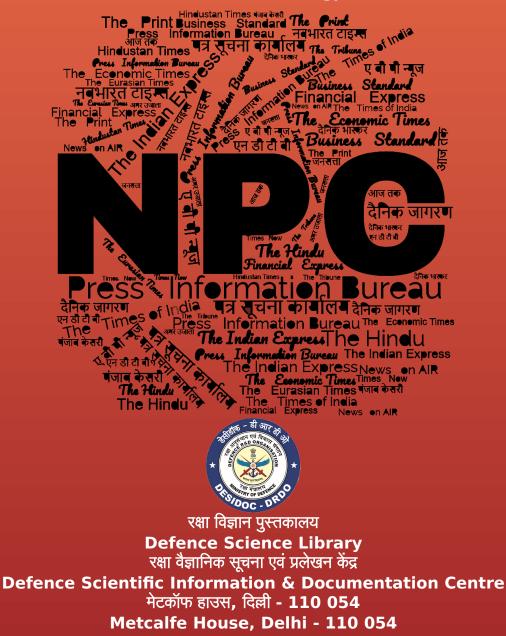
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मई May 2024

# 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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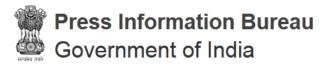


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**Defence News** 

## Defence Strategic: National/International



**Ministry of Defence** 

Mon, 06 May 2024

### Maiden Visit of Jordan Armed Forces Training Delegation to SNC and INA

A three member Jordan Armed Forces (JAF) training delegation led by Cdr Hazem I Maitah visited Southern Naval Command, Kochi and Indian Naval Academy, Ezhimala from 29 Apr to 04 May 24. The maiden visit was aimed at military training exchanges as decided during the second consultative meeting on defence cooperation between the two countries in Mar 23. The delegation visited various training facilities in the professional training schools of SNC, Kochi. Salient aspects included familiarisation with simulators, professional interactions and demonstration of VBSS & Diving Ops. A guided tour of the indigenous aircraft carrier INS Vikrant and ship repair facilities at Cochin Shipyard Ltd was also conducted. The delegation interacted with Cmde Sritanu Guru, Cmde Training, Southern Naval Command on avenues of engagement in Naval training and professional courses between the Indian Navy & Jordan Armed Forces.

At INA, the delegation called on VAdm Vineet McCarty, Commandant of INA, and shared insights on training methodologies, leadership strategies and operational experiences. They were provided an insight into the state of the art training facilities of the Academy, and held discussions on best practices. The visit of Jordan Armed Forces Training Delegation marks a significant step towards deepening cooperation between India Navy and Jordan Armed Forces under the larger ambit of defence cooperation between the two countries.

https://pib.gov.in/PressReleasePage.aspx?PRID=2019745

# THE MORE HINDU

Mon, 06 May 2024

### Maareech, Indian Navy's Advanced Torpedo Decoy System, Flagged off

V. Srinivas, Flag Officer Commanding-in-Chief, Southern Naval Command, flagged off two underwater arrays christened "Maareech," Indian Navy's Advanced Torpedo Decoy System (ATDS), at the Kerala State Electronics Development Corporation Ltd (Keltron) Controls, Aroor, on Monday.

Talking on the occasion Mr. Srinivas hailed the measures being taken by the Indian defence force for indigenisation. The national flavour at the moment is to ensure that the Indian defence forces are completely free of dependence from outside our country. This calls for a seamless confluence between the Naval Physical and Oceanographic Laboratories (NPOL), Naval Science and Technological Laboratory (NSTL), the development collaborators and production units like Keltron.

He was full of praise for the kind of work done by Keltron for the Indian defence forces. "As far as the defence sector is concerned, your support has been extremely important to us. I must congratulate all of you for the kind of products you have been sending to us, especially Mareech that has been flagged off just now. You are the technical brains and hands we are all looking forward to support us to be efficient at sea and come out as winners," Mr. Srinivas said.

There are many areas that Keltron can develop and make us state-of-the-art equipment that matches international standards. That is what we are looking forward to. The push that the government of India is giving to start-ups, developing industries and the public sector undertakings like yours is very important to synergize all these units and come up with something that is world class so that we don't have to go abroad for all our requirements, Mr. Srinivas said.

The underwater arrays are designed by NPOL at Kochi, manufactured by Keltron Controls at Aroor, and integrated at Bharat Electronics Limited Bangalore before deployment by the Indian Navy. Maareech systems are meant to detect, classify, and offer counter measures against torpedoes.

N. Narayanamoorthi, chairman, Keltron Group of Companies, Sreekumar Nair, Keltron managing director, Anil Kumar, head, Keltron Controls, and senior officials from the Indian Navy and NPOL were also present.

https://www.thehindu.com/news/national/kerala/maareech-indian-navys-advanced-torpedo-decoy-system-flagged-off/article68144929.ece



Mon, 06 May 2024

### India-UK Logistic Exchange Agreement Fosters Historic Visit of UK Royal Navy Vessels to Chennai

The UK's maritime prowess took centre stage as the Littoral Response Group (LRG) made its inaugural stop in Chennai on March 26, 2024, marking the commencement of its deployment to the Indian Pacific region.

Comprising the Royal Fleet Auxiliary (RFA) Argus and RFA Lyme Bay, the LRG engaged in maritime exercises with the Indian Navy upon entering the Arabian Sea. The vessels underwent essential maintenance at the Larsen & Toubro shipyard in Kattupalli near Chennai. Notably, this marks the first instance of a Royal Navy vessel undergoing maintenance at an Indian shipyard, an outcome of the logistics-sharing agreement inked between the UK and India in 2022.

Brigadier Nick Sawyer, Defence Advisor at the British High Commission, underscored the significance of the LRG's visit, affirming the UK's commitment and capability in the Indo-Pacific region.

On social media platform X, Brig Sawyer said: "The logistics-sharing agreement allows for the provision of logistic support, supplies and services between the UK and Indian armed forces, for joint training, joint exercises, authorised port visits and Humanitarian Assistance and Disaster Relief (HADR) operations." Adding: "This agreement has been a real game changer. It has led to increased engagements between our armed forces. The vital logistics partnership supports longer deployments of our capabilities in the region and is clear evidence of the UK Indo-Pacific tilt in action, in sync with India."

### What is LRG?

According to Brig Sawyer, this is a multi-functional amphibious task force, equipped to undertake a wide spectrum of activity in the littoral environment. This taskforce consists of the ships RFA Argus and RFA Lyme Bay, and there are forces on board centred on a Royal Marines strike force.

In the past 12 months there have been a series of visits by the Royal Navy. And this is the first time when the LRG(S) vessels docked at the L&T shipyard in Kattupalli near Chennai, he noted.

The visit follows the mutual commitment to bolster ties, as demonstrated during Indian Defence Minister Rajnath Singh's visit to the UK in January. In line with this, the UK launched Defence Partnership-India, aimed at fostering deeper defence collaboration. Integral to this partnership is the dispatch of the UK's Littoral Response Group (South) to India for joint exercises and leveraging the Indian dockyard at Chennai for essential maintenance.

Looking ahead, the UK's Carrier Strike Group 2025 is slated to visit the Indo-Pacific, further reinforcing the intent to operate and train alongside the Indian Armed Forces.

The logistics-sharing agreement stands as a testament to the growing cooperation, facilitating logistic support, supplies, and services between the two nations' armed forces. Future endeavours include more complex military exercises, culminating in a milestone joint exercise before 2030, underscoring shared objectives of safeguarding critical trade routes and upholding the rules-based international order.

As the UK and India deepen their defence collaboration, these initiatives signal a concerted effort to bolster regional stability and security in the Indo-Pacific.

https://www.financialexpress.com/business/defence-india-uk-logistic-exchange-agreement-fostershistoric-visit-of-uk-royal-navy-vessels-to-chennai-3478789/



*Tue, 07 May 2024* 

### Rejected by Thailand, Pakistan's Hangor-Class Submarines, Powered by Chinese Engines, Threat to India?

### By Ashish Dangwal

Pakistan has taken a significant leap forward in bolstering its naval capabilities with the recent launch of the first Hangor-class submarine, marking a milestone in its strategic partnership with China.

The acquisition of this advanced vessel, the first of eight slated for acquisition, is set to boost the Islamic Republic's military might in the Indian Ocean and Arabian Sea.

The launch ceremony, held on April 26 at the Wuchang Shipbuilding yard in Wuhan, China, was graced by high-ranking officials from both Pakistan and China. Among the attendees were representatives from Wuchang Shipbuilding Industry Group Company Ltd and China Shipbuilding & Offshore International Company Ltd.

Adm. Naveed Ashraf, Pakistan's naval chief, expressed his satisfaction with the project's progress, emphasizing the pivotal role these submarines equipped with state-of-the-art weapons and sensors would play in maintaining peace and stability in the region.

He underscored the significance of the Pak-China friendship, stating that the Hangor-class submarines would add a new dimension to this enduring partnership, which has been increasingly vital in countering regional challenges, particularly those posed by India.

The Hangor-class submarines, an export variant of the People's Liberation Army-Navy's (PLA-N) Type 039B Yuan-class submarines, are a product of the agreement signed during President Xi Jinping's visit to Islamabad in April 2015.

Under this agreement, Pakistan contracted China for eight submarines, four of which were to be built in China and the remaining four to be constructed by Karachi Shipyard & Engineering Works Ltd (KS&EW) under Transfer of Technology (ToT).

While details about the submarines' subsystems and specific weapon systems remain undisclosed by the Pakistan Navy, it is reported that these vessels could potentially be equipped with submarine-launched cruise missiles (SLCM), thus providing Pakistan with a significant deep strike capability.

The Hangor-class submarines exhibit significantly enhanced underwater endurance. They can remain submerged for extended periods ranging from 10 to 14 days.

This capability far exceeds the typical 48-hour endurance of conventional diesel-powered vessels. Concerning their dimensions, these submarines are anticipated to measure 76 meters in length and boast a displacement of 2,800 tons.

This makes them marginally shorter in length yet heavier than the original S26 submarine, designed initially as an export variant of the Type 039B primarily designated for Thailand.

### **Equipped With Chinese Engines?**

The Hangor-class submarines, touted for their modern design and advanced subsystems, were initially intended to be equipped with German MTU 396 diesel engines. However, Germany's refusal to grant export licenses for these engines has left the power source for the boats in question.

The lack of confirmation from Germany or Pakistan regarding the approval or denial of export clearance further adds to the issue's ambiguity.

Naval expert Alex Luck weighed in, expressing confidence that Chinese diesel engines might power these submarines instead of the originally intended German MTU units.

Luck added, "It makes little sense to deny Thailand the engines and approve them for Pakistan. Granted, the deal for Pakistan I think pre-dates the Thai deal by several years and may notionally fall into an era where Berlin was more lenient. But given the silence around it, I suspect above."

The German government previously refused export licenses for its engines concerning Thailand's order of the S-26T, a Chinese Type 039B submarine variant.

Consequently, the once-promising Thai deal collapsed, and Thailand officially announced in October 2023 its decision to abandon the purchase due to the unavailability of German engines.

In 2017, the initial contract to buy the S26T Yuan-class submarine with German-origin MTU-396 diesel engines was framed. However, Germany's withdrawal from the agreement, citing policy restrictions on using its engines, triggered complications.

Beijing suggested a domestically manufactured substitute to rescue the agreement, providing reverse-engineered CHD620 engines from China's state-owned submarine manufacturer. The CHD620 engine is a Chinese-produced version of the German MTU396 engine, manufactured under license.

The Chinese offer triggered intense negotiations between the Thai and Chinese military officials. However, Thailand ultimately rejected the Chinese-made engine, allegedly expressing apprehensions about its quality.

Speaking to EuAsian Times, Sheikh Akhter, an Indian Air Force veteran and a Warfare & Defense Systems expert, said, "The Hangor Class incorporates sophisticated noise reduction methods such as anechoic tiles, passive/active noise reduction, and an asymmetrical seven-blade skewed propeller. It is anticipated that the 039A will achieve a quietness comparable to other contemporary diesel-electric submarines, making them challenging to detect."

However, he added, "Speculation has circulated regarding the presence of German technology in Chinese warships. Due to the absence of a formal decision regarding the EU arms embargo on China in alignment with European treaties, certain exports of engines may potentially be permitted for the Chinese navy."

### **Concerns For India?**

The Hangor-class submarines represent a leap forward for Pakistan's naval prowess. Incorporating Air-independent propulsion (AIP) technology in these Chinese submarines also gives Pakistan a crucial advantage, as none of India's submarines currently boast this capability.

Akhter pointed out, "The Hangor class features an air-independent propulsion system created by the 711th Research Institute of the China Shipbuilding Heavy Industry Group Corp."

Akhter further explained, "The design characteristics of the Hangor class submarine suggest its suitability for operations in deep waters near coastal areas, particularly in regions like the approaches to Taiwan. Enhanced sonar and air-independent propulsion (AIP) capabilities enable the submarine to detect, track, and engage targets of interest in these areas effectively."

"Although there are plans to equip the Hangor Class with a more potent, long-range anti-ship cruise missile (ASCM) in the near future, the submarine's design constraints will still heavily depend on its torpedo systems," he added.

This technological edge underscores Pakistan's strategic intent to assert itself in the maritime domain, especially vis-à-vis its regional rival, India.

Akhter noted, "The Hangor-class submarines, equipped with advanced features like airindependent propulsion (AIP) and cutting-edge sensors, hold a significant edge over India's top Kalvari class submarines."

India currently possesses 16 operational submarines, comprising five Kalvari-class (French Scorpene), four Shishumar-class (German Type-209), and seven Sindhugosh-class (Russian Kilo) submarines. Furthermore, the imminent commissioning of another Kalvari-class submarine will augment the naval fleet to 17 submarines.

However, many of these submarines are over two decades old and nearing their decommissioning date. On the other hand, the delayed implementation of submarine acquisition projects, such as Projects 75 and 75I, has further exacerbated India's maritime vulnerabilities.

Should the P-75-I program fail to deliver submarines by the close of this decade, India's submarine fleet will dwindle to six Scorpenes. This reduction will occur due to the decommissioning of both the Russian Kilo and four German Type-209 submarines.

Moreover, despite India's capabilities in designing and constructing SSBNs (ballistic missile submarines) with high indigenous content, it struggles to independently develop conventional submarines, necessitating collaboration with international partners.

Nonetheless, Pakistan's acquisition of the Hangor-class submarines is expected to mark the beginning of a widening gap in submarine capabilities between New Delhi and Islamabad.

The inclusion of the eight Hangor-class submarines will raise Pakistan's total count of AIPequipped submarines to 11. Islamabad had previously incorporated a French AIP system into three of its Agosta 90B submarines in 2008.

By empowering Pakistan's maritime forces, China aims to counterbalance India's growing influence in the Indian Ocean region. The Hangor-class submarines serve as a tangible manifestation of China's strategic investments in Pakistan, aimed at challenging India's regional hegemony.

Akhter suggested. "The unveiling of Pakistan's new stealth submarine is perceived as a strategic move by Beijing to exert pressure on India. This development will compel India to enhance its naval capabilities in response."

"India should consider retrofitting the AIP system into its current vessels or incorporating it into a new submarine class. However, this transition is estimated to take another seven to ten years before India achieves AIP submarine capabilities," according to the Akhter.

https://www.eurasiantimes.com/rejected-by-thailand-pakistans-hangor-class/

# TIMESNOW

Tue, 07 May 2024

## China Hacks UK's Ministry of Defense Website: Report

The Chinese state has reportedly been found involved in the hacking of the United Kingdom's Ministry of Defense website. Although the scale of the cyberattack is being accessed, the members of Parliament (MPs) are going to be briefed about the major data breach, claims a report. The attack is aimed at targeting service personnel. The government has however denied that its data has been taken during the attack.

Contrary to the UK's government remarks on not disclosing the country's name, who they believe is linked to the hacking. A report by Sky News has mentioned China's state as an actor behind the hacking. The attack is seen as coming less than two months after the government of China attributed two "malicious" cyberattack campaigns in the UK to "state-affiliated actors."

The report further revealed that the cyberattack was aimed at MPs as well, who took a stand opposing China. With this, the MoD employees including personnel have been targeted for a third time in the recent past.

A payroll system used by both veterans and active service members was the target of the cyberattack. The attack has the potential to expose individual bank account information and names on it, leaving a scary situation impacting the privacy of the personnel. Despite the massive cyberattack, as per the report, the government believes salaries are going to paid this month.

The Ministry of Defense expects that service people won't worry about their security. A support and guidance mechanism has been thought of for those affected. The system is going to be in place from Tuesday onwards, Sky News reported.

The contractor system has been removed and a study has been initiated. It is not connected to the primary MoD computer systems.

Days after the hacks' traces are found, the MOD officials have reportedly been working to took into cognizance the scale of the hack.

https://www.timesnownews.com/world/china-hacks-uks-ministry-of-defense-website-reportarticle-109895376



Mon, 06 May 2024

### Russia to Practice Tactical Nuclear Weapon Scenario to Deter West

Russia on May 6 said it would hold a military exercise that will include practice for the use of tactical nuclear weapons after what the defence ministry said were provocative threats from Western officials.

The defence ministry said the exercise was ordered by President Vladimir Putin and would test the readiness of non-strategic nuclear forces to perform combat missions.

The military drills will include practice for the preparation and deployment for use of non-strategic nuclear weapons, the defence ministry said. Missile formations in the Southern Military District and naval forces will take part.

"During the exercise, a set of measures will be carried out to practice the issues of preparation and use of non-strategic nuclear weapons," the defence ministry said.

Russia has the world's largest arsenal of nuclear weapons.

The exercise is aimed at ensuring Russia's territorial integrity and sovereignty "in response to provocative statements and threats by certain Western officials against the Russian Federation", the ministry said.

Russia's 2022 invasion of Ukraine touched off the worst breakdown in relations between it and the West since the 1962 Cuban Missile Crisis, according to Russian and U.S. diplomats.

Russia casts the war as a battle with the West, which Putin says ignored Moscow's attempt at friendship after the 1991 fall of the Soviet Union and sought to grab control of Ukraine while enlarging the NATO military alliance eastwards.

The West and Ukraine say they will not rest until Russian forces are defeated, and cast the war as an imperial-style land grab aimed at forcing the country back into Moscow's orbit.

https://www.thehindu.com/news/international/russia-to-practice-tactical-nuclear-weapon-scenarioto-deter-west/article68144972.ece

# **Business Standard**

## US, Philippine Forces Stage Combat Drills near Channel off Southern Taiwan

US Marines and their Filipino counterparts darted out of Black Hawk helicopters during combat drills Monday in the Philippines' northernmost island town along the strategic Bashi Channel off southern Taiwan a flashpoint in the military rivalry between Washington and Beijing.

The show of allied battle readiness in Itbayat in Batanes province is part of annual military exercises that started last month, dubbed Balikatan, Tagalog for shoulder-to-shoulder, and involving more than 16,000 American and Philippine military personnel.

This year's exercises by the longtime treaty allies the largest yet are meant to deter possible aggression. They come against the backdrop of China's increasingly assertive actions in the disputed South China Sea, where Chinese and Philippine coast guards and accompanying ships have had several increasingly tense faceoffs since last year.

More than 250 French and Australian forces are also participating, along with observers from several allied and security partner nations, led by Japan and European nations. The drills, which began April 22, end later this week.

In Monday's mock battle scenario, American and Filipino forces took positions at the airfield, ringed by low-lying hills, as three Army CH-47 Chinook helicopters landed to deliver combat supplies.

Marine 1st Lt. Annie Pentaleri said aerial combat reconnaissance and counter-reconnaissance drills were also planned in the far-flung region. The Associated Press was among a small group of journalists invited to attend the maneuvers.

"We are absolutely battle-ready and that's what we train for day in and day out, Marine Maj. Robert Patterson said. It's important to enhance inter-operability with our Filipino counterparts.

Washington and Manila say the drills are not directed at any country and are crucial for improving the response to emergencies in the Philippines, one of the world's most disaster-prone countries.

However, this year's drills focus on territorial defense and are being staged mainly in two of the most sensitive fault lines in the regional rivalry between China and the United States: the disputed South China Sea and the Bashi Channel.

The critical waterway between Taiwan and the Philippines, an important trade conduit laden with international undersea cables, has been closely watched and guarded by Chinese and American forces. China considers Taiwant a part of its territory, to be annexed by force if necessary.

In a telephone call last month, Chinese President Xi Jinping stressed to President Joe Biden that Beijing will not tolerate separatist activities by Taiwan's independence forces, as well as exterior indulgence and support, an apparent reference to Washington's support for the island.

Biden raised concerns about China's actions in the South China Sea, including efforts to impede the Philippines, which Washington is treaty-obligated to defend, from resupplying its forces on the fiercely disputed Second Thomas Shoal.

Derek Grossman, a senior defense analyst at RAND Corporation, said the message of deterrence was important. Philippine President Ferdinand Marcos Jr.'s decision to allow U.S. forces indefinitely access to two Philippine air force and naval bases in Cagayan province near Batanes

under a 2014 defense pact, would likely upgrade the U.S. military's ability to intervene in a Taiwan contingency in a more timely manner," he said.

"Right now, a big concern is the U.S. simply won't get there in time, Grossman added.

The Balikatan exercises have included live-fire drills in the disputed South China Sea during joint naval sails by the U.S., France and the Philippines. An aircraft also dropped food and other supplies on a disputed island occupied by Filipino forces as part of the maneuvers in the disputed waters.

Separately on Monday, U.S. and Philippine forces practiced repelling invading forces in the coastal province of Ilocos Norte by firing missiles and artillery rounds on floating targets at sea. The northwestern province faces the South China Sea.

It was a huge success, the weapons were spot on, Marine Lt. Gen. Michael Cederholm said.

In escalating high-seas encounters in disputed areas, Chinese coast guard vessels have resorted to water cannons, blocking and other dangerous maneuvers that have left Philippine navy personnel injured and supply boats damaged. The Biden administration has repeatedly warned the U.S. is obligated to defend the Philippines, its oldest treaty ally in Asia, should it come under attack.

China has strongly criticized the exercises, saying the Philippines and countries outside Asia are joining forces against Beijing, warned that the drills could lead to confrontation and undermine regional stability.

Ahead of the drills, China specifically opposed the transport of a U.S. ground-launched missile system to the northern Philippines. No missile was to be fired as the goal was only to familiarize military participants with the hi-tech weaponry in a tropical setting.

Chinese Foreign Ministry spokesperson Lin Jian expressed China's grave concern over the deployment of the missile system at China's doorstep.

https://www.business-standard.com/external-affairs-defence-security/news/us-philippine-forcesstage-combat-drills-near-channel-off-southern-taiwan-124050600999\_1.html

# THE TIMES OF INDIA

Mon, 06 May 2024

## Houthi Drones 'Overpower' EU Air Defence System; Bloc Naval Chief Confirms Red Sea 'Failure'

The EU has admitted that its air defense system failed to contain a recent Houti Rebels attack in the Red Sea. Iran's TASNIM news agency reported that the EU Naval Mission held a secret meeting. Houtis have been constantly attacking vessels in the Red Sea and Gulf of Aden since November 2023, with Iran-backed attacks expanding to the Indian Ocean and Arabian Sea.

https://timesofindia.indiatimes.com/videos/toi-original/houthi-drones-overpower-eu-air-defencesystem-bloc-naval-chief-confirms-red-sea-failure/videoshow/109892918.cms

## Science & Technology News

# THE MORE HINDU

Mon, 06 May 2024

## **ISRO Conducts Key Ignition Test**

The Indian Space Research Organisation (ISRO) has successfully completed the first ignition test on the Semi Cryogenic Pre-Burner Ignition Test Article.

ISRO is developing a 2,000 kN thrust semi-cryogenic engine working on a LOX Kerosene propellant combination to enhance the payload capability of LVM3 and for future launch vehicles.

### Lead centre

The Liquid Propulsion Systems Centre is the lead centre for the development of semi-cryogenic propulsion systems, supported by ISRO's other launch vehicle centres.

The propulsion modules were assembled and tested at the ISRO propulsion complex (IPRC), Mahendragiri. As part of the engine development, a pre-burner ignition test article, which is a full complement of the engine power head system excluding the turbopumps, was realized.

### First ignition trial

"The first ignition trial was conducted successfully on May 2, 2024, at semi cryo integrated engine test facility (SIET) at IPRC, Mahendragiri, which was dedicated to the nation recently by the honourable Prime Minister of India. Smooth and sustained ignition of the preburner is demonstrated which is vital for the starting of the semi-cryogenic engine," ISRO said.

The space agency added that the successful ignition of a semi-cryo preburner is a major accomplishment of ISRO in the development of semi-cryogenic propulsion systems.

https://www.thehindu.com/news/national/karnataka/isro-conducts-key-ignition-test/ article68145634.ece

# THE TIMES OF INDIA

Tue, 07 May 2024

### Launch of Boeing Starliner Carrying Indian-origin Astronaut Sunita Williams Postponed

ULA launch director Tom Heter III on Tuesday announced that the launch of Atlas V and Starliner which was scheduled for today, have been postponed.

"Today's Starliner launch is scrubbed as teams evaluate an oxygen relief valve on the Centaur Stage on the Atlas V. Our astronauts have exited Starliner and will return to crew quarters," said Nasa in a post on X (formerly Twitter).

— NASA (@NASA)

Indian-origin astronaut Captain Sunita Williams and her colleague, veteran Nasa astronaut Butch Wilmore, were part of the mission to the International Space Station (ISS).

The launch, which would have marked the first crewed test flight of the Starliner, was scheduled to take place at 10:34pm EDT on May 6 (8:04 am IST on May 7) from the Cape Canaveral Space Force Station in Florida.

As part of its commitment to the ISS, Boeing has planned six manned missions for the Starliner over the next six years. NASA intends to use both SpaceX's Dragon and Boeing's Starliner to send astronauts to the ISS at least every six months from US soil.

https://timesofindia.indiatimes.com/home/science/launch-of-boeing-starliner-carrying-indianorigin-astronaut-sunita-williams-postponed/articleshow/109900053.cms



Tue, 07 May 2024

### **COVID-19 'FLiRT' Variants: Can Virus Bypass the Immune Defense Provided by Vaccines? Here's what Expert Says**

The COVID-19 virus has impacted the world in various ways since December 2019, and its effect continues. The virus remains a formidable burden for the world. As per reports, the United States is currently seeing an emergence of the 'FLiRT' variant of COVID-19, the name of the variant sounds quite interesting and it belongs to a fresh group of Omicron JN. 1 lineage.

Additionally, two more variants of COVID-19 have been detected in the US namely KP.2 and KP. 1.1., these variants are said to be causing the infections. According to the Infectious Disease Society of America, the new variants of COVID-19 have been named FLiRT because of the technical names of their mutations. Due to the changes in their genetic code, particularly 456 and 346. Reports claim that the FLiRT variant of Covid has the potential to invade the immune system because of a trans substitution of amino acids between two spike proteins. But can FLiRT invade our immune system?

Dr Vivek Anand Padegal, Director – of Pulmonology, Fortis Hospital, Bannerghatta Road, Bangalore told News9, "Yes, the FLiRT variant has mutations that allow it to evade the immune system's defenses partially. These mutations are in the spike protein, which the virus uses to enter human cells. This makes it somewhat easier for the FLiRT variant to infect people who have already been vaccinated or had a previous COVID-19 infection."

### Can vaccines prevent the illness?

Most reports indicate that most patients are not severely ill and have mild symptoms. However, according to Dr Padegal, "It's important to remember that vaccines still offer significant protection against severe illness, hospitalisation, and death from COVID-19, including the FLiRT variant. Studies suggest that even if a vaccine doesn't completely prevent infection, it can significantly reduce the viral load, leading to milder illness and a lower chance of transmission."

https://www.news9live.com/health/covid-19-flirt-variants-can-virus-bypass-the-immune-defense-provided-by-vaccines-heres-what-expert-says-2526192

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