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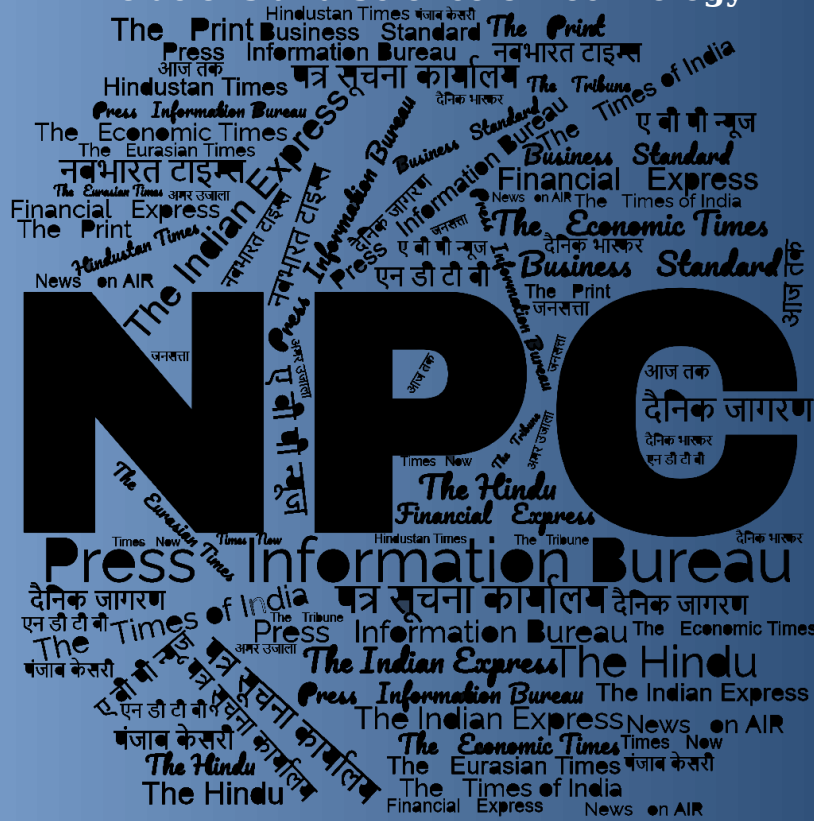
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समाचार पत्रों से चयित अंश Newspapers Clippings

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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Press Information Bureau
Government of India

Ministry of Defence

Sat, 22 Apr 2023

डीआरडीओ और भारतीय नौसेना ने नौसेना बेस से बीएमडी इंटरसेप्टर मिसाइल का सफल परीक्षण किया

रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) और भारतीय नौसेना ने 21 अप्रैल, 2023 को बंगाल की खाड़ी में ओडिशा के तट पर समुद्र आधारित एंडो-एटमोस्फेरिक बीएमडी इंटरसेप्टर की पहली उड़ान परीक्षण का सफलतापूर्वक संचालन किया। परीक्षण का उद्देश्य दुश्मन के बैलिस्टिक मिसाइल खतरे के प्रभाव को लक्षित करना और नष्ट करना था। यह भारतीय नौसेना को बीएमडी क्षमताओं वाले देशों के विशिष्ट समूह में स्थान दिला सकता है।

इससे पहले, डीआरडीओ ने सतह आधारित बीएमडी प्रणाली की क्षमता का सफलतापूर्वक प्रदर्शन किया था और इस तरह दुश्मन की तरफ से आने वाली बैलिस्टिक मिसाइल के खतरों को बेअसर करने की क्षमता हासिल की थी। रक्षा मंत्री श्री राजनाथ सिंह ने जहाज आधारित बैलिस्टिक मिसाइल रक्षा क्षमताओं के सफल प्रदर्शन में शामिल डीआरडीओ, भारतीय नौसेना एवं उद्योग को बधाई दी।

डीडीआरएंडडी के सचिव एवं डीआरडीओ के अध्यक्ष डॉ. समीर वी कामत ने मिसाइल की डिजाइन और विकास में शामिल टीमों की सराहना की। उन्होंने कहा कि देश ने बेहद जटिल नेटवर्क केंद्रित बैलिस्टिक मिसाइल रोधी प्रणाली का विकास करने में आत्म निर्भरता हासिल की है।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1918883>

अमर उजाला

Sat, 22 Apr 2023

DRDO: BMD सिस्टम क्षमता वाले राष्ट्रों में शामिल हुई भारतीय नौसेना, समुद्र से हुआ इस खास मिसाइल का सफल परीक्षण

डीआरडीओ और भारतीय नौसेना ने शुक्रवार 21 अप्रैल को बंगाल की खाड़ी में ओडिशा के तट से समुद्र आधारित एंडो-एटमोस्फेरिक इंटरसेप्टर मिसाइल का पहला उड़ान परीक्षण सफलतापूर्वक पूरा किया। परीक्षण का उद्देश्य शत्रुतापूर्ण

बैलिस्टिक मिसाइल खतरे को शामिल करना और बेअसर करना था, जिससे भारतीय नौसेना बैलिस्टिक मिसाइल डिफेंस सिस्टम क्षमता वाले राष्ट्रों के क्लब में शामिल हो गई।

इससे पहले, डीआरडीओ ने दुश्मनों से होने वाले बैलिस्टिक मिसाइल खतरों को बेअसर करने की क्षमता के साथ एक भूमि-आधारित बैलिस्टिक मिसाइल डिफेंस सिस्टम का सफलतापूर्वक प्रदर्शन किया।

रक्षा मंत्रालय ने कहा कि शुक्रवार को समुद्र आधारित मिसाइल के परीक्षण का उद्देश्य शत्रुतापूर्ण बैलिस्टिक मिसाइल खतरे को कम करना और बेअसर करना था, जिससे भारत ऐसी क्षमता वाले देशों के एक विशिष्ट क्लब में शामिल हो गया। बीएमडी आने वाली लंबी दूरी की परमाणु मिसाइलों और अवाक्स (हवाई चेतावनी और नियंत्रण प्रणाली) सहित शत्रुतापूर्ण विमानों को रोकने में सक्षम हैं।

रक्षा मंत्री राजनाथ सिंह ने जहाज आधारित बीएमडी प्रणाली की क्षमताओं के सफल प्रदर्शन के लिए भारतीय नौसेना और रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) को बधाई दी। मंत्रालय ने एक बयान में कहा, डीआरडीओ और भारतीय नौसेना ने 21 अप्रैल को बंगाल की खाड़ी में ओडिशा के तट से समुद्र आधारित एंडो-वायुमंडलीय इंटरसेप्टर मिसाइल का पहला उड़ान परीक्षण सफलतापूर्वक किया।

<https://www.amarujala.com/india-news/drdo-indian-navy-successfully-conducted-flight-trial-of-sea-based-endo-atmospheric-interceptor-missile-2023-04-22>



Press Information Bureau
Government of India

Ministry of Defence

Sat, 22 Apr 2023

DRDO & Indian Navy Conduct Successful Trial of BMD Interceptor from Naval Platform

Defence Research and Development Organisation (DRDO) and Indian Navy successfully conducted a maiden flight trial of sea-based endo-atmospheric interceptor missile off the coast of Odisha in the Bay of Bengal on April 21, 2023. The purpose of the trial was to engage and neutralize a hostile ballistic missile threat thereby elevating India into the elite club of Nations having Naval BMD capability.

Prior to this, DRDO has successfully demonstrated land-based BMD system with capability to neutralize ballistic missile threats, emerging from adversaries.

Raksha Mantri Shri Rajnath Singh congratulated DRDO, Indian Navy and Industry involved in successful demonstration of ship based Ballistic Missile defence capabilities.

Secretary DDR&D and Chairman DRDO Dr Samir V Kamat complimented the teams involved in the design and development of the missile. He said that nation has achieved self-reliance in developing highly-complex network-centric anti-ballistic missile systems.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1918799>

Sat, 22 Apr 2023

DRDO, Indian Navy Conducts Successful Trial of Interceptor Missile from Naval Platform

The Defence Research and Development Organisation (DRDO) and the Indian Navy successfully conducted a maiden flight trial of a sea-based interceptor missile off the coast of Odisha in Bay of Bengal on Friday.

"The purpose of the trial was to engage and neutralise a hostile ballistic missile threat, thereby elevating India into the elite club of nations having Naval BMD capability," a statement read.

Before this, the DRDO had successfully demonstrated a land-based BMD system with the capability to neutralise ballistic missile threats.

Defence Minister Rajnath Singh congratulated DRDO, the Indian Navy and industry involved in the successful demonstration of ship-based ballistic missile defence capabilities.

<https://www.indiatoday.in/india/story/drdo-indian-navy-successful-trial-of-interceptor-missile-from-naval-platform-2363480-2023-04-23>

Outlook

Sat, 22 Apr 2023

India Carries out Maiden Flight-test of Sea-based Ballistic Missile Defence Interceptor

India has successfully carried out the maiden flight trial of an endo-atmospheric interceptor missile from a ship off the coast of Odisha in the Bay of Bengal as part of its ambitious ballistic missile defence programme.

The defence ministry said the purpose of the trial of the sea-based missile on Friday was to engage and neutralise a hostile ballistic missile threat, thereby elevating India into an elite club of nations having such a capability.

The BMDs are capable of intercepting incoming long-range nuclear missiles and hostile aircraft including AWACS (airborne warning and control systems).

Defence Minister Rajnath Singh congratulated the Indian Navy and the Defence Research and Development Organisation (DRDO) for the successful demonstration of the capabilities of the ship-based ballistic missile defence (BMD) system.

"The DRDO and the Indian Navy successfully conducted a maiden flight trial of sea-based endo-atmospheric interceptor missile off the coast of Odisha in the Bay of Bengal on April 21," the ministry said in a statement.

It said the DRDO has already successfully demonstrated the capabilities of land-based BMD system to neutralise ballistic missile threats, emerging from adversaries.

"The purpose of the trial was to engage and neutralize a hostile ballistic missile threat thereby elevating India into the elite club of nations having naval BMD capability," it said.

India has been developing capabilities to intercept hostile ballistic missiles both inside and outside the earth's atmospheric limits.

The endo-atmospheric missiles are the ones that operate within the earth's atmosphere that covers an altitude below 100 kilometers. The exo-atmospheric missiles are capable of completing missions in the upper-most region of the earth's atmosphere, according to experts.

The range of the missile defence system tested on Friday is not immediately known.

In November, India successfully conducted the maiden flight-test of phase-II ballistic missile defence interceptor AD-1 that is capable of engaging many different types of targets.

The AD-1 is a long-range interceptor missile designed for both "low exo-atmospheric" and "endo-atmospheric" interception of long-range ballistic missiles as well as aircraft.

<https://www.outlookindia.com/national/india-carries-out-maiden-flight-test-of-sea-based-ballistic-missile-defence-interceptor-news-280585>

DRDO on Twitter



The Tribune

Fri, 21 Apr 2023

Creation of Theatre Commands Delayed

The much-awaited military reform of creating theatre commands, which will entail having all war-fighting assets and forces under a single commander for a specific geographical area, is not expected to take place anytime soon.

Chief of Defence Staff (CDS) General Anil Chauhan has been asked to reach a wider consensus on the contours of creating joint forces comprising elements of the Army, IAF and the Navy, sources told The Tribune.

Was to be done by jan 2023

- In January 2020, Chief of Defence Staff Gen Bipin Rawat was tasked with bringing tri-services' jointness, including theatre commands, within three years
- Serving CDS Gen Anil Chauhan asked to adopt a "bottom upwards" approach by first integrating logistics, weapons procurement, support systems, transport and communication, and then move on to theatre commands

Points of debate

Consensus eludes the contours of the theatre commands:

- Yet to decide on the operational strategy for shape of the theatre commands
- Kind of war-fighting assets to be positioned under one commander
- Flexibility to be allowed to move military weapons, equipment seamlessly from one theatre command to the other

The theatre commands are inevitable and will be formed, the forces have been told. The delay is only to bring about a wider consensus, the sources said.

The matter was debated behind closed doors at the combined commanders' conference at Bhopal from March 30 to April 1. The Ministry of Defence issued a statement on April 1 saying that "deliberations over a varied spectrum of issues were held, including on national security and evolving a joint military vision for the future". Prime Minister Narendra Modi addressed the commanders, and made it clear that 'integration' was needed and flagged immediate common

tri-services' issues like logistics, weapon procurement, communications, etc, of the three forces, the sources said.

At the conference, there was a lack of consensus on what shape the theatre commands should take, and what should be the contours and operational strategy. In the past, there have been discussions on creating specific theatre commands, among others two for the Himalayas along the Line of Actual Control with China, one for a maritime role, one for air defence and one for the western front. The forces at present have 19 commands, including the Army Training Command.

When the post of CDS was created in January 2020 with General Bipin Rawat taking charge, the Narendra Modi government had set a timeline of three years for sorting out vital issues 'holding back' the integration and jointness of forces. The 'transformational' directive looked to alter structures not in tune with modern times with technology playing a bigger role.

The late General Rawat was given three years to bring about jointness in operations, logistics, transport, training, support services, communications, repairs and maintenance.

Now, this three-year deadline stands extended with CDS General Chauhan being asked to go in for "bottom upwards approach", meaning to first integrate the immediate achievable tasks like having joint logistics, maintenance and support systems, etc.

<https://www.tribuneindia.com/news/nation/creation-of-theatre-commands-delayed-499667>



Sun, 23 Apr 2023

Soon, a Gender-Neutral Selection Board in Indian Army

The Indian Army has decided to introduce a common selection board for its male and female officers for promotion to the rank of colonel from 2024-25, in a move aimed at advancing gender equality in the force, officials familiar with the matter said on Saturday.

A common, gender-neutral selection board will be conducted for all officers from the 2009 batch onwards for promotion from the rank of lieutenant colonel to colonel, said one of the officers cited above, asking not to be named.

The development comes on the back of the army conducting a special selection board to promote 108 women officers to the rank of select-grade colonel and offering them command assignments in select branches for the first time.

The women officers assessed by the special selection board were from the 1992 to 2006 batch and were commissioned in various arms and services, including Engineers, Signals, Army Air Defence, Intelligence Corps, Army Service Corps, Army Ordnance Corps, and Electronics and Mechanical Engineers.

"When the special selection board was conducted (for the first time in January) for considering the women officers for command assignments, multiple policy waivers were granted for

mandatory qualification, the requirement to earn reports in command of a company, and no reports earned for up to seven years by officers who had exited service and rejoined after a gap,” said a second officer, who also asked not to be named.

There was no benchmarking of merit with their male batchmates, and equal promotion ratios were ensured, though for most batches it was higher than the corresponding batch of male officers, he said.

“With the common selection board in place from 2024-25, men and women officers will compete on merit for the same vacancies,” he added.

“Conducting a common selection board is a progressive move as women officers have been demanding that they be treated on a par with their male counterparts,” said Captain Shalini Singh, a former woman officer. Also, women officers will be considered for selection as brigadiers along with their male batchmates with immediate effect, and they will be graded based upon their eligibility and comparative profile, the officials said.

The opening of command roles to women became possible only after the army began granting them permanent commission (PC) in 2020. With the grant of PC, women officers are gearing up to assume challenging leadership roles akin to their male counterparts, said the first official. “The army has initiated a series of concurrent actions at multiple levels to ensure that the force swiftly transits towards inclusivity by empowering women officers for leadership roles,” he said.

A special senior command course has been organised to prepare the women officers for the rigours of command by orienting them to operational, intelligence, logistics and administrative aspects of the new roles, the officials said. Also, a growing number of women is now competing for staff course at the Defence Services Staff College at Wellington in Tamil Nadu, a career-advancing course that will empower them for command appointments, the officials said.

Women officers selected for command appointments are being offered the same career opportunities as their male counterparts, the officials said. “The army is a gender-neutral force which provides equal opportunities to everyone. The women officers’ cadre has shown steady growth over the last three decades. Concurrent actions by the force will ensure that the future holds bright prospects for women joining the army,” said another officer.

The upcoming commissioning of women into the regiment of artillery is the latest in a series of steps taken by the army to open more doors for them. In a first, five lady cadets, who will be among the 200-odd officers passing out from the Chennai-based Officers’ Training Academy on April 29, are expected to get commissioned into the regiment of artillery.

Women officers being commissioned from OTA Chennai will now pass out along with their male batchmates with common merit, the officials said. Also, the process of granting PC to women officers from junior batches has commenced, and they are being considered for it by gender-neutral selection boards in the 10th year of service.

Women in uniform are no longer on the fringes but are being assigned central roles on a par with their male counterparts across the three services – they are flying fighter planes, serving on board warships, being inducted in the personnel below officer rank (PBOR) cadre, eligible for permanent commission, being assigned command roles, and undergoing training at the National Defence Academy.

To be sure, tanks and combat positions in infantry are still no-go zones for women.

<https://www.hindustantimes.com/india-news/indian-army-to-introduce-gender-neutral-selection-board-for-promotion-to-colonel-rank-women-officers-to-compete-on-merit-from-202425-101682187834749.html>



Sat, 22 Apr 2023

IAF's Decorated 'Mighty Jets' to Mark Diamond Jubilee

A leading Indian Air Force (IAF) transport squadron, which earned its spurs in different wars and military operations during the last six decades, will mark its diamond jubilee at the Chandigarh Air Force station on Saturday, with the milestone celebration turning the spotlight on the squadron's outstanding achievements, officials familiar with the matter said on Friday.

The No. 44 Squadron, also known as the Mighty Jets, provided crucial logistics support to the army in the Ladakh sector during the 1962 India-China war, carried out extensive tactical and limited strategic airlift in the western sector during the 1965 India-Pakistan war, executed special bombing missions during the 1971 India-Pakistan war, and also played a pivotal role in supporting the army during the ongoing border row with China in eastern Ladakh, the officials said, asking not to be named.

The squadron was raised in April 1961, but the diamond jubilee celebrations were postponed because of the Covid-19 pandemic. It currently operates IL-76 and C-17 military transport aircraft.

"The rich and glorious history of the squadron is a kaleidoscope of military history and military diplomacy of modern-day India and filled with tales of fortitude, courage, daring, devotion and professionalism which encapsulates all that the IAF stands for," said one of the officials cited above.

The squadron, raised with Soviet-origin An-12 aircraft, faced a baptism by fire in the 1962 war but lived up to expectations.

It performed critical tasks including landing sorties at Leh and Chushul, airdrop of supplies to various forward posts, and evacuation of casualties. "The squadron also carried out airlift of AMX tanks into the northern sector which redefined the offensive abilities of the Indian Army," said a second official.

The squadron's unique contribution to the 1971 operations was the effective use of An-12s that were modified for bombing missions. For its innovation, valour and distinguished service in the face of the enemy, the squadron was awarded the prestigious Battle Honour for Air Offensive in the West Pakistan theatre of operations, he said. The squadron is the only non-fighter/bomber squadron to receive the Battle Honours for its role in the 1971 war.

The squadron, which has been at the forefront of the IAF's airlift capabilities, inducted IL-76 aircraft in June 1985. "The squadron carried out practice landings at Thoise in October 1985,

and in early 1986, inducted tanks and artillery guns into Ladakh region, thus substantially enhancing the army's firepower in the sector," said another official.

The first strategic airlift task after the induction of IL-76 was assigned to the squadron during Operation Brasstacks in 1987. It was tasked to position fighter squadrons at their operational locations in the western sector. The entire operation was completed in 36 hours, and within 48 hours, the IAF was ready to meet any threat, the officials said. "A completely new dimension had been added to the potency of the IAF -- the capability for rapid mobilisation and deployment of combat ready squadrons through round-the-clock operations," said a fourth official.

As part of Operation Brasstacks, the army moved tens of thousands of troops to the western border, along with armoured columns, artillery and rocket systems, in an overwhelming show of military force. The big takeaway from Operation Brasstacks was the capability of Indian forces to launch a swift offensive campaign. It asserted India's superiority over Pakistan in conventional warfare.

The squadron played a key role during the Indian Peace Keeping Force (IPKF) operations in Sri Lanka. "From the early hours of July 30, 1987, the squadron transported men and material, including T-72 tanks and artillery guns, to Sri Lanka. The IPKF operations culminated in March 1990, and the squadron flew extensively, and greatly contributed to the airlift effort," he said.

In November 1988, the squadron airlifted the entire Indian Army contingent that took part in Operation Cactus launched to help thwart attempts to overthrow the democratically elected government in Maldives. These operations were carried out by the squadron at short notice, and by night, to an unfamiliar airfield in a foreign country, the officials said.

The squadron also played a vital role in providing air mobility to IAF and army elements during the 1999 Kargil operations. The next important mission came in December 2001 when the squadron was tasked for the movement of combat units as part of Operation Parakram, launched after the terror attack on Parliament.

The squadron has airlifted more than 2,000 troops and crucial military equipment to the Ladakh sector amid the ongoing row along the Line of Actual Control.

The squadron has been a pillar of strength for IAF and the country, said Air Marshal SRK Nair (retd), who commanded the 'Mighty Jets' from 2002 to 2005, and retired as Air Officer Commanding-in-Chief of the IAF's Training Command in 2018.

"It has been the air bridge to the Ladakh region, and has unfailingly carried out all its commitments in support of the army's forward deployments. It is of great relevance to the country too as it has been the first responder when it comes to humanitarian assistance and disaster relief operations. The squadron was also involved in Covid-19 relief operations," Nair added.

<https://www.hindustantimes.com/india-news/indian-air-force-s-no-44-squadron-celebrates-diamond-jubilee-highlighting-decades-of-outstanding-achievements-in-military-operations-101682104847835.html>

Fri, 21 Apr 2023

US Assisting India to Develop Own Defence Industrial Base

In an effort to strengthen India's capabilities to meet any challenge from China, the US is providing assistance to its critical partner India and develop its own defence industrial base. Moreover, New Delhi and Washington face the same security challenge from Beijing in the strategically important Indo-Pacific region.

Making this assertion, Admiral John Christopher Aquilino, commander of US Indo-Pacific Command, also said "we value our partnership with India, and we've been increasing it and doing a lot more, over time. They have the same security challenge, primary security challenger that we do, and it's real on their northern border."

He told this to members of the House Armed Services Committee during a hearing on Indo-Pacific National Security Challenges late Wednesday in Washington.

The top commander said the US is providing assistance to its critical partner India to enhance capabilities that it might need to defend its border with China and also develop its own defence industrial base.

"Two skirmishes now in over the past nine or 10 months on that border, as they continue to get pressurised by the PRC (People's Republic of China) for border gains," Admiral Aquilino said.

He was responding to a question from Indian American Congressman Ro Khanna.

"I would like you to reflect on the importance of the relationship -- postcolonialism India and China had a relationship to emerge as the Asian voice. But that relationship now has really soured with a concern that there should not be a hegemon in Asia and that China is treating other countries as junior partners," Khanna said.

"It seems to me that this gives us an opportunity to ensure that China doesn't emerge as a hegemon to strengthen the relationship with India," said the Indian American Congressman.

Aquillino said both India and the US have the same security challenges. "We also have the desire to operate together, based on the world's largest democracy. We have common values, and we also have people-to-people ties for a number of years. I met with General (Anil) Chauhan, my counterpart, at the Raisina Dialogue not long ago. I've been to India five times now in the past two years.

<https://www.dailypioneer.com/2023/india/us-assisting-india-to-develop-own-defence-industrial-base.html>

Ahead of SCO Meeting, India and China Corps Commanders Hold Talks

Ahead of Chinese Defence Minister Li Shangfu's visit to New Delhi this week for the Shanghai Cooperation Organisation (SCO) Defence Ministers' meeting, India and China held the 18th round of military talks on Sunday to discuss legacy friction points along the Line of Actual Control (LAC) in eastern Ladakh and ways to overcome the trust deficit between the two militaries. The Corps Commander-level talks at Chushul on the Indian side, started at 10 am and were underway till evening. The Indian delegation was led by 14 Corps Commander Lt Gen Rashim Bali. Defence sources said the talks will set the stage for the SCO Defence Ministers' meeting this week. "Also, the talks will broadly discuss ways to overcome trust issues between the two sides to avoid any untoward incident at the tactical level and to discuss resolution of issues, if any, at the level of battalion commander and brigade commander," said a source.

Sources said pending issues along the LAC such as Depsang Plains and Demchok will also feature in the discussions. The last military talks between India and China took place in December last year, but there was no forward movement, either on resolution of legacy issues or on an overall de-escalation in eastern Ladakh.

Prior to that, in September last year, both sides pulled back troops to disengage from Patrolling Point-15 in the Gogra-Hot Springs area of Eastern Ladakh, which marked a step forward in the military standoff between the two sides which began in May 2020. Friction points such as Galwan Valley, north and south banks of Pangong Tso and the Gogra-Hot Springs area have seen some resolution in the last three years with the creation of buffer zones.

As per sources, while the broad summer strategy in eastern Ladakh is already being implemented, it will be further refined based on the outcome of this meet and the SCO meet later this week.

<https://indianexpress.com/article/india/ahead-of-sco-meeting-india-and-china-corps-commanders-hold-talks-8572152/>

In a First After Galwan, China Defence Minister to be in Delhi for SCO Huddle

Chinese Defence Minister Li Shangfu and Russian Defence minister Sergei Shoigu have confirmed that they will attend a Shanghai Cooperation Organisation meeting in New Delhi next week along with their counterparts from other member nations of the grouping, it is learnt.

The two ministers will attend the SCO Defence Ministers' meeting scheduled on April 27 and 28. The SCO member countries are India, Russia, China, Kyrgyz Republic, Kazakhstan, Tajikistan, Uzbekistan and Pakistan.

Defence Minister Rajnath Singh will chair the meeting. Issues related to terrorism, regional security and the security situation in Afghanistan are among topics expected to dominate the meeting.

While India had invited Pakistan Defence Minister Khawaja Asif to the meeting, there is no confirmation yet whether he will attend it. The SCO Defence Ministers' meeting will be followed by a meeting of the Foreign Ministers on May 5 in Goa, for which Pakistan Foreign minister Bilawal Bhutto Zardari has confirmed participation.

The terror attack in Poonch district of Jammu and Kashmir earlier this week has the potential to cast a shadow on these visits, if investigations point to the involvement of Pakistan-based terror groups.

This is the first time since the 2020 Galwan Valley clashes that the Chinese Defence Minister Li will be visiting Delhi. Despite disengagement at certain friction points along the Line of Actual Control in eastern Ladakh, border tensions between the two countries continue to simmer with no resolution reached on the legacy friction points. In December last year, Chinese and Indian troops clashed at Yangtse in the Tawang sector of Arunachal Pradesh.

This will also be Russian Defence Minister Shoigu's first visit to India since the start of the Russia-Ukraine conflict last year. The visit comes amid a series of high-level engagements between India and Russia, such as the visit of Russian Deputy Prime Minister Denis Manturov for the 24th India-Russia talks.

<https://indianexpress.com/article/india/in-a-first-after-galwan-china-defence-minister-to-be-in-delhi-for-sco-huddle-8570772/>



Fri, 21 Apr 2023

NATO Allies and Partners Take Part in World's Largest Cyber Defence Exercise

Over 3000 participants from 38 countries - including NATO Allies and partners – participated in the 2023 edition of the annual exercise “Locked Shields,” hosted by the NATO Cooperative Cyber Defence Centre of Excellence in Tallinn (Estonia). “Locked Shields” is the world's largest cyber defence exercise. It started on 18 April 2023 and involved protecting computer systems from real-time attacks and simulating tactical and strategic decisions in critical situations.

https://www.nato.int/cps/en/natohq/news_214144.htm

Sat, 22 Apr 2023

Japan Orders Defence Forces to Take 'Necessary Measures' to Shoot Down North Korea's Spy Satellite

Japan's Defence Ministry is all set to shoot down a North Korean spy satellite should it fall within Japan's territory. Defence Minister Yasukazu Hamada ordered Self-Defense Forces to make necessary preparations as he could potentially "order the destruction of ballistic missiles", the Defense Ministry said in a statement.

The ministry will make preparations in terms of deploying troops in the southern prefecture of Okinawa to "minimise damage should a ballistic missile fall."

Forces have also been directed to deploy ground-based Patriot Advanced Capability-3 interceptor missiles and Aegis-equipped destroyer warships, the statement added.

On Thursday, the North Korean state media KCNA reported that Kim Jong Un had ordered its military to launch the country's first military reconnaissance satellite. The satellite would be launched to counter threats from the United States and South Korea, KCNA added.

<https://www.firstpost.com/world/japan-orders-defence-forces-to-take-necessary-measures-to-shoot-down-north-koreas-spy-satellite-12490912.html>

THE TIMES OF INDIA

Mon, 24 Apr 2023

Eye on China: Australia Plans Biggest Defence Shakeup since WWII

Australia needs to spend more money on defence, make its own munitions and develop the ability to strike longer-range targets as China's military buildup challenges regional security, according to a government-commissioned review released Monday.

The defence Strategic Review supports the so-called AUKUS partnership between Australia, United States and Britain, who in March announced an agreement to create an Australian fleet of eight submarines powered by US nuclear technology.

Prime Minister Anthony Albanese said his government commissioned the review to assess whether Australia had the necessary defence capability, posture and preparedness to defend itself in the current strategic environment. "We support the strategic direction and key findings set out in the review, which will strengthen our national security and ensure our readiness for future challenges," Albanese said in a statement.

The public version of the classified review recommended Australia's government spend more on defence than the current expenditure of 2% of gross domestic product, improve the Australian

defence Force's ability to precisely strike targets at longer ranges and make munitions domestically. Other recommendations include improving the force's ability to operate from Australia's northern bases and to deepen defence partnerships with key partners in the Indo-Pacific region including India and Japan.

China's military buildup "is now the largest and most ambitious of any country" since the end of World War II, the review said. And it "is occurring without transparency or reassurance to the Indo-Pacific region of China's strategic intent," the review added.

The strategic circumstances during the current review were "radically different" than those in the past, said the review authored by former Australian defence Force Chief Angus Houston and former defence Minister Stephen Smith.

The United States, Australia's most important defence treaty partner, was "no longer the unipolar leader of the Indo-Pacific," a region that had seen the return of major power strategic competition, it said.

"As a consequence, for the first time in 80 years, we must go back to fundamentals, to take a first-principles approach as to how we manage and seek to avoid the highest level of strategic risk we now face as a nation: the prospect of major conflict in the region that directly threatens our national interest," the review said.

For the past five decades, Australia's defence policy had been aimed at deterring and responding to potential low-level threats from a small or middle-power neighbors.

"This approach is no longer fit for purpose," the review said.

Australia's army, air force and navy needed to focus on "delivering timely and relevant capability" and abandon its "pursuit of the perfect solution or process" in its procurements, it said.

<https://timesofindia.indiatimes.com/world/rest-of-world/eye-on-china-australia-plans-biggest-defence-shakeup-since-wwii/articleshow/99719890.cms>

Science & Technology News



Press Information Bureau
Government of India

Ministry of Science & Technology

Fri, 21 Apr 2023

Scientists Fabricate Protein that can Help Study Diseases like Multiple Sclerosis

Scientists have fabricated monolayers of pure myelin basic protein (MBP), a major protein component of myelin sheath, which is a protective membrane that wraps around the axon of nerve cells and acts as a model protein in studying diseases like multiple sclerosis (MS).

MBP helps in compactification of the myelin sheath, and the fabricated tailored monolayers can give an in-depth understanding of the role of MBP in forming multi-lamellar myelin sheath structure as well as preserving the integrity, stability, and compactness of the sheath.

A research group from physical sciences division of the Institute of Advanced Study in Science and Technology, Guwahati, an autonomous institute of North-East India under the Department of Science and Technology, used a technique called the Langmuir-Blodgett (LB) technique to form monolayers of pure myelin basic protein at the air-water and air-solid interfaces.

This research group is led by Dr. Sarathi Kundu, Associate Professor, along with Mr. Raktim J. Sarmah, a Senior Research Fellow, have explained the mechanism of formation of MBP while tracking the stability and rigidity of the protein films by tuning the subphase pH conditions. The reversible nature of the molecules confirms the flexibility of the films with respect to the pH conditions.

The behaviour of the protein under variable pH conditions were investigated from different areas of the monolayer formed at the air-water interface. The rigidity of the monolayers were correlated with the specific domains formed and the area occupied by the domains on the water surface.

The closely packed MBP layer formed at the air-water and also on solid surfaces fabricated by the LB method will be helpful in studying different chemical and physical properties in 2D in the vicinity of protein environment. The deposited LB films of MBP may also be considered as protein nanotemplates to crystallize proteins of interest. This research work was recently published in the journal of Colloids and Surfaces A: Physicochemical and Engineering Aspects under the reputed Elsevier publishers.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1918523>



Sat, 22 Apr 2023

What is Space Policy & How it will Bolster India's Private Space Industry

By Sangeet Kumar Sanu

After the approval of the Cabinet Committee on Security, the government published the Indian Space Policy 2023 on Friday. The Policy will have a huge impact on the Indian space economy as it intends to expand India's global space economic contribution from less than 2 per cent to 9 per cent by 2030.

What does the Indian Space Policy 2023 entail?

The Indian Space Policy 2023 is a detailed collection of guidelines outlining the roles and responsibilities of various organisations in the Indian space sector. The policy paves the much-needed way through proposing space reforms which include more private sector participation in the space economy.

According to the policy, there is a need to stimulate and institutionalise private sector participation in India's space sector, with the Indian Space Research Organisation (ISRO) principally focused on advanced space technology research and development.

The policy also says about giving the private sector more access to ISRO's infrastructure, technology and expertise to help them with their space-related activities.

What are the policy's main features?

One of the policy's primary elements is the definition of the duties and responsibilities of three key institutions in India's space sector: the Indian Space Research Organisation (ISRO), NewSpace India Limited (NSIL) and the Indian National Space Promotion and Authorisation Centre (IN-SPACe).

ISRO as India's top space agency will concentrate its efforts on developing new technologies, systems and research & development. NSIL is a space sector Public Sector Undertaking (PSU) that will work in a demand-driven way to meet the industry's needs and handle the operational aspects of ISRO's missions. Also, NSIL will be in charge of all strategic space-related initiatives. According to the *businessline's* report, NSIL aims to increase private industry engagement in the space economy and develop a self-sufficient space industry in India.

Why policy's mention IN-SPACe significantly?

In-SPACe, which was established in 2020, is a single-window autonomous agency inside the Department of Space. Despite the fact that it has proven to be critical for space tech start-up players in all things related to permissions, integrations, launches and so on, industry players have frequently noted IN-SPACe's lack of a legislative mandate.

They can now rejoice because the space policy explains this body's obligations. Other factors, such as organisational structure, appointments and tenure, remain unclear.

What exactly does the policy state about IN-SPACe's responsibilities?

To begin, IN-SPACe will grant permission to both government agencies and non-governmental organisations for space operations such as the establishment and/or operation of space objects, rocket launches, launchpad construction, scheduled re-entry of space objects and so on.

On the promotion front, it would collaborate with space sector-centric industry clusters, work to position India as a preferred service provider for foreign product and service requirements, collaborate with academia to allow industry-academia connections and so on.

It will also create frameworks for building global standards-based space sector standards. IN-SPACe will approve the use of space objects for communication and broadcast services in collaboration with the relevant departments.

How will IN-SPACe help private players to participate in space activities?

IN-SPACe will "ensure a level playing field for the use of all facilities created with public funds by prioritising their use among government entities and non-government organisations."

Apart from that, the policy stipulates that the organisation will incentivise Non-governmental Entities (NGEs) that obtain new orbital resources through filings with the United Nations' International Telecommunication Union (ITU) and so on.

What will be the role of the Department of Space?

According to the policy, the department will be in charge of carrying out the Indian Space Policy. It will also ensure that the policy's various stakeholders are empowered to carry out their tasks “without overlapping into the domains of others.”

Notably, the DoS will be in charge of maintaining existing and future satellite constellations and ground segments. In addition, it would “establish a framework to ensure safe and sustainable space operations in accordance with relevant international space debris mitigation guidelines.”

The problem of space debris has gotten so bad that it threatens the survival of current satellites. The United Nations General Assembly passed a resolution last year that voiced worry over space debris, calling it the “most significant threat to the space environment.”

How does India's space industry weigh in the world and future challenges?

India's space industry is known worldwide for producing low-cost satellites and advocating for the peaceful and civilian use of space. ISRO has a high success rate and is the world's sixth-largest space organisation.

India has about 400 private space enterprises and ranks fifth in terms of the number of space companies worldwide.

The establishment of the Defence Space Agency (DSA) and the expansion of satellite production capabilities, which are estimated to reach USD 3.2 billion by 2025, are recent advancements.

ISRO also started a student outreach programme named SAMVAD to inspire young brains to pursue careers in space.

However, the space sector faces significant challenges, including a lack of commercialisation regulations, which could lead to monopolisation, rising space debris from increased expeditions, China's rapid growth in the space industry and potential weaponisation and an increasing global trust deficit, which creates an environment of suspicion and potential conflict.

<https://www.businessworld.in/article/BW-Explains-What-Is-Space-Policy-How-It-Will-Bolster-India-s-Private-Space-Industry/22-04-2023-473771/>



Sun, 23 Apr 2023

Two Singapore Satellites Sent to Space: What is PSLV, ISRO's Workhorse Rocket that can 'Write Poems in Orbit'

ISRO's Polar Satellite Launch Vehicle (PSLV) Saturday successfully placed two Singapore satellites into their intended orbits.

The satellites are part of the order secured by NewSpace India Ltd, the commercial arm of ISRO, reported PTI. At the end of a 22.5-hour countdown, the 44.4-metre-tall rocket lifted off at the scheduled time of 2.19 pm from the Satish Dhawan Space Centre in Sriharikota.

“The PSLV in its 57th mission has once again demonstrated its high reliability and its suitability for commercial missions of such class,” ISRO Chief S Somanath said from the Mission Control Center, as reported by PTI.

The PSLV is one of ISRO’s most reliable vehicles, having launched hundreds of satellites with only three failures or partial failures since 1993. Over the years, various improvements have been made to it, making it a stand-out satellite carrier.

Launch vehicles are meant only to deposit satellites into space, after which they become useless. They either burn up in space or add to the ever-increasing concern of space debris. The PSLV, however, is now technologically advanced enough to have one component that can stay on in space to carry out the research after it has delivered its satellite. The current mission includes this component, POEM-2, which stands for PSLV Orbital Experimental Module.

Here is what makes the PSLV, ISRO’s workhorse rocket, special.

What was PSLV’s most recent mission?

The rocket launched on Saturday carried TeLEOS-2 as the primary satellite and Lumelite-4 as a co-passenger satellite, ISRO said in a statement. While TeLEOS-2 will “be used to support the satellite imagery requirements of various agencies within the Government of Singapore”, Lumelite-4 “aims to augment Singapore’s e-navigation maritime safety and benefit the global shipping community”, the space agency said.

POEM-2, meanwhile, will “be utilised as an orbital platform to carry out scientific experiments through non-separating payloads. The payloads belong to ISRO/Department of Space, Bellatrix, Dhruva Space, and Indian Institute of Astrophysics,” ISRO said.

First, why do satellites need launch vehicles?

The launch vehicle rockets have powerful propulsion systems that generate the huge amount of energy required to lift heavy objects like satellites into space, overcoming the gravitational pull of the earth. Satellites, or payloads as they are often called, sit inside the rocket and are ejected once they reach near their intended orbit in space. Most satellites have small propulsion systems and carry small amounts of fuel, because they encounter very little drag, or force, in outer space. What they do carry are the instruments needed for the scientific work for which they are being sent into space.

What is PSLV?

PSLV is the most reliable rocket used by ISRO to date. Its first launch was in 1994, and it has been ISRO’s main rocket ever since.

Apart from Indian satellites, it also carries satellites from other nations into space, like in the current mission, where it carried payloads from Singapore. The reason for this is that apart from being reliable, the PSLV is also more affordable than the launch vehicles of many other countries.

According to ISRO’s website, “After its first successful launch in October 1994, PSLV emerged as a reliable and versatile workhorse launch vehicle of India. The vehicle has launched numerous Indian and foreign customer satellites. Besides, the vehicle successfully launched two spacecraft, Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013, that later travelled to Moon and Mars respectively. Chandrayaan-1 and MOM were feathers in the hat of PSLV.

PSLV earned its title ‘the workhorse of ISRO’ through consistently delivering various satellites into low earth orbits.”

The various components of PSLV

Rockets have several detachable energy-providing parts. They burn different kinds of fuels to power the rocket. Once their fuel is exhausted, they detach from the rocket and fall off, often burning off in the atmosphere due to air-friction, and getting destroyed. Only a small part of the original rocket goes till the intended destination of the satellite. Once the satellite is finally ejected, this last part of the rocket either becomes part of space debris, or once again burns off after falling into the atmosphere.

PSLV has four parts — PS1, a solid rocket motor augmented by 6 solid strap-on boosters; PS2, a storable liquid rocket engine, known as the Vikas engine; PS3, a solid rocket motor that provides the upper stages high thrust after the atmospheric phase of the launch; and PS4, the uppermost stage consisting of two Earth storable liquid engines.

As technology evolves, the effort is to make the various parts of a rocket reusable. PSLV’s PS4 has been able to achieve this.

Enter POEM

As part of POEM, PS4, instead of being discarded, is now utilised as a “stabilised platform” to perform experiments.

POEM has a dedicated Navigation Guidance and Control (NGC) system for attitude stabilisation, which stands for controlling the orientation of any aerospace vehicle within permitted limits. The NGC acts as the platform’s brain to stabilise it with specified accuracy. It derives its power from solar panels mounted around the PS4 tank, and a Li-Ion battery.

Last year, when the PS4 orbited the earth as a stabilised platform for the first time, ISRO chairman Somnath had said the PS4 would “write some poems in orbit”. This time, ISRO tweeted images of the successful launch with the caption, “While the POEM is being written, here are initial images...”

<https://indianexpress.com/article/explained/explained-sci-tech/singapore-satellites-what-is-pslv-poem-8570483/>

Business Standard

Sat, 22 Apr 2023

ISRO to Send up Uncrewed Rocket in 2024 as part of Gaganyaan Mission

Ahead of the 2024 General Elections, the Indian space agency ISRO will launch the first uncrewed test rocket Geosynchronous Satellite Launch Vehicle (GSLV) as a part of the Gaganyaan Mission - India's human space mission. The Chairman of Indian Space Research Organisation (ISRO) S. Somanath said here on Saturday the space agency is planning to send up

the first uncrewed GSLV rocket in February 2024 as part of the Gaganyaan Mission. The human module will land in the sea.

He was speaking to reporters here after the successful launch of two Singaporean satellites - TeLEOS-2 and Lumilite-4, with the rocket Polar Satellite Launch Vehicle (PSLV).

Somanath said prior that there will a test of Gaganyaan Mission in June this year where the rocket will go up to 12-14 km and test its safety systems.

Queried about the next step in ISRO developing a reusable rocket - similar to the USA's Space Shuttle, Somanath said the space agency will send up a Orbital Recovery Vehicle. The vehicle will be in the space for some days and come back.

On forthcoming space missions of ISRO, he said the space agency will send the Aditya L1, Navigation satellites, a commercial launch with the heavier rocket GSLV and a mission with Small Satellite Launch Vehicle (SSLV).

According to D. Radhakrishnan, Chairman and Managing Director of NewSpace India Ltd (NSIL) - the commercial arm of Department of Space, there is emerging demand for SSLV rocket for orbiting small satellites.

Similarly after the successful launch of 72 OneWeb satellites - for a fee of over Rs 1,000 crore with ISRO's LVM3 rocket, there is a good business potential for that rocket as well, Radhakrishnan said.

He said the NSIL is planning to build communication satellites and launch the same.

Be that as it may, speaking about the Saturday's successful PSLV rocket mission, Somanath said the space agency did some re-engineering to cut costs without compromising on its performance.

The ISRO officials are also upbeat about using the PSLV rocket's upper stage as a stabilised orbital platform on which small payloads are fitted to carry out experiments.

The upper stage of PSLV-C55 rocket that went up on Saturday had seven experimental payloads.

According to M. Sankaran, Director, U R Rao Satellite Centre (URSC), the thought of using the upper stage came four years ago as it will be in the space for a long time.

Sankaran said the space agency took steps to stabilise the upper stage in space and then upgraded the same.

Somanath said commercial electronics are used in the upper stage to make it as an orbital platform and hence its life span will be short.

https://www.business-standard.com/amp/india-news/isro-to-send-up-uncrewed-rocket-in-2024-as-part-of-gaganyaan-mission-123042200556_1.html

