

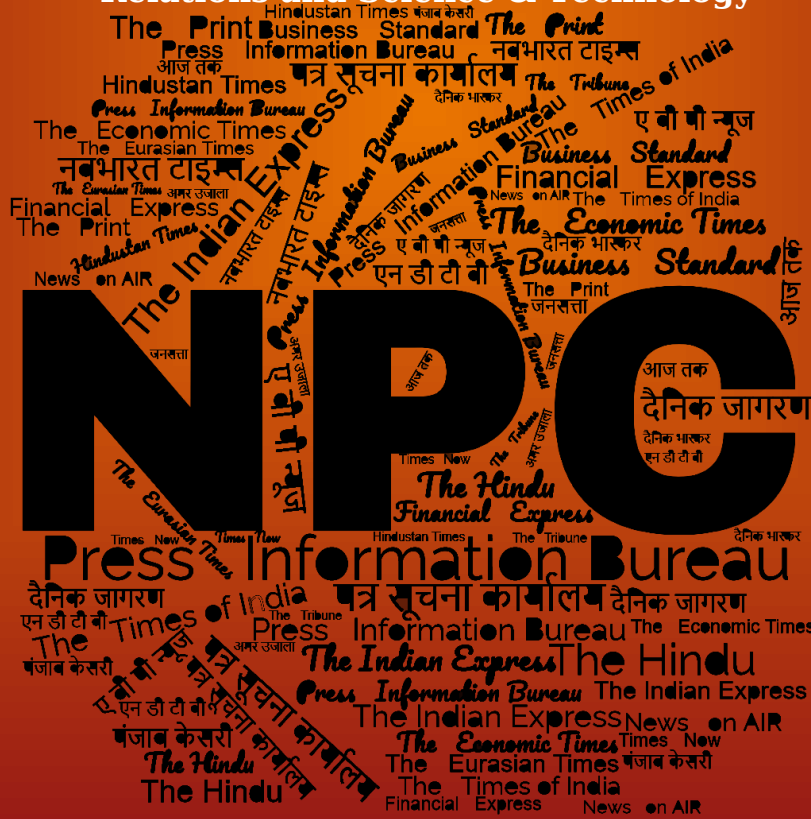
जनवरी
Jan
2024

खंड/Vol. : 49 अंक/Issue : 07
09/01/2024

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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DRDO Anti-Drone Tech Ready, Handed over to BEL, Private Firms

The counter-drone system developed by the Defence Research and Development Organisation (DRDO) is ready for production and was already demonstrated to armed services and other internal security agencies with some orders already placed. The DRDO is now focussing on high endurance Unmanned Aerial Vehicles (UAV) while the capability for smaller drones exists with the industry.

“The DRDO is making drone-based systems and anti-drone systems based on the requirements of user agencies. The DRDO has developed a comprehensive integrated anti-drone system which comprises detection, identification and neutralisation of a drone...,” the Defence Ministry informed the House panel in a written reply. This was stated in the 42nd report “A review of working of DRDO”, which was tabled in the Parliament recently. “Three Services have already placed 23 orders on BEL for DRDO-developed technology. The above technology is suitable for detection, identification and neutralisation of an intruding drone on our land borders also. The solutions can be customised for different challenges.”

The Transfer of Technology (ToT) for above technologies has been handed over to private industries, including BEL, Adani, Larsen & Toubro (L&T) and Icom, the Ministry said. The technology is capable of countering attacks, soft kill and hard kill of all types of drones, including micro drones, which is being developed in the DRDO.

“Anti-drone technology is where the focus should be and in that the DRDO is working very closely with the industry. We are also doing a lot of R&D for doing anti-drone, protection against these types of drones,” a representative of the DRDO said. On the R&D efforts, the DRDO said that the capacity for smaller drones which could loiter and attack, akin to those seen in Ukraine war, exists in our country with the industry, and that is not a focus area for the DRDO. The DRDO is focussing on high-end drones, the panel was informed.

In advanced stage

In this regard, the DRDO said that Tapas Medium Altitude Long Endurance (MALE) UAV developed for Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) application is in advance stage of developmental trials. Short range armed UAV Archer is being developed for reconnaissance, surveillance and low intensity conflict and developmental flight trials are under progress.”

During the briefing, it was submitted before the committee that drone batteries are unavailable in the country, the report noted, to which the Ministry later replied that the older generation of drones were using Nikhel-Cadmium and Silver-Zinc batteries as secondary source of power. The basic cells for Ni-Cad, Silver Zinc chemistry are being made in India and there is no issue with the

availability of these batteries for use on the drone. “However, due to weight concerns and advancement in the battery technologies, Lithium Ion chemistry is now being used.”

Lithium Ion-based battery with indigenous battery management system has been developed by the DRDO in association with a private vendor and is being used on Tapas UAV. “The cells are however imported. The DRDO and the ISRO are working on Lithium Ion cell development, but the activity is still in infant stage,” the Ministry said. It is “felt that the DRDO will be self-reliant in the drone batteries in the future.”

The committee, in its observations, emphasised on the need for the DRDO to stay at the forefront of technological advancements in its pursuit of developing state-of-the-art technologies and equipment, and put forth a recommendation to work on anti-drone and its battery technology and to integrate cutting-edge technologies such as Artificial Intelligence (AI) and Robotics into future endeavours.

<https://www.thehindu.com/news/national/drdo-anti-drone-tech-ready-handed-over-to-bel-private-firms/article67716451.ece>



Tue, 09 Jan 2024

DRDO Launches Indigenous Assault Rifle for Armed Forces

The Defence Research and Development Organisation (DRDO) on Monday launched Ugram, a state-of-the-art assault rifle of the 7.62 x 51 mm calibre, which has been indigenously designed, developed and manufactured in collaboration with a private industry partner. The assault rifle has been designed for the operational requirements of armed forces, paramilitary and state police entities.

The first operational prototype of the rifle, which has been named Ugram, which means ferocious, was unveiled at the hands of Dr Shailendra V Gade, Director General, Armament and Combat Engineering Systems of the DRDO on Monday in Pune.

The rifle has an effective range of 500 metres and weighs less than four kilograms and has been developed by DRDO’s Pune-based facility Armament Research and Development Establishments (ARDE) in collaboration with Hyderabad-based Dvipa Armour India Private Limited.

ARDE scientists, who have worked on the project, said the rifle was designed based on the General Staff Qualitative Requirements (GSQRs) of the Indian Army.

The rifle has a 20 round magazine and fires in both single and full auto mode. The configuration of the rifle is comparable to the latest AK and AR type rifles and it has a rivet-free design, making it robust.

The unveiling of this specific type of assault rifle of 7.62 x 51 mm calibre comes at a time when the Defence Acquisition Council had in December given a nod for procurement of 70,000 US-made SIG Sauer assault rifle of the same calibre for the Indian armed forces for over Rs 800 crore in addition to over 72,000 procured early in 2020.

DRDO’s Ugram will have to go through several internal tests, acceptance trials and user trials before it can be considered for induction.

Speaking about the Ugram assault rifle, ARDE Director Ankathi Raju said, “This was a mission mode project taken up two years ago. After the ARDE designed the rifle, we started looking for a

private industry partner for development and manufacturing. Simultaneously, we started working on its hardware through our sources. We have followed the concept of Development cum Production Partner, DcPP for the speedy progress of the project. Under this, the vendor is associated with us during the design and production too. After the product is made by the vendor, it will undergo the acceptance trials. We placed the order for the assault rifle to the Hyderabad-based Dvipa Armour. The rifle will soon go for trials.”

A Mission Mode Project of the DRDO refers to a focused and time-bound development undertaken to achieve specific goals and objectives in the field of defence and technology.

Director Raju further said, “As part of its trial, a set number of rounds will be fired from Ugram without stoppage, and accuracy and consistency checks will be conducted. The weapon will be tested in various weather and geographic conditions including the high altitude, desert etc. A board of Army officers will be constituted for the acceptance procedure. If some non-compliances are found, we will have to address them in specific time and the trials will be redone. Before these trials, we also conduct our own internal trials at our own small arms testing facility. While the process of design and design-related analysis started two years ago, the development in collaboration with the private vendor was completed in 100 days.”

G Ram Chaitanya Reddy, Director of the Dvipa Armour India, said, “There is a major shortfall of assault rifles in India. The AK-203 project has not taken off because of the Russia Ukraine war and PLR is supplying weapons to the Israel Weapon Industries because of the Israel-Hamas conflict. So this window of opportunity has come up. Three months ago, in October 2023, we received the order. And we have successfully given five prototypes. We believe this is the fastest development of a weapon anywhere in the world. After the development of the prototype and their trials, we will go for more tests for which we will give 15 more units to the ARDE. Subsequently, the process of further clearances will begin.”

<https://indianexpress.com/article/cities/pune/drdo-launches-indigenous-assault-rifle-for-armed-forces-9100894/>

THE TIMES OF INDIA

Tue, 09 Jan 2024

DRDO Launches Assault Rifle 'Ugram' for Indian Army

The Armament Research and Development Establishment (ARDE) and a Hyderabad-based private firm launched an indigenous assault rifle named ‘ugram’ (ferocious) on Monday.

This is the first time that the Defence Research and Development Organisation (DRDO) lab has collaborated with a private industry to manufacture a 7.62 x 51 mm calibre rifle, said an official.

The weapon is designed and developed to meet the operational requirements of the Indian armed forces, paramilitary forces and state police forces, said the official.

The rifle, weighing less than four kg with a 500-meter firing range, was unveiled at the hands of Shailendra Gade, the director general of the Armament and Combat Engineering (ACE) system of the DRDO.

Scientists and private players said that it was developed based on the General Staff Qualitative Requirements (GSQRs) issued by the Indian Army for assault rifles in the recent past.

The scope of the project is huge in the current security scenario because of a shortfall in assault rifles in the forces. The import of AK-203 rifles has been affected owing to the ongoing war between Russia and Ukraine, the official claimed.

A Raju, the director of the ARDE, said the laboratory developed the design for the weapon. “In this case, we have followed the newly introduced concept of development cum production partner (DCPP) to execute the project and that is how the private firm is involved in it. Now, we have developed the weapon in collaboration. We will now conduct various internal trials at our firing range to test various aspects of the weapon before going for user trials,” he added.

Weapon testing is a time-consuming process. A weapon should attain the basic threshold of the forces’ requirements in terms of accuracy, smooth functioning etc, said the officials.

“We are in the process of constituting a board of officers, represented by the Indian Army, to carry out a series of user trials in different weather conditions. The user, in this case the army, will test the weapon in high-altitude regions, deserts, etc in the coming months. If the weapon does not meet a particular requirement, we will have to take necessary measures to attain it at the earliest,” Raju added.

The ARDE officials and members of the firm worked hard to develop the weapon in 100 days.

“It was a commendable achievement. We could do it because our design was already ready,” added the director.

G Ram Chaitanya Reddy, director of Dvipa Armour India, claimed that they are among 30 licenced holders to manufacture weapons for the armed forces. “It is the first successful joint venture project that we have executed in a record time. We have developed five rifles for testing in the first slot. We will give 15 more rifles to the ARDE for advanced testing,” he said.

Unique barrel manufacturing unit at ARDE

The ARDE has established a dedicated barrel manufacturing facility on its campus. The DRDO has spent Rs 60 crore on the project. It will manufacture barrels for various weapons in a quick time. It will help private industries to execute their weapon manufacturing projects, said officials.

The machines have been imported from Austria. The ordnance factories use these machines for manufacturing barrels.

PS Prasad, project director of the small arms section of the ARDE and in charge of the facility, said, “Private industries have got the licence to develop weapons. But they do not have the technology and facility to produce barrels for the weapons. In that case, they will have to import barrels. It is a costly affair for them. At the initial stage, no firm will get a huge quantity order for the weapon. So, they will not invest in this kind of facility. Also, we have the required expertise in this area. We have to handhold them. Otherwise, they will not be able to execute their projects. As a result, the DRDO invested in this project to meet their requirements.”

Prasad said that there is a high demand already from manufacturers for developing barrels that will be cost-effective as compared to the imported ones.

<https://timesofindia.indiatimes.com/city/pune/drdo-launches-assault-rifle-ugram-for-indian-army/articleshow/106653712.cms>

Small-Arms Barrel Manufacturing Facility Opened in Pune, to Benefit Private Players

The Defence Research and Development Organisation (DRDO) on Monday launched a small arms barrel manufacturing facility at its Pune-based laboratory, Armament Research and Development Establishment (ARDE). The facility will mainly cater to the requirement of the private sector small arms manufacturers and will also be a key asset for the DRDO's own research and development efforts.

The facility, which has been constructed at a cost of close to Rs 60 crore, was inaugurated by Dr Shailendra V Gade, Director General, Armament and Combat Engineering Systems of the DRDO on Monday on the premises of the ARDE in Pashan. The facility consists of three sequential machines with the third and most important being the Austrian- origin barrel forging machine procured at a cost of 3.2 million Euros. The machine has a fully automatic operation sequence and comprises a six axe robot that performs the task.

ARDE Director Ankathi Raju said, "In small arms, the quality of its components is crucial and the barrel is the most important part of a gun. The quality and reliability of the barrels is paramount. For example, if 2,000 rounds are to be fired without stop, consider the quality checks that are required. The ordnance factories have got these barrel production facilities. The facility at the ARDE will cater to the industries. We will implement them as turnkey projects. The industry will tell you the calibre, length and other parameters etc. We have the ballistic database with us. We will design the barrel based on industry requirements and produce it. We will also test the barrel and deliver it to the industry. This project was sanctioned three years ago and it is now operational."

A lot of private industries have now got licenses to manufacture small arms.

But the problem has always been the barrel. Remaining components can be manufactured but not the barrel, because it required capital intensive facilities, like the one that was inaugurated.

"The private industries of all sizes who have small arms manufacturing licences will benefit from this facility. These companies will manufacture arms for not just Indian entities but can also export them. India has nearly 30 customer entities for small arms. Apart from armed forces, there are paramilitary and central armed police forces and state police forces many of whom have specialised commando units. If we aggregate them, it is a big market." said a senior scientist.

<https://indianexpress.com/article/cities/pune/small-arms-barrel-manufacturing-facility-opened-in-pune-to-benefit-private-players-9100899/>

THE TIMES OF INDIA

Mon, 08 Jan 2024

Defence Minister Rajnath Singh Arrives in UK for Defence, Security Dialogue

Defence minister Rajnath Singh arrived in London on Monday for a three-day visit focusing on all aspects of the India-UK Defence Partnership and to hold high-level discussions covering a wide range of defence, security and industrial cooperation issues. Singh is accompanied by a ministry of defence delegation comprised of senior officials from the defence research and development organisation (DRDO), service headquarters, department of defence, and department of defence production.

Besides a bilateral meeting with his UK counterpart, defence secretary Grant Shapps, he is also expected to meet Prime Minister Rishi Sunak and foreign secretary David Cameron.

"During his visit, the Raksha Mantri will hold a bilateral meeting with his UK counterpart Secretary of State for Defence, Mr Grant Shapps. They are expected to discuss a wide range of defence, security and industrial cooperation issues," the ministry of defence in New Delhi said in a pre-visit statement over the weekend.

"Shri Rajnath Singh is also expected to call on UK Prime Minister Mr Rishi Sunak and hold a meeting with Secretary of State for Foreign, Commonwealth & Development Affairs Mr David Cameron. He will also interact with the CEOs and industry leaders of the UK Defence Industry and meet with the Indian community there," the statement added.

A ceremonial Guard of Honour, visits to Mahatma Gandhi and Dr B.R. Ambedkar memorials, a defence industry roundtable and community interactions with the Indian diaspora at Neasden Temple and India House are on the agenda during what is seen as a significant visit, given that the last Indian defence ministerial-level visit to the UK took place 22 years ago.

"In substantive terms, the visit will seek to deepen military cooperation and defence industrial partnerships with the UK by building on the November 2023 Defence Consultative Group (DCG) meeting in Delhi at the level of Secretaries and the inaugural meeting of the 2+2 Foreign and Defence Dialogue at the level of Joint Secretaries in October 2023," says Rahul Roy-Chaudhury, Senior Fellow for South and Central Asian Defence, Strategy and Diplomacy at the London-based think tank International Institute for Strategic Studies (IISS).

The defence analyst believes that through the ministerial-level dialogue, the British government could seek to provide an "enabling environment" for British companies to pursue these objectives in India.

"Also, with India's and the UK's recent focus on the Indo-Pacific, there is a unique opportunity to bolster naval and maritime security cooperation with third countries in the western Indian Ocean region, including with Oman and Kenya, which host UK military and naval presence amidst a greater role and influence in the area by the Indian Navy," he noted.

The last visit by an Indian defence minister to the UK was by George Fernandes in the Atal Behari Vajpayee-led BJP government back in January 2002. A previously planned visit by Rajnath Singh to the UK in June 2022 was called off by the Indian side for "protocol reasons", making this week's tour a keenly watched one.

<https://timesofindia.indiatimes.com/india/defence-minister-rajnath-singh-arrives-in-uk-for-defence-security-dialogue/articleshow/106645957.cms>



Tue, 09 Jan 2024

Over 10 Indian Navy Warships now Deployed in Arabian Sea; Aim to Deter Pirates, Drone Strikes

The Indian Navy has now deployed over ten warships in a bid to intensify its maritime presence in the region starting from the north and central Arabian Sea to the Gulf of Aden to deter any piracy attempts and drone strikes.

The Indian Navy Chief — Admiral R Hari Kumar — in an exclusive conversation with CNN-News18, had mentioned how the naval force was investigating the MV Lila Norfolk hijack case and inspecting the boats in the vicinity.

The deployment of the warships also comes with the presence of Marine Commandos (MARCOS). Officials noted that the Indian Navy is the resident power of Indian Ocean Region (IOR) and will do whatever it can to safeguard the national interest of India and make the region free, fair, and open for global trade.

The enhanced maritime security operations are being conducted by the nation independently, a Times of India report said, adding that, India has abstained from being a part of the US-led multinational 'Operation Prosperity Guardian' launched in the Red Sea in December.

The multinational operation was launched in the backdrop of the attacks on civilian as well as military vessels in the region by the Houthi rebels of Yemen.

India has pressed on maintaining a undeterred presence in the Arabian Sea amid the escalating threat of piracy and drone attacks on commercial ships.

The aim is to assist in stabilising the situation in the Arabian Sea, while promoting net maritime security, an officer was quoted as saying.

Predator is also being used for surveillance. Consistent ISR (intelligence, surveillance, and reconnaissance) missions are being undertaken by the already deployed long-range P-8I maritime patrol aircraft and sea guardian drones. Both of these provide high-resolution live feeds for the Navy officials to inspect and study.

The Navy had already deployed INS Kochi, INS Kolkata, INS Mormugao along with INS Chennai and multi-role frigates INS Talwar and INS Tarkash. Dornier and helicopters were also deployed for maritime surveillance and security purposes.

The Indian Navy is working in close coordination with the Coast Guard to ensure effective surveillance of the Indian Exclusive Economic Zone (EEZ).

Just last week, INS Chennai and its elite commandos successfully rescued 21 crew members, including 15 Indians, from a bulk carrier in the North Arabian Sea and sanitised it in a swift operation.

#IndianNavy's Swift Response to the Hijacking Attempt of MV Lila Norfolk in the North Arabian Sea. All 21 crew (incl #15Indians) onboard safely evacuated from the citadel. Sanitisation by MARCOs has confirmed absence of the hijackers.

The attempt of hijacking by the pirates... <https://t.co/OvudB0A8VV> pic.twitter.com/616q7avNjg

— SpokespersonNavy (@indiannavy) January 5, 2024

Indian Navy spokesperson Commander Vivek Madhwal had said that the INS Chennai was in the vicinity of the MV Lila Norfolk and rendered support to restore the power generation and propulsion besides assisting her commence voyage to next port of call.

Dismissing any misconceptions about the preparedness of the Indian warships, an officer said that Navy warships are equipped with a vast range of guns, short and medium-range air defence missiles, and jammers.

The Navy although is not a part of the multinational 'operation Prosperity Guardian' in the Red Sea, but information and coordination with all the friendly foreign countries such as the US, UK and France takes place on a regular basis.

The Information Fusion Centre-Indian Ocean Region (IFC-IOR) is also on alert. The Navy's Information Management and Analysis Centre (IMAC) also plays a crucial role in maintain maritime security.

In addition, the Indian Navy is also working in close coordination with the other national maritime agencies to monitor the overall situation and ensure safety of the merchant vessels.

<https://www.news18.com/india/indian-navy-over-10-warships-arabian-sea-gulf-of-aden-piracy-attempts-drone-strikes-ins-chennai-missile-destroyer-8733011.html>

BW BUSINESSWORLD

Mon, 08 Jan 2024

Innovations for Defence Excellence Gears up for Vibrant Gujarat Summit 2024

The Defence Innovation Organisation (iDEX-DIO) is all set to showcase its pavilion at the upcoming tenth edition of the Vibrant Gujarat Summit, scheduled to take place from 10 to 12 January 2024, in Gandhinagar, Gujarat.

With the overarching theme of 'Gateway to the Future,' iDEX-DIO is set to unveil an innovative pavilion showcasing cutting-edge technologies in the realms of Unmanned Solutions, Artificial Intelligence, Cyber Security, and Advanced Materials.

The iDEX Pavilion, a focal point of the Summit, will host a diverse array of innovators, presenting futuristic solutions that embody the spirit of India's push towards self-reliance in defence technology.

This platform aims to spotlight the prowess of iDEX's leading defence startups and Micro, Small, and Medium Enterprises (MSMEs), placing a spotlight on their contributions to the defence and aerospace sector.

One of the major highlights will be the participation of iDEX in the Vibrant Gujarat Global Trade Show 2024, which will emphasise 'TECHADE and Disruptive Technologies.'

The Trade Show will underscore the Champion Services Sector, with a focus on Digital India initiatives, India Stack, and Emerging Technologies, such as Industry 4.0, Smart Manufacturing, and Artificial Intelligence/Machine Learning.

iDEX-DIO is actively seeking new partnerships and collaborations, positioning itself as a key player in shaping the future of defence innovation.

The platform aims to engage with industry leaders, policymakers, and innovators to collectively envision a future that not only enhances the defence capabilities of the nation but also contributes to the vibrant economic landscape of Gujarat and beyond.

Launched in 2018 by Prime Minister Narendra Modi, iDEX (Innovations for Defence Excellence) stands as the flagship scheme of the Ministry of Defence, Government of India. The scheme aims to cultivate an innovation ecosystem in the Defence and Aerospace sector by fostering collaborations with startups, innovators, MSMEs, incubators, and academia.

iDEX provides grants and support for research and development, with a focus on technologies that hold significant potential for future adoption in the Indian defence and aerospace domains.

With a current engagement with over 400 startups and MSMEs, iDEX has played a pivotal role in the procurement of 31 items worth over Rs 2000 Crores. Acknowledged as a game-changer in the defence ecosystem, iDEX has received the prestigious Prime Minister's Award for Innovation in the defence sector, underscoring its pivotal role in driving innovation and self-reliance in the country's defence capabilities. The organisation's participation in the Vibrant Gujarat Summit 2024 is expected to further solidify its position as a key catalyst for transformative advancements in the defence technology landscape.

<https://www.businessworld.in/article/Innovations-For-Defence-Excellence-Gears-Up-For-Vibrant-Gujarat-Summit-2024-/08-01-2024-505057/>



Mon, 08 Jan 2024

'String of Pearls': How China-made Kyaukphyu Port in Myanmar Threatens India's Nuclear Attack Submarine Base

As part of China's continuous efforts to encircle India, it has expedited the construction of Kyaukphyu Port on the western coast on Myanmar. The maritime hub can likely be repurposed for military matters as and when required.

The port is among several China-controlled points in the region including a naval base in Cambodia, Hambantota in Sri Lanka and Gwadar in Pakistan, apart from a naval station at the port of Djibouti.

China's Kyaukphyu Port poses direct threat to India

Over the last week of December 2023, a deal was reportedly agreed between China and Myanmar to speed up the project. Officials from Myanmar's ruling junta and China state-owned CITIC Group (Myanmar) met at the Myanmar's capital Naypyitaw to amp up the construction work.

The location of Kyaukphyu Port is causing concerns in India due to its location. It is being constructed very close to India's eastern coast and is in close proximity to the key under-construction Indian naval base – INS Varsha.

This naval base is crucial for India's defence as it will be housing nuclear attack (SSNs) and ballistic missile submarines (SSBNs).

If China gets successful in monitoring movement of these boats, it would be better placed to neutralise the sea leg of India's nuclear triad in the event of war. Also, the proximity could enable China to monitor Indian missile tests.

The upcoming port by China is also close to Abdul Kalam Island, used by the DRDO for testing of missile, including those meant for hitting targets on the Chinese mainland in the event of a nuclear exchange.

Not just surveillance

China's influence could extend beyond surveillance in the region. The proximity of Kyaukphyu to India's northeastern states raises the scope of China supporting insurgent activities, potentially forcing India to divert resources from other critical areas including the Line of Actual Control (LAC).

The concerns are worrisome to India keeping in view China's historical support for insurgency, including drug and weapons trafficking in the North East.

The work on the Kyaukphyu Port and KP SEZ began in 2010, but it got stalled due to the Covid pandemic and takeover of the military or 'Tatmadaw'.

The upcoming port is located in the sea across the restive Rakhine province where the 'Tatmadaw' is battling the Arakan Army. Rakhine is also the homeland of the Rohingyas, a persecuted Muslim community in Myanmar.

Why China accelerated Kyaukphyu Port construction?

The entire cost of the Kyaukphyu Port construction is said to be \$7.3 billion and on completion it will give China access to the Indian Ocean for direct trade links with West Asia, Europe and the Atlantic region by connecting the seaport with Yunnan province's capital Kunming by a rail and road link.

What India is doing?

The Government of India is aware of construction work of Kyaukphyu Port picking up pace and is taking measures to nullify these developments.

The steps taken by the Indian government include installing coastal radars to monitor maritime traffic and setting up the Information Management and Analysis Centre (IMAC) at Gurugram for collating and tracking all maritime activities in the region.

Till date, 46 radars have been installed along India's coastline, with 38 more under construction. Also, 32 radars are operational in various Indian Ocean nations like the Maldives, Mauritius, Sri Lanka, and Seychelles, with an additional 20 under construction in Bangladesh, fortifying its maritime surveillance capabilities.

<https://www.firstpost.com/world/string-of-pearls-how-china-made-kyaukphyu-port-in-myanmar-threatens-indias-nuclear-attack-submarine-base-13588512.html>

Sri Lanka Joins US-led Naval Patrols Against Huthis

Cash-strapped Sri Lanka's navy said Monday it was joining a US-led maritime taskforce to protect international shipping against attacks by Yemen's Huthi rebels.

"We will be joining 'Operation Prosperity Guardian' led by the US Navy," naval spokesman Gayan Wickramasuriya said, with the deployment of a patrol vessel crewed by more than 100 people.

Huthi fighters have launched more than 100 drone and missile attacks on targets in Israel and the Red Sea, disrupting traffic in the key shipping route that carries up to 12 percent of global trade.

The Iran-backed Huthis say they are targeting Israel and Israeli-linked vessels to push for a stop to the offensive in the Gaza Strip, where Israel has been battling Hamas militants since October 7.

Sri Lankan President Ranil Wickremesinghe has said that Huthi attacks had raised freight costs and were impacting exports of garments and tea. The South Asian island nation is emerging from its worst economic crisis in 2022, when months of street protests led to the ouster of then-president Gotabaya Rajapaksa. The country defaulted on its \$46 billion external debt and is now being supported by a \$2.9 billion four-year bailout loan from the International Monetary Fund.

Wickramasuriya said the move would add no additional cost as the vessel was already patrolling Sri Lanka's vast maritime boundary. The US-led maritime force announced late last month includes Britain, Canada, France, Italy, the Netherlands, Norway and other nations.

Last month neighbouring India deployed several warships in the Arabian Sea and Gulf of Aden after a string of shipping attacks, including a drone strike near India's coast that the United States blamed on Iran.

<https://economictimes.indiatimes.com/news/defence/sri-lanka-joins-us-led-naval-patrols-against-huthis/articleshow/106642673.cms>

Science & Technology News



Press Information Bureau
Government of India

Ministry of Science & Technology

Mon, 08 Jan 2024

India International Science Festival (IISF) 2023 Promo Film and Brochure Released During Curtain Raiser Event at THSTI, Faridabad

Theme of IISF 2023 is "Science and Technology Public Outreach in Amrit Kaal"

IISF-2023 to benefit a large number of schoolchildren, especially from the state, says State Higher Education Minister Shri Moolchand Sharma

A curtain raiser event of India International Science Festival (IISF) 2023 was held in Faridabad, Haryana today. This edition of IISF is being organised by the Department of Science & Technology, Ministry of Earth Sciences, Council of Scientific and Industrial Research, Department of Biotechnology (DBT), Department of Space, Department of Atomic Energy, Vijnana Bharti and Government of Haryana. IISF-2023 will be hosted in the DBT Translational Health Science and Technology Institute (THSTI) - Regional Centre for Biotechnology (RCB) campus, NCR Biotech Science Cluster, Faridabad from 17 to 20 January 2024.

This festival aims to celebrate and highlight a wide range of achievements in the field of science, technology and innovations in India. The theme of IISF 2023 is “Science and Technology Public Outreach in Amrit Kaal”.

Minister of Higher Education and Transport, Govt. of Haryana, Shri Moolchand Sharma was the chief guest for the curtain-raiser event. Dr Shiv Kumar Sharma, National Organising Secretary, Vijnana Bharati and Ms. Dhanalakshmi, Joint Secretary, Department of Science and Technology also attended the event.

Shri Moolchand Sharma expressed his happiness on Faridabad being selected as the venue for the upcoming IISF 2023. He said that this event would benefit a large number of schoolchildren from Faridabad and other districts of Haryana. Shri Sharma congratulated the organisers of IISF 2023 for the tremendous work that has been done in developing the venue and promised all support from the government in making IISF 2023 a grand success.

Ms. Dhanalakshmi, in her address, talked about how the venue was selected and the progress of getting the venue ready for IISF 2023. She appreciated the momentum and the progress made in the construction of the venue for IISF 2023.

In his address, Dr Shiv Kumar Sharma shared the journey of Vijnana Bharati and the efforts and work that is being done by the organisation in bringing science closer to the public.

Dr Arvind C Ranade, Director, National Innovation Foundation, shared glimpses of activities that will take place during IISF 2023.

During the event, IISF 2023 promo film and brochure were released by the dignitaries.

Dr Jayanta Bhattacharya, Dean and Executive Director (Additional Charge), delivered the vote of thanks and shared a small video of the work done by THSTI in developing the IISF 2023 venue. He thanked the secretaries of DBT and DST for their unwavering support and advice for the IISF 2023. Dr Bhattacharya expressed gratitude to DC, Faridabad and all the senior officials of Faridabad and state officials for their support in developing the venue in a record time and hoped the IISF 2023 will turn out to be a memorable event for Faridabad and Haryana as a whole. He also thanked the THSTI fraternity and NIF officials for relentless support and hard work towards making IISF 2023 a grand success.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1994217>



Tue, 09 Jan 2024

Aditya-L1 Data to Start Pouring in soon

Two days after India’s first solar observatory, Aditya-L1, was parked in an orbit around Lagrange Point-1 to observe various aspects of the Sun for the next five years, scientists at the Indian Space

Research Organisation (Isro) on Monday said that all the instruments on the spacecraft have been turned on. A senior Isro official said that all the seven key instruments were activated in a phased manner between Saturday and Sunday, and the first set of data may be available next week.

“The instruments are being tested now, and we can expect the first set of data coming in by the middle of this month,” the official said.

On September 2, the Indian space agency launched the Aditya-L1 spacecraft from the spaceport in Sriharikota. After the launch, a series of Earth-bound manoeuvres were performed to ensure that the craft gathers enough momentum to set off on its 127-day journey.

After the final round of manoeuvres were completed on Saturday, the craft has been placed in a Halo Orbit around L1, which is an imaginary point in space about 1.5 million km from the Earth — about 1% of the Earth-Sun distance.

The Aditya-L1 spacecraft is carrying seven instruments or payloads on-board -- VELC, which is the primary payload; Solar Ultraviolet Imaging Telescope (SUIT), Solar Low Energy X-ray Spectrometer (SoLEXS), and High Energy L1 Orbiting X-ray Spectrometer (HEL1OS), which are remote sensing payloads; and Aditya Solar wind Particle Experiment (ASPEX), Plasma Analyser Package for Aditya (PAPA), and Advanced Tri-axial High Resolution Digital Magnetometers, which are in-situ payloads — to observe the photosphere, chromosphere and corona using electromagnetic and particle and magnetic field detectors.

The primary instrument was designed by the Department of Science and Technology’s (DST) Indian Institute of Astrophysics (IIA).

Using the special vantage point L1, four payloads (VELC, SUIT, SoLEXS, HEL1OS) will directly view the sun, and the remaining three payloads (ASPEX, PAPA and Advanced Tri-axial High Resolution Digital Magnetometers) will carry out in-situ studies of particles and fields at L1, providing important scientific studies of the propagatory effect of solar dynamics in the interplanetary medium, the space agency said.

“The VELC will image the Sun’s atmosphere, the corona, closer to the Sun than ever before, at high resolution and time cadence. The payload has 40 different optical elements of high precision and will be kept at a temperature of 22 degrees Celsius in space. In addition, Aditya-L1 carries an ultraviolet imager, two X-ray spectrometers, and four in-situ instruments to measure plasma parameters,” Isro said in a statement on Saturday. In its mission document released in July, Isro said, “The suits of Aditya-L1 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, propagation of particles and fields.”

Astronomer and former professor at Indian Institute of Astrophysics (IIA) RC Kapoor said that Aditya-L1 will be observing the Sun without any interruptions for at least the next five years, providing critical data for the scientific community.

“This is for the first time that Isro has placed a satellite around the L1. The instruments on-board are also functional now and will be providing some crucial data,” Kapoor said.

2023 has been an important year for India’s space programme. India created history by successfully landing on the lunar surface, becoming the first country in the world to park itself on the south polar region of the Moon. Some key tests of India’s human spaceflight Gaganyaan were also performed successfully, which will pave India’s way to the final mission, likely to be launched by 2025.

<https://www.hindustantimes.com/india-news/adityal1-data-to-start-pouring-in-soon-101704741669026.html>

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NASA Launches Peregrine 1 Moon Lander, First in 50 years! Human Remains on Board

The Peregrine 1 lander which is carrying NASA's scientific equipment, has begun its journey towards the moon following the successful launch of the Vulcan Centaur rocket at Cape Canaveral.

This significant event marks the maiden flight of the robust new rocket constructed by the United Launch Alliance, a joint venture between Boeing and Lockheed. It also signifies the endeavor to accomplish the first soft landing by the United States on the lunar surface in five decades.

Crafted by the space robotics firm Astrobotic, the Peregrine lunar lander lifted off at 7:18 GMT, aspiring to secure the distinction of being the initial private company to achieve a lunar landing—a milestone that has been challenging to attain in recent times.

Shortly after separating from the rocket, Astrobotic's mission control received signals from the lander, which is now entering a highly elliptical orbit, aligning itself towards its intended destination. The collection of NASA payloads aboard Peregrine One aims to identify lunar water molecules, measure radiation and gases around the lander, and scrutinize the lunar exosphere (the thin layer of gases on the Moon's surface). These measurements will enhance our comprehension of the interaction between solar radiation and the lunar surface, NASA added.

If all goes according to plan, Peregrine is expected to land in the Sinus Viscositas, or Bay of Stickiness, a mid-latitude region on the Moon, on February 23.

According to CBS News, Peregrine carries 20 experiments and international payloads, including six NASA instruments, a \$108 million valued sensor, a shoebox-sized rover by Carnegie Mellon University, a physical Bitcoin, as well as cremated remains and DNA, including those of Gene Roddenberry, Arthur C. Clarke, and a dog. Other contents encompass personal mementos, artwork, and letters from children globally. A successful launch could establish Astrobotic as the first private company to execute a controlled, or 'soft' landing on the lunar surface, a feat no private entity has accomplished on the Moon or any other celestial body.

John Thornton, the CEO of Astrobotic leading the mission, expressed a mix of emotions: "A lot is riding here. It's a mix of thrill and excitement, but I'm also a bit terrified because there's a lot on the line."

Controversy surrounds the Peregrine mission due to some commercial payloads. The Navajo Nation of Native Americans has urged NASA to postpone the launch due to capsules on board containing human remains.

"The moon holds a sacred place in Navajo cosmology. The idea of converting it into a resting place for human remains is deeply disturbing and unacceptable to our people and many other tribal nations," said Buu Nygren, President of the Navajo Nation, reported by CNN.

In response to the concerns raised, the space agency stated its intention to involve tribes in future discussions regarding such decisions.

<https://www.financialexpress.com/life/science/nasa-launches-peregrine-1-moon-lander-first-in-50-years-human-remains-on-board-bkg/3358799/>



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US' Private Moon Lander Mission may Fail due to "Critical Loss" of Fuel

A historic private mission to land on the Moon was facing near-certain failure Monday after the spacecraft suffered a "critical loss" of fuel, in a major blow to America's hopes of placing its first robot on the lunar surface in five decades.

Fixed to the top of United Launch Alliance's new Vulcan rocket, which was making its first flight, Astrobotic's Peregrine Lunar Lander blasted off overnight from Florida's Cape Canaveral Space Force Station, then successfully separated from its launch vehicle.

A few hours later, Astrobotic began reporting technical troubles, starting with an inability to orient Peregrine's top-mounted solar panel towards the Sun and keep its onboard battery topped up, due to a malfunction in its propulsion system.

Though engineers "improvised" a way to tilt the spacecraft in the right direction and keep its power going, the company then posted on X that the same propulsion failure appeared to be the cause of a "critical loss of propellant."

"We are currently assessing what alternative mission profiles may be feasible at this time," Astrobotic said, an apparent admission that the Peregrine would not achieve a controlled touchdown on the Moon as planned.

They also released an image taken from a mounted camera that showed extensive damage to an outer layer of the spacecraft, calling it the first "visual clue" that reinforces their theory of a propulsion system anomaly, without elaborating on its nature.

Peregrine was supposed to reach the Moon, then maintain an orbit for several weeks before landing in a mid-latitude region called Sinus Viscositatis on February 23.

A soft landing on Earth's nearest celestial neighbor has thus far only been accomplished by a handful of national space agencies: the Soviet Union was first, in 1966, followed by the United States, which is still the only country to put people on the Moon.

China has successfully landed three times over the past decade, while India was the most recent to achieve the feat last year.

Pivot to private

The United States is turning to the commercial sector to stimulate a broader lunar economy and ship its hardware at a fraction of the cost under the Commercial Lunar Payload Services (CLPS) program -- but Astrobotic's apparent failure could lead to criticism of the new strategy.

NASA Administrator Bill Nelson however doubled down, praising the success of ULA's Vulcan rocket on its maiden voyage, which maintained the company's 100 percent success rate in more than 150 launches.

"Spaceflight is a daring adventure, and @astrobotic is making progress for CLPS deliveries and Artemis. @NASA will continue to expand our reach in the cosmos with our commercial partners," Nelson said on X.

NASA paid Astrobotic more than \$100 million, while another contracted company, Houston-based Intuitive Machines, is looking to launch in February and land near the Moon's south pole.

The space agency hopes to use such missions to probe the lunar environment, paving the way for its Artemis program to return astronauts to the Moon later this decade, in preparation for future missions to Mars.

Failure happens

Controlled touchdown on the Moon is challenging, with roughly half of all attempts failing.

In the absence of an atmosphere that would allow the use of parachutes, a spacecraft must navigate treacherous terrain using only its thrusters to slow descent.

Private missions by Israel and Japan, as well as a recent attempt by the Russian space agency, have all ended in failure -- though Japan's space agency is targeting mid-January for the touchdown of its SLIM lander launched last September.

In addition to the science instruments it carried for NASA, Peregrine contains more colorful cargo paid for by private customers, such as a physical Bitcoin as well as cremated remains and DNA, including those of Star Trek creator Gene Roddenberry, legendary sci-fi author Arthur C. Clarke, and a dog.

The Navajo Nation, America's largest Indigenous tribe, had objected to sending human remains to the Moon, calling it a desecration of a sacred space. Though they were granted a last-ditch meeting with White House and NASA officials, their misgivings were ultimately ignored.

<https://www.ndtv.com/world-news/us-private-moon-lander-mission-may-fail-due-to-critical-loss-of-fuel-4826149>

