

सितम्बर

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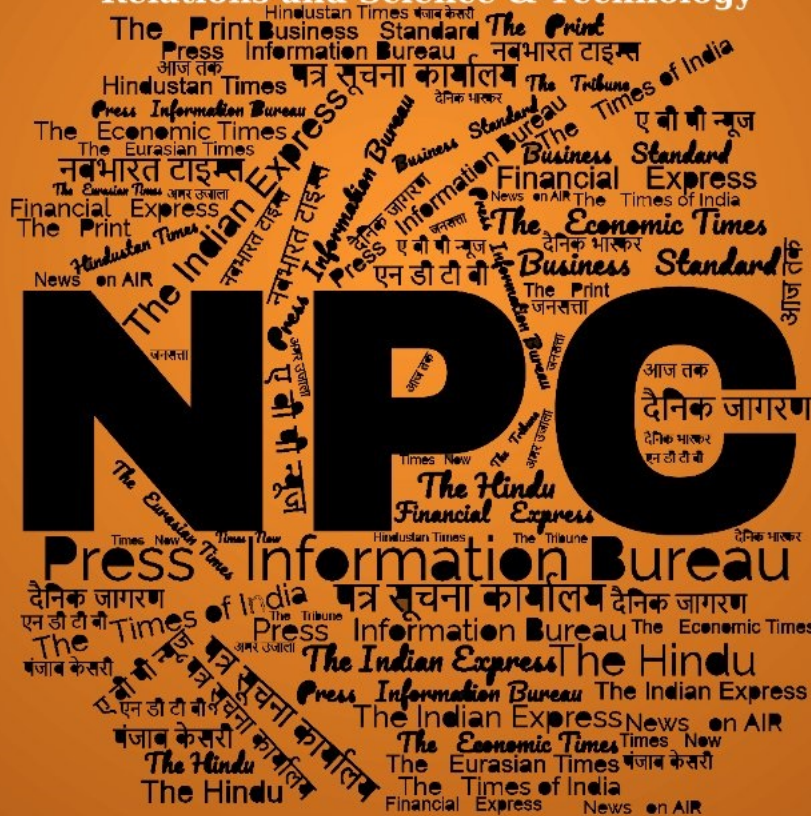
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समाचार पत्रों से चयित अंश Newspapers Clippings

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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Sat, 02 Sep 2023

By Achieving Export of Defence Equipment Worth ₹16,000 Crore, India has Become Self-Reliant: Former DRDO Chairman

By achieving exports of defence equipments and technology worth ₹16,000 crore this year, India has become self-reliant in many defence technologies and exuded confident that existing technological gaps in certain critical and advanced technologies will be overcome in the coming years, said G. Satheesh Reddy, former Secretary at Department of Defence R&D and chairman of the Defence Research and Development Organisation of India (DRDO), and scientific adviser to Defence Minister.

He was addressing the gathering at the 10th graduation day of Poojya Doddappa Appa College of Engineering in Kalaburagi on Saturday. Dr. Reddy said that India has achieved export of defence items worth ₹16,000 crore in 2022-23 and this figure is likely to rise to ₹25,000 crore in 2024-25.

Dr. Reddy opined that the development of advanced technologies and systems is the only way to become a world-leading exporter of defence equipment. The future defence manufacturing ecosystem envisaged by the Indian government will encompass defence technologies that will be conceived, designed, developed, tested, and manufactured completely in India.

Claiming that India has the world's longest Advanced Towed Artillery Gun System, which would be inducted into the armed forces, Dr. Reddy said that very soon India will join the list of key countries in the world in defence products manufacturing and exports.

Over the past few years, India has achieved self-sufficiency in the manufacture of aircraft, army vehicles, missiles, and radars. Gradually, India is moving from importing to exporting defence products.

The country has made great strides, and the academic strengths and technological capabilities have also developed immensely over the last couple of decades. Today, 80% of IITs are not going abroad to work and instead staying back in India, which is very encouraging and crucial for economic development, he said.

Dr. Reddy said that academic institutes must become the hubs for fostering innovation and entrepreneurship. Dedicated laboratory spaces must be created in collaboration with research institutes to enable students to get valuable experience.

Ira Agarwal, Chief Marketing Officer (CXO Role), Veersa Technologies, Noida, called upon the engineers to dream beyond the present confines, which will propel them to new heights. Each one of them, who have completed a degree, has to embark on a journey of immense promise. Your conduct, values and choices should serve as a guiding light for aspiring engineers, she added.

Bhimashankar Bilgundi, president of HKE Society, S.R. Mise, principal of PDA College, Bharati Harsoor, vice-principal (Academic), PDA College, and others were present. Syed Mazhar from Mechanical Engineering Department bagged six gold medals, and Archana M. Gundagurti from Electrical and Electronics Engineering Department got five gold medals. A total of 21 students from various branches were awarded gold medals. As many as 811 students received their degree certificates issued by VTU, Belagavi.

<https://www.thehindu.com/news/national/karnataka/pda-engineering-college-holds-10th-graduation-day/article67263977.ece>

Defence News

Defence Strategic: National/International



Press Information Bureau
Government of India

Ministry of Defence

Sat, 02 Sep 2023

Naval Commanders' Conference 2023/2 (04-06 Sep 23)

The second edition of Naval Commanders' Conference of 2023 is scheduled at New Delhi from 04 to 06 Sep 23. The Conference is the apex-level biannual event facilitating interaction between the Naval Commanders for deliberation and formulation of important policy decisions. During the three-day Conference, being conducted in a 'Hybrid' format, the senior leadership of the Indian Navy, under the Chairmanship of the Chief of the Naval Staff, will review major operational, materiel, logistics, HR, training, and administrative activities undertaken during the previous **six** months. The Conference will also deliberate upon the course to be steered in the ensuing months.

Hon'ble Raksha Rajya Mantri will address the Naval Commanders during the conference and interact with them, the Chief of the Defence Staff will also be present. The Conference also provides an opportunity for institutionalised interaction of Naval Commanders with senior Government officials to take ahead several inter-ministerial initiatives towards the development of a safe and secure maritime environment essential for the holistic economic growth of the country.

The conference and the embedded interactions with the NSA, Chiefs of the Indian Army and the Indian Air Force would also be utilised to analyse the operational environment, deliberate on the issue of Tri-Service synergy and assess the readiness of the Maritime forces.

The last six months have seen an intense operational tempo as the Indian Navy's operations spanned from the Atlantic to the Pacific. Indian Naval ships *were* first responders for the evacuation of Indian nationals from Sudan as part of 'Op Cauvery' and HADR in Myanmar in the aftermath of Cyclone Mocha as part of 'Op Karuna'. In keeping with the expectations of IN being the preferred security partner and first responder to any crisis in the region, the forum will undertake a detailed review of the operational readiness of the Navy, with a particular focus on the performance of weapons/ sensors of the Naval platforms.

The Commanders will also review the ongoing Naval projects with a focus on enhancing indigenisation through 'Make in India' in consonance with the vision of achieving complete 'Aatma-Nirbharta' by 2047. A demonstration of the indigenisation, Innovations and Tech initiatives by the IN is also planned on the sidelines of the conference. Various HR initiatives towards enhancing quality of life will be reviewed as well as the progress made towards identifying and removing archaic practices in the Indian Navy.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1954460>



Mon, 04 Sep 2023

Ahead of G20 Summit, IAF Conducts 'Trishul Exercise' along Borders of China, Pakistan

The Indian Air Force on Monday began a major training exercise codenamed 'Trishul' in the northern sector along the borders with China and Pakistan.

The exercise will be held from 4 to 14 September in the northern sector including Ladakh, Himachal Pradesh, Jammu and Kashmir and Punjab. Notably, the drills are taking place at a time when India is scheduled to host the G-20 Summit in New Delhi.

In the 'Trishul Exercise', all major fleets of fighter aircraft including the Rafale, Mirage 2000 and the Su-30MKI will be seen in action.

Similarly, heavy-lift transport aircraft and choppers including the Chinooks and Apache will also participate in the drills. The Garud Special Forces are also part of the drills.

Keeping the G-20 Summit in mind, which will be held on 9 and 10 September, the IAF has put all its assets on high alert.

The Indian Air Force is also putting all its assets on high alert for the G-20 summit to be held on September 9 and 10 where all major global leaders are going to be in the national capital.

The Indian Air Force has also started activating and moving its surface-to-air defence weapon systems including the Akash missile systems to tackle any possible aerial threat.

The security agencies have also activated their counter-drone systems where they can jam any small drones or if required, can take them out using other options.

<https://www.firstpost.com/india/ahead-of-g20-summit-iaf-conducts-trishul-exercise-along-borders-of-china-pakistan-13074022.html>



**Press Information Bureau
Government of India**

Ministry of Defence

Sun, 03 Sep 2023

INS Delhi Departs Sri Lanka on Completion of Two Day Visit

INS Delhi departed Colombo, Sri Lanka on 03 September 2023, after a two-day visit to the port city. During the ship's stay in harbour, several interactions including cross training of personnel in various topics of mutual interest were held between the ship's crew and personnel from the Sri Lanka Navy (SLN). A clean-up drive at Crow Island beach was jointly undertaken by the visiting ship's crew and personnel from SLN. The ship also conducted an familiarisation tour onboard for over 200 NCC cadets and 500 other local visitors.

The Commanding Officer of INS Delhi interacted with RAdm Suresh De Silva, Commander Western Naval Area (COMWEST) and paid homage at the IPKF memorial by laying a wreath in honour of the Indian soldiers who laid their lives in Sri Lanka during IPKF operations from 1987-91.

As part of India's 'Aarogya Maitri' initiative to provide essential medical supplies to friendly countries, the High Commissioner of India to Sri Lanka, Shri Gopal Baglay, presented state-of-the-art Arogya Maitri Cube to the Hon'ble Speaker of Sri Lanka Parliament during a reception hosted onboard INS Delhi. These medical cubes have been indigenously developed under the Project BHISHM (Bharat Health Initiative for Sahyog Hita and Maitri). Besides the Hon'ble Speaker, the reception was attended by several senior government officials including the Minister for Ports, Shipping & Aviation, the Attorney General, Secretary of Defence and all three Service Chiefs

The visit concluded with a Passage Exercise (PASSEX) at sea off Colombo between INS Delhi and SLN ship Vijayabahu.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1954477>



**Press Information Bureau
Government of India**

Ministry of Defence

Sat, 02 Sep 2023

Successful conduct of Visit of UAE Navy SME Delegation to Indian Navy (IN) Facilities 27 Aug to 01 Sep 23

A three member UAE Navy Subject Matter Expert (SME) Delegation led by Colonel Dr Ali Saif Ali Mehrazi successfully completed professional interaction with Indian Navy during their four day visit to specialized Meteorology, Oceanography, training and Weather Modelling facilities on 01 Sep 23.

The bilateral meeting, held at Integrated Headquarters (IHQ) of MoD (Navy), New Delhi on 01 Sep 23 was a key highlight, during which both navies expressed their satisfaction with the outcomes and agreed to deepen cooperation in the fields of Meteorology and Oceanography. Both sides recognised the mutual benefits that can be achieved through joint research projects, knowledge exchange, and capacity building initiatives.

Colonel Dr Ali Saif Ali Mehrazi, head of delegation expressed his gratitude for the warm welcome and outstanding hospitality extended by *IN* that facilitated the fruitful discussions keeping in view the mutual interests of both navies. UAE Navy highly valued the insights gained from engaging with counterparts and witnessing the cutting-edge technologies, methodologies, and research programs developed by IN. The delegation looks forward to utilizing this new knowledge and exploring possibilities for joint research and cooperation.

As part of the visit to IHQ MoD (Navy), New Delhi, Colonel Dr Ali Saif Ali Mehrazi also called on Rear Admiral Nirbhay Bapna, ACNS (FCI). Discussions emphasising the importance of international cooperation in addressing challenges such as weather patterns, oceanic conditions, and climate change as well as the other related fields that have implication on naval operations were undertaken.

This visit is a testament to the commitment and dedication of both nations to creating a brighter and more sustainable future for all.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1954307>



Fri, 01 Sep 2023

Warship Mahendragiri with Advanced Weapons, Sensors Launched: All you need to know

Indian Navy's warship Mahendragiri was launched in Mumbai on Friday, September 1 by Vice President Jagdeep Dhankhar's wife Sudesh Dhankhar launched the warship and the vice president was the chief guest at the event in Mumbai. The Indian Navy's warship Mahendragiri has been developed by Mazagon Dock Shipbuilders Limited (MDL).

After the launch, VP Jagdeep Dhankhar said, "I am sure that Mahendragiri, once commissioned, will proudly fly the tiranga [national tricolour] across the oceans, as an ambassador of India's maritime might. With a strong presence of over 10,000 women across the army, navy and air force, the Indian armed forces have made considerable strides in gender equality," he said. The launch of Mahendragiri is a significant milestone in our maritime history, he said.

Here are top points you need to know about mahendragiri

- Mahendragiri is named after a mountain peak in the Eastern Ghats of Odisha. It is the seventh ship of Project 17A frigates series.
- The warship stealth features, advanced weapons and sensors and platform management systems and is the last of the 7 warships of the Nilgiri-class stealth frigates built under Project 17A.

- The Project 17A ships have been internally designed by the Indian Navy's Warship Design Bureau, the foremost organization responsible for all warship design endeavors, the Ministry of Defence said in a press release.
- The newly christened Mahendragiri is a technologically advanced warship and stands as a symbol of India's determination to embrace its rich naval heritage, while propelling itself towards a future of indigenous defence capabilities, the ministry said.

According to the government, "Under the Project 17A program, a total of four ships by M/s MDL and three ships by M/s GRSE are under construction. The first six ships of the project have been launched so far by MDL & GRSE, between 2019-2023."

Maharashtra Governor Ramesh Bais, Chief Minister Eknath Shinde and Deputy Chief Minister Devendra Fadnavis were present at the launch ceremony.

<https://www.livemint.com/news/warship-mahendragiri-with-advanced-weapons-sensors-launched-all-you-need-to-know-11693566582282.html>



Mon, 04 Sep 2023

When on leave... do social service, promote govt schemes: Army Advises Jawans

The army is encouraging its soldiers to undertake social service during leave, and contribute to the organisation's nation-building effort, while suggesting a range of activities they can participate in, officials aware of the matter said on Sunday.

These activities include educating the local communities about schemes such as Swachh Bharat Abhiyan and Sarva Shiksha Abhiyan; and delivering talks in primary schools on diverse subjects ranging from hygiene and cleanliness to road safety and the meaning of country, the officials said.

The army's ceremonials and welfare directorate under the adjutant general's branch made the recommendation on soldiers utilising their leave and contributing to nation building in May in a letter addressed to all command headquarters.

It is recommended that every soldier proceeding on leave volunteers to choose any subject based on his interest and the need of his local community and engages citizens, making an individual contribution to the army's nation-building effort, the letter said, according to the officials. The local formations have been asked to provide feedback on this every quarter.

The letter states that every soldier possesses unique individual qualities and skill sets, the army's human resource pool has a pan-India footprint, they are from diverse areas and communities with the majority hailing from a rural background; and this connect with society can be meaningfully leveraged for augmenting nation-building efforts.

The letter has turned the attention on whether soldiers, who often serve in tough conditions, will have enough time for pursuing such activities, given the responsibilities they have to shoulder.

The letter said while the objective of granting leave to soldiers is to allow them to spend time with their families and address other personal commitments, there is adequate scope to engage with the local communities too.

“Soldiers should and do contribute to nation-building and the well-being of their local communities. However, it is critical that the district administration and police show empathy and address the many issues faced by them and resolve their grievances. This will allow them to devote more time and energy to the desired social service,” said military affairs expert Lieutenant General Vinod Bhatia (retd).

Local formations have been asked to provide the soldiers on leave with literature and other material for having a meaningful interaction with the community, the officials said. The Shimla-based Army Training Command is putting together material that soldiers can carry with them for performing social service.

Explaining the rationale behind the move and calling effort voluntary, the officials said that soldiers have a unique perspective of the country as they have served across it, and this puts them in a position to contribute towards nation building and national integration.

<https://www.hindustantimes.com/india-news/army-encourages-soldiers-to-undertake-social-service-during-leave-contribute-to-nation-building-effort-101693765707394.html>



Fri, 01 Sep 2023

Crack Team of Women military Engineers to Spearhead Project to Upgrade LAC Airfield

India is upgrading an airfield near the Line of Actual Control (LAC) in eastern Ladakh to a full-fledged base for fighter operations. The project will be led by a crew of women officers and is part of India's efforts to counter Chinese infrastructure construction along the contested border. The Nyoma airfield will be extended and strengthened, and the project is expected to be completed by September 2025. Additionally, a high-altitude road in Ladakh's Demchok sector is being constructed by the same crew, which will be the world's highest motorable road when completed.

A crew of women officers will spearhead a key project to upgrade an advanced landing ground near the Line of Actual Control (LAC) in eastern Ladakh to a full-fledged base for fighter operations as India steps up infrastructure development along its farthest frontiers to support military operations and counter Chinese infrastructure construction across the contested border where the two countries have been locked in a standoff for more than three years, officials aware of the development said on Friday.

The upgradation of the Nyoma airfield to support offensive and defensive operations will involve a Border Roads Organisation (BRO) task force led by a woman combat engineer, Colonel Ponung Doming, who will have five women engineers under her command, said one of the officials cited above, asking not to be named. The scope of the work will include extending and strengthening the existing airstrip and building allied infrastructure for fighter operations.

BRO will begin work on upgrading of the Nyoma airfield, located at a height of 13,300 feet above sea level and 23km from the LAC, in a few days after defence minister Rajnath Singh remotely lays the foundation stone of the ₹214 crore project on September 12, said a second official, who

also asked not to be named. The foundation stone of the Indian Air Force's (IAF) Nyoma fighter base will be laid on the day Singh inaugurates the BRO's Devak bridge near Jammu, and dedicates around 90 other infrastructure projects to the nation including roads, tunnels and bridges.

The project is expected to be completed by September 2025, the officials said.

The Nyoma airstrip was out of use for decades after the 1962 India-China war before IAF reactivated it in September 2009 and landed an AN-32 transport aircraft there for the first time. IAF has operated its C-130J special operations aircraft, AN-32s and helicopters from Nyoma in support of the military's forward deployments, including during the ongoing LAC row with China. IAF reactivated its other two airstrips at Daulet Beg Oldi (16,614 feet) and Fukche (13,000 feet) in May 2008 and November 2008.

The upgradation of the Nyoma advanced landing ground is not the only project being spearheaded by the BRO task force with women engineers.

Colonel Doming's unit is also constructing a high-altitude road in Ladakh's Demchok sector to provide connectivity to one of the military's farthest outposts in the sensitive sector, Fukche, which is just 3km from the LAC, the officials said. The construction of the 64-km Likaru-Mig La-Fukche road began on August 15.

At its highest point, the road will roll over an altitude of 19,400 feet, and when ready by mid-2025, it will be the highest motorable road in the world. The existing highest motorable road in the world has also been built by BRO. Two years ago, BRO created a world record by constructing and blacktopping the world's highest motorable road at Umling La in Ladakh at a height of 19,024 feet. Recognising the contribution of BRO workers, the government invited 50 of them as special guests at the 77th Independence Day celebrations at Red Fort.

After the India-China border row began in May 2000, India has built infrastructure at a swift pace in eastern Ladakh with focus on better living experience and improved facilities for soldiers, conservation of modern weapons and equipment deployed there, and supporting faster movement of men and material to deal with any contingency.

India inducted thousands of extra troops and modern military weaponry into the Ladakh sector to counter the Chinese military build-up after the standoff began, and the changed dynamics along the LAC necessitated the infrastructure push aimed at enhancing efficiency of the military's deployments.

The steps taken by the army to support its forward deployments along LAC include building of modular shelters for troops deployed at heights of up to 18,000 feet, habitat for reserve troops in rear locations, storage facilities for tanks, artillery guns and other equipment, underground facilities for ammunition storage, airfields, and new roads, bridges and tunnels in difficult terrain for improved connectivity in forward areas.

This has come in the backdrop of China's unrelenting infrastructure push.

An analysis of satellite imagery from Aksai Chin, a region that India has for long accused China of occupying illegally, shows the Chinese side has ramped up the construction of reinforced bunkers and underground facilities to better protect military assets from aerial or missile strikes.

A comparison of satellite images from December 2021 and August this year – provided to Hindustan Times by Maxar Technologies earlier this week – shows the Chinese side has built reinforced

bunkers and underground facilities at six locations within an area of roughly 15 sq km in Aksai Chin.

This area is located about 70km from the LAC, and while troops were deployed in the region following the start of the standoff in May 2020, most of the land was barren and with few signs of construction activity, apart from some overground facilities to host equipment.

At the 19th round of talks between corps commanders of the two armies on August 13 and 14, the two sides agreed to resolve the remaining issues along the LAC in a speedy manner through continued dialogue. That was the first time military talks were held over two days.

Despite four rounds of disengagement from Galwan Valley, Pangong Tso, Gogra (PP-17A) and Hot Springs (PP-15), the Indian and Chinese armies still have tens of thousands of troops each and advanced weaponry deployed in the Ladakh theatre. Problems at Depsang in Daulet Beg Oldi sector and CNN junction in Demchok are still on the negotiating table.

<https://www.hindustantimes.com/india-news/women-officers-lead-project-to-upgrade-airfield-in-ladakh-amid-india-china-standoff-101693592583933.html>

नवभारत टाइम्स

Sat, 02 Sep 2023

धूप, बारिश से लेकर ठंड का भी नहीं होगा असर, सेना में शामिल होंगे AI से लैस खच्चर

भारतीय सेना इंडियन इंस्टिट्यूट ऑफ साइंस बैंगलोर (IISc) के साथ मिलकर रोबॉटिक म्यूल यानी खच्चर बना रही है। सेना को इस तरह के 100 रोबॉटिक खच्चर की जरूरत है। यह प्रोजेक्ट करीब 10 करोड़ रुपये का है और जल्द ही ट्रायल के लिए इसका प्रोटोटाइप आने की उम्मीद है। सेना ने इसी साल जनवरी में इसके लिए RFP यानी रिक्वेस्ट फॉर प्रोजेक्ट भी जारी किया है। इसमें कहा गया है कि सेना रोबॉटिक खच्चर स्वदेशी कंपनियों से ही लेगी।

सेना क्या-क्या चाहती है खच्चर से

सेना को चार पैरों वाले रोबॉट की जरूरत है जो अलग-अलग भूभाग (टेरेन) में आ-जा सके। इसमें सेल्फ रिक्वरी कैपेबिलिटी भी होनी चाहिए। यह खुद ही किसी बाधा को पार कर सके। यह उबड़-खाबड़ जगहों पर चल सके। जो 4000 मीटर की ऊंचाई पर भी काम करने में सक्षम हो, जो ऑटोनोमस मोड पर काम कर सके। कमांड और कंट्रोल स्टेशन के जरिये यह तय रूट यानी प्री डिफाइंड मिशन रूट पर खुद-ब-खुद जा सके। रोबॉटिक खच्चर ऐसा हो जो शून्य से नीचे के तापमान यानी -20 डिग्री से लेकर चिलचिलाती गर्मी यानी 45 डिग्री तक ऑपरेट कर सके। इसकी बैटरी इतनी हो कि कम से कम तीन घंटे लगातार चल सके।

AI का भी इस्तेमाल

सेना ने स्वदेशी कंपनियों को अपनी यह जरूरत बताई है। साथ ही खुद भी IISc के साथ मिलकर इस रोबॉटिक खच्चर बनाने के प्रोजेक्ट पर काम कर रही है। रोबॉटिक खच्चर के प्रोटोटाइप पर आर्टिफिशल इंटेलिजेंस का भी इस्तेमाल होगा ताकि वह टफ टेरेन में आसानी से जा सके और ऊंचाई वाले इलाकों में (फॉरवर्ड एरिया में तैनात सैनिकों) तक रसद पहुंचा सके। रोबॉटिक खच्चर से सेना अपने मौजूदा खच्चरों को बदलेगी। अभी ऊंचाई वाले इलाकों में सेना रसद पहुंचाने के लिए खच्चरों का इस्तेमाल करती है जो सेना के एनिमल ट्रांसपोर्ट का बड़ा हिस्सा हैं।

2030 तक एनिमल ट्रांसपोर्ट आधा करने का लक्ष्य

सेना को उम्मीद है कि साल 2030 तक एनिमल ट्रांसपोर्ट घटकर 50-60% तक रह जाएगा। अभी बॉर्डर के इलाकों में सेना की कई ऐसी पोस्ट हैं, जहां तक सामान पहुंचाने के लिए एनिमल ट्रांसपोर्ट का इस्तेमाल जरूरी हो जाता है। क्योंकि यहां तक पहुंचने के लिए सड़कें नहीं हैं। सेना लॉजिस्टिक ड्रोन भी ले रही है। साथ ही रोड कनेक्टिविटी भी बढ़ रही है। रोबोटिक खच्चर, ड्रोन और रोड कनेक्टिविटी सब मिलाकर एनिमल ट्रांसपोर्ट को कम करने में मददगार होंगे। सेना इस पर चरणबद्ध तरीके से काम कर रही है।

<https://navbharattimes.indiatimes.com/india/india-army-plans-for-robotic-mules-with-help-in-india-institute-of-science/articleshow/103300232.cms>

THE TIMES OF INDIA

Mon, 04 Sep 2023

US to Stop Selling High-End Chips to Chinese Military: Commerce Secretary

The US will not sell high-end sophisticated chips to the Chinese military, commerce secretary Gina Raimondo said on Sunday. "We are trying to choke their military capacity. So, if they feel that, that means our strategy's working... We are not going to sell the most sophisticated American chip to China that they want for their military capacity," she told NBC News, as she appeared on a host of Sunday talk shows. Raimondo, an influential US cabinet member, visited China last week after months of rising tensions between the world's two largest economies.

"No commerce secretary has been tougher than I on China. Almost a third of the companies from China on the entity list have been put there under President Biden administration," she said. "However, we want to have a narrow line around what is national security. You can't use export controls for economic advantage. So, anyway, we are never going to sell China our most sophisticated, advanced AI chips," she said.

<https://timesofindia.indiatimes.com/world/us/us-to-stop-selling-high-end-chips-to-chinese-military-commerce-secretary/articleshow/103336125.cms?from=mdr>



Sun, 03 Sep 2023

North Korea Conducts Simulated 'Tactical Nuclear Attack' Drill to 'Warn Enemies'

North Korea conducted a "simulated tactical nuclear attack" drill on Saturday (September 2) with mock atomic warheads attached to two long-range cruise projectiles, state-controlled media said on Sunday (September 3). As per reports, the missiles were test-fired into the ocean. The KCNA news agency said the "counteraction drill", which was carried out early on Saturday, was in response to joint military training by the United States and South Korean forces that according to the agency had escalated tensions in the region.

"A firing drill for simulated tactical nuclear attack was conducted at dawn of September 2 to warn the enemies of the actual nuclear war danger," KCNA reported.

"Two long-range strategic cruise missiles tipped with mock nuclear warheads were fired" from North Korea's west coast into the sea to the south, it said.

South Korea's Joint Chiefs of Staff (JCS), on Saturday, released a statement saying that an unspecified number of cruise missiles were launched at around 4:00 a.m. (1900 GMT) towards the Yellow Sea.

A JCS official banished Pyongyang's claims by terming them as "exaggerated", the South Korean Yonhap news agency reported Sunday.

KCNA said that the United States and South Korea were seeking "confrontation hysteria" with their most recent joint military drills.

As per the analysts, the claims made by North Korea were aimed at deterrence.

North Korea's claims "suggest the Kim regime is desperate to deter an increasingly capable South Korea, including Seoul's strengthened alliance with Washington", said Leif-Eric Easley, a professor at Seoul's Ewha University.

"Pyongyang's rhetoric actually goes far beyond the logic of deterrence, probably to shore up domestic political legitimacy, which is an ominous sign for inter-Korean relations," news agency AFP quoted him as saying.

Kim Jong Un visits major munitions factory

A separate statement said that North Korean leader Kim Jong Un visited the Pukjung Machine Complex, which produces marine engines, and is a primary ammunition factory, in order to underline the significance of boosting Pyongyang's naval forces.

Kim "expressed satisfaction" and stressed the importance of the factory "in bolstering up the armed forces of the DPRK", KCNA reported.

"He affirmed that a future plenary meeting of the Central Committee of the WPK (Worker's Party of Korea) would set forth an important modernization of the complex and the development direction of the shipbuilding industry," the KCNA statement said.

<https://www.wionews.com/world/north-korea-conducts-simulated-tactical-nuclear-attack-drill-to-warn-enemies-631979>

Science & Technology News

THE  HINDU

Sun, 02 Sep 2023

Aditya-L1 Lifts Off to Study the Sun

India's first solar observatory mission — Aditya-L1 — was launched by the Indian Space Research Organisation (ISRO) on September 2. The Polar Satellite Launch Vehicle (PSLV), in its

59th flight with the Aditya-L1 onboard, took off from the Satish Dhawan Space Centre in Sriharikota at 11.50 a.m.

About 63 minutes after take-off, the separation from the satellite took place with the PSLV launching the Aditya-L1 spacecraft in a highly eccentric orbit around Earth at 12.53 p.m. This was among the longest flights of ISRO's workhorse launch vehicle in recent times.

Following the launch, Aditya-L1 will stay in orbit around Earth for 16 days, during which it will undergo five manoeuvres to gain the necessary velocity for its long journey towards the sun.

Subsequently, Aditya-L1 will undergo a Trans-Lagrangian1 insertion manoeuvre, marking the beginning of its 110-day trajectory to the destination around the L1 Lagrange point. Upon arrival at the L1 point, another manoeuvre binds Aditya-L1 to an orbit around L1, a balanced gravitational location between the earth and the sun.

The spacecraft will perform orbital manoeuvres by using its Liquid Apogee Motor (LAM) engine to reach L1.

Aditya-L1 will stay approximately 1.5 million km away from earth, directed towards the sun, which is about 1% of the earth-sun distance.

Aditya-L1 has a mission life of five years during which its payloads are expected to provide the most crucial information to understand the problem of coronal heating; coronal mass ejection; pre-flare and flare activities and their characteristics; dynamics of space weather; and propagation of particles and fields.

Seven payloads

The seven payloads onboard Aditya-L1 are: Visible Emission Line Coronagraph (VELC); Solar Ultraviolet Imaging Telescope (SUIT); Solar Low Energy X-ray Spectrometer (SoLEXS); High Energy L1 Orbiting X-ray Spectrometer (HEL1OS); Aditya Solar wind Particle Experiment (ASPEX); Plasma Analyser Package For Aditya (PAPA); and Advanced Tri-axial High Resolution Digital Magnetometers.

The solar panels on Aditya-L1 have been deployed and the spacecraft has started generating power. After the launch, ISRO Chairperson S. Somanath said, "The Aditya-L1 spacecraft has been injected in an elliptical orbit of 235 km by 19,500 km, which is as intended, very precisely by the PSLV. This is a very unique mission mode here with the upper stage of the PSLV taking two burn sequences for injecting the primary satellite for the first time. From now, the Aditya-L1 will make its journey. After some manoeuvres, it will start its journey towards the L-1 point. It is a very long journey of almost 125 days."

The first manoeuvre to raise its orbit is scheduled on September 3, around 11.45 a.m.

"After the success of Chandrayaan-3, India continues its space journey. Congratulations to our scientists and engineers at @isro for the successful launch of India's first Solar Mission, Aditya - L1. Our tireless scientific efforts will continue in order to develop better understanding of the Universe for the welfare of entire humanity," Prime Minister Narendra Modi posted on X (formerly Twitter) after the successful launch.

Union Minister of State (independent charge) for Science & Technology Jitendra Singh said, "Congratulations India, congratulations ISRO... and like the whole world watched this with bated breath, it is indeed a sun shine moment for India."

The seven payloads onboard Aditya-L1 satellite

- Visible Emission Line Coronagraph (VELC)

- Solar Ultraviolet Imaging Telescope (SUIT)
- Solar Low Energy X-ray Spectrometer (SoLEXS)
- High Energy L1 Orbiting X-ray Spectrometer (HEL1OS)
- Aditya Solar wind Particle Experiment (ASPEX)
- Plasma Analyser Package For Aditya (PAPA)
- Advanced Tri-axial High Resolution Digital Magnetometers

<https://www.thehindu.com/sci-tech/science/indias-first-solar-observatory-mission-aditya-l1-launched-by-indian-space-research-organisation-isro/article67262849.ece>



Mon, 04 Sep 2023

Aditya-L1 Healthy, First Orbit-Raising Exercise Successful: ISRO

A day after it launched the Aditya-L1 spacecraft, the country's first mission to study the Sun, the Indian Space Research Organisation (ISRO) carried out the first orbit-raising manoeuvre Sunday. Stating that the satellite is "healthy and operating nominally", the ISRO said the first Earth-bound manoeuvre has been "performed successfully" from ISTRAC, Bengaluru.

"The new orbit attained is 245 km x 22459 km" and the next manoeuvre, it said, is scheduled for 0300 Hours IST on September 5.

The Aditya-L1 mission was launched from the Sriharikota spaceport shortly before noon Saturday and placed in an Earth orbit, 235 km x 19,500 km, an hour later.

Over the next few days, the spacecraft will continue to move around the Earth, progressively raising its orbit and gaining momentum, before embarking on its four-month journey to the Lagrange-1 point of the Earth-Sun system.

It is from this point, about 1.5 million km from Earth, that the Aditya-L1 spacecraft will observe the Sun and carry out experiments.

The heavier version of the PSLV rocket that put the satellite in orbit Saturday achieved a milestone of its own. This was the first time that the fourth stage of the PSLV was fired two separate times to insert the spacecraft in the intended orbit.

During the firing of the fourth stage of PSLV and the coasting phase in between, there were two instances – one for nearly 25 minutes and another for just over two minutes – when there were no eyes on the satellite. It was only after a ship-based station in the Bay of Bengal and then the Korou ground station in French Guiana acquired the data that the flight path could be seen.

A scientist from the space agency said the mission should ideally have been launched in August. Launching it in September meant that the spacecraft had to travel longer to achieve the specific angle at which it needed to be inserted.

"Traditionally, satellites sent to orbits around the Earth do not require such an angle. This was akin to the need for one to leave their house from the backyard, but if you have come out of the front

door, what will you do? You will go around to the back. Similarly, the satellite had to go around the Earth for a while in the coasting phase before being inserted into the precise orbit,” the scientist said.

<https://indianexpress.com/article/technology/science/day-after-aditya-l1-launch-isro-carries-out-spacecrafts-first-orbit-raising-manoevre-8922343/>



Mon, 04 Sep 2023

What is the Purpose of VELC, Primary Payload of Aditya-L1 Satellite?

Aditya-L1 has been successfully launched from the Satish Dhawan Space Research Centre in Sriharikota on Saturday. The first Sun mission from India carried by the Polar Satellite Launch Vehicle (PSLV)-C57 rocket is equipped with seven payloads. Among these, the Visible Line Emission Coronagraph (VELC) is the primary payload that Aditya-L1 will use to focus on the Sun's Corona.

Annapurni Subramaniam, Director of the Indian Institute of Astrophysics Bangalore, which delivered VELC to ISRO, said that this payload has been designed to create a ‘total solar eclipse’ all the time once Aditya-L1 is placed in L1 (Lagrangian Point 1).

“We have delivered the main instrument for this mission, which is the Visible Line Emission Coronagraph (VELC). It will create a total solar eclipse continuously since it will be positioned at L1, providing an unobstructed view of the Sun. It will constantly observe the Sun in eclipse. This will be the first mission to examine the innermost part of the Corona,” news agency ANI quoted Annapurni Subramaniam as saying.

Aditya-L1 will be placed in a halo orbit around Lagrangian Point 1 (L1), which is 1.5 million kilometers from Earth in the direction of the Sun.

What will VELC find out in this Solar mission?

-VELC aims to collect data to understand how the temperature of the solar corona can reach about a million degrees while the Sun's surface remains at just over 6000 degrees Celsius. It does this by continuously observing the corona, starting from its lower boundary and moving upwards, while filtering out the bright light from the solar disc.

-The payload will send 1,440 images per day to the ground station for analysis once it reaches its intended orbit. VELC has the capability to capture images of the solar corona closer to the Sun's disc than any other solar space observatory.

-VELC has a mechanism to occult (block) the solar disc to separate and discard the light from the Sun's disk. This allows it to observe the Sun as if it were a solar eclipse, enabling the study of the corona and its characteristics, including its origin and the source of coronal mass ejections.

-The Indian Institute of Astrophysics (IIA) is actively involved in the calibration and utilisation of data from VELC and other payloads on Aditya-L1. They aim to address fundamental questions about solar astrophysics and its impact on daily life.

-VELC's ability to capture close-up images of the solar corona is attributed to its extremely accurately polished primary mirror, which was crafted by ISRO's Laboratory for Electro Optics Systems (LEOS). This precision reduces light scatter within VELC.

<https://www.hindustantimes.com/india-news/aditya1-launch-live-updates-isro-what-is-the-purpose-of-velc-primary-payload-corona-101693640652330.html>

THE ECONOMIC TIMES

Mon, 04 Sep 2023

Chandrayaan-3's Vikram Lander Exceeds Mission Objectives, says ISRO

The Indian Space Research Organisation (ISRO) on Monday said that Chandrayaan-3's Vikram lander has exceeded its mission objectives after it successfully underwent a hop experiment. "On command, it fired the engines, elevated itself by about 40 cm as expected and landed safely at a distance of 30 – 40 cm away. Importance: This 'kick-start' enthuses future sample return and human missions!" ISRO said in a post on X (formerly Twitter).

It further asserted, "all systems performed nominally and are healthy. Deployed Ramp, ChaSTE and ILSA were folded back and redeployed successfully after the experiment." — isro (@isro)

Chandrayaan 3's rover 'Pragyaan' had completed its assignments on the lunar surface and was set into sleep mode on Saturday. The space agency's announcement came hours after its chief S Somanath said the lunar mission's rover and lander, 'Pragyaan' and 'Vikram', respectively were functioning well and they would be put to "sleep" soon to withstand the night on the Moon. "The Rover completed its assignments. It is now safely parked and set into Sleep mode. APXS and LIBS payloads are turned off. Data from these payloads is transmitted to the Earth via the Lander," ISRO said in an update on social media platform X.

At present, the battery was fully charged and the solar panel oriented to receive the light at the next sunrise expected on September 22, 2023.

"The receiver is kept on. Hoping for a successful awakening for another set of assignments! Else, it will forever stay there as India's lunar ambassador," it said.

Somanath had earlier in the day said the rover has moved almost 100 metres from the lander. "And we are going to start the process of making both of them sleep in the coming one or two days because they have to withstand the night," he said.

<https://economictimes.indiatimes.com/news/science/chandrayaan-3s-vikram-lander-exceeds-mission-objectives-says-isro/articleshow/103345037.cms>

