

CONTENTS

S. No.	TITLE	Page No.
DRDO News		1-2
DRDO Technology News		1-2
1.	Indian Navy ने DRDO के सहयोग से स्वदेशी नौसैनिक एंटी-शिप मिसाइल का किया सफल परीक्षण	जागरण 1
2.	Odisha: DRDO Tests Niche Anti-ship Missile NASM Successfully	<i>The New Indian Express</i> 1
Defence News		2-13
Defence Strategic: National/International		2-13
3.	2nd Joint Working Group Meeting of India-UK Electric Propulsion Capability Partnership Held in New Delhi	<i>Press Information Bureau</i> 2
4.	भारत-अमरीका संयुक्त युद्ध अभ्यास वज्र प्रहार मेघालय के उमरोई में शुरू हुआ	पत्र सूचना कार्यालय 3
5.	India, US Kick off Vajra Prahar Exercise between their Special Forces	<i>The Times of India</i> 3
6.	इंडियन एयर फोर्स हवा के साथ अब स्पेस में भी: IAF ने नए नाम और काम का प्रस्ताव डिफेंस मिनिस्ट्री को दिया, स्पेस डॉक्ट्रिन पहले से तैयार	दैनिक भास्कर 4
7.	Centre Issues Rs 10,000 Crore Tender for Acquisition of 12 Su-30 MKI Fighter Jets	<i>India Today</i> 5
8.	Indian Army's Comprehensive Training Framework for United Nations Peace Missions	<i>Financial Express</i> 6
9.	ASEAN Wants 'Stronger' Relationship with India: Secretary-General Kao	<i>Financial Express</i> 7
10.	North Korea Claims its Third Attempt to Put a Spy Satellite into Orbit was Successful	<i>The Hindu</i> 8
11.	HIMARS: Know about the US-made Missile Launcher Used by Ukraine against Russia	<i>News Nine</i> 11
12.	Germany Announces 1.3 Billion Euros Aid Including 'Air Defence Systems' for Ukraine	<i>Hindustan Times</i> 12
13.	Iran Unveils Fattah-2 Hypersonic Cruise Missile	<i>Janes</i> 12
Science & Technology News		13-14
14.	ISRO Mission to Bring Soil Samples from Moon to Earth: All Details inside	<i>Business Standard</i> 13

*Tue, 21 Nov 2023*

Indian Navy ने DRDO के सहयोग से स्वदेशी नौसैनिक एंटी-शिप मिसाइल का किया सफल परीक्षण

सेना ने डीआरडीओ के सहयोग से मंगलवार को स्वदेशी नौसैनिक एंटी शिप मिसाइल का सफल परीक्षण किया। सीकिंग 42 बी हेलीकॉप्टर से यह परीक्षण किया गया। मिसाइल तकनीक के मामले में आत्मनिर्भरता की दिशा में यह परीक्षण बेहद अहम कदम है।

मिसाइल प्रौद्योगिकी में आत्मनिर्भर बनने की दिशा में बड़ा कदम

अपने आधिकारिक एक्स हैंडल से पोस्ट में नौसेना ने कहा कि यह परीक्षण मिसाइल प्रौद्योगिकी में आत्मनिर्भरता हासिल करने की दिशा में महत्वपूर्ण कदम है। इस मिसाइल का पहली बार परीक्षण मई 2022 में किया गया था।

मिसाइल में कई नई तकनीकों का हुआ इस्तेमाल

बता दें कि भारतीय नौसेना द्वारा किए गए इस परीक्षण में मिसाइल की सीकर और गाइडेंस तकनीक का भी परीक्षण किया गया। परीक्षण के बाद जारी बयान के अनुसार, मिसाइल में कई नई तकनीकों का इस्तेमाल किया गया है, जिसमें हेलीकॉप्टर के लिए स्वदेशी रूप से विकसित लांचर भी शामिल है। कोई मिसाइल कितनी प्रभावी है, यह उसकी गाइडेंस तकनीक पर ही निर्भर करता है।

<https://www.jagran.com/news/national-indian-navy-successfully-tests-indigenous-anti-ship-missile-in-collaboration-with-drdo-23586047.html>

*Wed, 22 Nov 2023*

Odisha: DRDO Tests Niche Anti-ship Missile NASM Successfully

In a major milestone in ongoing defence preparedness, India on Tuesday successfully test-fired an anti-ship missile from a naval helicopter over Bay of Bengal validating the newly-developed weapon's lethality and state-of-the-art technologies.

Sources said the Indian Navy in association with the Defence Research and Development Organisation (DRDO) conducted guided flight trials of the first indigenously developed naval anti-ship missile (NASM) from a Sea King 42B helicopter.

Developed by DRDO, the missile is the first indigenous air-launched anti-ship cruise missile developed for the Indian Navy. The missile followed the desired sea-skimming trajectory and reached the designated target with a high degree of accuracy, validating the control, guidance and mission algorithms.

The sensors deployed across the test range and near the impact point tracked the missile trajectory and captured all the events. “The trial is a significant step towards achieving self-reliance in niche missile technology, including seeker and guidance technologies,” the Navy said in a statement.

The missile’s new guidance system includes a state-of-the-art navigation system and integrated avionics. It employs several new technologies, including an indigenously developed launcher for the helicopter. With a strike range of around 60 km, the air-launched anti-ship missile can travel at a speed of Mach 0.8. DRDO is also developing a long-range version of it for attacking land targets.

The Sea King helicopter is a multi-role helicopter and has been used for all-around surveillance, search and rescue operations, warfare, and as a transportation platform.

Since the Sea King 42B, known as the flying frigate, is being phased out, the NASM will be equipped on the Indian Navy’s newly-acquired MH-60R naval helicopters. The flight test was witnessed by senior officers of DRDO and the Indian Navy.

<https://www.newindianexpress.com/states/odisha/2023/nov/22/odisha-drdo-tests-niche-anti-ship-missile-nasm-successfully-2635188.html>

Defence News

Defence Strategic: National/International



Press Information Bureau
Government of India

Ministry of Defence

Tue, 21 Nov 2023

2nd Joint Working Group Meeting of India-UK Electric Propulsion Capability Partnership Held in New Delhi

The 2nd India-UK Electric Propulsion Capability Partnership Joint Working Group meeting took place in New Delhi on November 21, 2023. The meeting was co-chaired by Joint Secretary (Naval Systems), Department of Defence Production Shri Rajeev Prakash and Director, Ships Operations and Capability Integration, Defence Equipment & Support Rear Admiral Steve McCarthy.

During the meeting, both sides discussed issues of the Electric Propulsion Partnership like finalisation of Statement of Technical Requirements (SOTR), Factory Acceptance Test (FAT) procedures, maintenance, Manning Philosophy and System Integration requirement.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1978509>



**Press Information Bureau
Government of India**

Ministry of Defence

Tue, 21 Nov 2023

भारत-अमरीका संयुक्त युद्ध अभ्यास वज्र प्रहार मेघालय के उमरोई में शुरू हुआ

भारत-अमरीका संयुक्त विशेष सशस्त्र बल अभ्यास "वज्र प्रहार 2023" का 14 वां संस्करण आज उमरोई के संयुक्त प्रशिक्षण स्थल में प्रारंभ हुआ। अमरीका के सैन्य दल का प्रतिनिधित्व अमरीकी विशेष बलों के पहले विशेष बल समूह(एसएफजी) के सैनिकों द्वारा किया गया। भारतीय सेना की टुकड़ी का नेतृत्व पूर्वी कमान के विशेष बल के जवानों द्वारा किया जा रहा है।

वज्र प्रहार युद्ध अभ्यास भारतीय सेना और अमरीका की सेना की विशेष टुकड़ियों के बीच आयोजित होने वाला एक संयुक्त अभ्यास है। इसका उद्देश्य संयुक्त कार्यक्रम योजना और परिचालन रणनीति जैसे क्षेत्रों में सर्वोत्तम कार्य प्रणालियों तथा उत्कृष्ट अनुभवों को साझा करना है।

इस युद्धाभ्यास के पहले संस्करण का आयोजन वर्ष 2010 में भारत में किया गया था। भारत-अमरीका संयुक्त विशेष सशस्त्र बल अभ्यास का 13 वां संस्करण बकलोह (हिमाचल प्रदेश) के विशेष बल प्रशिक्षण केंद्र (एसएफटीएस) में आयोजित किया गया था। वर्तमान संस्करण 21 नवंबर से 11 दिसंबर 2023 तक मेघालय में स्थित उमरोई छावनी में संचालित किया जा रहा है।

इस अभ्यास के अंतर्गत अगले तीन सप्ताह के दौरान, दोनों सैन्य टुकड़ियां संयुक्त रूप से पहाड़ी इलाकों में पारंपरिक एवं अपरंपरागत परिदृश्यों में विशेष कार्रवाई, आतंकवाद विरोधी गतिविधियों तथा हवाई अभियानों की एक श्रृंखला में योजना अनुसार भाग लेंगी और अभ्यास करेंगी। इसके मुख्य अभ्यास कार्यक्रमों में 'एक विशेष दूरी से सैनिकों द्वारा बिना युद्ध किये सुरक्षित रहते हुए किसी स्थान पर गुप्त प्रस्थान', 'जलीय क्षेत्र से सैनिकों का प्रवेश', 'लंबी दूरी पर लक्ष्यों पर सटीक घुसपैठ व हमला', 'अन्य हवाई खतरों से बचाव के अलावा बड़े लड़ाकू हवाई जहाजों व हेलीकॉप्टर जैसे एयरक्राफ्ट का सामना करने जैसी गतिविधियों' को पूरा करना और रसद संबंधी आवश्यकता पूरी करना शामिल हैं। वज्र प्रहार अभ्यास दोनों देशों की विशेष सैन्य टुकड़ियों के बीच विचारों के आदान-प्रदान करने और सर्वोत्तम कार्य प्रणालियों को साझा करने के लिए एक तंत्र के रूप में विकसित हुआ है। यह भारत और अमरीका की सेनाओं के बीच अंतर-संचालन क्षमता को बढ़ाने तथा रक्षा सहयोग को सशक्त करने का एक बड़ा अवसर भी है।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1978548>

THE TIMES OF INDIA

Tue, 21 Nov 2023

India, US Kick off Vajra Prahar Exercise between their Special Forces

India and the US on Tuesday kicked off the 'Vajra Prahar' combat exercise between their elite Special Forces in Meghalaya to further build military interoperability between the two countries. The exercise, at the joint training node in the Umroi Cantonment from November 21 to December 11, will see the two sides jointly plan and execute a series of special operations, counter-

terrorism and air-borne drills in simulated conventional and unconventional scenarios in mountainous terrain.

The US has deployed a contingent of personnel from the 1st Special Forces Group (SFG) for the exercise, while the Indian team is led by Para (Special Forces) commandos from the Eastern Army Command. "This is the 14th Edition of the Vajra Prahar series of exercises between the two Special Forces. It aims at sharing best practices and experiences in areas such as joint mission planning and operational tactics. It is also a platform to enhance interoperability and strengthen defence cooperation between the Indian and US armies," an officer said.

The three-week exercise will include "combat free-fall insertion of troops from stand-off distances", "air-borne and water-borne insertion of troops", "precision engagement of targets at long ranges" and "combat air controlling of fixed wing and rotary wing aircraft", among other drills. India conducts several military exercises with the US every year, ranging from the top-notch 'Malabar' naval exercise, which includes the other 'Quad' countries of Japan and Australia, to the bilateral 'Yudh Abhyas' and 'Vajra Prahar' between their armies.

As part of the expansive bilateral defence partnership, the US has also bagged lucrative Indian defence deals worth over \$21 billion just since 2007. Two major projects in the pipeline now are the around \$3 billion procurement of 31 armed MQ-9B Predator or Reaper drones and the joint production of GE-F414 jet engines for the Tejas Mark-II fighters in India, with 80% transfer of technology for around \$1 billion.

India and the US have also inked four "foundational military pacts", with the Basic Exchange and Cooperation Agreement for Geospatial Cooperation (Beca) being the last to be concluded in 2020.

India had earlier inked the General Security of Military Information Agreement (GSOMIA) with the US in 2002, which was followed by the Logistics Exchange Memorandum of Agreement (Lemoa) in 2016, and then the Communications, Compatibility and Security Arrangement (Comcasa) in 2018.

<https://timesofindia.indiatimes.com/india/india-us-kick-off-vajra-prahar-exercise-between-their-special-forces/articleshow/105389429.cms>



Wed, 22 Nov 2023

इंडियन एयर फोर्स हवा के साथ अब स्पेस में भी: IAF ने नए नाम और काम का प्रस्ताव डिफेंस मिनिस्ट्री को दिया, स्पेस डॉक्ट्रिन पहले से तैयार

इंडियन एयर फोर्स (IAF) ने हवा के साथ-साथ स्पेस में भी ताकत जुटानी शुरू कर दी है। IAF अब स्पेस के सिविल और मिलिट्री दोनों पहलुओं का उपयोग करने के लिए विचार कर रही है, जिसके लिए उसने इंफ्रास्ट्रक्चर और थिओरेटिकल फ्रेमवर्क तैयार किया है।

इस नए रोल के लिए IAF ने अपना नाम भी तय कर लिया है- इंडियन एयर एंड स्पेस फोर्स। एयर फोर्स ने नए नाम का प्रस्ताव डिफेंस मिनिस्ट्री में भेजा है। मिनिस्ट्री की ओर से मंजूरी मिलते ही एयर फोर्स का नया नाम और काम पब्लिक किया जाएगा।

साथ ही, डिपार्टमेंट ऑफ स्पेस एजेंसी की मदद से IAF अपना स्पेस डॉक्ट्रिन पहले ही तैयार कर चुका है। इस डॉक्ट्रिन में स्पेस मिलिट्री पावर से जुड़े नियमों और गाइडलाइन को शामिल किया गया है।

स्पेस के लिए जवानों की स्पेशल ट्रेनिंग होगी

स्पेस की जरूरतों के हिसाब से एयर फोर्स ने अपने जवानों की ट्रेनिंग का खाका भी खींच लिया है। इसके लिए हैदराबाद में स्पेस वॉर ट्रेनिंग कमांड सेंटर बन रहा है। इस सेंटर में स्पेस लॉ की ट्रेनिंग के लिए अलग कॉलेज बनेगा, जिसमें इंटरनेशनल स्पेस लॉ को अच्छे से जानने-समझने वाली प्रोफेशनल फोर्स तैयार होगी।

दरअसल, मौजूदा इंटरनेशनल नियमों के तहत स्पेस के मिलिट्री उपयोग की मनाही है। स्पेस लॉ कॉलेज में एयर फोर्स जवानों को सिखाया जाएगा कि किस तरह इन नियमों का पालन करते हुए स्पेस का बेहतर इस्तेमाल करना है।

IAF की सैटेलाइट फ़्लिट 31 उपग्रह छोड़ेगी

स्पेस फोर्स बनने के लिए IAF ने स्पेस सैटेलाइट की एक बड़ी फ़्लिट तैयार करने का भी फैसला किया है। इस प्रोजेक्ट के तहत 31 सैटेलाइट IAF के लिए स्पेस में छोड़े जाएंगे। इनका उपयोग कम्युनिकेशन, वेदर प्रिडिक्शन, नेवीगेशन, रियल टाइम सर्विलांस जैसे ऑपरेशन के लिए किया जाएगा।

एयर फोर्स ने तय किया है कि इन सैटेलाइट्स की लॉन्चिंग के लिए होने वाले खर्च का 60 फिसदी का हिस्सा वो खुद उठाएगी। इंडियन स्पेस रिसर्च ऑर्गनाइजेशन (ISRO) एवं डिफेंस रिसर्च एंड डेवलपमेंट ऑर्गनाइजेशन (DRDO) पर ऐसी लॉन्चिंग्स की अहम जिम्मेदारी होगी।

तीनों सेनाओं की ज्वाइंट स्पेस कमान

एयर फोर्स प्रशासनिक स्तर पर एक ऐसी ज्वाइंट स्पेस कमान का गठन भी चाहती है, जिसमें सेना के तीनों हिस्सों की हिस्सेदारी हो। इस कमान में ISRO एवं DRDO जैसे संगठनों को भी शामिल किया जाएगा। साथ ही एयरोस्पेस से जुड़ी निजी कंपनियों को भी इसमें शामिल करने का प्रस्ताव है।

भविष्य में अंतरिक्ष ही जंग का मैदान, इसलिए खुद की सुरक्षा जरूरी

एयर फोर्स के एक हाई रैंक ऑफिसर ने बताया कि स्पेस के हथियारबंदी की शुरुआत हो चुकी है। भविष्य की लड़ाइयां जमीन, समुद्र, आसमान के साथ ही साइबर और स्पेस में भी लड़ी जाएंगी। हमें भी अपने अहम ठिकानों की सुरक्षा के लिए स्पेस में अपनी डिफेंसिव और ऑफेंसिव दोनों ताकतों को बढ़ाना होगा। स्पेस में हमें शुरू में ही फायदा उठाना चाहिए और खुद को भविष्य के लिए तैयार करना चाहिए।

डिफेंस मिनिस्ट्री को भेजा प्रस्ताव

एयर फोर्स ने DRDO से ऐसे एयरक्राफ्ट पर भी काम करने को कहा है, जो दूसरे अंतरिक्ष में भी उड़ान भर सके। इसके लिए एयरफोर्स ने अपनी जरूरतें और इंटेलेक्चुअल इनपुट DRDO के साथ साझा किए हैं।

<https://www.bhaskar.com/national/news/iaf-space-exploration-strategy-indian-air-and-space-force-132178004.html>



Wed, 22 Nov 2023

Centre Issues Rs 10,000 Crore Tender for Acquisition of 12 Su-30 MKI Fighter Jets

In a step to improve the squadron strength of the Indian Air Force (IAF), the Ministry of Defence issued a Rs 10,000 crore tender to Hindustan Aeronautics Limited (HAL) for the acquisition of 12 Sukhoi-30 MKI fighter jets.

HAL is expected to respond to the tender by the end of December.

The decision of the central government came amid the depleting fighter strength of the Indian Air Force.

Notably, the new aircraft will fill in the void that has been created by the loss of 12 Su-30MKI fighters in accidents in the past 20 years.

The aircraft will be manufactured in India by Hindustan Aeronautics Limited (HAL) and will carry 60 per cent indigenous contents.

The aircraft will be the most modern Su-30MKIs in the Indian Air Force fleet of more than 260 such aircraft.

ABOUT SU-30MKI

The Su-30MKI is a multi-role air dominance fighter that can carry a versatile array of weapons including the Astra Mk-1 long-range air-to-air missile, Brahmos Air Launched missile, and an array of bombs, among others.

The Su-30MKI, a 4.5 generation aircraft, can carry out complex manoeuvres at both high speeds and low speeds, which includes the iconic vertical charlie manoeuvre.

The aircraft, with the capability of air-to-air refuelling, can also carry out long range patrol and other endurance missions.

The IAF is also in the process of upgrading its Su-30MKI fleet with an upgrade programme of over Rs 30,000.

The IAF, with Su-30MKI and Rafale fighter jets, has developed a strong package of fighters that can carry out tactical as well as strategic missions as per requirements.

<https://www.indiatoday.in/india/story/indian-air-force-tender-to-hal-for-su-30-mki-fighter-jets-2465944-2023-11-22>



Tue, 21 Nov 2023

Indian Army's Comprehensive Training Framework for United Nations Peace Missions

The Indian Army places significant emphasis on ensuring the preparedness and effectiveness of its personnel participating in United Nations peace missions. "The training regimen is meticulously designed to equip military observers, staff officers, and battalion personnel with the skills and knowledge essential for successful peacekeeping operations," sources in the defence and security establishment told Financial Express Online.

Two-Week Pre-Induction Training:

Staff officers and military observers play crucial roles in UN peace missions. To prepare them for their responsibilities, a mandatory two-week pre-induction training program is conducted at the Centre for United Nations Peacekeeping. This comprehensive training covers a spectrum of topics, including the principles of peacekeeping, cultural sensitivity, conflict resolution, and the specific guidelines outlined in the United Nations Charter.

Enrollment in Additional Courses:

Recognizing the dynamic nature of peacekeeping operations, personnel may also be enrolled in additional courses. These could be organized by the Centre for United Nations Peacekeeping or other reputable institutes, providing participants with diverse perspectives and a deeper understanding of the challenges they might encounter in the field.

Training for Battalion Personnel:

Considering the size of a battalion, a select group undergoes a specialized two-week training program at the Centre for United Nations Peacekeeping. This segment of the training focuses on coordination, communication, and strategic planning tailored to the battalion level. It ensures that the battalion operates cohesively as a unit in alignment with the UN mandate.

In-Battalion Training:

Having completed their training, designated individuals from the battalion take on the responsibility of training the remaining members. This ‘train-the-trainer’ approach is integral to disseminating knowledge and skills efficiently throughout the battalion, fostering a collective understanding of the mission objectives and operational protocols.

Extended Unit-Level Training:

Battalions, as cohesive units, engage in an extensive three-month training cadre at the unit level. This phase, occurring before their induction into peacekeeping operations, is crucial for honing specific skills, conducting realistic scenario-based exercises, and reinforcing the principles of peacekeeping outlined in the United Nations Charter. The extended duration allows for a deeper immersion into the complexities of peacekeeping, ensuring a high level of readiness and adaptability.

In conclusion, the Indian Army’s approach to training for UN peace missions reflects a commitment to excellence and a thorough understanding of the unique challenges posed by peacekeeping operations. By combining theoretical knowledge with practical exercises, the Army ensures that its personnel are not only well-versed in the principles of peacekeeping but also possess the practical skills needed to navigate the complex and dynamic environments they may encounter during their missions. This rigorous training framework underscores India’s dedication to contributing effectively to global peacekeeping efforts under the United Nations umbrella.

<https://www.financialexpress.com/business/defence-indian-armys-comprehensive-training-framework-for-united-nations-peace-missions-3312622/>



Tue, 21 Nov 2023

ASEAN Wants ‘Stronger’ Relationship with India: Secretary-General Kao

ASEAN wants a “stronger” relationship with India, Secretary-General Dr Kao Kim Hourn of the 10-member bloc of the Southeast Asian countries has said while noting that the free trade pact between the two sides is under review.

Talking to a select group of Indian journalists here on Monday evening, Dr Kao noted the huge trade and investment potential between the two sides given the size of their population.

“We want a stronger relationship with India. Look at the positive side (of the relationship),” Dr Kao said.

Responding to a question, the Secretary-General said that the existing India-ASEAN free trade pact is under review and the two sides plan to complete it by 2025.

Participating in the 20th ASEAN-India Summit in Jakarta in September, Prime Minister Narendra Modi had emphasised the need to complete the review of the ASEAN-India FTA (AITIGA) in a time-bound manner.

The FTA was signed in 2009 and implemented in January 2010.

The review of the AITIGA was a long-standing demand of Indian businesses, and the early commencement of the review would help in making the FTA trade facilitative and mutually beneficial, the commerce ministry has said.

The two regions have agreed to follow a quarterly schedule of negotiations and conclude the review in 2025.

India is asking for a review of the agreement with an aim to eliminate barriers and misuse of the trade pact.

The 10 member countries of ASEAN are Indonesia, Malaysia, the Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar and Cambodia.

In general, such review exercises include implementation issues, rules of origin; verification process and release of consignments; customs procedures; further liberalisation of trade in goods; and sharing and exchange of trade data.

In 2022-23, India’s exports to ASEAN increased to USD 44 billion from USD 42.32 billion in 2021-22. However, imports jumped to USD 87.57 billion in 2022-23 against USD 68 billion in 2021-22.

The trade deficit has widened to USD 43.57 billion in the last fiscal from USD 25.76 billion in 2021-22. It was just USD 5 billion in 2010-11.

<https://www.financialexpress.com/business/defence-asean-wants-stronger-relationship-with-india-secretary-general-kao-3313052/>



Tue, 21 Nov 2023

North Korea Claims its Third Attempt to Put a Spy Satellite into Orbit was Successful

North Korea claimed on Wednesday to have successfully placed a spy satellite into orbit with its third launch attempt this year, demonstrating the nation's determination to build a space-based surveillance system during protracted tensions with the United States.

The North’s claim could not immediately be independently confirmed. But the launch was certain to invite strong condemnation from the United States and its partners because the U.N. bans North Korea from conducting satellite launches, calling them covers for tests of missile technology.

The North’s space authorities said in a statement that its space launch vehicle placed the Malligyong-1 satellite into orbit on Tuesday night following liftoff from the country’s main launch center and an intended flight.

The statement said that leader Kim Jong Un observed the launch. It said the fired spy satellite would enhance North Korea's war readiness in response to its rivals' hostile military moves and that more would be launched at an early date.

South Korea and Japan said earlier that they detected the North Korean launch. The Japanese government briefly issued a J-Alert missile warning for Okinawa, urging residents to take shelter inside buildings or underground. South Korea's military said it maintains its readiness in close coordination with the U.S. and Japan.

"Even if North Korea calls it a satellite, the firing that uses ballistic missile technology is a clear violation to related United Nations Security Council resolutions," Japanese Prime Minister Fumio Kishida said. "It is also a serious threat that affects the safety of the people."

A spy satellite is among the key military assets coveted by North Korean leader Kim Jong Un, who wants to modernize his weapons systems to cope with what he calls escalating U.S. threats. North Korea attempted to launch a spy satellite twice earlier this year, but both launches ended in failure due to technical issues.

North Korea had vowed a third launch would take place sometime in October. But it didn't follow through or give a reason for not following that launch plan. South Korean officials have said the delay occurred likely because North Korea was receiving Russian technological assistance for its spy satellite launch program.

North Korea and Russia, both U.S. adversaries that are increasingly isolated globally, have been pushing hard to expand their relationships in recent months. In September, Kim traveled to Russia's Far East to meet President Vladimir Putin and visit key military sites, touching off intense speculation of a weapons deal between the two nations.

The alleged deal involves North Korea supplying conventional arms to refill Russia's ammunition stock drained in its war with Ukraine. In return, foreign governments and experts say that North Korea seeks Russian help in enhancing its nuclear and other military programs.

During Kim's Russia visit, Putin told state media that his country would help North Korea build satellites, saying Kim "shows keen interest in rocket technology."

Russia and North Korea dismissed the allegation on their arms transfer deal as groundless. Such a deal would violate U.N. bans on any weapons trading involving North Korea.

The White House said in October that North Korea had delivered more than 1,000 containers of military equipment and munitions to Russia. But South Korean Defense Minister Shin Wonsik said this week that North Korea had sent about 3,000 such containers to Russia.

Kim previously said North Korea needed spy satellites to better monitor South Korean and U.S. activities and enhance the effective use of its nuclear missiles. But South Korea has said a North Korean spy launch program also involves its efforts to manufacture more powerful intercontinental ballistic missiles.

"If North Korea succeeds in launching the military reconnaissance satellite, it would signify that North Korea's ICBM capabilities have been taken to a higher level," South Korean President Yoon Suk Yeol said in written responses to questions from The Associated Press last week. "Therefore, we will have to come up with reinforced countermeasures."

Leif-Eric Easley, a professor at Ewha University in Seoul, said Tuesday's launch raises more questions than answers, such as whether the North Korean satellite actually performs reconnaissance functions and whether Russia provided technical and even material assistance.

"What is already clear is that this is not a one-off event but part of a North Korean strategy of prioritizing military capabilities over economic development, threatening rather than reconciling

with South Korea, and further aligning with Russia and China instead of pursuing diplomacy with the United States,” Easley said.

Since last year, North Korea conducted about 100 missile tests in a bid to establish a reliable arsenal of nuclear weapons targeting the U.S. and its allies. Many foreign experts say North Korea has some last remaining technologies to master to acquire functioning nuclear missiles.

But they say that possessing a rocket that can place a satellite into orbit would mean North Korea can build a missile capable of carrying a warhead with a similar size of the satellite.

South Korea’s military recently suggested it could suspend a 2018 inter-Korean agreement to reduce tensions and resume front-line aerial surveillance and firing exercises, if the North went ahead with its launch.

Japan’s coast guard said earlier Tuesday that North Korea had told Tokyo that it would launch a satellite sometime between Wednesday and Nov. 30.

The U.S., South Korea and Japan subsequently urged North Korea to cancel the launch. They had earlier condemned North Korea’s two previous satellite launches as violations of U.N. Security Council resolutions. But permanent council members Russia and China have stymied any Security Council response.

In June, Kim’s sister and senior ruling party official, Kim Yo Jong, called the U.N. Security Council “a political appendage” of the United States. She slammed the U.N. council for allegedly being “discriminative and rude,” saying it only takes issue with the North’s satellite launches while thousands of satellites launched by other countries are already operating.

In the two previous launches in May and August, North Korea used its new Chollima-1 rocket to carry the Malligyong-1 reconnaissance satellite.

In the first attempt, the North Korean rocket carrying the satellite crashed into the ocean soon after liftoff. North Korean authorities said the rocket lost thrust after the separation of its first and second stages. After the second launch failure, North Korea said there was an error in the emergency blasting system during the third-stage flight.

South Korea retrieved debris from the first launch and called the satellite too crude to perform military reconnaissance.

Some civilian experts said North Korea’s Malligyong-1 satellite is likely capable only of detecting big targets like warships or planes. But by operating several such satellites, North Korea could still observe South Korea at all times, they said. In April, Kim Jong Un said North Korea must launch several satellites.

Besides spy satellites, Kim is eager to introduce other sophisticated weapons such as more mobile ICBMs, nuclear-powered submarines and multi-warhead missiles. Observers say Kim would ultimately want to use an enlarged weapons arsenal to wrest greater U.S. concessions like sanctions relief when diplomacy resumes.

In response, the U.S. and South Korea have been expanding their regular military exercises that sometimes included U.S. strategic assets such as long-range bombers, a nuclear-armed submarine and aircraft carriers. On Tuesday, the USS Carl Vinson aircraft carrier and its battle group arrived at a South Korean port in a fresh demonstration of strength against North Korea.

<https://www.thehindu.com/news/international/north-korea-spy-satellite-launch/article67559723.ece>

HIMARS: Know about the US-made Missile Launcher Used by Ukraine against Russia

The ongoing Russia-Ukraine war, which started on February 24, 2022, witnessed a new turn after Ukrainian soldiers started using HIMARS missiles. The Ukrainian President Volodymyr Zelensky stated that HIMARS missiles, developed by the United States, are changing the course of the war against Russia. Ukraine has been using the missile system to neutralize dozens of Russian targets, like command posts and ammunition depots.

What is HIMARS?

The M142 High Mobility Artillery Rocket System, well known as HIMARS, is a light multiple rocket launcher. Mounted on a five-tonne standard US Army Family of Medium Tactical Vehicles (FMTV) M1140 truck frame, the missile launcher is capable of firing guided missiles in quick succession.

Developed in the late 1990s for the United States Army, this light multiple rocket launcher can fire missiles at a range of up to 80 kilometres, which is over twice the range of the howitzer guns. Earlier, the United States had provided howitzers to Ukraine.

HIMARS is also capable of launching a single Army Tactical Missile System missile, which has a range of 300 kilometres. However, the US has not provided this missile to Ukraine.

Though the firing range of HIMARS missiles (80 kilometres) is quite similar to that of Russian Smerch missiles, HIMARS has been designed to launch GPS-guided missiles that can hit the target with pinpoint accuracy.

HIMARS ammunition pods are interchangeable with the M270 MLR. However, only one pod can be used instead of the two that are often used for the M270 and its variations.

Notably, this missile system can be transported through C-5 Galaxy, C-17 Globemaster and Lockheed C-130 Hercules aircraft, an American four-engine turboprop military transport aircraft.

Moreover, this missile system has been tested as a unified launch system for both the SLAMRAAM surface-launched variant of the AMRAAM anti-aircraft missile and the artillery rockets.

The entry of HIMARS into the Ukraine defence system

According to Phillips O'Brien, professor of strategic studies at St Andrews University and quoted by the BBC, Ukraine started using this American missile system at the end of June or the beginning of July. Adding further, the professor stated that the system was first employed against static targets and command centres, instead of forces on the move. Moreover, the missile system was used up and down the front in eastern Ukraine, attacking ammunition depots around 48 kilometres behind the Russian lines.

<https://www.news9live.com/knowledge/himars-know-about-the-us-made-missile-launcher-used-by-ukraine-against-russia-2355826>

Germany Announces 1.3 Billion Euros Aid Including 'Air Defence Systems' for Ukraine

Germany on Tuesday announced 1.3 billion euros (\$1.4 billion) more in military gear for Ukraine in its fight against Russia, including four further IRIS T-SLM air defence systems as well as artillery ammunition.

The package was unveiled by Defence Minister Boris Pistorius after talks with his Ukrainian counterpart Rustem Umerov in Kyiv.

Germany is the second biggest contributor of military equipment to Ukraine, and Pistorius's visit to Kyiv was his second since he became defence minister at the start of the year.

The IRIS-T systems are highly sought after by Ukraine to shoot down Russian drones and missiles.

The latest four pledged by Germany mark the third batch of IRIS-T systems that Berlin is offering to Ukraine since the beginning of the war.

Three IRIS-T systems from the first batch have already been delivered, and a fourth will follow in this winter. A second batch of four will arrive in 2024.

<https://www.hindustantimes.com/world-news/germany-announces-1-3-billion-euros-aid-including-air-defence-systems-for-ukraine-101700572535613.html>



Iran Unveils Fattah-2 Hypersonic Cruise Missile

Iran unveiled its Fattah-2 hypersonic missile during a visit by Supreme Leader Ayatollah Ali Khamenei to the Islamic Revolution Guard Corps Aerospace Force (IRGCAF) museum in Tehran on 19 November.

Media coverage of the event showed the Fattah-2 consists of a ballistic missile motor that looks similar to the one used to power the Fattah missile that was unveiled in June and a re-entry vehicle (RV) that looks like it was inspired by Boeing's X-51 Waverider experimental hypersonic cruise missile, albeit without an air intake for a scramjet engine.

A cutaway model of the Fattah-2 RV shown to Khamenei had two tanks, one larger than the other, such as those used to hold the fuel and oxidiser in liquid-propellant ballistic missiles.

Tasnim News Agency reported that the RV's engine uses hydrazine fuel, which is typically used in hypergolic propellant combinations that spontaneously combust when mixed. Hypergolics are highly toxic and corrosive but are often used for spacecraft as their engines can be easily shutdown and restarted. While this engine would enable the Fattah-2 RV to accelerate outside the Earth's atmosphere, Tasnim reported that it can only steer when inside the atmosphere using its aerodynamic control surfaces.

The Iranian media reported that the Fattah-2 has a range of 1,500 km, not much farther than the 1,400 km of the Fattah, which has an RV powered by a solid-fuel rocket motor that has a movable nozzle that allows it to change course when outside the atmosphere to accurately help it evade air-defence systems.

<https://www.janes.com/defence-news/news-detail/iran-unveils-fattah-2-hypersonic-cruise-missile>

Science & Technology News

Business Standard

Wed, 22 Nov 2023

ISRO Mission to Bring Soil Samples from Moon to Earth: All Details inside

The Indian Space Research Organisation (ISRO) is focused on its next challenging and highly ambitious Chandrayaan-4 mission, following the successful outcome of Chandrayaan-3.

This time, the objective is to recover soil samples from the Moon and bring them to earth. Nilesh Desai, Director of the Space Applications Centre (SAC/ISRO) stated, "It's a very ambitious mission; hopefully in the next five to seven years we will meet this challenge of bringing sample from the surface of the Moon."

ISRO soil sample: Chandrayaan-4 will have a heavier rover

- Chandrayaan-4 is expected to be more complex than its forerunner.

- The mission will deploy an essentially heavier 350kg rover on the Moon, instead of Chandrayaan-3's 30kg rover. The mission will likewise play out a difficult landing near the Shiv Shakti point.

- The Chandrayaan-4 rover will have a bigger exploration zone of 1km x 1km, contrasted with Chandrayaan-3's 500m x 500m.

Soil sample from Moon to Earth: Sample return procedure

Chandrayaan-4 will follow the same landing procedure as Chandrayaan-3. The spacecraft will then, at that point, gather lunar samples and dock with one more module in space.

As the two modules head toward Earth, they will separate, with one section heading towards Earth while the other will remain in orbit, as per the ET.

The upcoming mission will apparently need two launch vehicles, further showing its intricacy. To note, ISRO is yet to give any information on Chandrayaan-4.

ISRO plan from Moon to Earth: In collaborates with JAXA about LuPEX lunar mission

Other than Chandrayaan-4, ISRO is additionally collaborating with the Japanese space agency JAXA on another lunar mission, called LuPEX.

This mission expects to explore the Moon's darker side utilizing a 350kg rover.

Both Chandrayaan-4 and LuPEX exhibit India's extending role in space exploration and its commitment to scientific advancements in this domain.

More about ISRO's soil sample plan from Moon to Earth: Points to consider

- Under the project, which has an anticipated launch day in 2028, soil/rock samples will be gathered from the Shiv Shakti point on the lunar surface.

- In a departure from the standard, two launch vehicles will be utilized to undertake the mission. This is on the grounds that the activity includes four modules: Transfer, Lander, Ascender, and Re-entry.

- The task, similar to August's profoundly effective Chandrayaan 3, is arranged for one lunar day (14 days on Earth). Likewise, up to this point, the agency's three Chandrayaan missions have concentrated on Moon's surface, soil, and samples, at the same site.

- The LSRM is on similar lines as NASA's collection of the very first examples from Bennu, the near-Earth asteroid. The US space office accomplished this in September with its OSIRIS-REx spacecraft, which got back to the Earth's atmosphere in the wake of finishing a journey that spanned seven years.

- The Geosynchronous Satellite Launch Vehicle (GSLV) Mark II will be utilized for the Transfer and Re-entry modules, while GSLV Mark-III be utilized for the Ascender and Lander modules.

https://www.business-standard.com/technology/tech-news/isro-mission-to-bring-soil-samples-from-moon-to-earth-all-details-inside-123112200327_1.html

