG)," it says.

Manportable refers to an object capable of being carried by one person over a long distance.

The RFP defines the General Staff Qualitative Requirements (GSQRs) for the planned VSHORADS (NG).

"The system should comprise of a IR homing missile coupled to a manportable launching mechanism and suitable sighting system to engage targets both by day and night," it says.

It should have the capability to engage fighter, transport aircraft, helicopters and UAS (unmanned aerial system), the document says.

The procurement seeks to booster the Army's air-defence capabilities to deal with any adversarial aerial threat.

Under the "Proposed Service Employment" head of the RFP document, it has been said that the VSHORADS (NG) will be used by "all three services as terminal and point defence system against all types of aircraft, helicopters and UAS".

The air defence system is proposed to be employed on land and ship-based platforms with these two configurations -- "manportable single launcher configuration" and "para dropped operations".

The system is proposed to be employed across all terrains, including high-altitude areas, plains, deserts, coastal areas and the maritime domain.

The VSHORADS (NG) system should be able to "operate during day and night for engagement of aerial targets under all weather conditions, including snow-bound locations".

The range of the operating temperature is minus 30 degrees Celsius (minimum) to 50 degrees Celsius (maximum), according to the RFP.

"The missile should be effective against all types of aircraft, helicopters and UAS" and according to the requirements defined in the RFP, the maximum effective range is 6,000 metres or more, while the minimum range is not more than 500 metres.

The system should have the ability to engage targets approaching at a speed of 400 metres per second or more, according to the requirements defined in the document.

On the "deployment time", the requirement says the "system to be deployable from transportation to firing mode within three minutes".

On the transportability requirement, the RFP document says "the system with single launcher should be manportable" and the equipment should have the capability to be transported in "service vehicle, ships, trains and aircraft and being para dropped".

The Defence Research and Development Organisation (DRDO) is also working on a VSHORADS.

In February, the DRDO successfully conducted three successive flight-trials of a VSHORADS from Chandipur, off the coast of Odisha. These tests were carried out against high-speed targets flying at a very low altitude, the defence ministry had then said in a statement.

A VSHORADS is a man-portable air defence system designed and developed indigenously by Research Centre Imarat, in collaboration with other DRDO laboratories and development-cum-production partners. The missile system has the capability to meet the needs of all the three branches of the armed forces -- the Army, the Navy and the Air Force, the ministry had said.

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India secures HawkEye 360 tech deal with US for maritime surveillance of 'dark ships' in Indo-Pacific

Source: The Economic Times, Dt. 04 May 2025,

URL: <https://economictimes.indiatimes.com/news/defence/india-secures-hawkeye-360-tech-deal-with-us-for-maritime-surveillance-of-dark-ships-in-indo-pacific/articleshow/120866583.cms>

The United States has approved the sale of HawkEye 360 technology to India. The move comes at a time when maritime tensions are rising in the Indo-Pacific. The decision, cleared by the US State Department, enables India to improve its maritime domain awareness using advanced satellite capabilities.

According to the State Department, "The proposed sale will improve India's capabilities to meet current and future threats by bolstering its maritime domain awareness, analytical abilities and strategic posture."

The estimated cost of the package is \$131 million. It includes the SeaVision software, preferred software enhancements, training through a technical assistance field team, remote software, analytic support, documentation, and other logistics and programme support.

A statement from the US Defence Security Cooperation Agency added, "The principal contractor will be Hawkeye360, located in Herndon, Virginia."

Technology to detect vessels that 'go dark'

HawkEye 360 is a private American company that operates a network of satellites in low Earth orbit. These satellites track radio frequency (RF) signals coming from ships, aircraft, vehicles, and coastal systems.

The technology is especially important for detecting vessels that switch off their Automatic Identification System (AIS) to evade detection. These so-called 'dark' ships pose a significant challenge in disputed waters or areas where illicit activities occur.

HawkEye 360's system identifies these hidden vessels by picking up RF emissions and analysing them using multiple layers: Electro-Optical (EO) for daytime imaging, Infrared (IR) for detecting thermal signatures, and Synthetic Aperture Radar (SAR) for radar-based images under any weather or light condition. These layers work together to determine a vessel's size, speed, and location.

The technology is capable of identifying suspicious patterns—such as repeated AIS gaps—and can correlate them with unknown signal activity. This data allows the Indian Navy to respond quickly and accurately.

What the HawkEye 360 sale means for India

The deal marks a new level of defence cooperation between India and the United States. A US government statement explained, "The proposed sale will support the foreign policy and national security objectives of the US by helping to strengthen the US-Indian strategic relationship and to improve the security of a major defence partner, which continues to be an important force for political stability, peace and economic progress in the Indo-Pacific and South Asia regions."

With the addition of HawkEye 360, India will now gain deeper visibility into its Exclusive Economic Zone. This is expected to help monitor smuggling, illegal fishing, trafficking, and piracy across the Indian Ocean Region.

Indian forces already use platforms such as the P8i maritime patrol aircraft and Sea Guardian drones. The new technology will complement those tools by providing real-time, round-the-clock surveillance—even in areas where ships attempt to avoid detection.

Broader Context: QUAD and regional maritime surveillance

This sale aligns with the goals of the Quadrilateral Security Dialogue (QUAD), a strategic partnership involving India, the US, Japan, and Australia.

In July 2024, following a QUAD foreign ministers meeting in Tokyo, the group expanded its Indo-Pacific maritime domain awareness initiative to cover the Indian Ocean. Originally announced in May 2022, the initiative allows partner nations to closely monitor maritime traffic and identify threats ranging from illegal activity to environmental risks.

The HawkEye 360 deal fits within this framework. It offers India not only better data but also greater independence in acting on that information.

India's growing focus on maritime security

In 2018, India launched the Information Fusion Centre in the Indian Ocean Region. This facility acts as a regional hub for gathering and analysing shipping data. With the integration of HawkEye 360, the centre will receive even more precise intelligence, helping it track developments in real time.

The system's ability to operate continuously, regardless of weather or time of day, provides a significant edge.

By closing "dead zones" where ships could once disappear without a trace, India enhances its readiness to face threats at sea and ensures safer navigation in vital trade corridors.

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Rafale-M once inducted, will ensure full fighter strength on both aircraft carriers

Source: The Hindu, **Dt.** 03 May 2025,

URL: <https://www.thehindu.com/news/national/rafale-m-once-inducted-will-ensure-full-fighter-strength-on-both-aircraft-carriers/article69535020.ece>

The Rafale-M fighter jets, 26 of which were contracted last week, once inducted from the second quarter of 2028 onwards, will enable the Indian Navy to field both its aircraft carriers with the full complement of their fighters. However, the jet as well as the flight deck of the carrier would need slight modifications for the Rafale-M to be able to fit on the lifts and for optimal performance.

"The lifts would need some modifications for the Rafale-M to fit in and as the Indian carriers use a ski-jump, the overall system would also need some changes," a source said.

On the aircraft, the wing pylons of Rafale need to be taken off, which takes a few minutes, before they can be moved on the lift, another source said. The lifts on board a carrier are used to move the jets and equipment between the hanger below and the flight deck above.

The consolidation of the capital allocation in the defence budget done two years back, doing away with service-specific capital allocation, also came handy in prioritising the payments for the Rafale deal, that was earlier planned to be concluded in the previous fiscal.

The delivery of these aircraft would begin in the second quarter of 2028 and be completed by the end of 2030, with the crew undergoing training in France and India.

Inter-governmental deal

On April 28, India and France concluded an Inter-Governmental Agreement for the procurement of 26 Rafale-Marine jets – 22 single-seater and four twin-seater — for the Indian Navy. The agreement includes training, simulator, associated equipment, weapons and performance-based logistics (PBL) for five years costing nearly ₹64,000 crore. The cost of the deal was not officially mentioned. The deal also includes additional equipment for the existing 36 Rafale fleet of the Indian Air Force, which, officials said, includes some support and maintenance equipment. Rafale-M would be capable of operating from both the carriers – INS Vikramaditya and INS Vikrant.

The country's first indigenous carrier INS Vikrant, measuring 262 metres long and 62 metres wide, can operate an air wing of 30 aircraft comprising MiG-29K fighter jets and, in the future, Rafale-Ms, Kamov-31 early warning helicopters, MH-60R multi-role helicopters and indigenous Advanced Light Helicopters (ALH). Both the carriers use the STOBAR (short take-off but arrested recovery) method to launch and recover aircraft for which it is equipped with a ski-jump to launch aircraft, and three 'arrester wires' for their recovery.

The Navy and Defence Ministry were keen to conclude the deal in the 2024-25 financial year. Funds were earmarked in the capital budget. However, as the deal got delayed it would have meant that unspent money would be returned to the Finance Ministry.

Capital utilisation

To avoid that and to optimise the capital utilisation, the Union government cleared and concluded another mega-deal that was in the pipeline but was to be concluded early fiscal year 2025-26: the deal for 156 Light Combat Helicopters (LCH) with Hindustan Aeronautics Limited (HAL) at a cost of ₹62,700 deal was advanced and concluded on March 28, 2025. "The doing away of the service-specific capital allocation has been beneficial in better managing the procurement cycles," one of the sources cited above observed.

The Rafale is a multi-role aircraft capable of undertaking air defence, escort, maritime strike, strike against shore targets, reconnaissance and buddy refuelling missions. The Navy had procured 45 MIG-29K jets from Russia along with INS Vikramaditya. Around 40 jets are available now but their serviceability rates have been not been up to the mark, which leaves a gap in fighter strength in case both carriers are deployed simultaneously.

In the case of the IAF Rafales, the contract had stipulated that its manufacturer Dassault Aviation be part of the performance-based logistics to ensure 75% availability rate of the fleet.

The Indian Navy aircraft carriers with its full complement of fighter aircraft have the ability to exercise sea control and strike enemy units at extended ranges while remaining well outside enemy weapon ranges, a Navy source observed, adding "The Rafale will also effectively provide the Navy with an ability to effect operations on land through shore strikes."

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PM Modi announces \$200 mn for modernisation of Angolan armed forces

Source: The Economic Times, Dt. 03 May 2025,

URL: <https://economictimes.indiatimes.com/news/defence/pm-modi-announces-200-mn-for-modernisation-of-angolan-armed-forces/articleshow/120847056.cms>

Prime Minister Narendra Modi on Saturday announced a USD 200 million defence credit line for Angola and expressed commitment to act firmly and decisively against terrorists and their backers, an assertion that came days after the Pahalgam terror strike. Modi made the remarks after holding wide-ranging talks with Angolan President Joao Manuel Goncalves Laurengo that focused on ramping up overall bilateral ties, including in areas of digital public infrastructure.

In his media statement, the prime minister said Laurengo's visit to India not only gives a new direction to the bilateral relations but also strengthens the India-Africa partnership. "I am pleased to announce India's USD 200 million defence credit line to support modernisation of Angola's defence forces," he said.

The prime minister also said that there was a discussion on repair, overhaul and supply of defence platforms as well. India will also share its capabilities with Angola in the areas of digital public infrastructure, space technology and capacity building, Modi said. "We have also decided to further strengthen our relations in areas of healthcare, diamond processing, fertiliser and critical minerals."

The prime minister also said, "We are committed to taking firm and decisive action against terrorists and those who support them." Highlighting the importance of ties between India and the African Union, he said, "We are partners in progress, We are pillars of the Global South." Laurengo arrived in Delhi on Thursday on a four-day trip.

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Indian Army receives new supplies of Russian-origin Igla-S shoulder-fired air defence missiles

Source: ANI News, **Dt.** 04 May 2025,

URL: <https://www.aninews.in/news/national/general-news/indian-army-receives-new-supplies-of-russian-origin-igla-s-shoulder-fired-air-defense-missiles20250504112243/>

In a major boost for its capabilities amid tensions with Pakistan over the Pahalgam attack, the Indian Army has received new supplies of the Russian-origin Igla-S missiles.

The Very Short Range Air Defence Systems (VSHORADS) are an important part of the air defence protection of the Indian Army, and the new supplies of the Igla-S missiles have been received as part of a contract inked under the emergency procurement powers given by the Centre to the forces.

The new supplies of the Igla-S air defence missiles have been received by the Indian Army a couple of weeks ago and are being provided to the forward formations for taking care of the threat from enemy fighter aircraft, choppers and drones on the borders, defence sources told ANI.

The contract worth around Rs 260 crore is expected to boost the strength of the air defence troops in the forward areas especially on the western sector, they said. The Indian Air Force has opted for a similar contract for the air defence missiles which are Infra Red sensor based VSHORADS. The Indian forces have been boosting their inventories through emergency and fast-track procurements over the last few years, where a major focus has been on the spares and other equipment to keep the fleets running through high tempo operations.

Along with the fresh deliveries of the Igla-S missiles, Indian Army has also issued tender for buying 48 more launchers and around 90 missiles of the VSHORADS (IR) under fast track procedures. The forces are also looking at acquiring new versions of the laser beam-riding VSHORADS soon. The Igla-S is the advanced version of the Igla missiles, which have been in use

since the 1990s. The existing inventory of older version missiles has also been refurbished by an Indian firm in the country itself.

The Indian Army requires a large number of missiles as well as enhanced drone detection and destruction capabilities, given the threat from all types of unmanned aerial vehicles used by the Pakistan Army on the western front.

The Army has deployed the Mark 1 of the indigenous Integrated Drone Detection and Interdiction System which can detect, jam, spoof and kill drones from a distance of over 8 kilometers. The systems are also fitted with lasers which can burn and bring down drones. The Army Air Defence units had recently brought down a Pakistan Army drone using the same systems opposite the 16 Corps area in the Jammu region.

The Defence Research and Development Organisation has also developed a longer range and high powered direct energy weapon which can take down large size drones, cruise missiles and aircraft in times of conflicts. The Army also has to get the low-level transportable radars for a quicker detection and destruction of enemy drones and aircraft operating at lower levels.

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Defence pact with India to be presented in Parliament, says Sri Lankan president

Source: The Hindu, Dt. 03 May 2025,

URL: <https://www.thehindu.com/news/international/defence-pact-with-india-to-be-presented-in-parliament-says-sri-lankan-president/article69533903.ece>

Sri Lanka's President Anura Kumara Dissanayake has said that the defence pact with India would be presented in Parliament soon. Mr. Dissanayake was responding to opposition criticism that his NPP government had entered a secret defence pact with India when Prime Minister Narendra Modi visited Sri Lanka from April 4 to 6 and has been demanding that the MoU be revealed.

"They are creating false narratives. These are imaginary monsters created by them without seeing it. There are agreements between the countries, they are open for both sides. It is our responsibility to ensure our own security. This has been stated in a clause in the agreement," Mr. Dissanayake said during a TV talk show Friday night.

PM Modi's visit reinforces Sri Lanka's important role in India's 'Neighbourhood First Policy': Dissanayake's office. Mr. Dissanayake had ensured Sri Lanka's consistent position that its soil would not be allowed to be used for any anti-Indian activity so as to endanger its neighbour's national security concerns. Mr. Modi, in his banquet speech, had thanked Mr. Dissanayake for this position.

Hark back to 1987-90

The opposition has riled the National People's Power (NPP) for signing pacts with India as its mother party, the Janatha Vimukthi Peramuna (JVP) in 1987-90 had led a bloody rebellion to protest a direct Indian intervention in Sri Lanka's Tamil minority issue.

The Rajiv Gandhi-Jayawardena signed Indo Lanka Peace Accord brought in constitutional changes prescribing a council for each of Sri Lanka's nine provinces. The JVP led a violent campaign against anyone who supported the Indo-Lanka Accord until they came to be militarily crushed in late 1989. The Memorandum of Understanding (MoU) on defence cooperation between India and Sri Lanka signed on April 5 during Prime Minister Modi's visit to the island nation will remain in force for five years.

Major defence pact

It is for the first time that India and Sri Lanka have inked a major defence pact to institutionalise a framework for deeper engagement in the military domain.

"India annually trains around 750 Sri Lankan military personnel. This defence partnership continues to be an invaluable asset," Sri Lanka's Defence Secretary Thuyiakontha had said after it was signed.

"As part of the cooperation under this MoU, both parties are committed to respecting each other's military and national laws, as well as the principles and purposes of the U.N. Charter-including sovereign equality and non-intervention in internal affairs," Mr. Thuyiakontha had said.

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IAF, Navy chiefs brief PM Modi as forces prepare response to Pahalgam terror attack

Source: The Indian Express, Dt. 05 May 2025,

URL: <https://indianexpress.com/article/india/air-chief-marshall-a-p-singh-meets-pm-modi-9982276/>

Indian Air Force chief Air Chief Marshal A P Singh met Prime Minister Narendra Modi Sunday and is learnt to have briefed him on the overall preparedness of the IAF in the context of retaliatory options being weighed by the government following the Pahalgam terror attack.

While there was no official statement on the meeting, Air Chief Marshal Singh and the Prime Minister were said to have discussed the security scenario and the options on the table.

The IAF chief's meeting at 7, Lok Kalyan Marg took place hours after Navy chief Admiral Dinesh K Tripathi spoke to the Prime Minister on the situation in the northern Arabian Sea.

Given the Navy's ongoing drills in the Arabian Sea, all operational frontline warships of the Western Fleet with maritime patrol aircraft, and fleet auxiliaries are out at sea.

IAF, Navy chiefs brief PM as forces prepare response to Pahalgam Chief of Air Staff Air Chief Marshal A P Singh leaves after meeting with Prime Minister Narendra Modi, Sunday.

Defence sources said the Navy is well-positioned to act on any possible option as soon as the executive orders are given.

Meanwhile, Defence Minister Rajnath Singh, speaking at the Sanatan Sanskriti Jagran Mahotsav in New Delhi, said, "As Defence Minister, it is my duty to ensure the security of the country's

borders along with our soldiers. It is my duty to join our armed forces in giving a befitting reply ('muh tod jawab') to those who dare to cast an evil eye on our country."

"You all know Prime Minister Narendra Modi very well, you are familiar with his work style and determination. You are also aware of the risk-taking ability he has learnt in life. I want to assure you that under the leadership of Prime Minister Modi, what you wish, will happen ('jaisa aap chahate hain, vaisa ho kar rahega')," Singh said.

The one-on-one conversations of the IAF and Navy chiefs with the Prime Minister follow the meeting of the military brass at the PM's residence on April 29 where Modi was quoted saying that the armed forces have "complete operational freedom to decide on the mode, targets and timing of our response" to the Pahalgam terror attack.

Reposing "complete faith and confidence in the professional abilities of the armed forces", Modi said it is "our national resolve to deal a crushing blow to terrorism".

The meeting was attended by Defence Minister Singh, National Security Advisor Ajit Doval, Chief of Defence Staff General Anil Chauhan, Army chief General Upendra Dwivedi, IAF chief Air Chief Marshal Singh and Navy chief Admiral Tripathi.

Officials said individual meetings of the service chiefs and the PM allow a free and frank exchange of inputs.

"Such meetings provide space for discussion of specific targets and objectives, emergency requirements, service-specific likely challenges, and genuine timelines," an official told The Indian Express.

These developments have prompted Pakistan to place its troops on high alert along the Line of Control. Sources said there were inputs that around 30 per cent of troops of its frontline units would remain deployed at forward posts.

The inputs stated that the Pakistan Army had also kept detachments of heavy weapons ready, and stepped up its air defences in recent days while carrying out reinforcement of troops.

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Underwater breathing gadgets enhance survivability of tank crew during deep fording operations

Source: The Tribune, Dt. 04 May 2025,

URL: <https://www.tribuneindia.com/news/india/underwater-breathing-gadgets-enhance-survivability-of-tank-crew-during-deep-fording-operations/>

The survivability of Indian Army's T-90 tank crew is getting a boost with the induction of underwater breathing equipment for emergency use when the tank is submerged while undertaking fording operations. Known as Individual Under Water Breathing Apparatus (IUWBA), it can be worn by each crew member to escape if a tank gets stuck underwater while negotiating obstacles. The equipment is categorised as a "dual-use" technology, implying that it can also be used by the civilian sector.

The technology of IUWBA had been transferred by the Defence Research and Development Organisation (DRDO) to six industries for commercial production. A contract for production of an initial batch of 947 sets for the Army has already been concluded. Another 3,080 sets are expected to be procured subsequently.

The system has been designed for enabling the T-90 crew for safe escape from the T-90 tank in the event of an emergency situation like tank stalling or the engine switching off during deep fording up to a depth of five metres.

In such a situation, where the crew is unable to restart the engine or free the vehicle from entanglement, there is no alternative for the crew except to flood the tank and escape via the cupola or hatch, according to DRDO officials.

The induction assumes significance in light of an incident in Ladakh last year, when five soldiers were killed after their T-90 tank got stuck while crossing a river. The crew had been marooned for over five hours and after the incident, the Army had reviewed its operating procedures and rescue protocols in such situations. The high velocity of the water was also an issue in Ladakh.



The T-90 has a three-member crew and like most Russian main battle tanks, has the capability to undertake fording operations, for which certain preparations like setting up snorkel for ensuring air supply for the engine and crew when underwater, are required to be carried out in the field.

IUWBA has been developed by DRDO's Defence Bio-engineering and Electromedical Laboratory (DEBEL), an establishment engaged in research in the field of life sciences and personal equipment.

A light-weight modular system weighing about 5 kg, it is capable of providing breathing support up to 60 minutes at a depth of five metres. It regenerates oxygen from the carbon dioxide exhaled by the user.

The Defence Acquisition Council (DAC), chaired by the then defence minister, Nirmala Sitharaman, accorded approval for "progressing the design and development of IUWBA for T 90 tanks", along with several other procurements.

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IAF to get pseudo satellites, Army missile system

Source: The Tribune, Dt. 04 May 2025,

URL: <https://www.tribuneindia.com/news/nation/iaf-to-get-pseudo-satellites-army-missile-system/>

The Indian Air Force will be acquiring “pseudo satellites” capable of providing communication, conducting surveillance and acting as a data relay system between aircraft and ground stations. Additionally, the Indian Army will get 48 launchers of the very short range air defence system (VSHORADS), along with 85 missiles and 48 night-vision sights.

Although these purchases coincide with heightened tensions between India and Pakistan, there will be no immediate impact on military readiness, as the acquisition process will take several months.

The Ministry of Defence (MoD) has sought pseudo satellites, referred to as high-altitude platform systems (HAPS). These solar-powered systems function as long-endurance unmanned aerial vehicles (UAVs or drones) and do not require refuelling. Unlike conventional rooftop solar panels, the ones used to power these aircraft are made of extremely thin solar films.

HAPS operate at altitudes higher than traditional drones but lower than low Earth orbit satellites, providing a satellite-like view for extended periods.

The MoD issued a request for information (RFI), a step in the tender process, seeking three such platforms for the IAF and has invited domestic manufacturers to bid. The RFI states that these are needed for ‘persistent intelligence, surveillance, and reconnaissance (ISR)’ as well as airborne data relay for other unmanned platforms while intercepting adversary electronic signals.

The MoD requires the system to operate at an altitude of 16 km (16,000 metres). For context, Mount Everest stands at 8,849 metres, while long-haul international flights typically cruise at around 10,000 metres. Additionally, the HAPS should be capable of clear line-of-sight communication up to 150 km and at least 400 km when communicating with satellites.

Last year, the Navy signed a deal with Bengaluru-based NewSpace Research & Technologies (NSRT) to design and develop a domestically built HAPS. The MoD had funded this research under its Innovations for Defence Excellence (iDEX) initiative.

Separately, the MoD has issued a request for proposal, another step in the tendering process, for new-generation VSHORADS. These are man-portable anti-aircraft missiles designed to counter low-flying adversary aerial platforms.

VSHORAD systems are used by forward field formations and serve as the last line of defence in a multi-layered air defence mechanism to neutralise incoming threats.

The MoD seeks a man-portable launcher capable of engaging airborne threats during both day and night operations. The missile should be effective at distances of up to 6,000 metres.

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China may only offer surveillance support to Pak

Source: The Tribune, Dt. 03 May 2025,

URL: <https://www.tribuneindia.com/news/india/china-may-offer-surveillance-support-to-pak/>

Amid heightened tensions following the April 22 Pahalgam terror attack, Indian military planners are evaluating a range of calibrated options for retaliation. As anticipation builds, intelligence inputs suggest China may support Pakistan by providing live satellite and UAV surveillance feeds — though it is expected to stop short of direct intervention.

Such surveillance could enhance Pakistan's real-time battlefield awareness, potentially aiding its response strategies. However, historical precedent shows China has refrained from military involvement during past Indo-Pak conflicts, including the Kargil War in 1999 and the 1971 war. The strategic equation has evolved since, with the launch of the China-Pakistan Economic Corridor and increased Chinese military hardware now in Pakistani hands — ranging from fighter jets and warships to air defence systems and rifles.

India's military options remain wide-ranging, including precision missile strikes on terror infrastructure in Pakistan-occupied Kashmir (PoK), using systems like the BrahMos with 300-km range capable of penetrating air defences.

India could also employ concentrated artillery fire on terror camps and infrastructure in PoK, providing cover for special forces to carry out targeted operations at selected locations.

India has conducted extensive naval drills, including exercises simulating long-range precision strikes. The Indian Air Force also possesses multiple strike options, particularly with Rafale jets equipped with long-range missiles capable of engaging ground targets with high accuracy.

The strategy is to retain strategic ambiguity — keeping the adversary guessing. Past precedents like the 2016 surgical strikes and the 2019 Balakot airstrike underscored India's ability to surprise.

Meanwhile, Pakistan has launched simultaneous military exercises across domains and deployed a significant number of tanks facing Rajasthan. Pakistan army Chief General Asim Munir addressed troops near the frontier today. He warned of a strong escalation if India launches an attack.

Pakistan has already escalated tensions with repeated, indiscriminate ceasefire violations along the Line of Control, largely during night-time. These are seen as attempts to shield cross-border terrorist activity. Indian positions have responded with precision, aiming to deter without escalating.

India's response so far remains a blend of diplomatic pressure, economic levers and measured military readiness. The message, however, is clear: those behind the Pahalgam attack will face decisive consequences, at a time and manner of India's choosing.

On April 29, the Cabinet Committee on Security, chaired by Prime Minister Narendra Modi, granted the Chief of Defence Staff and the three Service Chiefs full autonomy to decide the time, target and method of retribution.

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Indian Navy's "Trident Of Power" Post Follows "Combat-Ready" Message

Source: NDTV, **Dt.** 03 May 2025,

URL: <https://www.ndtv.com/india-news/above-below-and-across-waves-indian-navys-trident-of-power-post-amid-india-pakistan-tensions-post-pahalgam-terror-attack-8318477>

The Indian Navy on Saturday shared a picture featuring a surface ship, a submarine, and a helicopter, calling it the "trident of Naval Power".

The picture, posted on X, shows the destroyer INS Kolkata, the Dhruv Advanced Light Helicopter (ALH), and a Scorpene-class submarine.

"The trident of Naval Power - Above, below and across the waves," the Navy wrote.

The picture, which has now gone viral, is likely a file photo as Dhruv ALH is presently grounded in the Navy.

The post came amid heightened tensions between India and Pakistan over the deadly terror attack in Jammu and Kashmir's Pahalgam on April 22.

India, citing "cross-border linkages" to the attack that left 26 people dead, has announced a raft of punitive measures against Pakistan, including suspension of the Indus Waters Treaty, shutting down of the only operational land border crossing at Attari and downgrading of diplomatic ties.

Last week, Prime Minister Narendra Modi said the "perpetrators and conspirators" of the Pahalgam attack will be "served with the harshest response".

"The whole world stands with 140 crore Indians in our fight against terrorism. I once again assure the affected families that they will get justice, and justice will be done," he said in his 'Mann ki Baat' address.

"The perpetrators and conspirators of this attack will be served with the harshest response," he added.

Indian Navy's Message With Arabian Sea Warship Visuals

Last week, the Navy also shared visuals of Indian warships conducting multiple anti-ship firings in the Arabian Sea, demonstrating their preparedness for long-range precision strikes.

Multiple visuals of BrahMos anti-ship and anti-surface cruise missiles being fired from warships in the middle of the sea were shared by the Navy on X.

These warships included Kolkata-class destroyers, and Nilgiri and Krivak-class frigates.

"Indian Navy Ships undertook successful multiple anti-ship firings to revalidate and demonstrate readiness of platforms, systems, and crew for long-range precision offensive strike. Indian Navy stands combat-ready, credible, and future-ready in safeguarding the nation's maritime interests Anytime Anywhere Anyhow," the Navy said on X.

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Pakistan conducts training launch of surface-to surface ballistic missile amid rising tensions with India

Source: The Economic Times, Dt. 03 May 2025,

URL: <https://economictimes.indiatimes.com/news/defence/india-pakistan-tensions-may-go-ballistic-as-islamabad-prepares-to-test-fire-surface-to-surface-ballistic-missiles/articleshow/120843594.cms>

Pakistan's military announced Saturday that it carried out a training launch of a surface-to-surface missile system. The test comes at a time of heightened tensions with India, according to AFP. The military stated that the Abdali Weapon System, a surface-to-surface missile with a range of 450 kilometers, was successfully launched.

The surface-to-surface missile has a range of 450 kilometres (about 280 miles), the Pakistani military said.

According to the statement, the purpose of the launch was aimed at ensuring the “operational readiness of troops and validating key technical parameters,” including the missile’s advanced navigation system and enhanced manoeuvrability features, according to a statement from the military.

The Pakistani army said the missile launch was part of "Exercise INDUS" without giving details about the exercise, as reported by PTI.

The training launch was witnessed by the Commander Army Strategic Forces Command, senior officials from the Strategic Plans Division, Army Strategic Forces Command, as well as scientists and engineers from Pakistan's strategic organisations.

President Asif Ali Zardari, Prime Minister Shehbaz Sharif and services chiefs extended their congratulations to the participating troops, scientists, and engineers.

The move comes amid a sharp rise in tensions with India following the April 22 terror attack in Pahalgam, Jammu and Kashmir, which left 26 civilians dead.

“It is learnt that Pakistan is preparing to test-fire surface-to-surface ballistic missiles this week,” a senior government source told ANI. The source described it as “a reckless act of provocation and a dangerous escalation in its hostile campaign against India.”

Another official, speaking on condition of anonymity, said, “The planned missile test, under such volatile conditions, is a blatant provocation and a desperate attempt to whip up tensions with India.”

Gunfire, missiles and political rhetoric

The proposed missile test is just the latest in a series of aggressive manoeuvres from Pakistan, Indian officials say. Over the past ten days, Pakistan has issued four NOTAMs (Notices to Airmen), signalling missile test intentions. So far, none of those notifications have resulted in actual launches.

The first NOTAM came on April 23, just a day after the Pahalgam attack. It gave less than 24 hours’ notice but no missile was fired. Similar notifications followed on April 26–27 and again from April 30 to May 2, with locations alarmingly close to India’s Exclusive Economic Zone. Yet again, no missiles were launched.

Despite the lack of follow-through, officials in New Delhi believe the continued warnings are intended to intimidate. “This is not normal. It is calculated psychological coercion,” a senior Indian defence source said.

Ceasefire under fire, literally

Since January, Pakistani troops have violated the February 2021 ceasefire agreement around 15 times. But it was after April 22 that the shelling intensified. On Wednesday alone, Pakistani troops targeted Indian positions along both the Line of Control and the international border.

Unlike earlier incidents, which were localised and resolved through communication channels, the latest attacks have taken place across multiple sectors and with rising frequency.

The Indian military has been ordered to respond firmly. On Tuesday, Prime Minister Narendra Modi gave the armed forces “complete operational freedom” to decide how, when, and where to respond. He also vowed a “crushing blow to terrorism”.

Diplomatic fallout deepens

India has taken a raft of measures since the Pahalgam attack. These include suspending visas for Pakistani nationals, ordering a reduction in staff at the Pakistani High Commission, closing the Attari land border, and moving to suspend the Indus Waters Treaty.

Pakistan, on its part, has pushed back. It has shut down its airspace to Indian carriers, halted trade—including via third countries—and called for an independent probe into the Pahalgam incident.

At a press briefing on Wednesday, Pakistan’s Deputy Prime Minister Ishaq Dar said, “We will not resort to any escalatory action but will respond very strongly to any such move by India.”

Beyond missile threats, Pakistan has also stepped up military exercises in the Arabian Sea. Officials say the combined effect of these moves—ceasefire violations, naval drills, and now a potential ballistic missile test—is part of a broader campaign to challenge India’s restraint.

New Delhi is taking these signals seriously. For many in India's defence establishment, the missile test represents not just a symbolic threat, but a potentially destabilising action in an already volatile theatre.

And in the backdrop, the memory of Pahalgam remains fresh—adding to the sense that this standoff may not cool anytime soon.

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Pakistani media spread fake news on Indian Armed Forces senior officials amid cross-border tensions: Sources

Source: The Economic Times, Dt. 03 May 2025,

URL: <https://economictimes.indiatimes.com/news/india/pakistani-media-spread-fake-news-on-indian-armed-forces-senior-officials-amid-cross-border-tensions-sources/articleshow/120847661.cms?from=mdr>

Amid the tensions due to Pahalgam attack, Pakistan-based media channels and certain social media handles started a "coordinated disinformation campaign" aimed at various Indian Armed Forces officials, amidst cross border tensions following India's swift and decisive response, sources said on Saturday.

Pakistan based channels and certain "troll networks" alleged that Lieutenant General DS Rana, Director General of the Defence Intelligence Agency had been "sacked" and "exiled" to Kala Pin Andaman and Nicobar Islands, after supposed operational lapses. However, Lieutenant General Rana had been promoted to being the Commander-in-Chief, Andaman and Nicobar Command (CINCAN), a tri-services command.

In another incident, certain Pakistan-based social-media handles alleged Lieutenant General MV Suchindra Kumar was "shunted out" of the Army's Northern Command due to "failures linked to the Pahalgam attack." However, Lt Gen Kumar had retired honourably on April 30, 2025, after 4 decades of distinguished service. The change of command had been notified well in advance.

A certain Pakistani-based account alleged that Vice Chief of the Air Staff, Air Marshal SP Dharkar, was "dismissed" from his post for "refusing to fight a war" against Pakistan.

However, Air Marshal Dharkar completed his tenure and superannuated on April 30 of this year, where he received a ceremonial guard-of honour and paid homage at the National War Memorial. Air Marshal Narmdeshwar Tiwari took over as the next Vice Chief of the Air Staff.

Sources have said that these allegations are part of a "pattern of deception," with each claim surfacing after a strong diplomatic response from India for the Pahalgam attack. The targets were specifically senior commanders in charge of intelligence, and other senior officials, meant to "sow doubts about India's preparedness," sources said. It has also been claimed that the stories were propagated by a group of ISI-linked social-media handles who are known to spread misinformation.

India's response was swift and reaffirmed the forces' Operational Continuity. The Headquarters Integrated Defence Staff, Ministry of Defence, issued swift clarifications on each of those stories to ensure no spread of misinformation happens domestically.

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Iran unveils new solid-fueled ballistic missile, state TV reports

Source: The Economic Times, Dt. 05 May 2025,

URL: <https://economictimes.indiatimes.com/news/defence/iran-unveils-new-solid-fueled-ballistic-missile-state-tv-reports/articleshow/120884573.cms>

Iran's defense ministry Sunday unveiled the country's latest solid-fueled ballistic missile, state TV reported, against a backdrop of threats from the United States over its nuclear program. TV showed the "Qassem Basir" ballistic missile during an interview with Defense Minister Gen. Aziz Nasirzadeh. He said it includes improvements in both guidance and maneuverability to overcome layers of defense and easily bypass anti-ballistic defense systems.

The missile was most recently tested on April 17. TV described the missile as having at least a 1,200-kilometer (745-mile) range. It also said the missile can identify and strike a designated target among multiple ones without GPS guidance and with pinpoint accuracy.

In reaction to a May 1 comment by Secretary of Defense Pete Hegseth on the platform X, in which he warns Iran about its support for the Houthis in Yemen, Nasirzade said if war is initiated by the US or Israel, Iran will strike their interests, bases and forces "wherever they are and whenever necessary."

Nasirzadeh added: "We have no hostility toward neighboring countries and seek brotherly relations, but in the event of an attack, US bases in the region will be considered legitimate targets."

Regarding a recent missile attack by Yemen's Houthis on Israel, Nasirzadeh said Yemen is an independent nation making its own decisions, and rejected U.S. attempts to link Iran to the conflict there. Tehran created its ballistic missile program after suffering through Iraqi Scud missile attacks in the Iran-Iraq war - and as a hedge against its Western-armed neighbors as embargos have kept it from accessing modern attack aircraft.

The missile announcement comes amid escalating tensions following the strike on Israel's Ben Gurion Airport by the Houthis. In response, Israeli Prime Minister Benjamin Netanyahu vowed significant retaliation against both the Houthis and their Iranian supporters. The incident marks a significant escalation in regional hostilities.

Meanwhile, indirect talks between Iran and the United States, which were scheduled for May 3 in Rome, were suspended last week. Iran's Foreign Ministry said the postponement came at the request of Oman's foreign minister, who has been mediating the negotiations. A new date has yet to be announced.

President Donald Trump has repeatedly threatened to unleash airstrikes targeting Iran's program if a deal isn't reached. Iranian officials increasingly warn that they could pursue a nuclear weapon with their stockpile of uranium enriched to near weapons-grade levels.

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Making F-35 & Eurofighter “Invisible”, UK Rolls Out ‘StormShroud’ Drones That Could Blind Enemy Radars

Source: The EurAsian Times,

Dt. 04 May 2025,

URL: <https://www.eurasiantimes.com/uks-stormshroud-will-protect-raf-fighters/>

The British Royal Air Force (RAF) has unveiled its first-ever Autonomous Collaborative Platform (ACP), StormShroud. It will operate in a manned-unmanned teaming (MUMT) format with crewed fighter jets, including the RAF F-35B Lightning II and Eurofighter Typhoons.

The StormShroud is the first of a new family of Autonomous Collaborative Platforms (ACP) that will fly alongside manned fighter jets to enhance their survivability and assist in air-to-air combat. It is essentially an electronic warfare (EW) drone that will protect RAF fighter jets by knocking out enemy air defences.

On May 2, the Royal Air Force said in a statement: “StormShroud will support RAF F-35B Lightning and Typhoon pilots by blinding enemy radars, which increases the survivability and operational effectiveness of our crewed aircraft.”

The service emphasized that the drone’s development has been based on the lessons learned from the grinding Ukraine War and other battlefields worldwide.



The RAF said: “The ACP Strategy is clear that the best way to optimise our strength against increasingly sophisticated adversaries is through a blend of crewed and uncrewed autonomous platforms operating together.” The service said that the StormShroud is a more adaptable, agile,

and cost-effective model that will reduce risks faced by human pilots in contested and hostile environments.

As per the RAF announcement, the StormShroud will be operated by 216 Squadron, supported by the RAF Regiment, and made up of Regular RAF and Royal Auxiliary Air Force (RAuxAF) personnel, alongside other UK Defence personnel. The troops will receive training on how to work in high-threat situations in small teams, the RAF stated.

The unveiling comes as advanced militaries worldwide are introducing loyal wingman-type drones that operate in tandem with crewed fighter jets.

What Do We Know About The StormShroud Drone?

According to the RAF, the StormShroud will conduct operations like Suppression of Enemy Air Defenses (SEAD) to aid its crewed partners. It will essentially render RAF jets “invisible” or more difficult to track by deceiving or jamming hostile radar systems. While other loyal wingman drones can perform EW ops, that is only one of the many other operations they conduct, unlike the StormShroud.

The StormShroud combines the Tekever AR3 uncrewed air system (UAS) and the Leonardo BriteStorm Electronic Warfare suite.



The StormShroud is based on the Tekever AR3 uncrewed air systems (UAS), which have been extensively deployed (and combat-proven) in Ukraine. With over 10,000 combat hours clocked in Ukraine, the AR3 is a tactical UAS known for its reliability and adaptability. Its endurance is about 16 hours, and it is known for being compact and lightweight.

The StormShroud drone will be equipped with Leonardo UK’s BriteStorm electronic warfare system. This system is a “stand-in jammer”—a small, platform-neutral system made to fly ahead of expensive, crewed combat aircraft. When deployed, it targets integrated air defense systems (IADS) by impairing the adversary’s radar tracking and targeting capability.

Mark Randall, Campaign Manager for Electronic Warfare at Leonardo, said in a previous interaction: “Platforms installed with a BriteStorm payload can deploy ahead to create confusion so that enemy IADS are unable to detect, track, and attempt to engage friendly assets. Due to the

evolution of near-peer IADS capabilities, friendly forces must use BriteStorm to ensure they remain protected.”

Unlike traditional stand-off jammers, which are mounted on large aircraft positioned far from the battlefield, Leonardo’s stand-in jammer is lightweight, small enough to fit on a drone, and inexpensive enough to be expendable.

The stand-in jamming approach reduces the need for high-power systems, making it more suitable for operations in closer proximity to enemy defenses. Thus, making it ideal for air combat with a near-peer adversary.

When BriteStorm detects an enemy radar signal, it digitally records the radar pulse, analyzes it, and responds with either advanced spoofing techniques or electrical jamming using Leonardo’s state-of-the-art Digital Radio Frequency Memory (DRFM) technology. This manipulation can produce dozens of “ghost” fighter jets and other bogus targets, making it hard for the opponent’s radars to tell the difference between actual and fake threats.

Additionally, its software-defined architecture allows real-time updates to counter evolving threats, a necessity given the rapid advancements in near-peer IADS.

The StormShroud was developed by the RAF’s Rapid Capabilities Office, the Defence Equipment & Support (DE&S) Catalyst team, Defence Science and Technology Laboratories (DSTL), and UK industry.

Notably, while these drones will operate alongside the F-35 and Typhoons, they will not be transported by these fighter jets. They will be fired from the ground using a portable catapult mechanism for which the crew is currently receiving training. As per reports, the Tekever AR3 can be configured for vertical take-off and landing (VTOL). However, the example displayed by the RAF did not seem to have that capability.

According to Tekever CEO Ricardo Mendes, the primary goal of the AR3 in its StormShroud configuration is to “carry the [BriteStorm] payload” and ensure that “it arrives, it survives where it’s needed,” particularly in “complex RF” conditions when several aircraft are deployed as a drone swarm.

The RAF intends to acquire a fleet of drones with differing levels of sophistication and cost. “The RAF is investing an initial £19 million into the cutting-edge drones, which are made in the UK and directly support 200 highly skilled engineering jobs at multiple UK locations already, from West Wales to Somerset, with further opportunities expected in the future.

StormShroud is just the first of a family of next-generation drones – known as Autonomous Collaborative Platforms (ACPs) – being delivered to the RAF,” a statement from the UK Prime Minister Keir Starmer’s office said.

Notably, while parallels have been drawn between the ACP and the US Collaborative Combat Aircraft (CCA), a key difference between the two is that the CCA will also carry additional weapons, whereas the StormShroud will only carry the EW suite. Additionally, the StormShroud is smaller and less survivable than the CCA.

In general, collaborative combat drones provide additional combat effects, supporting crewed aircraft by carrying extra air-to-air munitions, extending sensor coverage, and executing missions that would otherwise put human pilots at risk.

Unlike multi-role “loyal wingman” drones (e.g., U.S. Collaborative Combat Aircraft (CCA) or Australia’s Ghost Bat), the StormShroud is purpose-built for electronic warfare (EW), specifically Suppression of Enemy Air Defenses (SEAD). Its sole focus on EW, using the BriteStorm payload, distinguishes it from broader-capability drones that conduct ISR, precision strikes, or carry munitions.

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Biggest Test Awaits ‘Make In India’ Weapons As India, Pakistan Could Be Headed For A Limited War; Here’s A List To Watch Out For

Source: The EurAsian Times, Dt. 03 May 2025,

URL: <https://www.eurasiantimes.com/the-world-will-keenly-watch-the-performance/>

As war clouds loom over the South Asian subcontinent once again after the ghastly terror attack on tourists in Pahalgam, Jammu and Kashmir, it appears that India and Pakistan could be headed towards an armed clash.

Earlier, Pakistan’s Information Minister Attaullah Tarar warned that it had “credible intelligence” that New Delhi would launch a military strike in a few days. He said India could launch an attack and that “any such military adventurism by India would be responded to assuredly and decisively.”

The Indian Prime Minister, Narendra Modi, has given the Indian military “operational freedom” to decide on the mode, target, and timing of the response to the terror attack. Fearing an attack from the Indian military, the Pakistani military remains on high alert. Reports suggest that it has activated its air defenses, moved military equipment closer to the border with India, and launched military drills to project power.

Intermittent cross-border firing along the Line of Control (LOC) has been reported since the attack, and could easily intensify. Whether it will escalate into a limited or full-blown conflict remains to be seen. The sustained tensions between India and Pakistan are unlikely to snowball into a full-scale war. However, if a limited conflict breaks out, there would be a global spotlight on India’s indigenous weapons, especially the ones the country has exported to its allies.

Pinaka MLRS

India’s indigenously developed Pinaka Multiple Barrel Rocket Launch System has been projected as India’s equivalent to the HIMARS. It is well-suited for modern combat, as the launcher’s Shoot-and-Scoot capability enables it to evade counter-battery fire, a crucial requirement for survival in today’s drone-saturated battlefields. The Pinaka MBRL system consists of six launcher vehicles, each equipped with 12 rockets, six loader-replenishment vehicles, two command post vehicles integrated with a fire control computer, and a DIGICORA MET radar.



Enhanced PINAKA rocket, developed by the Defence Research and Development Organisation (DRDO), was successfully flight-tested from the Integrated Test Range, Chandipur, in Odisha on November 04, 2020.

The Pinaka Mk-1 is a free-flight artillery rocket area bombardment system with a range of 38 kilometers, quick reaction time, and a high rate of fire. A single Pinaka system fires 12 rockets from a multi-barrel launcher in 44 seconds, while a battery can fire 72 rockets. India is now developing an enhanced version of the rocket system with an increased range between 60 and 90 kilometers. The 214mm bore Pinaka Mk-1 rocket has a payload of 100 kilograms and can be fitted with various warheads, such as anti-tank mines and blast-cum-pre-fragmented high explosives. The system is already in service with the Indian Army and has also been exported to Armenia.

Akash Surface-To-Air Missile



The Akash short-range surface-to-air missile (SAM) system, developed by India's DRDO and manufactured by Bharat Dynamics Limited (BDL), is a robust air defense platform designed to

counter various aerial threats. The BDL website states that the Akash Weapon System (AWS) can simultaneously engage multiple targets in group or autonomous modes. The system is equipped with built-in Electronic Countermeasures (ECCM).

The entire weapon system is mounted on mobile platforms, which enhances its mobility and survivability. It could be easily moved in the mountainous region along the Line of Control (LoC). The Akash can effectively engage helicopters, fighter jets, and UAVs flying in the range of 4-25 kilometers.

The Indian Defense Research and Development Organisation (DRDO) claims that it is the first system in the world capable of engaging four aerial targets simultaneously at a distance of 25 kilometers by command guidance using a single firing unit. The weapon system can operate in fully automatic mode with a quick response time from target detection to kill.

Its open-system architecture ensures adaptability to existing and futuristic air defense platforms. Additionally, it is highly immune to active and passive jamming. It can be transported swiftly via rail or road and deployed quickly. In the event of a war, the Pakistan Air Force (PAF) fighter jets will have to steer clear of the formidable Akash SAM.

LCA Tejas

India's Light Combat Aircraft, Tejas, could see action if a clash erupts between India and Pakistan. Developed by Hindustan Aeronautics Limited (HAL) and the Aeronautical Development Agency (ADA), the LCA Tejas is a single-engine, 4+ generation fighter designed for air-to-air and air-to-ground roles.

First inducted in 2015, it has overcome early development challenges to become a reliable platform. As of May 2025, the IAF operates a limited number of Tejas Mk-1 aircraft, with 83 Mk-1A variants on order. With a speed of Mach 1.6, a combat range of about 500 kilometres, and a payload capacity of 3,500 kilograms, the Tejas-Mk1 could be used for air defense, maritime reconnaissance, and strike roles at the switch of a button.

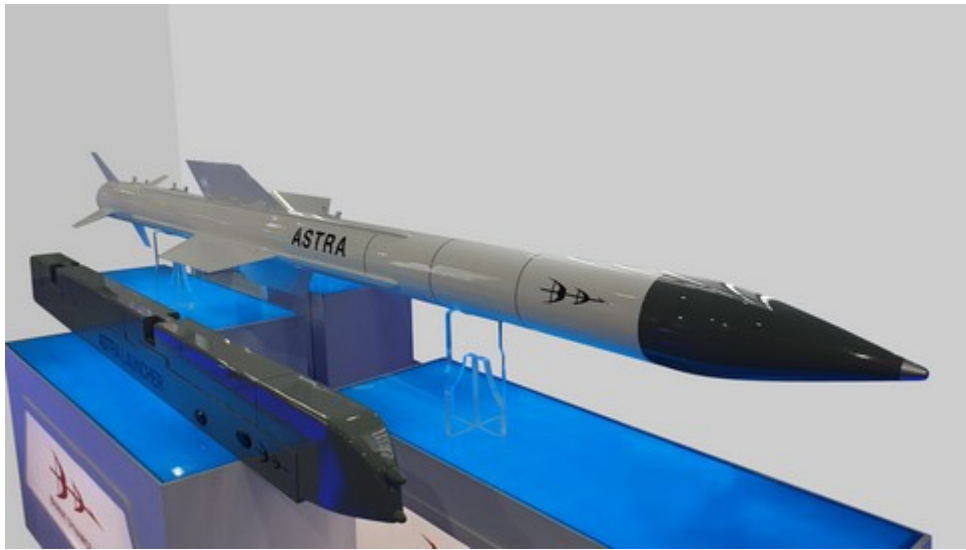
Tejas has been deployed to forward bases, including in Jammu and Kashmir. The IAF has about three squadrons of Tejas fighters, which could be quickly dispatched in case of a conflict with Pakistan. The IAF may deploy Tejas for air patrols or secondary strikes, reserving Rafale or Su-30 MKI for primary missions due to their longer range and payload. It will certainly be compared to the Chinese-Pakistani JF-17 Thunder.

Air Launched Missiles

The IAF fighter jets can carry a variety of indigenously developed missiles that will likely be used against the enemy. For instance, the Astra Mk-1 Beyond Visual Range Air-to-Air Missile (BVRAAM) boasts a range of approximately 110 kilometres. This missile can carry a 15-kilogram explosive and is compatible with Su-30MKI, Tejas, and MiG-29. At long ranges, it can engage a Pakistani JF-17 or F-16.

The other lethal missile that India can use in combat against Pakistan is the Rudram-II Anti-Radiation Missile, which can help the Su-30MKI in Suppression of Enemy Air Defenses (SEAD) by targeting enemy radar and communication systems at a range of around 150 kilometres. It could

help suppress Pakistani air defenses by targeting radar systems (e.g., those linked to HQ-9 SAMs or AEW&C ground stations), which could then be followed by a strike by another aircraft. The Su-30MKI can also fire the BrahMos, the Indo-Russian missile developed in India.

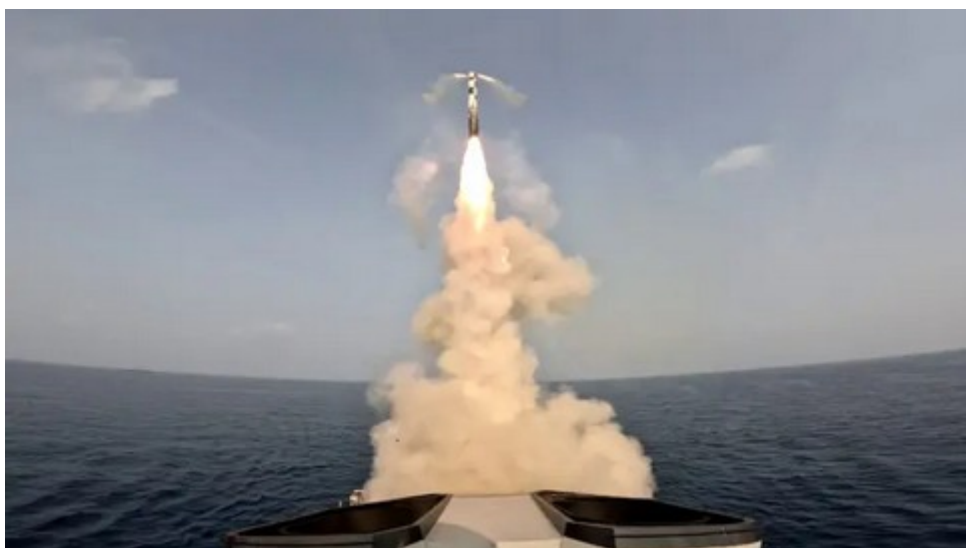


Astra (missile)

BrahMos Missile

BrahMos is a supersonic cruise missile jointly developed by India's Defence Research and Development Organisation (DRDO) and Russia's NPO Mashinostroyeniya. It is capable of reaching speeds up to Mach 3 and striking targets over 500 kilometers away. Thus, providing the lethal combination of range and speed. It is believed to be the world's fastest supersonic cruise missile. It can be launched from submarines, ships, aircraft, or land platforms. One of its special features is its ability to fly extremely low to the ground, avoiding missile defense systems.

In fact, during the terminal phase, the missile can fly as low as 10 meters above the ground. The air-launched variant of the BrahMos missile travels at Mach 3.5+ and is designed for precision strikes against ground and naval targets. It has been a key component of the Indian armed forces for several years. With its cutting-edge capabilities, the missile has made a significant impact in the export market, particularly in Southeast Asia.



BrahMos Missile

The Philippines became the first buyer of the missile when it signed a US\$375 million deal with India for three batteries of the shore-based, anti-ship variant of the BrahMos missile for its naval forces. The missile has since been offered to other countries in the region, and reports suggest that Malaysia, Indonesia, and Vietnam have shown interest.

The surge in demand for the BrahMos missile underscores Southeast Asian nations' strategic recalibration as they bolster their arsenals in response to China's military expansion in the South China Sea and the Western Pacific. If BrahMos is put into action, Pakistan has nothing in its arsenal to intercept the deadly missiles.

Combat Helicopters

India has two indigenously developed helicopters that will likely see action against Pakistan: the Advanced Light Helicopter (ALH) in Dhruv and Rudra variants, and the Light Combat Helicopter (LCH) Prachand. The ALH Dhruv, now cleared for operations, is primarily a utility helicopter. It can be used for transporting troops, reconnaissance missions, and indirectly aiding SEAD and air superiority missions. The ALH Dhruv has been designed to operate in high-altitude environments, which will benefit any combat against Pakistan.



An Advanced Light Helicopter carries an ATV in an underslung configuration to enhance operational and logistic stamina in forward areas.

The LCH Prachand is a dedicated attack helicopter developed indigenously to meet the Indian Armed Forces' need for a high-altitude, multi-role combat platform. The Prachand features an arrow fuselage with stealth characteristics that enable high-altitude performance. Its service ceiling is 21,000 ft (6,500 m), and operations are at 5,000 m (16,400 ft) with a significant payload.

The Prachand is equipped with a versatile weapons suite for air-to-air, air-to-ground, and anti-tank roles. This Indian chopper could support SEAD missions by targeting radar and launchers, clearing paths for Su-30MKI/Tejas strikes with Astra Mk-1 (air-to-air) and BrahMos (air-to-ground) missiles.

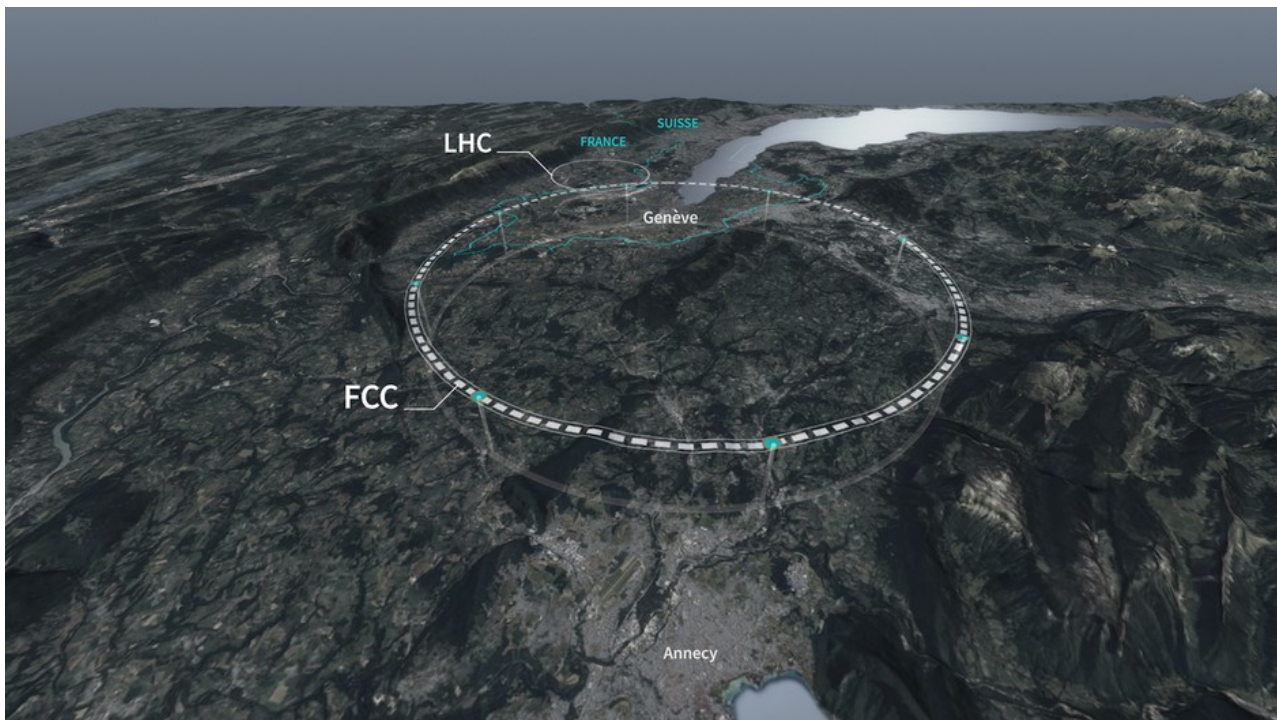
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Science & Technology News

Why do scientists want to spend billions on a 70-year project in the Swiss Alps?

Source: The Hindu, Dt. 02 May 2025,

URL: <https://www.thehindu.com/sci-tech/science/why-do-scientists-want-to-spend-billions-on-a-70-year-project-in-the-swiss-alps/article69529396.ece>



The planned Future Circular Collider would occupy a tunnel 91 kilometres long, dwarfing the 27-kilometre Large Hadron Collider

The Large Hadron Collider has been responsible for astounding advances in physics: the discovery of the elusive, long-sought Higgs boson as well as other new exotic particles, possible hints of new forces of nature, and more.

Located at the European Organization for Nuclear Research (CERN) on the border of France and Switzerland, the LHC is expected to run for another 15 years. Nevertheless, physicists are already planning what will come after it.

One of the most favoured proposals for CERN's next step is the 70-year Future Circular Collider (FCC) project. More than three times the size of the LHC, this enormous proposed machine promises to resolve some mysteries of the universe – and undoubtedly reveal some new ones.

What will the FCC do?

The LHC, which occupies a circular tunnel 27 kilometres in circumference, is currently the largest machine in the world. The FCC would be housed in a much larger 91km tunnel in the Geneva basin between the Jura mountains and the Alps.

The first stage of the FCC would be the construction and operation of a collider for electrons (the lightweight particles that make up the outer shell of atoms) and positrons (the antimatter mirror images of electrons). This collider would allow more precise measurements of the Higgs boson.

The second stage would be a collider for protons (heavier particles found in the cores of atoms). The LHC already collides protons, but the new collider would accelerate the protons up to more than seven times as much energy.

This increase in collision energy allows for the discovery of particles never produced by humanity before. It also brings with it technical challenges, such as the development of high-powered superconducting magnets.

Known unknowns

The most high-profile result from the LHC has been the discovery of the Higgs boson, which lets us explain why particles in the universe have mass: they interact with the so-called Higgs field which permeates all of space.

This was a great victory for what we call the Standard Model. This is the theory that, to the best of our current knowledge, explains all the fundamental particles in the universe and their interactions. However, the Standard Model has significant weaknesses, and leaves some crucial questions unanswered.

The FCC promises to answer some of these questions. For example, we know the Higgs field can explain the mass of heavy particles. However, it is possible that a completely different mechanism provides mass to lighter particles. We also want to know whether the Higgs field gives mass to the Higgs boson itself. To answer these Higgs questions we will need the higher energies that the FCC will provide.

The FCC will also let us take a closer look at the interactions of very heavy quarks. (Quarks are the tiniest components of protons and some other particles.) We hope this may shed light on the question of why the universe contains so much more matter than antimatter.

And the FCC will help us look for new particles that might be dark matter, a mysterious substance that seems to pervade the universe. Of course, there is no guarantee that the FCC will provide the answers to these questions. That is the nature of curiosity-driven research. You know the journey,

but not the destination. Competing colliders The FCC is not the only major particle physics project under consideration.

Another is a proposed 20-kilometre machine called the International Linear Collider, which would likely be built in Japan. The US has several projects on the go, mainly detectors of various kinds. It also supports an “offshore Higgs factory”, located in Europe or Japan.

One project that may concern the FCC’s backers is the planned 100 kilometre Chinese Electron Positron Collider (CEPC), which has significant similarities to the FCC. This poses a dilemma for Europe: if China goes ahead with their project, is the FCC still worthwhile? On the other hand, CERN chief Fabiola Gianotti has argued that the FCC is necessary to keep up with China.

High costs The decision on the FCC won’t be taken lightly, given the large cost associated with the project.

CERN estimates the first stage will cost 15 billion Swiss francs (around US\$18 billion or A\$28 billion at current exchange rates), spread out over 12 years. One third of this cost is the tunnel construction. The size of the sum has attracted criticism. However, a CERN spokesperson told the Agence France-Press that up to 80% of the cost would be covered by the organisation’s current annual budget.

The second stage of FCC, which would reuse the 91km tunnel as well as some existing LHC infrastructure, is currently estimated to cost 19 billion Swiss francs. This costing carries a large uncertainty, as the second stage would not be commissioned until 2070 at the earliest.

Benefits beyond science Pure science has not been the only benefit of the LHC. There have been plenty of practical technological spinoffs, from medical technology to open and free software. One specific example is the Medipix chips developed for a detector at the LHC, which are now used across multiple areas in medical imaging and material science.

For the past 70 years, CERN has served as a fantastic model for peaceful and efficient international collaboration. Beyond its astonishing scientific output, it has also produced significant advances in engineering that have spread through society. Building the FCC will be an investment in both technology and curiosity.

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UoH faculty member elected as Fellow of Royal Society of Chemistry

Source: The Hindu, Dt. 02 May 2025,

URL: <https://www.thehindu.com/news/cities/Hyderabad/uoh-faculty-member-elected-as-fellow-of-royal-society-of-chemistry/article69530082.ece>

G.S. Vaitheeswaran from University of Hyderabad’s (UoH) School of Physics has been elected as a Fellow of the prestigious Royal Society of Chemistry for his contributions to understanding the electronic structure of solids, particularly in the field of energetic materials.



The fellowship will enable Prof Vaitheeswaran to expand his research network and collaborations with universities worldwide, facilitating international funding and participation in conferences. He has received several notable awards, including the DAE Young Achiever Award, B.M. Birla Science Prize in Physics, and the Chancellor Award for Excellence in Teaching and Research, as per a press release on Friday (May 1, 2025).

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Do public-funded R&D units innovate enough? | Explained

Source: The Hindu, Dt. 05 May 2025,

URL: <https://www.thehindu.com/sci-tech/science/do-public-funded-rd-units-innovate-enough-explained/article69535543.ece>

The story so far: The office of the Principal Scientific Adviser to the Government of India, Confederation of Indian Industry (CII) and the Centre for Technology, Innovation, and Economic Research have released a detailed assessment of public-funded research and development in India. In all, 244 R&D organisations, affiliated to various ministries, participated in the study, ‘Evaluation of Innovation Excellence Indicators of Public Funded R&D Organizations’. However, scientific institutions such as those belonging to defence research, space, and atomic energy research, which make up the dominant share of India’s overall R&D spend, were excluded from the study, due to the “sensitive nature” of their work. Academic institutions and universities also weren’t part of the study.

The survey was administered via an online questionnaire and was designed to capture the contributions of public-funded R&D organisations in areas critical to India’s growth. The key question that the authors of the report sought to answer was whether these labs were largely engaged in curiosity-driven academic science, or geared towards developing products and new innovations that aligned with the demands of industry. The authors sought to “capture and evaluate” innovation indicators of public-funded R&D labs/institutes. “The analysis and recommendations in this report were meant to guide the public-funded R&D labs/institutes to

increase their contributions meaningfully towards a number of Sustainable Development Goals and national priorities through their research capabilities, to help the nation navigate various challenges on the socio-economic front, from health challenges to ensuring a more diverse scientific base through opportunities for women scientists, and finally to contribute to skilling and creating meaningful employment by working alongside industry and startups,” the study noted.

How was it conducted?

These big-picture questions were broken down into 62 parameters. These included questions on the labs’ annual spend on R&D, number of young scientists, patents filed, technologies developed, participation of women scientists and their contribution to ‘national missions’ such as the ‘Deep Ocean Mission,’ ‘National Quantum Mission’ etc. Labs/institutes self selected themselves as ‘Basic, Applied or Services’ or as ‘hybrid’ — a lab/institute whose research straddles more than one of the three research categories of basic, applied and services. All the data submitted by the labs/institutes were accompanied with the director’s sign-off indicating that the submitted data was authentic and valid.

What were the key findings?

A significant finding was that only about 25% of the labs surveyed gave incubation support to startups and only 16% provided support to ‘deep tech’ startups. Only 15% collaborated with industry overseas and only half of them opened their facilities to researchers and students from outside. About half the labs/institutes contributed to national policies and developing technologies targeting the ‘Make in India’ initiative. The Skill India Mission was being targeted by around 35% of the organisations while around 30% of the organisations said they were targeting the Swachh Bharat Mission. A large number of labs/institutes reported a decrease in the number of permanent staff in 2022-23 compared to the previous year and an increased reliance — from 17,234 to 19,625 — on contractual staff. The median share of young researchers increased in 2022-23 to around 58% from 54% in the previous year. The combined budget of 155 labs/institutes increased from ₹9,924 crore in 2017-18 to ₹13,162 crore in 2022-23. The total number of scientific staff and the share of women scientists within scientific staff remained stagnant across 2021-2023.

Does the report make recommendations?

As part of its recommendations, the report advocates that every lab should be “mandated to review their existing mandates” and align themselves to ‘Viksit Bharat.’ The mandate is to focus on “critical technologies” as directed by the government, and that public-funded R&D organisations must adopt this strategy on a “war footing”. They should work closely with industry, as well as each other. The report recommends setting up of Section 8 companies (non profit organisations registered under the Ministry of Corporate Affairs) to provide support to startups, opening research and testing facilities and, improving cross-linkages with higher educational institutes.

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