

CONTENTS

S. No.	TITLE	Page No.
DRDO News		1-4
DRDO Technology News		1-4
1.	DRDO ने बनाई पनडुब्बी से छोड़ी जाने वाली घातक मिसाइल, 500 किलोमीटर दूर भेद सकती है लक्ष्य	एन डी टी वी 1
2.	What is 'Daksh', DRDO ROV Employed in Uttarakhand Tunnel Collapse Rescue Op?	<i>Hindustan Times</i> 1
3.	एक साल में बन जाएगा Tejas Mk-2 फाइटर जेट, चार साल में शामिल होगा सेना में ... जानिए इसकी ताकत	आज तक 2
4.	India to Develop LCA Mark2, AMCA Engines at Home: What we Know so far	<i>News Nine</i> 3
Defence News		4-13
Defence Strategic: National/International		4-13
5.	Launch of Missile cum Ammunition (MCA) Barge, LSAM 10 (YARD 78)	<i>Press Information Bureau</i> 4
6.	Raksha Mantri Shri Rajnath Singh Holds Bilateral Talks with his Australian Counterpart Mr Richard Marles in New Delhi	<i>Press Information Bureau</i> 5
7.	India, Australia 2+2 Talks Focus on Defence, Regional Security	<i>Hindustan Times</i> 6
8.	Army Chief Bolsters India-Korea Defence Bonds on Historic Anniversary	<i>Financial Express</i> 8
9.	Anna University-developed Drones to Ferry 50-Kg Payload into Risky Terrains for the Army	<i>The Hindu</i> 8
10.	In Kargil, 336 Unexploded Shells Destroyed this Year	<i>The Tribune</i> 9
11.	From Defence Ties to iCET, US Envoy Eric Garcetti Explains Value of India-US Ties	<i>ANI</i> 10
12.	Can Pakistan's Ababeel Nuclear Missile Counter India's Air Defence System?	<i>India Today</i> 11
13.	Australian Army Test-fires NASAMS	<i>Janes</i> 13
Science & Technology News		13-14
14.	After Chandrayaan-3's Success, ISRO Prepares for Chandrayaan-4 Lunar Mission: All about it	<i>The Times of India</i> 13

*Mon, 20 Nov 2023*

DRDO ने बनाई पनडुब्बी से छोड़ी जाने वाली घातक मिसाइल, 500 किलोमीटर दूर भेद सकती है लक्ष्य

डीआरडीओ ने पनडुब्बी से छोड़ी जाने वाली एक घातक मिसाइल तैयार की है, जिसकी मारक क्षमता 500 किलोमीटर तक है। इसी साल फरवरी महीने में डीआरडीओ ने इसका गुप्त परीक्षण किया था, जिसमें मिसाइल ने 402 किलोमीटर दूर लक्ष्य को सफलतापूर्वक भेद दिया था। इसने परीक्षण के दौरान हर मिशन को पूरा किया। इसे एसएलसीएम यानि सबमरीन लांच क्रूज मिसाइल भी कहा जाता है।

बताया गया है कि इसके रेंज को 500 किलोमीटर तक बढ़ाया जा सकता है।

ये मिसाइल 5.6 मीटर लंबी, इसका व्यास 505 मिलीमीटर और स्पीड 0.7 मैक, यानि कि 864 किलोमीटर प्रतिघंटा है। ये मिसाइल तारपीडो ट्यूब से छोड़ी जाती है। ये दुनिया की इकलौती मिसाइल है जिसकी रेंज 500 किमी तक है और जो तारपीडो ट्यूब से छोड़ी जाती है। इस मिसाइल के दो वेरियंट हैं। एक जमीन पर हमला करने वाला, तो वहीं दूसरा एन्टी शिप मिसाइल। ये दुश्मन की पकड़ में भी नहीं आती है। वहीं इसका निशाना भी अचूक है।

भारत के पास अभी एक परमाणु, तो करीब 16 सामान्य पनडुब्बी है। अब समंदर के रास्ते दुश्मन कोई भी हरकत करने से पहले सोचेगा। क्योंकि अब भारत के पास पनडुब्बी से मार करने वाली खतरनाक मिसाइल आ गई है।

<https://ndtv.in/india/drdo-has-made-a-missile-to-be-launched-from-a-submarine-can-hit-a-target-400-kilometers-away-4589478>

*Mon, 20 Nov 2023*

What is 'Daksh', DRDO ROV Employed in Uttarakhand Tunnel Collapse Rescue Op?

Rescue operations continued on Monday at the Uttarakhand tunnel collapse site in Uttarkashi district. To help the authorities in the evacuation of 41 workers stranded inside the partially collapsed tunnel, the Defence Research Development Organisation's robotics team has employed the Remotely Operated Vehicle (ROV) Daksh. The equipment is specifically designed for use on a motorized pan-tilt platform, which can help reach the risky terrain.

What is ROV Daksh?

The Remote Operated Vehicle (ROV) – Daksh – is a versatile tool used for detecting and managing improvised explosive devices (IEDs), surveying nuclear and chemical contamination and handling hazardous objects, according to DRDO.

It has ladder climbing abilities and can function for three continuous hours, with the capability to operate over distances exceeding 100 to 500 metres. It serves the bomb disposal units (BDU) of army, police, and paramilitary forces, aiding in handling IEDs and other dangerous substances. The ROV Daksh features a motorized pan-tilt platform and can be controlled remotely within a 500-meter range.

Its manipulator arm can handle hazardous objects weighing up to 20kg from 2.5 meters and 9kg from 4 metres away. Daksh demonstrates the ability to climb stairs and maneuver steep slopes, with durable rubber wheels capable of withstanding blast impacts.

It can tow suspicious platforms and operate continuously for three hours once fully charged. It is equipped with multiple cameras, IED handling tools, nuclear biological chemical (NBC) reconnaissance systems, a master control station (MCS), and a shotgun.

The ROV Daksh, along with the MCS, is transported using a specially designed carrier vehicle for deployment and mobility.

Other organisations working at the tunnel site

The trapped workers have been receiving essentials through a 4-inch compressor pipeline. They have been getting supplies like chickpeas, puffed rice, dry fruits and medications.

The National Highways & Infrastructure Development Corporation Limited (NHIDCL) is currently installing a new 6-inch pipeline for food supply. They have completed drilling 39 metres out of 60, with plans to continue from the Silkyara end once safety measures are ensured.

Rail Vikas Nigam Limited (RVNL) is working on a separate vertical pipeline for essential supplies. To support this initiative, the Border Roads Organisation (BRO) has finished constructing an access road for RVNL's convenience.

Meanwhile, the Tehri Hydroelectric Development Corporation (THDC) is set to commence micro tunneling from the Barkot end, having mobilised heavy machinery. Sutlej Jal Vidyut Nigam Limited (SJVNL) will undertake vertical drilling to aid in the rescue of the trapped laborers.

To support these operations, equipment has been brought in from Gujarat and Odisha.

Oil and Natural Gas Corporation (ONGC) has initiated preliminary work for vertical drilling from the Barkot end, with BRO already underway in constructing an access road to mobilise machines for ONGC and SJVNL.

<https://www.hindustantimes.com/india-news/what-is-daksh-drdo-rov-employed-in-uttarakhand-tunnel-collapse-rescue-op-101700472107993-amp.html>



Mon, 20 Nov 2023

एक साल में बन जाएगा Tejas Mk-2 फाइटर जेट, चार साल में शामिल होगा सेना में ... जानिए इसकी ताकत

भारतीय रक्षा अनुसंधान संगठन (DRDO) के चेयरमैन डॉ. समीर वी. कामत ने बताया कि बहुत जल्द भारत में अमेरिकी कंपनी GE के इंजन बनने लगेंगे. इसके लिए अमेरिका से सारे क्लियरेंस मिल चुके हैं. यहां पर ही भारत के अगले हल्के लड़ाकू विमान तेजस-मार्क 2 (LCA Tejas Mark 2) के इंजन बनेंगे.

इंजन बनने के साथ ही एक साल में इस फाइटर जेट का पहला प्रोटोटाइप बनकर तैयार हो जाएगा. इसके बाद चार साल में इसे भारतीय वायुसेना में शामिल भी किया जा सकता है. आइए जानते हैं इस आधुनिक मीडियम वेट फाइटर (MWF) की ताकत. इसमें कौन से हथियार होंगे? किस तरह का राडार होगा? कितनी रेंज होगी?

तेजस मार्क 2 में नाइट विजन चश्मे से जुड़ा हुआ कॉकपिट होगा. यानी रात के समय या अंधेरे में भी इस फाइटर जेट से दुश्मन टारगेट पर हमला किया जा सके. इसमें HOTAS यानी हैंड्स ऑन थ्रॉटल-एंड-स्टिक की व्यवस्था होगी. यानी जिस लीवर से फाइटर जेट कंट्रोल किया जाएगा, उसी से हथियार भी चलेंगे. इसके 10 स्क्वॉड्रन बनाए जाएंगे. ताकि जगुआर, मिराज-2000 और मिग-29 फाइटर जेट्स के पुराने फ़ीट को खत्म किया जाए.

अमेरिका का इंजन देश में बनेगा, उसी से होगी पूरी उड़ान

इस फाइटर जेट को एक या दो पायलट मिलकर उड़ाएंगे. 48.1 फीट लंबे फाइटर जेट की ऊंचाई 16 फीट होगी. विंगस्पैन 27.11 फीट होगी. यह 17,500 किलोग्राम वजन लेकर टेकऑफ कर पाएगा. इसमें लगने वाला इंजन GE-F414 इंजन लगाया जाएगा, जिसकी वजह से इसे 98 किलोन्यूटन की ताकत मिलेगी.

2223 km प्रतिघंटा की रफ्तार से चीरेगा आसमान

यह अधिकतम 2223 किलोमीटर प्रतिघंटा की रफ्तार से उड़ेगा. इसकी रेंज करीब 2500 किलोमीटर होगी. अधिकतम 56,758 फीट की ऊंचाई तक उड़ान भर पाएगा. इस फाइटर जेट में 30 मिलिमीटर की एक GSh-30-1 गन लगी होगी. यह गन एक मिनट में 1500-1800 गोलियां दाग सकती है. जिसकी रेंज 200 से 1800 मीटर होगी.

एक से एक घातक हथियारों से किया जाएगा लैस

इस गन के अलावा इस फाइटर जेट पर 13 हार्डप्वाइंट्स होंगे. यानी 13 एक जैसे या अलग-अलग तरह के हथियार लगा सकते हैं. इसमें पांच तरह के हवा से हवा में मार करने वाली मिसाइलें लगाई जा सकती हैं. जैसे- MICA, ASRAAM, Meteor, Astra और NG-CCM. इनकी तैनाती लगभग तय मानी जा रही है.

इनके अलावा हवा से सतह पर मार करने वाली चार मिसाइलें लगाई जाएंगी. जिनमें ब्रम्होस-एनजी ALCM, LRLACM, स्टॉर्म शैडो और क्रिस्टल मेज शामिल हैं. यही नहीं इनके अलावा इसमें एंटी-रेडिएशन मिसाइल रुद्रम 1/2/3 लगाने की भी योजना है. इसके अलावा इसमें चार प्रेसिशन गाइडेड बम एक लेजर गाइडेड बम, क्लस्टर म्यूनिशन, लॉयट्रिंग म्यूनिशन CATS ALPHA और अनगाइडेड बम लगाए जाएंगे.

<https://www.aajtak.in/science/story/lca-tejas-mark-2-prototype-will-be-ready-in-one-year-will-join-indian-air-force-in-next-four-years-know-the-specifications-cds-1822377-2023-11-20>



Mon, 20 Nov 2023

India to Develop LCA Mark2, AMCA Engines at Home: What we Know so far

India has embarked on a journey to become an independent nation in terms of producing defence equipment and other important gear. Significantly, the dependency on other countries for defence equipment has declined in the past few years. Taking a step ahead, the country is looking forward to domestically producing engines for the LCA Mark 2 and the first two squadrons of the indigenous Advanced Medium Combat Aircraft (AMCA).

Who will produce the engine?

According to DRDO chief Dr Samir V Kamat, the engines of LCA Mark 2 and the first two squadrons of the indigenous Advanced Medium Combat Aircraft would be developed within the country together by Hindustan Aeronautics Limited in association with American General Electric Company (GE). Adding further, the DRDO chief stated that all clearance has been received from the United States.

LCA Mark 2 to replace the Mirage 2000 and others

The project for the development of LCA Mark 2 fighter aircraft received a green signal from the Cabinet Committee on Security on August 30 this year. The LCA Mark 2 fighter aircraft will replace the Mirage 2000, Jaguar and MiG-29 combat aircraft in the Indian Air Force (IAF).

LCA Mark 2 fighter aircraft development project, which has been approved by the government, will pave the way for designers to develop an advanced 17.5-tonne single-engine aircraft in the country. As per Aeronautical Development Agency chief Girish Deodhare, the development of new aircraft is to be completed by 2027.

The government has given approval to the development of prototypes of the aircraft, of which the first will roll out in a year. Moreover, the project is scheduled to be completed by the year 2027 and the aircraft will go through extensive flying trials and other related work.

According to DRDO, the aircraft would be in the category of Rafale-class aircraft in terms of avionics and capabilities. However, it will be lighter in weight. As per the government's plan, the engine to be used in the aircraft would be made in India after the initial development phase.

<https://www.news9live.com/knowledge/india-to-develop-lca-mark2-amca-engines-at-home-what-we-know-so-far-2355538>

Defence News

Defence Strategic: National/International



Press Information Bureau
Government of India

Ministry of Defence

Mon, 20 Nov 2023

Launch of Missile cum Ammunition (MCA) Barge, LSAM 10 (YARD 78)

On 20 nov 23 at M/S Secon Engineering Projects Pvt Ltd, Visakhapatnam

The launch of 'Missile Cum Ammunition Barge, LSAM 10 (Yard 78)', the fourth Barge of 08 x Missile Cum Ammunition Barge project, built by MSME Shipyard, M/s SECON Engineering Projects Pvt Ltd (SEPPL), Visakhapatnam for Indian Navy, was undertaken on 20 Nov 23 at

Guttenadeevi, East Godavari, Andhra Pradesh (launch site of M/s SEPPL). The launching Ceremony was presided over by Cmde Shanmugam Sabesan, CRO (East).

The contract for building 08 x Missile Cum Ammunition Barge was signed between MoD and M/s SECON Engineering Projects Pvt Ltd, Visakhapatnam on 19 Feb 21. The availability of these Barges would provide impetus to operational commitments of IN by facilitating Transportation, Embarkation and Disembarkation of articles/ ammunition to IN Ships both alongside jetties and at outer harbours.

These Barges are indigenously designed and built under relevant Naval Rules and Regulation of Indian Register of Shipping (IRS). The model testing of the Barge during design stage were undertaken at Naval Science and Technological Laboratory (NSTL), Visakhapatnam. These Barges are proud flag bearers of Make in India initiative of Government of India (GoI).

<https://pib.gov.in/PressReleasePage.aspx?PRID=1978310>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 20 Nov 2023

Raksha Mantri Shri Rajnath Singh Holds Bilateral Talks with his Australian Counterpart Mr Richard Marles in New Delhi

Emphasises on military cooperation in niche training areas such as Artificial Intelligence, anti-submarine & anti-drone warfare and cyber domain

India & Australia agree that strong defence partnership will augur well for overall security of Indo-Pacific

Raksha Mantri Shri Rajnath Singh held a bilateral meeting with Australian Deputy Prime Minister and Defence Minister Mr Richard Marles in New Delhi on November 20, 2023. Both the ministers reaffirmed their commitment towards further strengthening the bilateral defence relations. They expressed satisfaction at the increasing military-to-military cooperation between the two countries, including joint exercises, exchanges and institutional dialogue. The Raksha Mantri congratulated Minister Marles on the maiden and successful conduct of multilateral exercise 'Malabar' by Australia in August this year.

Both ministers underscored the importance to further enhance cooperation in information exchange and maritime domain awareness between the two countries. The two sides are also in an advanced stage of discussion to conclude implementing arrangements on Hydrography Cooperation and cooperation for air-to-air refueling.

Shri Rajnath Singh emphasised that the forces of the two countries should also look at cooperating in niche training areas like Artificial Intelligence, anti-submarine and anti-drone warfare and cyber domain. The two ministers agreed that deepening cooperation in defence industry and research would give a fillip to the already strong relationship.

The Raksha Mantri suggested that shipbuilding, ship repair and maintenance and aircraft Maintenance, Repair, and Overhaul (MRO) could be the potential areas of collaboration. The two ministers also discussed cooperation for joint research in underwater technologies. Collaboration between the defence start-ups of both the countries, including that for solving challenges jointly,

was discussed by the ministers. They concurred that a strong India-Australia defence partnership will augur well not just for the mutual benefit of the two countries but also for the overall security of the Indo-Pacific.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1978250>



Tue, 21 Nov 2023

India, Australia 2+2 Talks Focus on Defence, Regional Security

India and Australia on Monday held talks centered around deepening military cooperation in critical areas including anti-submarine warfare and air-to-air refuelling, security in the vast Indo-Pacific region amid China's rising influence, hydrography cooperation and strengthening ties in sectors such as critical minerals, space, education, and science and technology.

The two sides also discussed pressing geopolitical issues, including the crisis in West Asia and the war in Ukraine.

Defence minister Rajnath Singh and external affairs minister S Jaishankar met their Australian counterparts Richard Marles and Penny Wong in New Delhi for the second India and Australia 2+2 dialogue during which they discussed the key issues relating to taking the strategic partnership to the next level.

In his opening remarks, Singh said that the dialogue will give further impetus to the already strong relationship between the countries while stressing that the robust partnership augurs well not only for mutual benefit but also for the overall peace, prosperity and security of the Indo-Pacific region.

“Defence has become one of the most important pillars of our strategic partnership. We will move ahead today to take this partnership to the next level,” Singh said.

Jaishankar drew attention towards the exceptional challenges in the region, including those involving rule of law and how, as comprehensive strategic partners, it was important for the two countries to plan for these exceptions.

“The India-Australia bilateral relationship has grown rapidly and has larger implications for the region, and a lot of other countries look to us as a factor of stability and security. This has happened at a time of increasing uncertainty in the world which is seeing sharper polarisation and deeper stresses,” Jaishankar said.

Later, in a post on X, Jaishankar said: “Joined RM @rajnathsingh ji in co-hosting the second India-Australia 2+2 Ministerial dialogue. Thank DPM @RichardMarlesMP and FM @SenatorWong for an open and productive exchange of views. Took stock of our Comprehensive Strategic Partnership and our growing convergences, especially in the defence, security and maritime domains. They work for the larger benefit of the region. Shared perspectives on developments in the Indo-Pacific, West Asia, South Asia and Ukraine. Spoke also about our contribution to addressing regional and global needs. Will explore working together in third countries.”

India has 2+2 ministerial dialogues with only a handful of countries, including the US, Japan and Russia. The latest edition of India-US 2+2 dialogue was held in New Delhi on November 10.

Cooperation in critical areas such as anti-submarine warfare, anti-drone warfare, cyber, air-air-refuelling and underwater technologies also came up for discussion during a bilateral meeting between Singh and Marles, along with the security situation in the Indo-Pacific region, people aware of the matter said.

The security of the vast Indo-Pacific has been in the spotlight amid China's growing influence in the region where it is setting up military bases, pushing countries to advance its maritime claims, and forcing strategic concessions from vulnerable States.

The two ministers reaffirmed their commitment towards further strengthening the bilateral defence relationship, while expressing satisfaction at the increasing military-to-military cooperation between the two countries, including joint exercises, exchanges and institutional dialogue, the defence ministry said in a statement.

They also talked about further enhancing cooperation in information exchange and maritime domain awareness between. The two sides are in an advanced stage of discussion to conclude implementing arrangements on hydrography cooperation and cooperation for air-to-air refuelling, the statement said.

Singh emphasised that the forces of the two countries should also look at cooperating in niche training areas like artificial intelligence, anti-submarine and anti-drone warfare, and cyber domain, it said. "The two ministers agreed that deepening cooperation in defence industry and research would give a fillip to the already strong relationship."

During the talks, Singh suggested that shipbuilding, ship repair and maintenance, and aircraft maintenance, repair, and overhaul could be among the potential areas of collaboration. Joint research in underwater technologies and collaboration between the defence start-ups of both the countries was also discussed.

Jaishankar also met Marles ahead of the 2+2 talks.

"A very good meeting with DPM and Defence Minister @RichardMarlesMP of Australia. Spoke about recent developments that influence the Indo-Pacific strategic scenario. Also exchanged views on West Asia. And yes, we discussed yesterday's match. Congratulations Australia." Jaishankar wrote on X.

There was no joint statement by the two sides on the talks till the time this report was filed.

"Defence minister RM @rajnathsingh & EAM @DrSJJaishankar warmly received Deputy PM & Defence Minister @RichardMarlesMP and FM @SenatorWong of Australia ahead of the 2nd - 2+2 Ministerial Dialogue. Ministers will exchange views on deepening multifaceted - ties, including in areas of defence and security, trade & investment, critical minerals, energy, climate change, S&T, space, education and people to people linkages. Regional and global issues are also on agenda," the official MEA spokesperson wrote on X.

"Attended a comprehensive India-Australia 2+2 Ministerial Meeting. There is a consensus on both the sides that a strong India-Australia partnership augurs well for overall peace, security and prosperity of the Indo-Pacific region. India looks forward to continue working with Australia to take our bilateral relationship onwards and upwards," Singh wrote on X.

India and Australia are currently engaged in advanced negotiations for a comprehensive economic cooperation agreement (CECA) that will build on the Economic Cooperation and Trade Agreement (ECTA) signed in April 2022. The 2+2 dialogue was elevated to the ministerial level in September 2021.

<https://www.hindustantimes.com/india-news/india-aus-talks-focus-on-defence-regional-security-101700504604210.html>

Mon, 20 Nov 2023

Army Chief Bolsters India-Korea Defence Bonds on Historic Anniversary

In an effort to further deepen defence ties between the two countries, General Manoj Pande, Chief of the Army Staff, has set out on an official visit to the Republic of Korea (ROK).

The three days visit starting today holds special significance as it commences on 20th November, a date etched in the history of India-ROK relations. Exactly 73 years ago on this day, in 1950, the Indian Army's 60 Para Field Ambulance landed in Busan, providing vital medical support during the Korean War. General Pande's itinerary covers crucial interactions with ROK's senior military leadership and visits to key defence establishments. Highlights include a bilateral meeting with General Park An-su, Chief of Staff, ROK Army, and a dialogue with General Kim Seung-kyum, Chairman of Joint Chief of Staff of ROK Armed Forces. These engagements are geared towards fostering mutual understanding, exchanging views on the regional security situation, and contributing to the strengthening of bilateral defence cooperation.

In a touching gesture, the army chief will visit the National Cemetery and War Memorial, laying a wreath in remembrance of the fallen heroes. A special visit to the Indian Section of the War Memorial is planned, paying homage to the Indian soldiers who played a significant role in the Korean War.

The COAS is scheduled to visit key establishments like Defence Acquisition Programme Administration (DAPA), Korean Army Centre for Future and Innovation (KARCFI), and the Agency for Defence Development at Daejeon. Briefings on mutual interests, a visit to a Drone Combat Unit, and a tour of the Border Management and Surveillance Facility are also on the agenda.

As India and ROK celebrate 50 years of diplomatic ties in 2023, this visit underscores the commitment of both nations to strengthen their special strategic partnership. It reflects the enduring camaraderie between India and the ROK, boosting bilateral cooperation on various strategic issues, particularly in the realm of defence collaboration. General Pande's visit stands as a diplomatic milestone, contributing significantly to the continued growth of the relationship between India and the Republic of Korea.

<https://www.financialexpress.com/business/defence-army-chief-bolsters-india-korea-defence-bonds-on-historic-anniversary-3311649/>

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Anna University-developed Drones to Ferry 50-Kg Payload into Risky Terrains for the Army

The Anna University is developing drones capable of flying 50-kg payload for the Indian Army.

The advanced, unmanned technology that supports increased payload is expected to bring about a significant change in logistical operations, expediting the delivery of larger quantities of essential supplies such as arms and ammunition, life-saving medicines etc., to armed forces deployed in high-altitude and other risky terrains.

According to the scientists at the Centre for Aero-Space Research, Madras Institute of Technology (MIT), Anna University, the enhanced load-carrying capacity would substantially increase the volume of crucial supplies and comprehensively address the logistical demands.

The Army is now relying more on traditional methods such as mule transportation or helicopter services for the delivery of supplies. “The reduced dependence on traditional methods and the deployment of drones with higher payload capacity would streamline the supply chain process and mitigate potential delays. This technology will contribute to the efficiency of the Indian armed forces in fulfilling their logistical requirements,” K. Senthil Kumar, Professor & Director, Centre for Aero-Space Research, told The Hindu on Monday.

Orders placed for 500 drones

Development of the unmanned systems with higher carrying capacity comes close on the heels of the university successfully developing a drone prototype capable of transporting essential commodities (weighing up to 15 kg) within a flying radius of 10 kms. This achievement has been a significant leap forward in utilising cutting-edge technology to overcome logistical obstacles and support soldiers in challenging environments, Dr. Kumar said.

“The Army has placed an order for procuring 500 drones each with 15-kg payload. Implementing advanced drone technology to support the well-being of soldiers stationed in unfriendly terrains and hard-to-reach locations will be a significant milestone for the armed forces. The focus is particularly directed to the Line of Control in North Kashmir,” the professor added.

In 2019, Army officials had suggested that mules be replaced by drones for delivering supplies due to the delay. The armed forces hired thousands of mules for moving goods to defence personnel stationed along the international border or other remotely located strategic camps. “The mules can hardly carry 10-kg each and take about two days to reach the destinations tucked about 10 kms in the hills. During winters, flying helicopters is often difficult due to inclement weather conditions and visibility issues. After three years of research, we have successfully delivered the customised drones,” he said.

Air ambulance

Dr. Senthil Kumar said a team of defence officials had visited MIT recently and wanted drones with a carrying capacity of 80 kgs for shifting injured or sick personnel from forward stations to the base camp. “Research is on to design an unmanned system with payload of 80-kg, which will be the first drone-based air ambulance,” Dr. Kumar concluded.

<https://www.thehindu.com/news/cities/chennai/anna-university-developed-drones-to-ferry-50-kg-payload-into-risky-terrains-for-the-army/article67554709.ece>

The Tribune

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In Kargil, 336 Unexploded Shells Destroyed this Year

The Army, with the assistance of the district administration of Kargil, has defused at least 336 unexploded ordnance (UXO) in Kurbathang area this year. On November 17, Army officers had destroyed 132 unexploded shells in the area.

The remnants of the Kargil war that took place in 1999 still haunt the local population as unexploded shells are frequently found hither and thither. The Army is focusing on de-mining the areas to ensure safety of the local population.

An Army official said, "In continued efforts to ensure safety for all and eliminate the threat to life, the fearless Operations Division, in close coordination with the civil administration, disposed of 134 UXOs on November 17 at Kurbathang area, taking the total numbers of the unexploded ordnance destroyed in the area to 336 this season."

Before taking up the de-mining exercises, the local administration is informed about it which further asks the local population not to venture out in the area. During the sanitisation drive, magistrate, tehsildar and police officials are stationed near the area to keep a watch on the exercise. Kurbathang also has a football ground that is visited by many children on a daily basis.

In April this year, a minor boy was killed and two others injured in the area when they found an unexploded shell and started fiddling with it. The area was reportedly a firing range for the Army years ago. It is believed that some unexploded shells are present here from the Kargil war era.

Kargil Tehsildar Kacho Asgar said the area was isolated but had a football ground frequented by many people. "The population is asked to remain away from the area where de-mining exercise starts. It takes hours for the drive to complete before we open the area for the people," said Asgar. He said the Army had conducted many drives to remove unexploded shells from the area.

<https://www.tribuneindia.com/news/j-k/in-kargil-336-unexploded-shells-destroyed-this-year-564389>



Mon, 20 Nov 2023

From Defence Ties to iCET, US Envoy Eric Garcetti Explains Value of India-US Ties

US Ambassador to India Eric Garcetti on November 20 stated that the India-US 2+2 Ministerial Dialogue focused on strengthening the two nations' already strong defence ties. He stated that both countries discussed how to strengthen their partnerships in science and technology for the global good, which connects and protects them. Eric Garcetti said "We made important steps forward in strengthening our major defence partnership which continues to grow, increasing acceleration that we've seen through initiatives like the roadmap of US-India Industrial Cooperation, US-India Defence Acceleration Ecosystem and expanded collaboration and cooperation in emerging domains..." he later added "Our countries discussed ways to deepen our science and our technology partnerships to harness technology for the global good instead of technology that harms us and divides us, technology that can connect us and protect us. These efforts are moving forward at a record-breaking speed under the US-India Initiative on Critical and Emerging Technology (iCET)."

<https://www.aninews.in/national/national/from-defence-ties-to-icet-us-envoy-eric-garcetti-explains-value-of-india-us-ties-full-interaction/>

Can Pakistan's Ababeel Nuclear Missile Counter India's Air Defence System?

Last month, Pakistan successfully test-fired a medium-range ballistic missile, designed to penetrate India's developing air defense system. The Ababeel weapon system is designed to deliver multiple warheads in a single flight. Once deployed, they can effectively hit targets anywhere in India.

Ababeel's second test, first being in 2017, was conducted from the Sakhi Sarwar range in Pakistan's Punjab province on October 18 for "re-validating various design, technical parameters and performance evaluation of different sub-systems of the weapon system", according to Pakistan's public broadcaster.

In a blog post, Antoine Levesques, a researcher at the International Institute for Strategic Studies (IISS), said that Ababeel is capable of carrying independently targetable re-entry vehicles (MIRVs).

WHAT IS MIRV?

A MIRV is a sophisticated missile technology that allows a single ballistic missile to carry multiple warheads, each capable of being aimed at hitting a different target. This technology is significant in strategic nuclear warfare, as it enables a single missile to effectively target several locations simultaneously.

MIRVs were developed as part of the arms race during the Cold War, primarily to increase the effectiveness of intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs). The concept of MIRV involves launching multiple independently targetable re-entry vehicles (ICBMs and SLBMs) carrying nuclear warheads.

The United States was the first country to have deployed MIRV technology on an ICBM in 1970. Today, the US, the UK, and France use MIRV technology on SLBMs while China has integrated this technology with its ICBMs. Russia is the only country to have MIRVed both its ICBMs and SLBMs, as per the Centre for Arms Control and Non-Proliferation.

INDIA'S MIRV PROGRAMME

So where does India stand in the MIRV race? Defence Research and Development Organisation (DRDO) is developing its indigenous MIRV technology. Though New Delhi has not officially revealed its plan, media reports talk of at least two tests of Agni Prime missile with MIRV technology.

Agni-P, the latest but miniaturized version of Agni missiles, reportedly carried MIRVs or its decoys during its first test flight in June 2021 and during pre-induction night launch conducted by the Strategic Forces Command – the authority responsible for the management and administration of the country's tactical and strategic nuclear weapons stockpile in India.

However, the South Asian giant has not officially confirmed it. The Centre for Arms Control and Non-Proliferation says India is still seeking this capability.

While Agni-P has a range of 1,500-2,000 km, Agni VI – another missile being developed with MIRV integration – can strike targets up to 9,000 kms and 12,000 kms capable of carrying up to ten nuclear/thermonuclear warheads.

IS ABADEEL A THREAT TO INDIAN SECURITY?

The short answer is no. But MIRV's capability to deliver warheads hundreds of km apart, experts say, can overwhelm India's Ballistic Missile Defence (BMD) – currently protecting capital New Delhi and economic hub Mumbai.

Speaking to India Today, former Indian Air Force (IAF) Group Captain UK Devnath said: "Normally, surveillance radar can track multiple missiles. However, with MIRV missiles, the challenge is different. The warheads of a MIRV missile are released late in the missile's trajectory, during the reentry phase.

This timing means that the tracking radar and its operators have a very limited window to analyze the trajectory of each individual warhead. Consequently, they have less time to react and launch separate anti-missile defenses against each warhead, significantly complicating the interception process."

However, he believes that Russia-made S-400 batteries – currently deployed along the borders with China and Pakistan – are "perfectly capable of tackling any threat from any Pakistani MIRV missile".

Former director general of the Indian Army Infantry, Lt Gen (ret'd) Sanjay Kulkarni echoes similar views. "With three mobile batteries (of S-400) in location and two more expected early 2025, the Pakistan Air Force stations feel threatened," he weighed in.

IISS researcher Levesques says the Russian-made surface-to-air missile defence system "presents an immediate challenge to Pakistan's ability to penetrate Indian airspace, with the subsonic Ra'ad and Babur land-attack cruise missiles being especially vulnerable".

India's ballistic missile defence operates on a two-layered approach, comprising the Prithvi Air Defense Vehicle (PAD) or Prithvi Defense Vehicle (PDV) and the Ashwin Advanced Air Defense (AAD) interceptors.

The PAD/PDV is designed to engage targets at exo-atmospheric heights ranging from 50 to 180 kms whereas the AAD system can neutralize threats at altitudes between 20 and 40 kms. Both interceptor types have undergone multiple successful tests.

WHY IS PAKISTAN DEVELOPING MIRV?

Islamabad believes that India's rapid development, test and deployment of land and sea-based missiles defences will give Indian armed forces an edge in nuclear strike capabilities, and deprive Islamabad of retaliation.

Pakistan-based analysts argue that Ababeel's second test was prompted by the successful test of the warship-based "endo-atmospheric interceptor missile" defence system in April this year.

"On paper, a BMD system looks like a defensive matter, but it is in actuality an offensive development.

In this case, BMD is a cardinal part of the Indian nuclear strategy of launching pre-emptive strikes on Pakistan's counterforce targets while remaining immune from Pakistan's retaliatory nuclear response," Pakistani researchers Usman Haider and Abdul Moiz Khan argue in The Diplomat piece.

<https://www.indiatoday.in/diu/story/pakistan-tested-new-ababeel-nuclear-missile-bypass-indian-defences-2465441-2023-11-20>

Mon, 20 Nov 2023

Australian Army Test-fires NASAMS

The Australian Army has test-fired the National Advanced Surface-to-Air Missile System (NASAMS) at Woomera Test Range in South Australia, the Australian Department of Defence (DoD) said in a press release in mid-November.

According to the DoD, NASAMS test-fire exercise was carried out by the 16th Regiment, Royal Australian Artillery, as part of the modernisation of the army's land-based Integrated Air and Missile Defence (IAMD).

During the exercise, the service fired the AIM-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM) from NASAMS to target unmanned aerial vehicles (UAVs) flying at an altitude of 5,000 ft, about 15 km away, the DoD said.

NASAMS – which will replace the Australian Army's RBS-70 manportable air defence systems – will be operated by the 16th Regiment at Woodside in Victoria until late 2025, according to the DoD.

In late 2025 the 16th Regiment will relocate to Royal Australian Air Force (RAAF) Base Edinburgh to become a part of the Adelaide-based 10th Brigade as a part of the Australian Defence Force's (ADF's) new order of battle, the DoD added. “The [NASAMS] project will also deliver 16th Regiment new facilities at Edinburgh Defence Precinct.”

According to Janes Land Warfare Platforms: Artillery & Air Defence, NASAMS is a networked medium-range air-defence system developed and built in a transatlantic co-operative venture between Kongsberg and Raytheon.

<https://www.janes.com/defence-news/news-detail/australian-army-test-fires-nasams>

Science & Technology News

THE TIMES OF INDIA

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After Chandrayaan-3's Success, ISRO Prepares for Chandrayaan-4 Lunar Mission: All about it

It's surprising to learn that ISRO still holds hope for Chandrayaan-3's return to Earth. However, experts argue that recalling the rover may be futile due to potential communication system issues. Additionally, ISRO itself stated in a recent announcement that they are "okay" if communication with the rover cannot be re-established, as they have already recovered all the necessary data.

Despite its inability to return to Earth, Chandrayaan-3 is considered a successful mission. Now, ISRO is hinting at another significant step forward in space exploration: the Chandrayaan-4

mission. Unlike its predecessors, experts anticipate that Chandrayaan-4 will bring back lunar samples to Earth.

Nilesh Desai, Director of the Space Applications Centre (SAC/ISRO), mentioned the Chandrayaan-4 mission as a major advancement during a recent address to the Indian Tropical Meteorology Institute. The mission is expected to involve collecting samples from the lunar surface.

The spacecraft will travel to the moon, land, collect samples, and then connect to another module in space. When the two modules approach Earth, they will split into two parts: one part will return to Earth, while the other will orbit Earth.

Desai stated, "It's a very ambitious mission, and hopefully, in the next five to seven years, we will meet the challenge of bringing samples from the moon."

Chandrayaan-4 is expected to be more complex than its predecessor. Firstly, in terms of weight, the Chandrayaan-3 rover was only 30kg, while Chandrayaan-4 plans to land a massive 350kg rover on the moon. Secondly, the mission aims to perform a challenging landing on the moon's rim, an unexplored region. The rover will also explore a much larger area, 1000m x 1000m, compared to Chandrayaan-3's 500m x 500m.

The mission's success will be determined by its ability to return lunar samples to Earth. This challenging process requires two powerful rockets for the returning cargo carrying lunar samples.

However, confirmation from the space agency regarding the mission's viability is still pending. Currently, ISRO is collaborating with the Japanese space agency, JAXA, on a lunar mission called "LuPEX," which aims to explore the moon's darker side. This mission, weighing 350kg, will explore areas up to 90 degrees on the lunar surface.

<https://timesofindia.indiatimes.com/etimes/trending/after-chandrayaan-3s-success-isro-prepares-for-chandrayaan-4-lunar-mission-all-about-it/articleshow/105362154.cms?from=mdr>

