

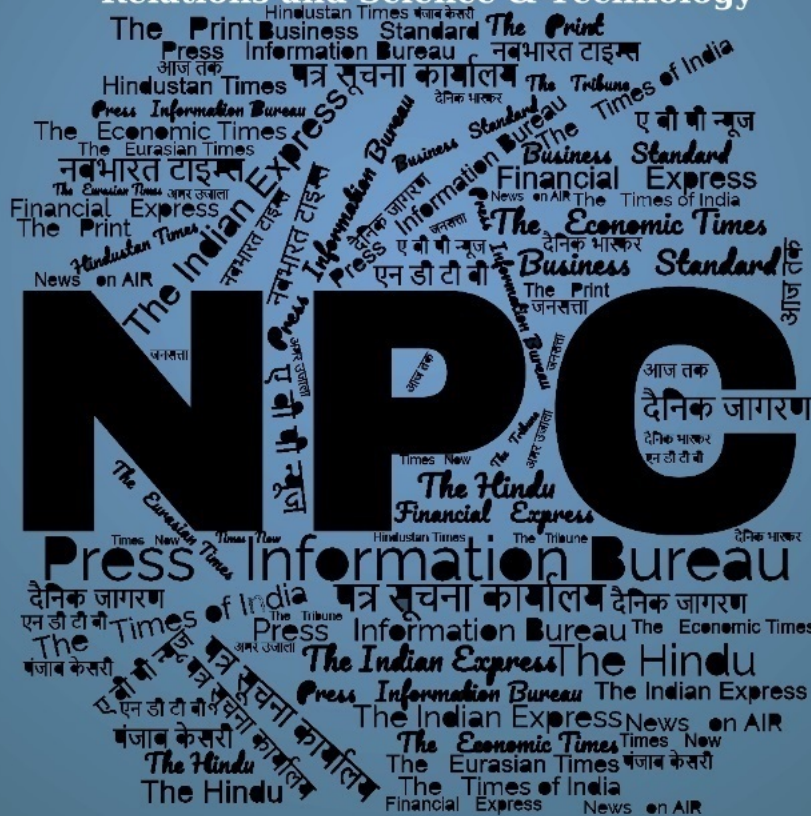
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# समाचार पत्रों से चयित अंश Newspapers Clippings

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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# CONTENTS

S. No.	TITLE		Page No.
<b>Defence News</b>			<b>1-11</b>
<b>Defence Strategic: National/International</b>			
1	Two-day 'Varshik Niti Samvad Shivar' of NCC held in New Delhi Tele MANAS Cell launched to support Armed Forces' mental health	<i>Press Information Bureau</i>	1
2	Tele MANAS Cell launched to support Armed Forces' mental health	<i>The Print</i>	2
3	Army chief visits Thal Sena Bhawan construction site; complex to be completed by Jun 2025	<i>The Economic Times</i>	2
4	IAF showcases women power at US-led combat drills	<i>Hindustan Times</i>	3
5	INS Varsha: चीन और पाकिस्तान से खतरा, बंगाल की खाड़ी में न्यूक्लियर लॉन्च पैड बना रहा भारत	<i>NavBharat Times</i>	5
6	Indian Navy's 'Stealthy' Nuclear Submarine Base In World's Largest Bay Set To Puncture Chinese PLAN	<i>The EurAsian Times</i>	6
7	For strategic autonomy, India needs to build its own technology for defence	<i>Mint</i>	9
8	US, South Korea conduct joint bombing drills	<i>The Economic Times</i>	10
<b>Science &amp; Technology News</b>			<b>11-15</b>
9	The 3rd Indian Analytical Congress (IAC) inaugurated at the Council of Scientific and Industrial Research-Indian Institute of Petroleum (CSIR-IIP) Dehradun	<i>Press Information Bureau</i>	11
10	ISRO chairman inaugurates facilities at HAL to support LVM3 programme	<i>The Hindu</i>	12
11	ISRO gives details on Indo-French TRISHNA mission	<i>The Hindu</i>	13
12	World's most powerful rocket Starship set for next launch	<i>The Economic Times</i>	14

**DRDO News**

**DRDO Technology News**



**Press Information Bureau  
Government of India**

**Ministry of Defence**

*Wed, 5 Jun 2024*

## **Two-day ‘Varshik Niti Samvad Shivir’ of NCC held in New Delhi**

A two-day ‘Varshik Niti Samvad Shivir’ of the National Cadet Corps (NCC) took place in New Delhi on June 04-05, 2024. The conference’s primary focus was to review the progress of the ongoing expansion plan of NCC as per the Government directives to meet the aspirations of the youth. It was inaugurated by DG NCC Lt Gen Gurbirpal Singh and attended by Additional Directors General & Deputy Directors General representing NCC Directorates from across the country.

During the meeting, DG NCC highlighted the substantial efforts made in the last one year to enhance training, infrastructure and logistics functions of the NCC. He emphasised on the need for institutionalised training to be the *raison de’être* (reason for being) of all Directorates in order to meaningfully contribute towards nation building, social awareness and community development programmes.

He reiterated NCC’s unwavering commitment to motivate young Indians and transform them into responsible citizens, in sync with the Government policies towards making the country ‘Viksit Bharat’ by 2047.

The conference was held at the newly-renovated Pratap Conference Hall, DG NCC Camp, Cariappa Parade Ground in New Delhi. The hall is named after Cadet Sergeant Pratap Singh of the 10th Punjab Battalion NCC, Gurdaspur who was awarded the Ashok Chakra Class III for his gallantry and selfless devotion to duty during firefighting operations at Gurdaspur Railway Station on September 13, 1965 during the war.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2022818>

## **Tele MANAS Cell launched to support Armed Forces' mental health**

The Armed Forces Medical College in Pune has established a dedicated Tele MANAS cell to address the mental health concerns of personnel and their families. The move is in line with the growing demand for mental health support among the forces, a PIB press release stated.

The new cell is part of the efforts of the Ministry of Health and Family Welfare (MoHFW) and the Ministry of Defence (MoD) to strengthen the mental health infrastructure of the Armed Forces. It is hoped that the dedicated Tele MANAS cell will provide 24/7 services and enable the armed forces personnel and their families to access specialized care.

The Tele MANAS cell was earlier inaugurated on 1 December 2023, in the presence of the Chief of Defence Staff, General Anil Chauhan, PVSM, UYSM, AVSM, SM, VSM. The cell is operational in 20 different languages and offers services to more than 10 lakh callers annually.

<https://theprint.in/defence/tele-manas-cell-launched-to-support-armed-forces-mental-health/2118686/>

## **Army chief visits Thal Sena Bhawan construction site; complex to be completed by Jun 2025**

Army Chief Gen Manoj Pande visited the site of construction of the upcoming Thal Sena Bhawan -- the new building of the Army headquarters -- at Delhi cantonment on Wednesday to oversee the progress of the complex scheduled to be completed by June 2025. Defence Minister Rajnath Singh laid the foundation stone of the complex in February 2020.

Thal Sena Bhawan, a cornerstone project aimed at modernising infrastructure for the Indian Army, has been under construction since March 2023, officials said. The Army chief was updated on the state of the construction which is "progressing as per schedule and in adherence to the highest engineering standards", a senior official said.

Various green initiatives and the best engineering practices which have been adopted in the project were highlighted during the visit. These include transplantation of 476 fully grown trees, compensatory plantation of 5,790 trees to increase green cover, and use of environment-friendly construction material such as fly ash bricks, ashcrete cement, recycled wood, and peri formwork, the officials said. The Thal Sena Bhawan aims to be a net-zero building as it will have its own

compost plant, sewage treatment plant, solar panels and electric vehicle charging facilities to promote clean energy, they said. The Army chief also inaugurated a state-of-the-art living barrack for troops at the Army HQ Camp at Delhi Cantonment.

The barrack has a capacity of 400 beds and was constructed with the latest light gauge steel frame technology through which speedy and sturdy construction has been undertaken. The building was completed in "record time of one year". It has state-of-the-art amenities for all weather conditions, including a central cooling system, and is equipped with modern technologies such as CCTV cameras and biometric attendance systems. Gen Pande expressed satisfaction with both projects.

These endeavours underscore the Indian Army's unwavering resolve to modernise infrastructure, prioritise sustainability and improve the quality of life for its personnel, the officials said. The eight-storey state-of-the-art structure of the Army headquarters' new building will "complement" the overall Central Vista redevelopment project, and its architectural design draws inspiration from the official emblem of the Army, senior officials said in April 2023.

The work is due to finish in 27 months at an approximate cost of Rs 760 crore, a top Army official had earlier said. The starting of the construction work got delayed after the outbreak of the COVID-19 pandemic in early 2020, sources had said, adding the building will be a green structure and fully quake-resistant and "will be built to last 100 years".

<https://economictimes.indiatimes.com/news/defence/army-chief-visits-thal-sena-bhawan-construction-site-complex-to-be-completed-by-jun-2025/articleshow/110737263.cms>



*Thu, 6 Jun 2024*

## **IAF showcases women power at US-led combat drills**

Six women officers of the Indian Air Force are part of a 250-member Indian contingent taking part in the Pacific Air Forces-led multinational exercise 'Red Flag-Alaska' currently underway in the US to provide realistic training to air crews in a simulated combat environment, officials aware of the matter said on Wednesday.

Squadron Leader Shivangi Singh, India's first woman Rafale pilot, is among them, the officials said, on condition of anonymity.

The remaining women officers are in roles associated with maintenance and support of the IAF contingent, which includes eight Rafale fighter planes, three C-17 Globemaster III heavy-lifters and two Il-78 refuellers --- a mix of French, US and Russian platforms.

The Red Flag exercise, which began on May 30 and will end on June 14, involves primary flight operations over the Joint Pacific Alaska Range Complex (JPARC --- the US Department of Defence's premier training venue in Alaska) and aircraft based at Eielson Air Force Base and Joint Base Elmendorf-Richardson, Alaska.

Air crews from six global air forces, including the IAF, are using more than 77,000 square miles of airspace in JPARC, the world's largest combat training range.

“The IAF contingent, including the women officers, are getting valuable exposure to joint warfighting tactics. The IAF is providing its women officers equal opportunity with men,” said one of the officials cited above.

In January 2023, Squadron Leader Avani Chaturvedi, the IAF's first woman fighter pilot, became the first woman officer to take part in a joint international exercise, Veer Guardian -2023 in Japan.

A few months later, Squadron Leader Shivangi Singh, hailing from Varanasi, took part in the multi-national exercise Orion held at the Mont-de-Marsan base in France in April-May 2023. The drills featured four IAF Rafales, two C-17s, two Il-78s and 165 air warriors. It was the first overseas exercise for the IAF's Rafale fighter planes.

Singh is from the Ambala-based No. 17 squadron, also known as 'Golden Arrows.' She joined the IAF in 2017.

IAF, the world's fourth largest air force, currently accounts for more than 20 women fighter pilots. The service opened its fighter stream to women, a watershed in India's military history, in 2016.

It has opened all frontiers for women and is giving them opportunities on a par with their male counterparts. The IAF has also begun inducting them in its non-officer cadre under the Agnipath scheme. The IAF has also allowed women officers to join the elite Garud commando force, provided they meet the criteria for selection. Last year, a woman officer, Group Captain Shaliza Dhama, took charge of a frontline IAF combat unit for the first time. Dhama, a helicopter pilot, is commanding a missile squadron near the India-Pakistan border in Punjab.

The Indian military has come a long way since it began inducting women as short-service commissioned officers in the early 1990s.

Women in uniform are no longer on the fringes but are being assigned key roles alongside their male counterparts across the three services. They are flying fighter planes, serving on board warships, commanding front-line units, being inducted in the PBOR (personnel below officer rank) cadre, eligible for permanent commission, and undergoing training at the National Defence Academy. To be sure, tanks and combat positions in the infantry are still no-go zones for women in the army.

On Monday, India's deputy ambassador to the US Sripriya Ranganathan visited the Eielson Air Force Base and interacted with the IAF contingent. She was also briefed on the exercise by the base commander.

Red Flag-Alaska is designed to provide realistic training in a simulated combat environment enabling joint combined forces to exchange tactics, techniques and procedures while improving interoperability with fellow servicemembers, the Pacific Air Forces, headquartered in Hawaii, said in the run-up to the exercise. Around 3,100 service members are flying, maintaining and supporting more than 100 aircraft taking part in the drills.

<https://www.hindustantimes.com/india-news/iaf-showcases-women-power-at-us-led-combat-drills-101717614928994.html>

# नवभारत टाइम्स

Wed, 5 Jun 2024

## INS Varsha: चीन और पाकिस्तान से खतरा, बंगाल की खाड़ी में न्यूक्लियर लॉन्च पैड बना रहा भारत

भारत बंगाल की खाड़ी में एक पनडुब्बी बेस बना रहा है। यह पूरा होने पर पाकिस्तान और चीन के खिलाफ भारत के समुद्र-आधारित परमाणु निवारक के लिए एक सुरक्षित पनाहगाह बनेगा। भारत की यह महत्वाकांक्षी परियोजना आईएनएस वर्षा एक विशाल 1,680 एकड़ का नौसैनिक बेस, रामबिली में पूर्वी तट पर तेजी से आकार ले रहा है। हाल ही में उपग्रह चित्रों से पता चलता है कि इसके निर्माण में काफी तेजी आई है। ऐसे में संभावना है कि यह परियोजना अपने निर्धारित समय सीमा के भीतर पूरी होने की राह पर है। इस बेस के निर्माण के साथ ही भारत एक साथ चीन और पाकिस्तान के खतरों से निपटने में सक्षम हो जाएगा।

### आईएनएस वर्षा क्या है

आईएनएस वर्षा परियोजना भारत का एक रणनीतिक नौसैनिक बेस है जिसे 12 से अधिक परमाणु-संचालित बैलिस्टिक मिसाइल पनडुब्बियों (SSBN) के बेड़े को रखने के लिए डिजाइन किया गया है। इसकी सबसे खास विशेषता एक व्यापक भूमिगत परिसर है, जिसमें सुरंगें शामिल हैं जो पनडुब्बियों को छिपाने के लिए बनाई गई हैं। बेस की अंडरग्राउंड सुरंगें भारत की परमाणु पनडुब्बियों को हवाई खतरों और खोजी उपग्रहों से बचाने के काम में आएंगी। इसके अलावा यह परमाणु इंजीनियरिंग के लिए आवश्यक सहायता सुविधाएं भी प्रदान करता है। जमीन के ऊपर बनें घाटों के निर्माण से पता चलता है कि इसमें विभिन्न सतही युद्धपोतों को समायोजित करने की क्षमता है।

### आईएनएस वर्षा से भारत को क्या लाभ

प्रोजेक्ट वर्षा का स्थान भारतीय नौसेना को इंडो-पैसिफिक के महत्वपूर्ण शिपिंग लेन के करीब स्थित करके रणनीतिक लाभ प्रदान करता है। यह निकटता क्षेत्रीय खतरों के खिलाफ त्वरित प्रतिक्रिया में सहायता प्रदान करेगा और भारत के परमाणु प्रतिष्ठान भाभा परमाणु अनुसंधान केंद्र (BARC) के साथ सहयोग की सुविधा प्रदान करती है। प्रोजेक्ट वर्षा को भारत की नौसैनिक प्रतिरोधक क्षमता को महत्वपूर्ण रूप से बढ़ाने के लिए डिजाइन किया गया है, जिससे एक सुरक्षित, भूमिगत बेस से परमाणु-सशस्त्र पनडुब्बियों की तैनाती की अनुमति मिलती है। यह हिंद महासागर क्षेत्र में एक दुर्जेय उपस्थिति बनाए रखने, राष्ट्र की सुरक्षा सुनिश्चित करने और एक प्रमुख समुद्री शक्ति के रूप में अपनी स्थिति को मजबूत करने के लिए भारत की प्रतिबद्धता का संकेत देता है।

### चीन और पाकिस्तान से भारत को खतरा

भारत का लक्ष्य पाकिस्तान और चीन द्वारा उत्पन्न दोहरे खतरे से निपटने के लिए चार बैलिस्टिक मिसाइलों से लैस परमाणु पनडुब्बी को ऑपरेट करना है। वर्तमान में, भारत के पास एक सक्रिय परमाणु पनडुब्बी आईएनएस अरिहंत है, जो 700 किलोमीटर की अपेक्षाकृत कम दूरी के साथ 12 K-15 पनडुब्बी-लॉन्च बैलिस्टिक मिसाइलों (SLBM) से लैस है। भारत अपने दूसरी परमाणु पनडुब्बी आईएनएस अरिघात को इस साल के अंत तक चालू करने की योजना बना रहा है।

## चौथी परमाणु पनडुब्बी बना रहा भारत

भारत की तीसरी परमाणु पनडुब्बी, जिसका कोडनेम S4 है, निर्माणाधीन है और माना जाता है कि यह अपने पूर्ववर्तियों से बड़ा है। सैटेलाइट इमेजरी से पता चला है कि S4 पनडुब्बी आईएनएस अरिहंत और INS अरिघाट की तुलना में दुगुनी पनडुब्बी से लॉन्च होने वाली बैलिस्टिक मिसाइलें ले जा सकती है। इसमें 3,500 किलोमीटर की रेंज वाली 24 K-15 SLBM या 8 K-4 SLBM हो सकती हैं। भारत संभवतः इस साल S4 को पूरा कर लेगा और फिर समुद्री परीक्षणों की योजना बनाएगा। उसके बाद, भारत की चौथी परमाणु पनडुब्बी संभवतः S4 पर आधारित होगी, जिसमें अपने पूर्ववर्ती की तुलना में अलग-अलग सुधार होंगे।

## भारत के पास अब भी कम क्षमता की मिसाइलें

हंस क्रिस्टेंसन और मैट कोर्डा ने जुलाई 2022 के बुलेटिन ऑफ द एटॉमिक साइंटिस्ट्स लेख में लिखा है कि K-15 SLBM की रेंज कम है, जो सिर्फ पाकिस्तान को निशाना बनाने में सक्षम है। यह मिसाइल पूरे चीन को अपनी जद में नहीं ले सकती है। हालांकि, भारत पहले से ही 5,000 किलोमीटर की रेंज वाली K-5 SLBM विकसित कर रहा है। रणनीतिक और सुरक्षा कारणों से यह परियोजना अत्यधिक गोपनीय है।

## चीन-पाकिस्तान गठजोड़ से भारत सतर्क

भारत को पाकिस्तान और चीन से दोहरे परमाणु खतरे का सामना करना पड़ रहा है। इसमें चीन, पाकिस्तान के साथ "थ्रेसहोल्ड एलायंस" में शामिल है। यह एक ऐसा रिश्ता है जो औपचारिक गठबंधन से कम लेकिन सामान्य रक्षा सहयोग से कहीं ज़्यादा है। हाल में ही चीन ने पाकिस्तान के लिए बनाई गई हेंगोर क्लास की पहली पनडुब्बी को लॉन्च किया था, जो 039B युआन-क्लास का एक्सपोर्ट वेरिएंट है। अप्रैल 2015 में, पाकिस्तान ने चीन के साथ आठ पनडुब्बियों के लिए एक अनुबंध पर हस्ताक्षर किए, जिनमें से चार चीन में और बाकी पाकिस्तान में बनाई जानी हैं। पाकिस्तान अगर अपनी हेंगोर क्लास की पनडुब्बियों को परमाणु हथियार से लैस बाबर-3 पनडुब्बी से प्रक्षेपित क्रूज मिसाइलों (एसएलसीएम) से लैस कर ले, तो उसे महत्वपूर्ण रूप से भारत के अंदर हमले की क्षमता हासिल हो जाएगी, जिनकी रेंज 450 किलोमीटर है।

<https://navbharattimes.indiatimes.com/world/china/ins-varsha-project-indian-navy-making-bay-of-bengal-into-a-nuclear-launchpad-amid-threat-from-china-pakistan/articleshow/110741758.cms>



Thu, 6 Jun 2024

## Indian Navy's 'Stealthy' Nuclear Submarine Base In World's Largest Bay Set To Puncture Chinese PLAN

Deep beneath the tranquil shores of Rambilli village in Andhra Pradesh, a subterranean marvel is taking shape—INS Varsha, India's covert and formidable nuclear submarine base. This \$3.75 billion megaproject spans a vast 20-square-kilometer area, with a network of tunnels bored into a mountain to allow stealthy submarine operations.



India's strategic naval project, INS Varsha, an underground base for nuclear submarines, is under construction near the coastal village Rambilli in Andhra Pradesh, about 70 km from the Vishakhapatnam base. Operated by the Eastern Naval Command headquartered in Visakhapatnam, this cutting-edge naval base on India's east coast will serve as a key point in the Bay of Bengal.

The project covers an area of 20 square kilometers and will accommodate at least 10 nuclear submarines, which are expected to be fully operational by 2025-2026.

The base's construction involves extensive engineering efforts, including the creation of numerous tunnels into a mountain, large piers, and support facilities. While the exact cost is unknown, estimates suggest it will reach \$3.75 billion.

### **Crown Jewel Of Eastern Naval Command**

INS Varsha – nuclear submarine base's proximity to the Bhabha Atomic Research Centre (BARC), India's primary nuclear research facility associated with its nuclear weapons program, indicates Rambilli's suitability as a clandestine naval base site.

The location was chosen for its unique underground chambers, which enable submarines to enter and exit the base through tunnels without surfacing and avoid detection by enemy spy satellites. This ensures the covert deployment of India's nuclear submarines.

INS Varsha will house repair and maintenance facilities and amenities for crew rest. Its size will accommodate large nuclear submarines like the Arihant class, the upcoming S5, and nuclear attack submarines.

### **Creating A New Naval Hub Near Visakhapatnam**

Visakhapatnam, home to the Headquarters of the Eastern Naval Command, serves as a base for over 50 warships of the Indian Navy, utilizing its landlocked natural harbor as an ideal position for naval operations.

However, the current Visakhapatnam port often encounters congestion due to heavy civilian container traffic and visiting ships. In response, the establishment of INS Varsha seeks to offer specialized infrastructure and amenities tailored to naval needs, aiming to reduce interruptions from commercial port operations. By segregating naval activities from civilian maritime traffic, this new base will bolster the Navy's operational efficiency and preparedness in the area.

INS Varsha is a strategically designed submarine base to house India's nuclear-powered submarines, both ballistic missile (SSBNs) and attack (SSNs) variants. The base boasts state-of-the-art infrastructure, including modern docking facilities, repair yards, and munitions storage.

It will be equipped with sophisticated command and control systems for real-time coordination of naval operations. Additionally, the base features advanced stealth and security measures to safeguard sensitive assets and maintain operational secrecy.

### **India's Answer To China's Naval Ambitions**

INS Varsha's significance extends far beyond India's shores, resonating across the vast Indo-Pacific expanse.

Amidst China's growing naval assertiveness and the escalating Sino-Indian rivalry in the Bay of Bengal (the largest bay in the world with an area of about 839,000 square miles), this formidable

base represents a potent counterbalance, bolstering India's credible deterrence capabilities and safeguarding its strategic interests.

In the last few years, China has been actively bolstering the underwater naval capabilities of several littoral countries in the Bay of Bengal in recent years. In the Bay of Bengal, Sino-Indian competition has become increasingly significant as India seeks to maintain its dominance amid China's expanding presence.

China's proactive involvement in South Asia has added complexity to the regional dynamics, particularly concerning India's underdeveloped underwater naval capabilities. The disparity between Indian and Chinese naval strengths is stark, especially in the undersea domain, due to budget and warship-building capacity differences.

INS Varsha aims to bolster India's credible nuclear deterrence capabilities. Simultaneously, it serves as a regional counterbalance, addressing the increasing Chinese naval presence in the Indian Ocean Region (IOR). By enhancing India's naval prowess, INS Varsha strengthens the nation's strategic position in the maritime domain.

### **Expanding Maritime Influence In Indo-Pacific**

The establishment of INS Varsha carries significant implications regionally and globally, showcasing India's escalating maritime ambitions and its commitment to safeguarding interests across the Indo-Pacific.

INS Varsha will be helpful for strengthening cooperative security frameworks with the United States, Japan, and Australia under the Quad alliance. It also paves the way for potential technological collaborations and joint ventures with international partners. By enhancing naval capabilities, the base contributes to regional deterrence and stability.

INS Varsha augments India's capability to project naval power and influence across the vast Indo-Pacific maritime expanse. This strategic base enables the Indian Navy to conduct operations beyond regional waters, extending its operational reach to farther seas and oceans.

Project Varsha is set to significantly bolster the Indian Navy's strategic and operational capabilities. By providing a secure and advanced facility for India's naval assets, it strengthens India's maritime defense posture, enhances regional stability, and marks a pivotal advancement in India's maritime strategy.

### **Enhancing Maritime Security & Combat Readiness**

INS Varsha plays a crucial role in enhancing the Indian Navy's strategic capabilities, especially in accommodating and managing nuclear submarines and other essential maritime assets.

It enhances maritime security by facilitating anti-piracy operations in the Indian Ocean and safeguarding vital sea lines of communication (SLOCs) crucial for trade and energy transportation.

Additionally, INS Varsha enhances the combat readiness of both submarine and surface fleets by providing specialized facilities, thereby improving logistics and maintenance infrastructure and ensuring faster turnaround times for naval assets.

INS Varsha stands as a resounding testament to India's unwavering resolve to fortify its maritime prowess and cement its status as a preeminent naval power in the Indo-Pacific region.

This audacious engineering feat, meticulously carved into the very bedrock, transcends its physical grandeur to symbolize India's strategic vision – a vision that embraces cutting-edge technology, fosters international partnerships, and resolutely safeguards the nation's interests on the high seas.

<https://www.eurasiantimes.com/indian-navys-nuclear-submarine-base-in-worlds/>



*Wed, 5 Jun 2024*

## **For strategic autonomy, India needs to build its own technology for defence**

**- by Sumant Banerji**

In today's geopolitically charged and polarized world, India needs to develop its own technology in the defence sector to attain meaningful strategic autonomy, experts emphasized in a panel discussion at the Mint India Investment Summit 2024.

The government has set a target of over ₹3 trillion of capital acquisition by 2028-29, nearly double the current ₹1.7 trillion, offering a significant opportunity for domestic companies. Furthermore, 509 platforms and 4,666 components are reserved exclusively for domestic production.

“The ability of Indian industry today to fundamentally conceptualize from technology to a product to a system to a full fledged platform is fully recognized,” said Jayant Patil, member of executive committee & adviser, defence and smart technology, to chairman and managing director at Larsen & Toubro (L&T). “It is a journey that started more than two decades ago in 2002 and with incremental steps taken over time we are now in a position where 92% of our future defence requirement will be met through the domestic industry.”

L&T, a pioneer in the sector, began its investments 18 years prior to the privatization of the industry, gaining immediate benefits from liberalization. However, Patil acknowledged that the development of the supply chain has been a gradual process.

“In 2002, there were only two big private players and maybe 500-600 small entrepreneurs. Today there are 10 large companies and 12,000 MSMEs in the country,” Patil said. “We are fighting a four front war and cannot function as we used to in the past. Gone are the days of getting hardware from overseas and building the software here. If we want strategic autonomy it will come only by creating IP and being a master of your destiny.”

The discussion also touched upon the importance of research and development (R&D), assembly, scaling, and testing capabilities. With domestic demand providing a robust base for growth, the export potential of Indian defence equipment, expected to reach ₹25,000-30,000 crore by 2026 from ₹20,000 crore this year, positions India among the top 20 defence exporters globally.

Arjun Rajagopalan of Deloitte India underscored the necessity of building an in-house ecosystem for supply chain reliability, alongside the critical roles of assembly, scaling, and testing capabilities.

Ideaforge, a leading drone supplier for the Indian armed forces, exemplifies the new age companies entering the defence sector.

“Our split is very heavily skewed towards defence—almost 90% in last quarter,” said Ankit Mehta, CEO, Ideaforge. “Massive pace of induction is happening and will continue to happen going forward. We are right now trying to scale up and fill the deficit in demand and supply.”

The sector maybe booming right now but it has had its share of challenges in the past, mostly related to availability of capital. Measures like overhauling defence procurement policies have attracted investment in the sector.

“There has been a substantial overhaul in terms of defence acquisition and procurement policies. The offset contract thresholds increased from \$36 to \$240 million threshold level. 23 lease agreements for transfer of technology has been signed up and it has started to give us defence production value of \$14 billion in FY23,” said Rajagopalan. “Further, FDI cap has gone up from 49 to 74% and the impact of this is there are today \$13.2 billion offset obligations to be discharged by 2031.”

<https://www.livemint.com/industry/for-strategic-autonomy-india-needs-to-build-its-own-technology-for-defence-11711798777555.html>

## THE ECONOMIC TIMES

Wed, 5 Jun 2024

### **US, South Korea conduct joint bombing drills**

The United States flew a B-1B bomber over the Korean Peninsula for the first joint bombing drills with South Korea in seven years, the South Korean military said on Wednesday.

The development comes amid heightened tensions after North's Korea sent trash-filled balloons to the South and resorted to jamming the latter's GPS signals. South Korean military on Tuesday suspended a 2018 inter-Korean military pact, Yonhap news agency reported.

Meanwhile, during Wednesday's exercise, the US bomber dropped Joint Direct Attack Munitions at an unspecified firing range in the country, while being escorted by South Korean F-15K fighter jets, according to the ministry as cited by Yonhap news agency. US B-1B bombers last held such an exercise in South Korea in 2017. "Under close coordination between South Korea and the United States, this exercise took place with a focus on implementing the U.S. extended deterrence commitment and strengthening the combined defence posture," the ministry said.

The ministry said the South's F-15Ks also took part in the live-fire drills and demonstrated the "solid" combined defence posture against North Korea's nuclear and missile threats. The US bomber also staged joint air drills with South Korean F-35A and KF-16 fighters, as well as US F-35B and F-16 jets.

It did not specify the number of B-1B bombers deployed for the exercise. On Tuesday, the South Korean military said that it would resume all military activities along the demarcation line

separating the two Koreas and the North West Islands, for the first time in 5 years after suspending a 2018 inter-Korean military pact. On June 2, a trilateral ministerial meeting held in Singapore, attended by US Secretary of Defence Lloyd J. Austin, Japan's Minister of Defense Kihara Minoru, and South Korea's Minister of National Defense Shin Won-sik. The three officials said there was no change in their nations' position on Taiwan and that regional peace was "an indispensable element of security and prosperity in the international community." They also called for a peaceful resolution to cross-strait issues, as per Taiwan News.

After the Korean War ended in 1953 with an armistice, the two adjacent nations were cut off from one another. The US and its security allies have criticized Pyongyang for attempting to launch on May 27 a satellite-carrying rocket in defiance of UN Security Council resolutions, while Russia and China defended North Korea's action.

At a UN security council meeting convened earlier this month, Khaled Khiari, Assistant Secretary-General for the Middle East and Asia and the Pacific, said that North Korea has significantly increased its missile launch activities since 2022, including more than 100 launches using ballistic missile technology, in violation of the relevant Security Council resolutions.

<https://economictimes.indiatimes.com/news/defence/us-south-korea-conduct-joint-bombing-drills/articleshow/110737438.cms>

## Science & Technology News



**Press Information Bureau**  
**Government of India**

**Ministry of Science & Technology**

*Wed, 05 Jun 2024*

### **The 3rd Indian Analytical Congress (IAC) inaugurated at the Council of Scientific and Industrial Research-Indian Institute of Petroleum (CSIR-IIP) Dehradun**

**"Role of Science and Technology in Green Transitions": Theme of Conference**

The 3rd Indian Analytical Congress (IAC) was inaugurated today at the Council of Scientific and Industrial Research-Indian Institute of Petroleum (CSIR-IIP) in Dehradun. It is a three-day International Conference cum Exhibition IAC-2024 being jointly organized by CSIR-IIP and the Indian Society of Analytical Scientists (ISAS-Delhi Chapter). "Role of Science and Technology in Green Transitions" is the theme of conference.

Prof. S.K.Mehta, Vice-Chancellor, Ladakh University addressing the inaugural session presented an overview of the role of newly developed educational infrastructure in Ladakh. He also showcased the advanced research facilities recently developed at Ladakh University through the research funds obtained from DST, DBT, and other funding agencies.

Dr. Harinder Singh Bisht, Director, CSIR-IIP, briefed about the importance and significance of new Advanced Analytical facilities and their role in the energy transition. Prof. Rajnish Kumar, SSB Awardee and Professor IIT Madras delivered a plenary talk on "CO2 capture and sequestration Carbon capture utilization and sequestration and its relevance to net zero targets in India."

CSIR's initiative and thematic achievements in Energy and Energy Devices (EED) were showcased through the 'One Week One Theme' (OWOT) program. The EED session focused on conventional energy sources, renewable and non-conventional energy/energy systems, and energy storage and devices.

The 3-Day International Conference will provide a platform for industries, academia, scientists, and technologists in the Analytical Sciences to present the prevalent and upcoming solutions in this area. The conference shall witness five technical sessions comprising invited talks by eminent speakers, presentations by researchers, and special and plenary sessions.

ISAS-Delhi Chapter executives Dr. G.S. Kapur, Dr. J. Christopher, Dr. Ravindra Kumar and Dr. Rajkumar Singh were present during the inaugural ceremony. More than 250 delegates from public sector units (PSUs) such as IOCL, BPCL, HMEL, and institutions such as IIT-Roorkee, UPES, Doon University, BARC, Punjab University, etc. participated in the conference.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2022955>



*Wed, 05 Jun 2024*

## **ISRO chairman inaugurates facilities at HAL to support LVM3 programme**

A state-of-the-art Propellant Tank Production and Computer Numerical Centre (CNC) Machining facility was inaugurated at Hindustan Aeronautics Limited's (HAL) Aerospace Division on Wednesday by ISRO Chairman S. Somanath. HAL said the newly established facilities would provide a major boost to ISRO's ability to meet its growing production needs, particularly for India's heaviest and most powerful rocket, the Launch Vehicle Mark-3 (LVM3).

"Currently, the existing capacity allows for only two LVM3 launches per year, whereas ISRO's requirements stand at six launches annually. The facilities will address this gap, enabling HAL to manufacture enough critical components to support the production of six LVM3 rockets per year," HAL said. "HAL has enormous capacities and this potential should be explored in the larger interest of both the organisations.

HAL will play a larger role in ISRO's future missions hence should focus on emerging technologies, designing challenges, and take up end-to-end tasks to ease pressure on ISRO," Mr.

Somanath said. C.B. Ananthakrishnan, CMD (additional charge), HAL, said the ongoing collaboration with ISRO would accelerate human spaceflight missions and development of NextGeneration Launch Vehicles (NGLV).

During the programme, in a symbolic gesture, the first Gaganyaan Service Module and LVM3 ½ U Isogrid Version Hardware were also handed over to ISRO. The Propellant Tank Production Facility will specialise in the manufacturing of high-performance fuel and oxidiser tanks, critical components for the LVM3 launch vehicle of size 4 m in diameter and up to 15 m in length.

The CNC Machining Facility houses advanced Computer Numerical Control machines for handling high-precision fabrication of 4.5 m class Rings and Propellant Tank Domes of LVM3.

<https://www.thehindu.com/news/cities/bangalore/isro-chairman-inaugurates-facilities-at-hal-to-support-lvm3-programme/article68254969.ece>



*Wed, 05 Jun 2024*

## **ISRO gives details on Indo-French TRISHNA mission**

ISRO, on the occasion of World Environment Day, on Wednesday provided details about its collaborative endeavour with the French national space agency CNES for the upcoming Thermal Infrared Imaging Satellite for High-resolution Natural Resource Assessment (TRISHNA) mission.

TRISHNA is engineered to deliver high spatial and high temporal resolution monitoring of earth's surface temperature, emissivity, and biophysical and radiation variables for surface energy budgeting at regional to global scale.

“This mission addresses critical water and food security challenges, focusing on the impacts of human-induced climate change and efficient water resource management through evapotranspiration monitoring,” ISRO said.

TRISHNA's primary objectives include detailed monitoring of the energy and water budgets of the continental biosphere for quantifying terrestrial water stress and water use and high-resolution observation of water quality and dynamics in coastal and inland waters.

In addition, as secondary objectives, the TRISHNA mission will also help in a comprehensive assessment of urban heat islands, detection of thermal anomalies linked to volcanic activity and geothermal resources, and precise monitoring of snowmelt runoff and glacier dynamics.

The mission will also provide valuable data on aerosol optical depth, atmospheric water vapour, and cloud cover. The scientific and societal benefits of TRISHNA are extensive. In agricultural water management, the mission's science data products will help to assess irrigation water use, issue advisories for water savings and enhance crop water productivity through efficient and sustainable water management practices, and better micro-watershed management.

For climate monitoring, the mission will track key indicators such as droughts, permafrost changes, and evapotranspiration rates.

“Urban planners will benefit from detailed urban heat island maps and heat alerts; while water quality monitoring will aid in detecting pollution in coastal and inland waterbodies. It will also help in identifying sub-marine groundwater discharge at the coastal fringes,” ISRO said.

Additionally, the mission will support the detection of sub-surface fires and assessment of geothermal resources; while cryosphere monitoring will evaluate snow cover and snow-melt patterns, contributing to improved hydrological models.

<https://www.thehindu.com/news/cities/bangalore/isro-gives-details-on-indo-french-trishna-mission/article68255024.ece>

# THE ECONOMIC TIMES

*Thu, 06 Jun 2024*

## **World's most powerful rocket Starship set for next launch**

Starship, SpaceX's massive prototype rocket that may one day send humans to Mars, is poised for its next flight on Thursday.

It will be the fourth test for the most powerful launch system ever built, vital to NASA's plans for landing astronauts on the Moon later this decade and to SpaceX CEO's Elon Musk's hopes of one day colonizing the Red Planet. A two-hour liftoff window from the company's Starbase in Boca Chica, Texas opens at 7:00 am local time (1200 GMT). Weather conditions look favorable, and the Federal Aviation Administration has given its green light.

Three previous attempts have ended in Starship's fiery destruction, all part of what the company says is an acceptable cost in its rapid trial-and-error approach to development. "The fourth flight test turns our focus from achieving orbit to demonstrating the ability to return and reuse Starship and Super Heavy," SpaceX said in a statement.

Super Heavy is the booster, while Starship refers to both the upper stage and the two stages combined. The flight path will be similar to the third test, which took place in March and saw Starship fly halfway around the globe before it was eventually lost as it reentered the atmosphere over the Indian Ocean, 49 minutes into the mission.

Since then SpaceX says it has made several software and hardware upgrades and hopes to achieve a soft splashdown for the booster stage in the Gulf of Mexico, and a "controlled entry" for the upper stage. Designed to eventually be fully reusable, Starship stands 397 feet (121 meters) tall with both stages combined -- 90 feet taller than the Statue of Liberty.

Its Super Heavy booster produces 16.7 million pounds (74.3 Meganewtons) of thrust, almost double that of the world's second most powerful rocket, NASA's Space Launch System -- though the latter is now certified, while Starship is still under development. SpaceX's strategy of carrying out tests in the real world rather than in labs has paid off in the past.



Its Falcon 9 rockets have come to be workhorses for NASA and the commercial sector, its Dragon capsule sends astronauts and cargo to the International Space Station, and its Starlink internet satellite constellation now covers dozens of countries.

But the clock is ticking for SpaceX to be ready for NASA's planned return of astronauts to the Moon in 2026, using a modified Starship as the lander vehicle. To accomplish this, SpaceX will need to first place a Starship in orbit, then refuel it with multiple "Starship tankers" for its onward journey -- a complex engineering feat that has never before been accomplished.

At least one SpaceX fan has grown tired of waiting. Japanese billionaire Yusaku Maezawa announced this week he has canceled a planned trip around the Moon on Starship with a crew of artists, because he has no idea when it might actually happen.

<https://economictimes.indiatimes.com/news/science/worlds-most-powerful-rocket-starship-set-for-next-launch/articleshow/110753508.cms>

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