

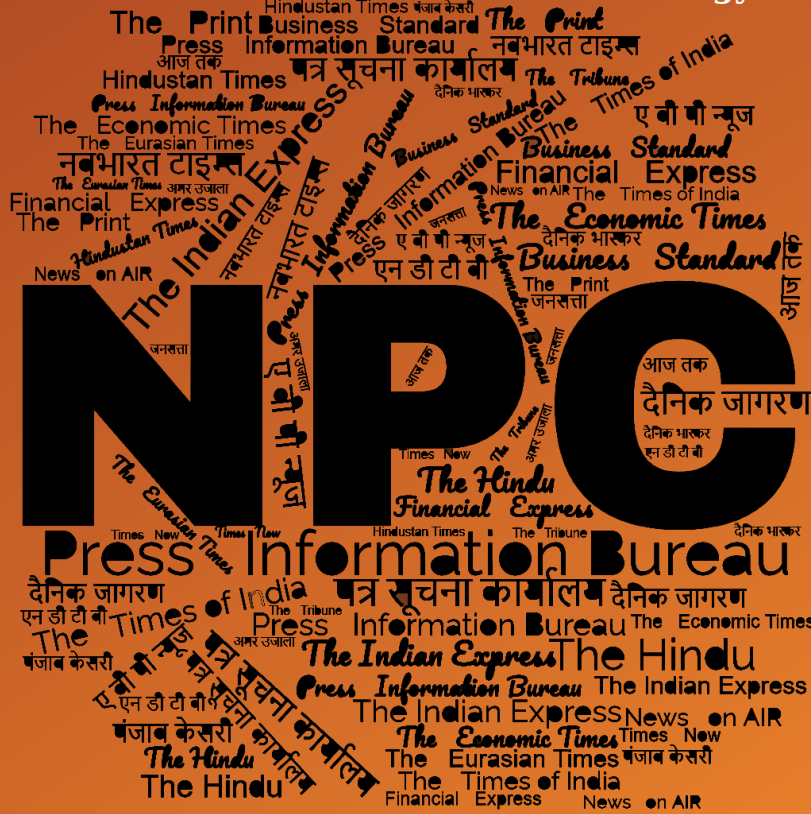
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Wed, 22 Nov 2023

Indian Navy's Indigenous Guided Missile Hits 'Bulls Eye' in Maiden Brahmos Firing

In a notable achievement, the Indian Navy's latest indigenous guided missile destroyer scored 'Bulls Eye' in its maiden Brahmos firing at sea. The successful test marks the first-ever test-firing of an extended-range Brahmos missile before a ship's commissioning, as reported by news agency ANI.

#WATCH | Imphal (Yard 12706), Indian Navy's latest indigenous guided missile destroyer, scored 'Bulls Eye' in her maiden Brahmos firing at sea.

First ever test-firing of Extended Range Brahmos missile before a ship's commissioning underscores Indian Navy's unwavering focus on... pic.twitter.com/hdXFGXS7se

— ANI (@ANI) November 22, 2023

the Indian Navy and the Defence Research and Development Organisation (DRDO) successfully conducted Guided Flight Trials of the first indigenously developed Naval Anti-Ship Missile on Tuesday. Launched from a Seaking 42B helicopter, this missile milestone marks a significant step in the direction of attaining self-reliance in niche missile technology, showcasing advancements in seeker and guidance technologies.

"#IndianNavy in association with @DRDO_India successfully undertook Guided Flight Trials of #1st indigenously developed Naval #AntiShipMissile frm Seaking 42B helo on #21Nov 23. A significant step towards achieving self-reliance in niche missile tech, incl seeker & guidance tech," a post by the Indian Navy stated.

After the maiden flight test, Defence Minister Rajnath Singh extended congratulations to DRDO, the Indian Navy, and associated teams, acknowledging India's achievement in the indigenous design and development of missile systems.

Dr G Satheesh Reddy, then the Chairman of DRDO, praised the project team's efforts, commending the Indian Navy and Naval Flight Test Squadron for their support. He emphasised that the new system would enhance the offensive capability of the Indian Navy, news agency ANI reported.

The missile's advanced guidance system incorporates state-of-the-art navigation and integrated avionics, showcasing India's prowess in developing cutting-edge missile technologies. The successful trial reaffirms the Indian Navy's commitment to indigenisation and strengthens the country's position in missile technology development.

<https://news.abplive.com/india-at-2047/indian-navy-indigenous-guided-missile-imphal-hits-bulls-eye-maiden-brahmos-firing-1644394>



Press Information Bureau
Government of India

Ministry of Defence

Wed, 22 Nov 2023

Delivery of Missile cum Ammunition (MCA) Barge, LSAM 9 (YARD 77)

**Third Barge Of 08 X Missile cum Ammunition (MCA) Barge Project on
22 nov 23 at Naval Dockyard, Mumbai for INS Tunir**

The delivery of 'Missile Cum Ammunition Barge, LSAM 9 (Yard 77)', the third Barge of 08 x Missile Cum Ammunition Barge project, built by MSME Shipyard, M/s SECON Engineering Projects Pvt Ltd, Visakhapatnam for Indian Navy, was undertaken on 22 Nov 23 at Naval Dockyard, Mumbai for INS Tunir. The induction ceremony was presided over by Cmde Ashish Sehgal Command Refit Officer, Western Naval Command.

The contract for building 08 x Missile Cum Ammunition Barge was signed between MoD and M/s SECON Engineering Projects Pvt Ltd, Visakhapatnam on 19 Feb 21. Induction of these Barges would provide impetus to operational commitments of IN by facilitating Transportation, Embarkation and Disembarkation of articles/ ammunition to IN Ships both alongside jetties and at outer harbours.

These Barges are indigenously designed and built under relevant Naval Rules and Regulations of Indian Register of Shipping (IRS). The model testing of the Barge during design stage was undertaken at Naval Science and Technological Laboratory (NSTL), Visakhapatnam. These Barges are proud flag bearers of Make in India initiative of Government of India (GoI).

<https://pib.gov.in/PressReleasePage.aspx?PRID=1978836>



Press Information Bureau
Government of India

Ministry of Defence

Wed, 22 Nov 2023

INS Sumedha Mission Deployed at Maputo, Mozambique

As a part of the ongoing Extended Operational Deployment to Africa, Indian Naval Ship Sumedha arrived at Maputo, Mozambique on 21 November 2023. The port call is aimed at strengthening

long standing diplomatic relations, reinforce maritime co-operation and boost interoperability between both the navies. Professional interactions, cross deck visits, planning conferences and Joint EEZ surveillance from 23-25 November 2023 are scheduled during the visit. Activities during the port call include Courtesy Calls by the Commanding Officer on various dignitaries and government officials of Mozambique including the Navy Commandant, Mozambique Navy and Mayor of Maputo City.

Mozambique and India have traditionally enjoyed warm and friendly bilateral relations, share common values of democracy, development and secularism. There have been regular high-level exchanges and interactions in numerous fields between both countries. Bilateral Defence Cooperation is also being progressed through regular Joint Defence Working Group (JDWG) meetings. Indian Naval ships are regularly deployed overseas as part of Indian Navy's mission of building 'bridges of friendship' and strengthening international cooperation with friendly countries.

INS Sumedha is part of the Indian Navy's Eastern Fleet based at Visakhapatnam and functions under the operational command of the Flag Officer Commanding-in-Chief, Eastern Naval Command. The ship is equipped with several weapon systems, sensors, state of art navigation and communication systems/Electronic Warfare suits. Sumedha has undertaken various Fleet support operations, coastal and offshore patrolling, ocean surveillance and HADR missions in the past.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1978675>



Press Information Bureau
Government of India

Ministry of Defence

Wed, 22 Nov 2023

Indian Armed Forces Contingent Departs for Joint Military Exercise “AUSTRAHIND-23”

The Indian Armed Forces contingent comprising of 81 personnel departed for Australia today to take part in the second edition of Joint Military Exercise AUSTRAHIND-23. The exercise will be conducted at Perth, Australia from 22nd November to 06th December 2023.

Indian Army contingent comprises 60 personnel from a Battalion of the GORKHA Rifles. The Australian Army contingent comprising 60 personnel will be from the 13th Brigade. One officer from Indian Navy and 20 personnel from Indian Air Force will also participate from the Indian side. The Australian contingent will include 20 personnel each from the Royal Australian Navy and Royal Australian Air Force.

Exercise AUSTRAHIND was instituted in 2022 and the first edition was conducted in Mahajan, Rajasthan. It is planned to be an annual training event to be conducted alternatively in India and Australia.

Aim of the exercise is to foster collaborative partnership and share best practices between the two sides. The exercise will also promote inter-operability while undertaking multi-domain operations in Urban and Semi- Urban terrain under Chapter VII of United Nations on peace keeping operations.

The joint exercise will promote exchange of ideas and jointly rehearse tactics, technique and procedures for conducting tactical operations. Training curriculum also includes sniper firing, and

jointly operating surveillance and communication equipment to achieve a high degree of situational awareness. Casualty management and evacuation will also be rehearsed besides tactical actions at Company/ Battalion level.

The exercise will also help in promoting understanding between the two militaries and further strengthen the defence cooperation between the two friendly nations.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1978722>

THE TIMES OF INDIA

Thu, 23 Nov 2023

India, Australia to Kick off Defence Drill in Perth Today

Soon after India and Australia decided to further crank up their defence ties with an eye firmly on China's aggressive behaviour in the Indo-Pacific, the two countries are all set to kick off the bilateral 'AustraHind' tri-Service combat exercise at Perth from Thursday.

Australia has also invited India as an "active participant" in its largest multination biennial exercise 'Talisman Sabre' in 2025. India had sent only observers for this year's edition of the exercise in July-August.

Australia, in turn, will take part in India's multilateral air combat exercise 'Tarang Shakti' in Rajasthan in mid-2024. The major exercise will witness around a dozen air forces from friendly countries, including the US, France and Australia, engage in intensive combat drills with fighters, helicopters, transport aircraft and force-multipliers like midair refuellers and AWACS (airborne warning and control systems).

As for the second edition of the AustraHind exercise, which will be conducted at Perth from November 23 to December 6, India has dispatched 60 Gorkha Rifles soldiers from the Army, 20 IAF personnel and an officer from the Navy on a C-17 Globemaster-III aircraft.

"The aim of the exercise is to foster collaborative partnership and share best practices between the two sides. The exercise will also promote interoperability while undertaking multidomain operations in urban and semi-urban terrains," an officer said.

The joint drills will include tactics, techniques and procedures for conducting tactical operations as well as sniper firing and operation of surveillance and communication equipment to achieve a high degree of situational awareness, he added. The first edition of AustraHind was conducted at Mahajan in Rajasthan last year.

<https://timesofindia.indiatimes.com/india/india-australia-to-kick-off-defence-drill-in-perth-today/articleshow/105428148.cms>



Wed, 22 Nov 2023

Indian Army Issues RFI to Restore T-72 Tanks

The Indian Army has issued a tender to support its programme for the restoration and life extension of in-service T-72 main battle tanks (MBTs). According to a request for information (RFI) issued by the Indian Army on 21 November, the programme – named 'Overhaul II of Tank T-72' – is carried out to ensure restoration of the T-72 to "as good as new condition".

The programme seeks to “neutralise effects of age, usage, and restoration of T-72 to near-zero hour [and] zero km state of operational readiness”, the RFI said.

The T-72 restoration process comprises “stripping of the tank, removal of assemblies, stripping of the repairable assemblies, inspection of the components of repairable assemblies, and replacement of assemblies [that are not repairable] with new ones”, the RFI added.

The process also includes “100% replacement of parts that have limited shelf life such as gaskets, seals, rings, bearings, fasteners, washers, and so on; testing of assemblies; integration in tanks; and quality assurance”, the RFI said.

The programme, according to the Indian Army, includes rectification of major/minor weld defects and worn-out portions of the T-72 hull; replacement or revalidation of rubber parts, metal pipes, and engine sub-assemblies; and replacement or revalidation of cooling, fuel, lubrication, air induction, exhaust, and transmission systems components.

<https://www.janes.com/defence-news/news-detail/indian-army-issues-rfi-to-restore-t-72-tanks>

ThePrint

Wed, 22 Nov 2023

India Holds Maritime Exercise with Russia, Land Exercise with US

Amid the ongoing conflict with Ukraine, two Russian Navy destroyers from its Pacific Fleet have reached the Bay of Bengal where they are undergoing a joint exercise with the Indian Navy.

The exercise with Russia came at a time when the Indian Army was engaged in a joint exercise, Vajra Prahar, at Umroi in Meghalaya with the US Army Special Forces.

“The purpose of the exercise is to comprehensively develop and strengthen naval cooperation between Russia and India,” the Russian Ministry of Defence announced Tuesday.

The exercise will help the two navies to jointly counter global threats and ensure the safety of civilian shipping in the Asia-Pacific region, it added.

India has, however, not released an official statement with regard to the exercise. As per the Russian defence ministry, the exercise will last until Wednesday.

The exercise involved ships from Russia’s Pacific Fleet, including the Admiral Tributs anti-submarine destroyer.

In November second week, Russia had undertaken its first-ever joint naval exercise with Myanmar, Myanmar-Russia Maritime Security Exercise (MARUMEX), deepening security cooperation involving both ships and aircraft.

Both the countries are facing sanctions from the international community at present, owing to the Junta takeover in Myanmar and Russia’s war on Ukraine. Their two forces held air combat and live-fire drills in the Andaman Sea, to the south of Yangon.

India-Russia naval exercises

In 2021, the navies of the two countries concluded the 12th edition of the biennial exercise Indra Navy in the Baltic Sea. Last year in September, Russia held annual military exercises in the eastern region with 13 countries, including India and China.

However, India only sent its army contingent of the 7/8 Gorkha Rifles, and did not take part in the maritime section of the two-part event.

At the time, the US criticised the exercise with White House Secretary Karine Jean-Pierre saying the US has “concerns about any country exercising with Russia while Russia wages an unprovoked, brutal war against Ukraine.”

Indian Army in exercise with the US

At the moment, the Indian Army is engaged in a joint exercise, Vajra Prahar, at Umroi in Meghalaya with the US Army. The 14th edition of the Indo-US joint special forces, which commenced 21 November, in which the American contingent is represented by the 1st Special Forces Group (SFG) of US Special Force. The India contingent is led by Special Forces personnel from the Eastern Command.

<https://theprint.in/defence/india-holds-maritime-exercise-with-russia-land-exercise-with-us/1855074/>



Thu, 23 Nov 2023

Advancing Collaborative Frontiers: Key Developments in the India-UK Defence Partnership

Various aspects concerning the Electric Propulsion Partnership were addressed during the 2nd India-UK Electric Propulsion Capability Partnership Joint Working Group meeting held today in New Delhi. Topics of discussion encompassed the finalization of the Statement of Technical Requirements (SOTR), Factory Acceptance Test (FAT) procedures, maintenance, Manning Philosophy, and System Integration requirements.

Co-chairing the meeting were 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.

The joint statement issued in April 2022, following discussions between Prime Minister Narendra Modi and former British Prime Minister Boris Johnson, welcomed the finalization of the Letter of Arrangement between the UK’s Defence Science and Technology Laboratory and India’s Defence Research and Development Organisation.

Presently, the UK has extended an offer of advanced core technologies to India, facilitating the creation of an indigenous, ITAR-free jet engine owned, manufactured, and exported by India. The establishment of the Electric Propulsion Capability Partnership aims to forge a robust collaboration between the respective navies for the development of Electric Propulsion capability in India.

Further commitments under the UK India 2030 Roadmap include partnership initiatives for India’s indigenous combat air programs, namely LCA Mk-II and AMCA. Rolls Royce has solidified its presence in India through a partnership with Hindustan Aeronautics Limited (HAL) for packaging, installation, marketing, and service support of Rolls-Royce MT30 marine engines.

In 2022, with the support of the UK government, defence industry organizations from India and the UK collaborated to establish a Defence Industry Joint Working Group, fostering more effective cooperation. The inaugural meeting of this group occurred during DefExpo 2022 in Gandhinagar,

Gujarat. Notably, the UK industry's integration of Indian defence suppliers into its global supply chain has expanded, manufacturing defence equipment not solely for India but for international markets.

The Joint Working Group stands as a pivotal element in the continuous effort between both nations to fortify their defence and security partnership through industrial collaboration. Notably, the UK's issuance of the first Open General Export License (OGEL) in the Indo-Pacific region to India aims to expedite defence procurement delivery times.

A subject matter expertise exchange between the Royal Air Force (RAF) and the Defence Research and Development Organisation (DRDO) occurred during the visit of Eurofighter Typhoon, Voyager, and A400 in New Delhi. Concurrently, joint-flying exercises were conducted with the Indian Air Force (IAF).

Additionally, Thales UK and BDL have entered into an agreement to produce the next generation of VSHORAD missiles in India, supplying both the UK and Indian Armies with a 'Made in India' Laser Beam Riding MANPAD System. MBDA UK has also established a live build capability for the Advanced Short Range Air-to-Air Missile (ASRAAM) in partnership with BDL.

<https://www.financialexpress.com/business/defence-advancing-collaborative-frontiers-key-developments-in-the-india-uk-defence-partnership-3314699/>

THE TIMES OF INDIA

Wed, 22 Nov 2023

The US and the Philippines Conduct Joint Air, Sea Patrols in South China Sea not Far from Taiwan

The United States and the Philippines are conducting joint air and maritime patrols in the South China Sea, which come as the two countries step up cooperation in the face of growingly aggressive Chinese activity in the area. The Philippine Air Force said on Wednesday its aircraft had taken part in joint patrols the day before in the vicinity of Batanes, the northernmost province of the Philippines, which is only about 200 kilometers (125 miles) from Taiwan, a self-governed island that China claims as its own.

The patrols run through Thursday and also include both the US and Philippine navies. They come only days after Philippines President Ferdinand Marcos Jr called the situation in the South China Sea increasingly "dire" as China seeks to assert its presence in an area where multiple nations have competing territorial claims.

Asked about the patrols, Chinese Foreign Ministry spokesperson Mao Ning said Beijing's position had been made clear to both the Philippines and the US.

"The Philippines-US joint patrol drill must not undermine China's territorial sovereignty and maritime rights and interests," she said.

The US 7th Fleet said the patrols were part of routine American interaction with its allies and partners in "preserving a free and open Indo-Pacific region".

China claims virtually the entire South China Sea as its own waters, which has led to disputes not only with the Philippines but also with Vietnam, Malaysia, Taiwan and Brunei. These claims have long been regarded as potential flashpoints in the region, and have fuelled US-China rivalry.

Earlier this month a Chinese coast guard ship blasted a Philippine supply ship with a water cannon in disputed waters, and last month a Chinese coast guard ship and an accompanying vessel rammed a Philippine coast guard ship and a military-run supply boat near a contested shoal, according to Philippine officials.

Speaking on Sunday in Honolulu, Marcos said China has been showing interest in atolls and shoals that are "closer and closer" to the coast of the Philippines, with the nearest atoll about 60 nautical miles (111 kilometers) away.

"Unfortunately, I cannot report that the situation is improving," Marcos said. "The situation has become more dire than it was before."

In announcing the start of the joint patrols, Marcos said on X, formerly known as Twitter, that they were "testament to our commitment to bolster the interoperability of our military forces".

"Through collaborative efforts, we aim to enhance regional security and foster a seamless partnership with the United States in safeguarding our shared interests," he wrote.

Under Marcos, who was elected last year, the Philippines has been deepening its relationship with the US in a shift from his predecessor, Rodrigo Duterte, who had been closer to China and Russia.

In February, Marcos approved an expansion of the US military presence in the Philippines to add four new bases from five existing sites under a 2014 Enhanced Defense Cooperation Agreement between the longtime treaty allies.

The move, which Marcos said would boost the Philippines' coastal defence, dovetails with the Biden administration's efforts to strengthen an arc of military alliances in the Indo-Pacific to better counter China.

Marcos has also been strengthening ties with others, including Tokyo, signing an agreement earlier in the year to allow Japanese troops to join training exercises.

<https://timesofindia.indiatimes.com/world/rest-of-world/the-us-and-the-philippines-conduct-joint-air-sea-patrols-in-south-china-sea-not-far-from-taiwan/articleshow/105411882.cms>



Wed, 22 Nov 2023

Iran may be Considering Providing Ballistic Missiles to Russia: White House

The White House on Tuesday said Iran may be considering providing Russia with ballistic missiles for use in Ukraine.

White House spokesman John Kirby said the United States would monitor the situation between Iran and Russia, and take appropriate action as needed.

Mr. Kirby said Iran had been providing Russia with drones, guided aerial bombs and artillery ammunition that Moscow has used to attack Ukraine.

"Iran may be preparing to go a step further in its support for Russia," he said. "We are ... concerned that Iran is considering providing Russia with ballistic missiles now for use in Ukraine."

In return for that support, he said Russia had been offering Tehran "unprecedented defense cooperation" including missiles, electronics and air defense. Iran was seeking to purchase billions

of dollars in military equipment from Russia including attack helicopters, radars and combat trainer aircraft.

He said the Wagner mercenary group, at Russia's direction, was preparing to provide air defence capabilities to either Hezbollah or Iran.

The United States was prepared to use its counterterrorism sanctions authorities against Russian individuals or entities that might make these "destabilizing transfers," he said.

The White House in May said it was seeing more indications that Russia and Iran were expanding an unprecedented defense partnership that will help Moscow prolong its war in Ukraine as well as pose a threat to Iran's neighbors.

<https://www.thehindu.com/news/international/iran-may-be-considering-providing-ballistic-missiles-to-russia-white-house/article67559881.ece>

Science & Technology News



Press Information Bureau
Government of India

Ministry of Science & Technology

Wed, 22 Nov 2023

Scientists Fabricate 2D Protein Monolayer that can Help to Study Diseases Like Amyloidosis

A 2D protein monolayer was fabricated by scientists by assembling lysozyme molecules -- model protein in studying diseases like Amyloidosis.

Amyloidosis is a rare disease that occurs when a protein called amyloid builds up in organs.

This amyloid buildup can affect the working of organs like heart, kidneys, liver, spleen, nervous system and digestive tract. Lysozyme, a protein present in mucosal secretions and a principal component of airway fluid can be regarded as a model protein in studying diseases like Amyloidosis which ultimately leads to multi-organ dysfunction.

Scientists from the Institute of Advanced Study in Science and Technology, Guwahati (IASST), an autonomous institute of North-East India under the Department of Science and Technology (DST) have assembled lysozyme molecules as a 2D monolayer at the interface of pure aqueous subphase. The research group, led by Dr. Sarathi Kundu, Associate Professor, along with Himadri Nath, a junior Research Fellow used the 2D protein monolayer to understand the behaviour of lysozyme molecules at air-water as well as at air-solid interface with the help of a technique called Langmuir-Blodgett (LB) technique.

The physical properties of lysozyme molecules at air-water interface were investigated under the variation of surface pressure and subphase pH conditions in the study recently published in the RSC Advances under the reputed RSC publishers. The compressible behaviour of lysozyme monolayers were correlated to the stripe-like domains formed with increase in surface pressure.

Lysozyme molecules at the air-water interface and their structural or conformational changes in variable pH conditions can be considered as a model system to study Amyloidosis disease, which occurs because of the misfolding and agglomeration of lysozyme molecules.

The closely packed lysozyme monolayers formed at the air-water and air-solid interfaces by the LB method will be helpful in studying different chemical and physical properties in 2D in the vicinity of protein environment. The deposited LB films of lysozyme may also be considered as protein nanotemplates to crystallize proteins of interest.

Publication link: <https://doi.org/10.1039/D3RA03710J>

<https://pib.gov.in/PressReleasePage.aspx?PRID=1978858>

