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समाचार पत्रों से चयित अंश Newspapers Clippings

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Technologies, Defence Technologies, Defence Policies,
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Tue, 02 Aug 2022

DRDO and Innovation in the Indian Defence Eco-System

In a written reply to a question in Rajya Sabha, the Minister of State for Defence Ajay Bhatt described the R&D wing of the Ministry of Defence, Defence Research Development Organisation's (DRDO) efforts for enhancing self-reliance in the defence sector to create a "Made in India" defence eco-system. He stated that, DRDO had signed 1,464 'Transfer of Technology' (ToT) agreements with Indian firms to supply key components to India's defence setup till date. The DRDO has been working relentlessly for providing home grown cutting-edge defence technologies to the Armed forces, as a continuous process, he added. These technologies not only handhold defence manufacturers but also pave the way for enhanced home grown indigenous state-of-art defence technologies.

As a separate reply to another question, the MoS Defence also informed that the Central Government was seeking to collaborate with an international engine company for co-developing and producing combat jet engines, which will have higher thrust capacities than 80 kiloNewtons (kNs), for India's Advanced Medium Combat Aircraft (AMCA). He further stated that, indigenous capabilities already exist with the DRDO and Indian industries to design, develop as well as manufacture of 80kN combat jet engines. In June, the enhancement of funding under the Technology Development Fund (TDF) scheme was approved and Rs 50 crore per project was allotted from the earlier Rs 10 crore. The TDF scheme which is executed by Defence Research and Development Organisation (DRDO), supports indigenous development of components, products, systems and technologies by Micro, Small & Medium Enterprises (MSMEs) and start-ups. The scheme facilitates up to 90% of the total project cost and enables industry to work in consortium with industry/academia. Currently, 56 projects have been sanctioned under the TDF scheme.

Agreements pertaining to 21 technologies to be developed by 16 DRDO laboratories spread across India were handed over in April, 2022. Notably, these technologies involve Quantum Random Number Generator - developed by a DRDO Young Scientist Lab (DYSL- QT, Pune), Counter Drone System, Missile Warheads, Laser-directed Energy Weapon Systems, High Grade Steel, Propellants, Surveillance & Reconnaissance systems, Chemical, Biological, Radiological & Nuclear underground vehicles, Fire resistant armours, and Anti-Mine Boots.

<http://www.indiandefensenews.in/2022/08/drdo-and-innovation-in-indian-defence.html?m=1>

Mon, 01 Aug 2022

Hypersonic BrahMos-II Missile may Include Technology from Tsirkon Missile — CEO

The hypersonic version of the BrahMos cruise missile - the BrahMos-II - will probably have the same specifications as the hypersonic version of the Tsirkon missile, BrahMos Aerospace CEO AtulRane told TASS Monday, adding that it would take up to five or six years before first flight trials. According to AtulRane, "technology bricks" for a hypersonic missile have been designed by both sides. "If they give us the technology bricks, then we will develop a hypersonic missile," the CEO said. When asked if the BrahMos-II missile will have some "science" from the Tsirkon missile, Rane said that it is "possible." He noted that, while the media announced first flight trials for such missile first for 2021 and later for 2024, he believes it would take "five to six year" before the trials will actually take place.

"The whole world is working on hypersonics. I have not seen anyone in the world having hypersonic cruise missiles. Russia says it tested the Tsirkon, developed by NPO Mashinostroyeniya," Rane noted, adding that while the US and China are both working on hypersonic cruise missiles, neither country has them yet. He pointed out that the hypersonic version of the BrahMos missile will be very expensive. The CEO noted that the BrahMos-II missile will not be exported; instead, it will only be produced for Russia and India.

Rane explained that India, being a party to the Missile Technology Control Regime, may develop missile with range of over 300 km and weight of over 500 kg, but cannot hand it over to third countries. The BrahMos is a supersonic cruise missile, developed by the joint Russian-Indian BrahMos Aerospace Company. The missile has been jointly developed by Russia's NPO Mashinostroyeniya and India's Defense Research and Development Organization (DRDO). The first trial launch took place in 2001. Various versions of this missile have been commissioned to India's Navy, Air Force and ground forces. BrahMos Aerospace's headquarters is in New Delhi. The name BrahMos is a combination of names of Brahmaputra River in India and Moskva River in Russia.

<https://tass.com/defense/1487641>

पहाड़ों में भी मदद पहुंचा रही सेना के लिए बनाई बाइक एंबुलेंस, अब निजी सेक्टरों में उतारने की तैयारी

By Manoj Kumar

सुदूर या पहाड़ी क्षेत्रों में सेना के आपरेशन के दौरान अगर कोई दुर्घटना हो जाए तो बेस कैंपस तक लाने में काफी जिद्दोजहद करनी पड़ती है। इस समस्या के समाधान के लिए रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) के दिल्ली स्थित नाभिकीय औषधि तथा संबद्ध विज्ञान संस्थान (इनमास) और केंद्रीय रिजर्व पुलिस बल (सीआरपीएफ) ने एक बाइक एंबुलेंस बनाई थी। तब उसका प्रयोग सेना के लिए करना था। मगर अब इस तकनीक को प्राइवेट कंपनी के माध्यम से प्राइवेट सेक्टर में भी लाया जाएगा। हिसार में एस्पाइरिंग हरियाणा 2022 प्रदर्शनी आयोजित हुई। जिसमें विज्ञानियों ने डीआरडीओ इनमास और सीआरपीएफ द्वारा निर्मित बाइक एंबुलेंस के बारे में जानकारी दी गई। इस प्रोजेक्ट पर कंपनियों से हाल ही में टेक्नालाजी ट्रांसफर के लिए आवेदन भी मांग लिए गए हैं। प्राइवेट कंपनी के पास टेक्नालाजी जाने से इसका निर्माण प्राइवेट तौर पर भी हो सकेगा।

जिन सुदूर गांव आदि के क्षेत्रों में जहां एंबुलेंस नहीं पहुंच पाती है वहां पर मरीज को बाइक एंबुलेंस से नजदीकी अस्पताल तक लाया जा सकेगा। गौरतलब है कि बाइक एंबुलेंस के निर्माण के बाद इसे सिक्वोरिटी फोर्स सीआरपीएफ को हैंडओवर कर दिया गया था।

पहाड़ी क्षेत्रों में अभी भी मरीजों को पैदल लाना पड़ता है

देश में अभी भी कई ऐसे पहाड़ी क्षेत्र हैं जहां पर अगर कोई बीमार हो जाए तो लोगों को उस मरीज को नजदीकी अस्पताल तक लाने में पसीने छूट जाते हैं। इस कारण के चलते कई स्थानों पर तो लोग सुदूर क्षेत्रों से पलायन भी कर चुके हैं। इसके साथ ही कई प्रसूताओं की जान भी चली गई है। ऐसे में बाइक एंबुलेंस ऐसे दुर्गम क्षेत्रों में अपना रोल बखूबी निभाएगी। यह बाइक पहाड़ी क्षेत्रों पर अच्छे से कार्य करती है और मरीज को भी अधिक दिक्कत नहीं होने देती है।

बाइक एंबुलेंस रक्षिता की यह हैं विशेषताएं

- इस बाइक एंबुलेंस में हेड मोबलाइजर, सेफ्टी जैकेट, सुरक्षा के लिए हाथों और पैरों को रखने की स्ट्रेप, एडजस्टेबल फुटरेस्ट भी लगाए गए हैं।
- बाइक एंबुलेंस में बेसिक मेडिकल आपातकालीन किट भी लगी हुई है। जोकि मरीज को एंबुलेंस में ले जाते समय लाइफ सपोर्ट देती है।

- बाइक एंबुलेंस सामान्य एंबुलेंस की तुलना में काफी तेज है और आपातकालीन मेडिकल सपोर्ट के लिए बेहतर है।
- बाइक एंबुलेंस चालक के लिए स्वचलित चेतावनी सिस्टम भी लगा हुआ है। इसके साथ थी बाइक के डैशबोर्ड पर सभी वाइटर पैरामीटर्स की स्थिति को देखा जा सकता है।
- बाइक एंबुलेंस पर सीइएस यानि कैजुअल्टी इवैक्यूशन सीट लगी है, जिसे कभी भी लगाया व निकाला जा सकता है।
- बाइक एंबुलेंस पर एयर स्पलिट, मेडिकल और आक्सीजन किट भी स्पाट मेडिकल केयर के रूप में दी गई है।

<https://www.jagran.com/haryana/hisar-drdo-and-crpf-made-bike-ambulance-for-army-now-emergency-help-will-be-available-in-mountains-too-22946621.html>

Defence News

Defence Strategic : National/International

BusinessLine

Tue, 02 Aug 2022

Defence Ministry to Unveil Atmanirbhar Bharat-II for Indigenous Production of Core Technologies

By Dalip Singh

The next level of reforms under the Atmanirbhar Bharat scheme will include promoting indigenous development and production of core technologies in Public-Private Partnership mode and liberalising testing and certification of products, which have so far been a government preserve. The Ministry of Defence (MoD) is set to give a big R&D push in core technologies which India is traditionally lacking. To begin with, the Ministry will create an enabling ecosystem to develop engines for maritime and airborne platforms through partnerships between defence PSUs and indigenous private players, said top MoD sources.

High capacity engines

As of now, India manufactures marine diesel engines with a power output of a maximum of 3 megawatts, but the MoD seeks to create an R&D collaboration to scale it up to 6-10 megawatts to make the country self-reliant, informed government sources. Goa Shipyard, a government ship-building company, has tied up with Rolls Royce to manufacture advanced MTU series 8,000 engines that can give output of up to 10 megawatts to power offshore patrol vessels. After

the MoD's new model for Atmanirbhar II comes out, the government will focus on developing engines entirely through PPP mode. The other area, said an MoD official, of making India self-reliant in the defence sector is to manufacture multi-role helicopters in the league of Boeing-made Apaches, which the US Army, Indian Air Force and others are flying. It is learnt that the ministry would like the Hindustan Aeronautics Limited (HAL) to tie-up with a domestic private firm for the development of a complete set of choppers. HAL has already managed to develop a certain level of capability that is reflected in the manufacturing of advanced light helicopters used by the IAF. The IAF helicopter fleet is spread over Chinooks, Apaches, Mi-17s, and Dhruvs, which are made by HAL.

Defence Secretary Ajay Kumar confirmed to BusinessLine: "We are creating a mode to encourage major R&D projects in collaboration with the private sector and allow participation of industry in testing and certification for ease of doing business." Kumar said. Ministry sources said the government is trying to make testing infrastructure, which is now the domain of the government, available to the private sector. To incentivise it, the Ministry is likely to propose a 75 per cent investment subsidy to set up testing labs. Over six labs would come up, three each in the defence corridors of Uttar Pradesh and Tamil Nadu, with the government wanting to reduce the hassle private players face to either test their products or seek certification. This is also to bring global standards in this aspect, some of which are not available in the country. For instance, said Ministry sources, the Ministry intends to allow Airbus' international bench mark of certification for C-295 transport aircraft. Airbus has signed with Tata Advance Systems Limited to manufacture 56 C-295 in the country.

The move is expected to address concerns over India not investing in core technologies under the Atmanirbhar Bharat scheme, which will reduce dependence on foreign vendors and empower the sector to upgrade in-country capabilities for producing next-generation platforms. During the Galwan stand off with Chinese troops, India realised the need to invest in strategic armaments to make the country self-reliant. A defence expert commented that with the country short of comfortable inventory, it was scrambling across the globe to purchase military hardware.

<https://www.thehindubusinessline.com/news/national/defence-ministry-to-unveil-atmanirbhar-bharat-ii-for-indigenous-production-of-core-technologies/article65716952.ece>

THE ECONOMIC TIMES

Mon, 01 Aug 2022

Expenditure on Defence Good Investment, Not Drain on Country's Finances, Says Former Army Chief Naravane

Former Army chief General Manoj Naravane (retired) on Monday said it is a misplaced notion that expenditure on defence is a drain on the country's finances and asserted it is actually an investment for good returns. Speaking at the anniversary of Marathi daily Sakal in Kolhapur, he said there will always be a debate between 'guns and butter' and how much to spend on defence in a developing country like India. "How much can be spent? It can be debated, but defence takes the first priority and that cannot be wished away. We have to build the capability to defend our

country," said Naravane. Capability and intentions are two sides of the coin and intentions can change overnight, he pointed out.

"Somebody who is a friend can become an enemy tomorrow, but capability takes time to develop. It takes years and decades to develop and, therefore, we need sustained development and sustained budget to build that strength," the former general asserted. Referring to the Ukraine-Russia war, Naravane said Ukraine neglected national security and are now paying a price, adding that the nation would take years to recover from the damage. "In fact, the cost of reconstruction, the cost of repaying of aid that they received will be much more in order of magnitude than had they spent adequately on the defence of the country. Now, this is something we cannot ignore," he said. Asserting it is a misplaced notion that defence expenditure is a drain on finances, he said, "Actually, expenditure on defence is an investment, from which you get good returns. You have seen when there is instability, straightaway the stock market crashes. If the country is stable, it attracts foreign investment."

He said self-reliance was important as depending on imported shipments of arms and ammunition can lead to trouble, as is being witnessed in Ukraine's case. "When war breaks out, we will have to fight it alone. Nobody comes to your help. They (other countries) will give moral support, they will give weapons but the blood spilled will be ours," he said.

<https://economictimes.indiatimes.com/news/defence/expenditure-on-defence-good-investment-not-drain-on-countrys-finances-says-former-army-chief-naravane/articleshow/93280958.cms?from=mdr>

THE TIMES OF INDIA

Tue, 02 Aug 2022

Armed Forces Need to Prepare for 'Long Forms' of War Say Defence Experts

Indian Armed forces need to focus on the long form' of wars rather than preparing for 'short term' conflicts to counter future security and strategic challenges, said defence experts on Monday. The ongoing Russian and crisis is a testimony to prove that the forces need to prepare for a long war. The world leadership had thought the Russia- Ukraine war would finish in a few days. But it went on for months. And it is still going on, they said. The experts were talking at a symposium on 'The Ukraine crisis: Challenges to India's foreign policy.' The Pune International Center (PIC) in association with Takshashula Institution had organised a day-long event. Air Marshal Bhushan Gokhale (retd), former vice chief of air staff, said, "The present Russia and Ukraine crisis has shown varied aspects of modern warfare and military tactics. The Indian Armed forces need to take lessons from it to face the future security challenges." Rear Admiral SY Shrikhande (retd), former assistant chief of naval staff, said, "The highest standard of strategic planning is the most essential part of modern warfare today.

The US armed forces' failure in Afghanistan was a classic example of strategic failure. All these years, the US could project its supremacy in Afghanistan. However, eventually, they lost the war and left the country. Hence the armed forces need to focus on this front. And it can be achieved by fine-tuning their military doctrines at prominent military establishments." He said that the

Ukraine armed forces had learned hard lessons from the 2014 conflict with Russia. "This time they had shown more resilience than the last time. On other hand, the Russian military leadership failed to forecast it. "As a result, they (Russians) could not achieve the objectives that they had thought to get within a short period. But it was again a strategic failure," Shrikhande added. Lt General ShokinChauhan (ret'd), former director general of Assam of Rifles, said a strong ground force with the highest order of military ethos is needed to fight the war. "Technology alone will not help any military to win the war. Thus, any force needs professional soldiers, not conscripted soldiers. This is what the Russian military leadership is facing the problem today. The military leadership should draw lessons from it," Chauhan pointed out.

Former ambassador GautamBambawale talked about the lessons for India's foreign policy choices. Representatives from private companies, who are working in defence productions, said, "They have got the necessary support from the government under its 'Atmanirbhar Bharat' initiative in the last few years. And hence they are working on various niche military technologies and systems positively." Some of them pointed out that the armed forces need to give clarity on the systems that they are planning to acquire. "It will help them to work on it extensively to meet their operational requirements," they said. Senior retired armed forces personnel, defence and strategic analysts, security experts, serving army officers and academicians attended the event.

<https://timesofindia.indiatimes.com/india/armed-forces-need-to-prepare-for-long-forms-of-war-say-defence-experts/articleshow/93297041.cms>

Business Standard

Tue, 02 Aug 2022

Parliament Passes Bill to Ban Funding of Weapons of Mass Destruction

Parliament on Monday passed a bill which seeks to ban funding of weapons of mass destruction and also empowers the Centre to freeze, seize or attach financial assets and economic resources of people engaged in such activities. The Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Amendment Bill, 2022, piloted by External Affairs Minister S Jaishankar, was passed by the Rajya Sabha with a voice vote even as opposition parties continued their protest over various issues, including the arrest of Shiv Sena MP Sanjay Raut in a money laundering case. The bill was approved by the Lok Sabha in April. Replying to a debate on the bill, Jaishankar said all members who spoke on the proposed legislation recognised that terrorism is a serious threat and so are weapons of mass destruction (WMD).

He said that the current law only covers trading and does not cover financing of weapons of mass destruction. "This gap needs to be filled because recommendation...of the Financial Action Task Force requires all countries, including us, to ensure that assets financing for WMD-related activities is prohibited." So keeping in mind this lacunae of the current law we have brought this amendment. This is good for the security of the country. This is good for the reputation of the country," Jaishankar said. The Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act, passed in 2005, only banned manufacture of weapons of mass destruction.

The amendment bill seeks to insert a new Section 12A in the existing law which states that "no person shall finance any activity which is prohibited under this Act, or under the United Nations (Security Council) Act, 1947 or any other relevant Act for the time being in force, or by an order issued under any such Act, in relation to weapons of mass destruction and their delivery systems.

https://www.business-standard.com/article/current-affairs/parliament-passes-bill-to-ban-funding-of-weapons-of-mass-destruction-122080100937_1.html



Tue, 02 Aug 2022

TASL has Started Delivering Tactical/Combat Support/High Mobility Trucks to the African Defence Forces

TASL has started delivering Tactical and Combat Support Trucks- High Mobility Platforms (HMPV) to the African Defence Forces. These trucks are customised as per military requirements and can also carry troops & ammunition and other combat support equipment reports TATA Advanced Systems on its Twitter handle.

About TASL

TATA Advanced Systems' Land Mobility division offers a wide range of products operating across the entire spectrum of Military Vehicles from Logistics to front-line Combat. Tata Advanced Systems today is the largest private sector mobility player in the Defence space in India. Our mobility solutions portfolio includes all classes of vehicles from light to heavy combat range for the Indian and International Armed Forces. TATA Advanced Systems Land Mobility Division has supplied over 170,000+ vehicles to various Armed Forces including Paramilitary & State Police. We are proud of our association with the Paramilitary & Police Forces and are continually improving & innovating products that cater to specific mission requirements. TATA Advanced Systems also exports its range of specialised Defence Vehicles to SAARC, ASEAN, African Nations and for UN Peacekeeping Forces.

<http://www.indiandefensenews.in/2022/08/tasl-has-started-delivering.html?m=1>

The Tribune

Tue, 02 Aug 2022

India Negotiating for Drone Used in Attack

When Al-Qaida chief Ayman al-Zawahiri was killed by US forces in a drone strike in Afghanistan capital Kabul, the development was watched keenly in India. For, New Delhi has been negotiating with Washington for the sale of similar drones — Predator — that can launch the Hellfire missile, which was used to kill Zawahiri. The Ministry of Defence is processing a case to get 30 such drones, 10 each for the Navy, Air Force and the Army. Pictures from the Kabul home where Zawahiri was killed showed no signs of an explosion, pointing to the use of

the secret weapon called the 'Hellfire R9X'. The weapon has no explosive warhead, but deploys six blades, which fly in at high speed, crushing and slicing the targeted person.

Officially, the US Department of Defence or the CIA have never acknowledged the use of the 'Hellfire R9X'. The Hellfire missile has several variants. The 'R9X' variant is deployed to target a terrorist without damage to civilians, which a conventional missile won't do on exploding. As per available data, the 'Hellfire R9X' is a little more than five feet long and weighs just over 100 pounds and doesn't leave behind any signs such as burnt-out shells or mangled marks. The weapon was used earlier too when US forces targeted Qaida-linked trainer in Syria in 2020. The weapon was used four to five times.

<https://www.tribuneindia.com/news/nation/india-negotiating-for-drone-used-in-attack-418185>



Tue, 02 Aug 2022

All You Want to Know about Hellfire R9x

By HumaSiddiqui

For killing leaders of extremist groups, it seems the Hellfire RX9 also known as a 'ninja bomb' is the munition of choice for the US. On Tuesday (August 2, 2022) according to reports, the US used the 'ninja bomb' to kill al-Qaeda head Ayman al-Zawahiri, 71, in Kabul, Afghanistan. Two missiles were reportedly fired at Zawahiri's home, however the images available in the public domain show no sign of explosion and the US officials have claimed that no civilian lives were lost. US had earlier reportedly used this bomb back in 2017 when al-Qaeda senior leader Abu al-Khayr al-Masri was killed in Syria and there was no loss of civilian lives.

More about Hellfire RX9

This Air to Ground (AGM) 114 Hellfire missiles are subsonic missiles and have significant anti-tank capacity. The missile used by the US, on August 2, is a warhead-less missile and it is equipped with six razors like blades. And it is these blades that killed the al-Qaeda head. These missiles do not explode and to avoid collateral civilian damage, these missiles are known to release knife-like blades which hit the targets with precision. This missile has several variants based on the guidance system, its physical variants and the latest addition is the Hellfire R9X. This variant uses pop-up blades and is used for targeted killings by the US. These missiles are also known as the flying 'Ginsu'. They are not known to cause any damage to the area where as there is no explosive which would explode, and there is no payload it carries.

When was it first known to have been used?

Though no one will acknowledge using it publicly, the CIA or the Pentagon are the agencies that can use it to target extremist leaders. In 2017, it was used for the first time ever to kill al-Qaeda senior leader Abu al-Khayr al-Masri while he was travelling in a car and it was deployed again in 2020 when the US forces had targeted an al-Qaida-linked trainer in Syria in 2020. As has been reported in Financial Express Online, this was probably used to assassinate Iranian General Qasem Soleimani. Reports indicate that this variant of the missile was developed during the

Obama administration and the focus was to kill the target with minimum loss to the civilian population.

Where are the blades stored?

There are six long blades inside the missile and are deployed through the skin of the missile just a few seconds before the impact. This ensures that anything in its tracks is shredded. It is different from the traditional Hellfire missile. It leaves no mark, no burns, no scorches and all that is left is the points of entry. This new variant weighs about 45 kg and can be launched from drones, helicopters, and aircraft. The US forces have fired these missiles from Humvees by their ground troops. Depending on the variant being fired these missiles have a range which can be anything between 500 metres to 11 km. For the killing of the al-Qaeda leader, the US had used specific intelligence to target him while he was on the balcony of his house in Kabul.

Drones used for strikes

The US has been using drones excessively to target enemies and their camps and, in the process, have caused a lot of civilian damage. And the new variant of Hellfire Missile causes less damage. These missiles can be launched by the MQ9 Predator drones from the US based General Atomics. These drones as reported by Financial Express Online earlier have the capability to detect targets using inbuilt radars and sensors and have the endurance of more than 27 hours. They can carry payloads of almost 1700 kgs and capacity of flying up to 50,000 feet with 6,000 nautical miles.

Does India have these Predators?

Not yet. India is in the process of finalising US \$3 billion deal with General Atomics for 30 armed drones for the three services – Indian Navy, Air Force and the Indian Army. And these drones can be used for hitting the target with either missiles or bombs. Since they come with stealth features, they go undetected.

https://www.financialexpress.com/defence/all-you-want-to-know-about-hellfire-r9x/2614708/lite/?utm_source=defence_landing_page&utm_medium=article_listing_widget&utm_campaign=Tags



Tue, 02 Aug 2022

India Signs 6 Pacts with the Maldives; Cybersecurity, Defence Take Centrepoint

By Rezaul H Laskar

Coordination between India and the Maldives in defence and security is vital for peace and stability in the region, Prime Minister Narendra Modi said on Tuesday as New Delhi announced it will provide two naval vessels and vehicles for the Maldivian defence forces. The two sides signed six agreements, including one on cybersecurity and another on creating a network of police facilities in the archipelago, as visiting Maldivian President Ibrahim Solih held talks with

PM Modi. The Indian side unveiled additional financial assistance of more than \$250 million for the Maldives, one of the main beneficiaries of New Delhi's 'Neighbourhood First' policy.

The two leaders reviewed infrastructure projects being implemented in the Maldives to develop roads, ports, airports and housing under India's development cooperation portfolio of more than \$2 billion. They also virtually launched the first pouring of concrete for the Greater Male Connectivity Project, being built with an Indian grant of \$100 million and a soft loan of \$400 million. Speaking at a media interaction after his talks with Solih, Modi said, "The threat of transnational crime, terrorism and drug trafficking in the Indian Ocean is serious. And therefore, close contact and coordination between India and Maldives in defence and security is vital for the peace and stability of the entire region."



Maldivian President Ibrahim Mohamed Solih (left) with Prime Minister Narendra Modi in New Delhi on Tuesday

"We have increased our cooperation against all these common challenges. It includes capacity building and training support for Maldivian security officials," PM Modi added. Solih said, "We both reiterated our firm commitment to the work against terrorism in all its forms and manifestations and strengthened cooperation to enhance maritime safety and security in the Indian Ocean region." The Indian side announced it will provide a landing craft assault (LCA) to the Maldives National Defence Force (MNDF), and another warship to replace CGS Huravee, which itself is a naval patrol vessel gifted by India in 2006. India will also provide 24 utility vehicles to MNDF. Officials said this equipment will boost the maritime surveillance and security capacity of MNDF. India has provided other defence hardware in the past and helped build a coastal radar network in the Maldives that became operational in March.

The six agreements signed by the two sides included memorandums of understanding on cooperation in cyber-security, training of Maldivian local government officials, collaboration in data sharing and marine research for forecasting of potential fishing zones, and cooperation in disaster management. India's Exim Bank and the Maldives finance ministry signed an agreement for buyer's credit financing worth \$41 million to create police infrastructure on 61 islands, while a letter of intent was finalised for buyer's credit funding worth \$119 million for building 2,000 social housing units in Hulhumale. The Indian side extended a new line of credit of \$100 million to fund revised costs of existing projects under a previous \$800-million line of credit provided in 2018. Indian companies are currently engaged in two projects to build 4,000 social housing units in Greater Male.

Solih is visiting India at a time when the Maldives is witnessing an 'India Out' campaign backed by hardliners and the opposition party of former president Abdulla Yameen. The ruling

Maldivian Democratic Party has been hit by a rift between Solih and his erstwhile ally, speaker Mohamed Nasheed, who has charged the administration with arresting his brother after “accusing him of homosexuality”. The Adhaalath Party, part of the ruling coalition, has opposed yoga events organised by the Indian mission on the ground they are “un-Islamic”. India’s high commissioner MunuMahawar evaded a direct response when he was asked at a media briefing whether these issues figured in the talks, but said Solihreemphasised his country’s ‘India First’ policy. The ‘India Out’ campaign is based on “misinformation” and doesn’t reflect the views of Maldivian people, Mahawar said. Yoga day is celebrated across the world and has been observed in the Maldives since 2015, he said, adding the government in Male has committed that those responsible for storming a yoga day event in June will be brought before the law.

Solih lauded India for its support when his country’s borders were close due to the Covid-19 pandemic. “The result left both our economy and people in distress. Was it not for the generous assistance received in the form of budgetary support, medical assistance and supplies, and the Covishield vaccines donated by the government of India, our economic recovery would have been hard and long,” he said. “Our relationship with India will always be of the highest priority... The Maldives will always remain a true friend of India, firmly committed to our shared vision of peace and development in our countries and our region,” he added. Modi said the bilateral partnership is becoming a source of peace, stability and prosperity in the region. “India has been and will continue to be the first responder in any need or crisis of the Maldives,” he said.

<https://www.hindustantimes.com/india-news/india-signs-6-pacts-with-the-maldives-cybersecurity-defence-take-centrepoint-101659446885024.html>

अमर उजाला

मंगलवार, 02 अगस्त 2022

ऑस्ट्रेलिया में 17 देशों के 'पिच ब्लैक' अभ्यास में शामिल होगा भारत, 100 विमान लेंगे भाग

भारत इस महीने ऑस्ट्रेलिया में होने वाले एक मेगा हवाई युद्ध अभ्यास में शामिल होगा। इस अभ्यास में भारत समेत 17 देशों के लगभग 100 विमान और 2,500 सैन्यकर्मी भाग लेंगे। "पिच ब्लैक" नाम के इस अभ्यास में भारत की भागीदारी की पुष्टि ऑस्ट्रेलियाई सरकार ने की है।

17 देशों के 100 विमान और 2500 सैन्यकर्मी होंगे शामिल

"पिच ब्लैक" अभ्यास में ऑस्ट्रेलिया, कनाडा, फ्रांस, जर्मनी, इंडोनेशिया, भारत, जापान, मलेशिया, नीदरलैंड, न्यूजीलैंड, फिलीपींस, दक्षिण कोरिया, सिंगापुर, थाईलैंड, संयुक्त अरब अमीरात (यूएई), ब्रिटेन और अमेरिका के लगभग 100 विमान और 2500 सैन्यकर्मी शामिल होंगे। एक ऑस्ट्रेलियाई मीडिया ने कहा कि पिच ब्लैक 2022 (PBK22) शुरू करने के लिए 17 देशों के लगभग 100 विमान और 2,500 सैन्यकर्मी दो सप्ताह में देश के उत्तरी क्षेत्र में पहुंचेंगे।

यह अभ्यास 19 अगस्त से 6 सितंबर तक होगा

रॉयल ऑस्ट्रेलियाई वायु सेना (आरएएफ) "पिच ब्लैक" को रणनीतिक भागीदारों और सहयोगियों की वायुसेना के साथ अपनी "कैपस्टोन" को अंतरराष्ट्रीय कार्य गतिविधि के रूप में मानता है। अभ्यास "पिच ब्लैक" हर दो साल में एक बार होता है और रॉयल ऑस्ट्रेलियाई वायुसेना द्वारा आयोजित किया जाता है। लेकिन कोविड-19 महामारी की वजह से यह युद्ध अभ्यास चार साल के बाद हो रहा है। युद्ध अभ्यास आम तौर पर उत्तरी ऑस्ट्रेलिया के आरएएफ ठिकानों - डार्विन और टिंडल में होता है। इस बार यह अभ्यास 19 अगस्त से 6 सितंबर तक होगा।

कोविड-19 महामारी के कारण "पिच ब्लैक" के पिछले संस्करण के बाद यह अभ्यास चार साल के अंतराल के बाद होने जा रहा है। इस साल का अभ्यास ऑस्ट्रेलियाई आसमान में संयुक्त बलों की वापसी, अंतर-क्षमता को बढ़ाने और रिश्तों को मजबूत करने के तौर पर देखा जाएगा। पिच ब्लैक 2022 के निदेशक ग्रुप कैप्टन पीटर वुड ने कहा कि एक बड़े ब्रेक के बाद पिच ब्लैक की वापसी को देखकर वह खुश हैं। ग्रुप कैप्टन पीटर वुड ने कहा कि "हिंद-प्रशांत क्षेत्र के भीतर और विदेशों में अभ्यास पिच ब्लैक में अंतरराष्ट्रीय भागीदारी, उत्तरी ऑस्ट्रेलिया के अद्वितीय वातावरण में विमान, सिस्टम और कार्य प्रथाओं के साथ काम करने में सभी देशों के कर्मियों को अनुभव प्रदान करती है।" उन्होंने कहा कि "संयुक्त हवाई युद्ध अभियानों में हमारे अंतरराष्ट्रीय भागीदारों के साथ अभ्यास करना यह सुनिश्चित करने के लिए महत्वपूर्ण है कि जब भी ऑस्ट्रेलियाई सरकार को आवश्यकता हो, वायुसेना जवाब देने के लिए तैयार रहे।"

ग्रुप कैप्टन वुड ने कहा, "हम अभ्यास पिच ब्लैक के लिए एक बार फिर अपने अंतरराष्ट्रीय भागीदारों के साथ काम करने के लिए उत्सुक हैं।" पिछले कुछ वर्षों में भारत और ऑस्ट्रेलिया के बीच रक्षा और सुरक्षा संबंधों में तेजी आई है। जून 2020 में, दोनों देशों ने अपने संबंधों को एक व्यापक रणनीतिक साझेदारी तक बढ़ाया और सैन्य-तंत्र के समर्थन के लिए सैन्य ठिकानों तक पारस्परिक पहुंच के लिए एक ऐतिहासिक समझौते पर हस्ताक्षर किए। म्युचुअल लॉजिस्टिक्स सपोर्ट एग्रीमेंट (एमएलएसए) दोनों देशों की सेनाओं को समग्र रक्षा सहयोग को बढ़ाने के अलावा आपूर्ति को पूरा करने और पुनःपूर्ति के लिए एक-दूसरे के ठिकानों का उपयोग करने की अनुमति देता है। ऑस्ट्रेलियाई नौसेना नवंबर 2020 के साथ-साथ पिछले साल भारत द्वारा आयोजित मालाबार नौसैनिक अभ्यास का हिस्सा थी। पहला पिच ब्लैक अभ्यास 15-16 जून, 1981 में विभिन्न आरएएफ इकाइयों के बीच आयोजित किया गया था।

<https://www.amarujala.com/india-news/india-to-be-part-of-17-nations-pitch-black-exercise-in-australia>

India to be Part of 17-Nation 'Pitch Black' Exercise in Australia

India will be part of a mega air combat exercise in Australia this month that is set to witness the participation of around 100 aircraft and 2,500 military personnel from 17 countries. India's participation in the exercise, "Pitch Black", has been confirmed by the Australian government. The Royal Australian Air Force (RAAF) considers "Pitch Black" as its "capstone" international engagement activity with the air forces of strategic partners and allies. The exercise is scheduled to take place from August 19 to September 6. An Australian readout said about 100 aircraft and 2,500 military personnel from 17 countries will arrive in the Northern Territory in the country in two weeks to commence Pitch Black 2022. With a four-year hiatus since the last edition of Pitch Black due to the COVID-19 pandemic, this year's exercise will see a return of the combined force to Australian skies, enhancing interoperability and strengthening relationships, it said.

PBK22 Director Engagement Group Captain Peter Wood said he is pleased to see the return of Pitch Black after the extended break. "International participation in Exercise Pitch Black, from within the Indo-Pacific region and further abroad, provides all nations' personnel with experience in working with aircraft, systems and work practices, in northern Australia's unique environment, that would otherwise be unfamiliar," Group Captain Wood said. "Exercising with our international partners in combined air combat operations is pivotal to ensuring Air Force remains ready to respond whenever the Australian government requires," he added. The readout said this year's participants include Australia, Canada, India, France, Germany, Indonesia, Japan, Malaysia, the Netherlands, New Zealand, the Philippines, the Republic of Korea, Singapore, Thailand, the UAE, the UK and the US.

"We are very much looking forward to working with our international partners once again for Exercise Pitch Black," Group Captain Wood said. The defence and security ties between India and Australia have been on an upswing in the last few years. In June 2020, the two countries elevated their ties to a comprehensive strategic partnership and signed a landmark deal for reciprocal access to military bases for logistics support. The Mutual Logistics Support Agreement (MLSA) allows the militaries of the two countries to use each other's bases for repair and replenishment of supplies, besides facilitating scaling up of overall defence cooperation. The Australian Navy was part of the Malabar naval exercise hosted by India in November 2020 as well as last year.

<https://economictimes.indiatimes.com/news/defence/india-to-be-part-of-17-nation-pitch-black-exercise-in-australia/articleshow/93281099.cms>

China Builds New Nuclear Test Site in Xinjiang Uyghur Autonomous Region

Satellite photos show that China is building a new nuclear test site in Xinjiang Uyghur Autonomous Region (XUAR) speeding up the nuclear arms race to achieve the ambition of becoming military power on a par with the US contradictory to President Joe Biden has advocated a “nuclear-free world. Nikkei Asia viewed satellite photographs with a number of experts that appear to confirm China is strengthening its nuclear testing capability. The evidence of new construction was detected by a satellite 450 kilometers above Lop Nur, a dried-up salt lake in the southeast of Western China’s Xinjiang Uyghur Autonomous Region. Many analysts believe that the secret nuclear testing area is secured by the People’s Liberation Army. China has conducted five underground nuclear tests at Lop Nur, the last in 1996. Evidence that a sixth tunnel has been excavated points to a planned resumption.

“China could conduct nuclear-related tests anytime, especially since the electricity line and road system now connects Lop Nur’s western military nuclear test facilities to new possible test areas in the east,” an expert at AllSource Analysis, a US private geospatial company, told Nikkei. The researcher spoke on the condition of anonymity because of the sensitivity of the subject. China aims to become a military power on a par with the US by the middle of the 21st century — a formidable ambition given the underdeveloped state of some of its forces and materiel. China has 2.04 million military personnel. Although that is already the largest standing force in the world — and 1.5 times larger than that of the US, reported Nikkei Asia. President Xi Jinping said the Chinese Communist Party rules “east, west, north, south,” and that means it controls the PLA. But China’s military system remains corrupt and nepotistic. The PLA is also untested; its last real combat experience was the Sino-Vietnamese War of 1979.

The Xi administration may be contemplating the unification of China, and that would involve taking Taiwan by force. But Russia’s invasion of Ukraine has provided a sobering warning about the risks of military adventures, reported Nikkei Asia. Although there are no nuclear power plants in the Xinjiang Uyghur Autonomous Region, the Xinjiang Production and Construction Corps (XPCC) said that it will “make 2022 the starting year for strengthening the capacity to monitor radioactivity.” Satellites detected new terrain levelling activity at Lop Nur in October 2020. Big trucks came and went in 2021, and the power infrastructure for the sixth tunnel was built in the first half of 2022. In June, the explosive storage facility was completed, reported Nikkei Asia.

Increased radiation was detected in the vicinity alongside these developments. A new underground facility that could be used to launch nuclear missiles was found nearby. Time is not on Xi’s side. He is manoeuvring for a third term that will end in 2027. “Possibly (he) wants to discourage US intervention in the Taiwan Strait by threatening to use small nuclear weapons,” Nobumasa Akiyama, a professor at Hitotsubashi University who studies East Asian security, told Nikkei. If there is an emergency in the Taiwan Strait, maritime control will of course be the key issue. Small nuclear weapons with limited strike capabilities could enable China to hold US

aircraft carriers at bay. Although President Joe Biden has advocated a “nuclear-free world,” the US conducted subcritical nuclear tests without reaching a critical mass in June and September 2021. By holding more than a quarter of the world’s nuclear warheads, the US continues to compete head-on with China and Russia on nuclear weapons.

<https://theprint.in/world/china-builds-new-nuclear-test-site-in-xinjiang-uyghur-autonomous-region/1066301/>



Tue, 02 Aug 2022

Why the Chinese Spy Ship Yuan Wang 5 that is Set to Dock in Sri Lanka has Sparked Concerns in India

A Chinese spy ship is advancing toward Sri Lanka as we speak at a speed of 19 knots (approximately 35 kilometres per hour). The state of the art research vessel Yuan Wang 5 is planning to dock at Sri Lanka’s Hambantota port on August 11 as per ship tracking websites. According to Reuters, a Sri Lankan consulting firm, the Belt & Road Initiative Sri Lanka, said on its website that the Yuan Wang 5 would be in Hambantota for a week. The objective is ostensibly to “conduct space tracking, satellite control and research tracking in the northwestern part of the Indian Ocean region through August and September”.

But India thinks otherwise. It is worth noting that the vessel, which is among China’s most advanced ships, has an aerial reach that surpasses 750 km. This would bring into its radar the nuclear power plants at Kalapakkam and Koodankulam as well as the atomic research centre, raising fears of potential snooping. India fears that with its strategic location at Hambantota, which is also close to international shipping lanes, the Chinese ship will gain access to Southern Indian ports in the states of Kerala, Tamil Nadu and Andhra Pradesh. Vital installations along the coast could be vulnerable to Chinese surveillance.

What does this mean for India-Sri Lanka relations?

New Delhi traditionally wields influence across the Indian Ocean region and the docking of the Yuan Wang 5 at the Chinese-built and leased Hambantota has sparked fresh tensions between India and China. Already relations between the two nations have been frosty since the clashes between its military in Galwan in 2020 that triggered a protracted and yet-unresolved territorial dispute. China’s inroads into the waters here as it tries to lay a ‘string of pearls’ from Myanmar to eastern Africa to protect its trade interests has directly challenged India’s powers. There are fears that the ports and other infrastructure that China has built along the string of pearls could also be used as military bases. Many of these China-funded ‘assets’ became debt traps – Hambantota is one such example. The port was leased to China Merchant Port Holdings, after Sri Lanka was unable to keep its loan repayment commitments.

China’s foreign ministry told Reuters in a statement that: “China hopes that the relevant parties will view and report on China’s marine scientific research activities correctly and refrain from interfering with normal and legitimate maritime activities.” Yet, India has lodged a protest

with Sri Lanka, the crisis-hit country that India is helping financially to tide over the economic disaster. India has extended \$4 billion in financial assistance to the country this year alone with more aid and credit lines under discussion. Sri Lanka has also sought assistance from China, which is helping in debt restructuring so that the country can access IMF aid.

Sri Lanka appears to be caught between a wall and a hard place in managing its ties with both nations and neighbours that it depends on in a time of crisis. Meanwhile, the Ranil Wickremesinghe administration has laid blame at the feet of the previous government, claiming they gave the nod for the spy ship to dock in Sri Lanka. This is not the first time, and possibly not the last, that there has been turbulence in the Indian Ocean due to Chinese vessels' port call at Sri Lanka. In 2014 too, India's relations had strained with its southern neighbour after it permitted China's submarine Changzheng 2 and warship Chang Xing Dao to drop anchor at Colombo. India sees Sri Lanka's move as a violation of agreements that say that the two countries will not allow their respective territories to be used for activities prejudicial to each other's unity, integrity and security. While the Rajapaksas are generally blamed for welcoming China, current President Wickremesinghe is known for leasing the Hambantota port to China for 99 years.

What is China's take on the matter?

China's mouthpiece Global Times dismissed the "fuss" over its vessel docking at Hambantota claiming that this would be a regular port that was already permitted by the Sri Lankan Defence forces. Tian Shichen, founder of the Global Governance Institution and director of the International Center for the Law of Military Operations, told the Global Times that the Yuan Wang 5 was not a military ship but a research vessel. "Even if it is a military vessel, it is normal if the call complies with the relevant laws of the country hosting the port," he said. Chinese experts painted the port call as a service to Sri Lanka, which can earn 'some' foreign exchange by refuelling the vessel and helping it obtain supplies.

However, it is largely believed that, among other reasons, China's unproductive projects drove Sri Lanka into a debt trap and pushed it into the crisis that it is currently in. So, whatever aid China is extending to Sri Lanka by docking its research vessel at Hambantota is likely to serve its own interest. India meanwhile has been at the forefront of efforts to bail out Sri Lanka, and would remind the country of its role so far expecting that it would reciprocate by defending Indian interests. It remains to be seen how proactive India remains in sending assistance to Sri Lanka after the latest blip in relations.

<https://www.timesnownews.com/exclusive/why-the-chinese-spy-ship-yuan-wang-5-that-is-set-to-dock-in-sri-lanka-has-sparked-concerns-in-india-article-93294834>



Tue, 02 Aug 2022

China Objects to Indian Air Activities Near LAC, Hastens Road Development Before Winter Sets In

China has lately been raising objections over major air activities carried out by India near the Line of Actual Control (LAC), particularly in the eastern sector, two government officials familiar with the matter told News18. This includes routine helicopter sorties for transportation of men and equipment for construction works as well as drone operations conducted within the Indian side of the LAC in the past few weeks, an official said. The objections were discussed between local commanders of the two sides. The development comes at the heels of India detecting a Chinese aircraft flying close to the LAC in eastern Ladakh in June this year. Subsequently, as reported by News18, one of the discussion points in the 16th round of military talks between India and China was to keep each other informed of any air activity that either side may plan.

What also makes this development critical is that it comes amid the ongoing military stand-off with China in eastern Ladakh, with the last few rounds of military talks between the two countries making little progress, thus giving way to lingering tensions at the LAC. Moreover, past records show that most incursion attempts by China have taken place during these months, just before the onset of winters. As first reported by News18, in September-October last year, India foiled an incursion attempt by Chinese troops at the Tawang sector in Arunachal Pradesh.

Concerns Over Large-Scale Infra Development

With the winters about to set in within the next few months, India and China have both upped the pace of their infrastructure development work. The sources quoted above said this especially holds true for approach roads to the LAC. “China has been constructing roads near the LAC at a breakneck speed. India has also been building roads and other critical infrastructure near the LAC,” a government official told News18. Aside from the many connecting and approaching roads, China has also been working on strategic highway projects for the long term.

Last month, a South China Morning Post report said that Beijing is planning to construct a new highway that will run through the disputed Aksai Chin area. The G695 highway will connect Lhunzecounty in Tibet to Mazha in Xinjiang, and run north of the LAC. Sources said India has raised concerns over China’s development of infrastructure close to the disputed LAC in the last several rounds of military talks.

A Mystery

However, China’s ‘Xiaokang’ border defence villages continue to remain unoccupied for over a year after they were constructed. China has been building 628 such “well-off” villages along India’s borders with the Tibet Autonomous Region’s periphery, including along Ladakh and Arunachal Pradesh. The exact purpose of the spacious buildings is not known, though India is concerned that they could be put to dual — civil and military — use. India has taken up three

border villages at Arunachal Pradesh alone — at Kibithoo, Kaho and Musai — to develop them as model villages as a pilot project. However, full fledged work is yet to start on it.

<https://www.news18.com/news/india/china-objects-to-indian-air-activities-near-lac-hastens-road-development-before-winter-sets-in-5669473.html>

THE ECONOMIC TIMES

Tue, 02 Aug 2022

Russia's New Maritime Doctrine Puts India at Centre Stage of its Indian Ocean Region Strategy

By Dipanjan Roy Chaudhury

Russia has released its new maritime doctrine, which has put India at the centre stage of its Indian Ocean Region (IOR) strategy that involves jointly exploring off shore hydrocarbons and laying underwater pipelines. The doctrine released by Russian President Vladimir Putin on Sunday on the occasion of the country's Navy Day outlines expansion of shipping lines in the IOR as well as interest for joint collaboration for exploring offshore hydrocarbon deposits and putting underwater pipelines. The doctrine has put collaboration with India at the centre stage of Russia's Indian Ocean strategy. Russia's priority was to develop strategic and naval cooperation with India as well as wider cooperation with Iran, Iraq, Saudi Arabia and other states in the region, according to the doctrine. The strategy eyes expansion of Russian naval presence in the IOR to fight piracy and maintain stability. The Russian Navy has a decades-old partnership with its Indian counterpart and the two sides plan to conclude a 'logistics service agreement'.

The strategy also includes marine scientific research in the IOR. It may be recalled that Russia is eyeing a naval base in Sudan for its outreach in the Indian Ocean Region. Speaking on Russia's Navy Day in St Petersburg, founded by Peter the Great, Putin lauded the monarch for making Russia a great sea power and increasing the global standing of the Russian state. Putin's address did not mention the conflict in Ukraine, but the military doctrine envisages a "comprehensive strengthening of Russia's geopolitical position" in the Black and Azov seas. On the occasion, Putin signed a new 55-page naval doctrine, which sets out the broad strategic aims of Russia's navy, including its ambitions as a "great maritime power", which extend over the entire world. The doctrine also focuses on the Arctic Ocean. Russia's 37,650-km coastline, which stretches from the Sea of Japan to the White Sea, also includes the Black Sea and the Caspian Sea.

<https://economictimes.indiatimes.com/news/defence/russias-new-maritime-doctrine-puts-india-at-centre-stage-of-its-indian-ocean-region-strategy/articleshow/93306596.cms?from=mdr>

Tue, 02 Aug 2022

Russia Ready to Create Naval Bases in India

The doctrine states that the US course for dominance in the oceans is the main challenge to the national security of the Russian Federation. The doctrine defines the zones of "vital interests" where military methods can be used when diplomatic methods can no longer be helpful. These zones "are directly related to the development of the state, the protection of its sovereignty, territorial integrity and the strengthening of defence, and critically affect the socio-economic development of the country." India is the most relevant and useful country for maritime and military cooperation due to its membership in the BRICS, SCO and interests in the Arctic. After February 24, India became Russia's main geopolitical partner. The two countries have been moving closer both politically and economically. According to Indian statistics, the trade turnover between the two countries amounted to 6.4 billion US dollars from January to April 2022. This is almost twice as much as in the same period last year. India buys sanctioned Russian hydrocarbons and businesses left by Western companies.

Russia's New Naval Doctrine Names Countries of Priority Naval Cooperation

The doctrine notes the lack of a sufficient number of naval bases outside the Russian Federation, which is a risk to Russia's security, and proposes the creation of logistic support points for the Russian Navy

in Asia Pacific

in "a number of countries in the Mediterranean region",

in the Red Sea

and the Indian Ocean

Russia also plans to expand cooperation with Iran, Iraq and Saudi Arabia and develop naval cooperation with India. All of the above-mentioned countries refrain from accusing the Russian Federation in connection with the special operation in Ukraine.

India is Russia's Main Partner

In late 2021, at the summit in New Delhi, military agreements were signed, including on the supply of S-400 systems. In addition, Russia and India hold joint military exercises. The key Reciprocal Exchange of Logistics Agreement (RELOS) has long been developed and is to be signed soon. In accordance with this document, Russia and India may use military logistics facilities while visiting each other's ports, bases and military facilities. India openly called for support for the Russian vision of the development of the material production system and is interested in the development of the Arctic. India's interests in the Arctic region have been growing lately, partly to counterbalance China's ambition. In the near future, New Delhi intends to invest, in particular, in the exploration of Russian oil, gas and other rare earth minerals. The support of the Russian Federation in the field of strategic security is required for their protection. Currently, India has neither port facilities nor naval bases in the Arctic. An agreement such as RELOS will enable the Indian Navy to have greater operational coverage in this region,

and Russia will be able to expand its influence in the Indian Ocean — a zone of direct US interests.

<http://www.indiandefensenews.in/2022/08/russia-ready-to-create-naval-bases-in.html>

DefenseNews

Tue, 02 Aug 2022

Iron Dome Intercepts Targets, Works with US Systems in Army Test

By Seth J. Frantzman

The U.S. Army has completed an interceptor test of the Iron Dome air defense system, the second event of its kind since two batteries were supplied to the service at the end of 2020. The newly revealed test at White Sands Missile Range, New Mexico, which took place in mid-June, was carried out in conjunction with the Israel Missile Defense Organization, according to a statement from the Israeli Defense Ministry. Moshe Patel, the director of the organization, said that during the test, “the system intercepted all the threats, while being interoperable with U.S. systems.” The ministry noted the test “took a critical step toward fielding the first of two Iron Dome Defense System-Army (IDDS-A) batteries.”

“As part of the U.S. Army’s operational training, American troops operated the system, which functioned with optimal effectiveness against a variety of threats and intercepted targets from different ranges,” said Pini Yungman, an executive vice president and head of Rafael Advanced Defense Systems’ air and missile defense unit. The Israeli company helps manufacture Iron Dome. Statements from the Defense Ministry and Rafael both noted that testing “prepares the system for U.S. operational forces’ use by ensuring it meets U.S. Army safety standards and that the system will effectively operate within the U.S. AMD [air and missile defense] architecture.”

According to the statements, the U.S. Army plans to field the two Iron Dome Defense System-Army batteries as an interim cruise missile defense solution. The service has deployed one Iron Dome system to Guam since the fall of 2021. “It’s important to understand that implementation for the U.S. is about the ability to integrate this system into our air defense picture,” said Maj. Gen. Brian Gibson, director of the U.S. Army’s Air and Missile Defense Cross-Functional Team, said following the test. “We need to integrate this into our U.S. architecture, and to give confidence to our regional commanders that we can integrate this system safely into what they have.” Iron Dome is designed for use at fixed and semi-fixed locations to defend against “subsonic Cruise Missiles (CM), Groups 2 and 3 Unmanned Aircraft Systems (UAS), and rockets, artillery, and mortar threats,” the statement added, referring to a system by which drones are categorized by weight.

The test comes two weeks after the U.S. Marine Corps carried out a successful test of the Iron Dome’s Tamir missile at the same range. Rafael in the early 2000s developed Iron Dome, which uses radar from Israel Aerospace Industries subsidiary Elta Systems. In the U.S., Rafael partners with Raytheon Technologies to produce the system. “Future variants of the IFPC [Indirect Fire Protection Capability] program include technology insertions such as directed energy,” the recent

Israeli statements said. The addition of directed-energy — or laser — technology to the Iron Dome system was shown to U.S. President Joe Biden when he visited Israel. Iron Dome has been active for more than a decade with the Israel Defense Forces. It was initially used against short-range rocket threats from the Gaza Strip, but it has since received upgrades to confront numerous types of emerging threats. In May 2021, it was publicly revealed to have intercepted a drone for the first time during combat. The Israel Missile Defense Organization, a division of the Defense Ministry's Directorate of Defense Research and Development, leads the development of Israel's multitiered air defense systems, including Iron Dome, David's Sling and Arrow. The U.S. Congress has supported all three systems. The IMDO partners with the U.S. Missile Defense Agency on systems such as Arrow-4.

<https://www.defensenews.com/land/2022/08/02/us-army-completes-second-iron-dome-interceptor-test/>



Tue, 02 Aug 2022

Sri Lanka Says Chinese Military Survey Ship will Port Only to Refuel

By Uditha Jayasinghe

A Chinese military survey ship will visit a strategic port in crisis-hit Sri Lanka later this month only to refuel, a cabinet spokesman said on Tuesday, after neighbouring India raised concerns over the vessel's journey to the Indian Ocean island. Shipping data from Refinitiv Eikon showed the research and survey vessel Yuan Wang 5 was en route to Sri Lanka's Hambantota, a \$1.5 billion Chinese-built port that India worries could be used as a military facility. COLOMBO, Aug 2 (Reuters) - A Chinese military survey ship will visit a strategic port in crisis-hit Sri Lanka later this month only to refuel, a cabinet spokesman said on Tuesday, after neighbouring India raised concerns over the vessel's journey to the Indian Ocean island. Shipping data from Refinitiv Eikon showed the research and survey vessel Yuan Wang 5 was en route to Sri Lanka's Hambantota, a \$1.5 billion Chinese-built port that India worries could be used as a military facility.

"It is coming to refuel and not for any other purpose," cabinet spokesman Bandula Gunawardana told reporters, adding that the foreign minister had briefed Sri Lanka's new President Ranil Wickremesinghe on the matter. "President told Cabinet that diplomatic efforts will be made to work with both countries so as not to create any issues," Gunawardana said. China last week said it hoped "relevant parties" would refrain from interfering with its legitimate maritime activities. India, which has spent billions in recent months to keep Sri Lanka afloat amid its worst economic crisis in seven decades, said it was monitoring the planned visit of the Chinese ship. Diplomatic relations between India and China have been strained since 2020 after clashes between troops along a remote Himalayan border. At least 20 Indian and four Chinese soldiers were killed in the fighting, which led to a massive build-up of troops on both sides.

Foreign security analysts describe the Yuan Wang 5 as one of China's latest space-tracking ships, used to monitor satellite, rocket and intercontinental ballistic missile launches. The Pentagon's annual report on China's military modernisation says the Yuan Wang ships are operated by the Strategic Support Force of the People's Liberation Army.

<https://www.reuters.com/world/asia-pacific/sri-lanka-says-chinese-military-survey-ship-will-port-only-refuel-2022-08-02/>

Science & Technology News



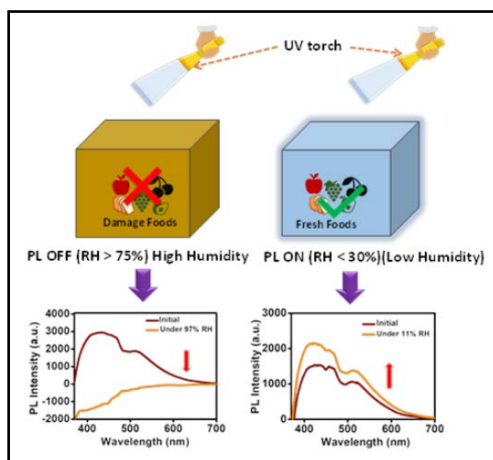
Press Information Bureau
Government of India

Ministry of Science & Technology

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Biodegradable Biopolymer Nanocomposite that Detects Relative Humidity can Monitor Packed Food Freshness

A newly developed biodegradable, biopolymer nanocomposite which can detect relative humidity can find application as smart packaging materials, especially for the food industry. The food industry has an increasing need for non-toxic, biodegradable, low-cost, and environmentally friendly material for use as packaging material to replace petroleum-based material like plastics. Besides, it also needs smart and active packaging materials to detect and report food quality in a real-time fashion. Such smart and active packaging systems respond to signals while interacting with the food packaging environment. Perishable packed foods are easily damaged by the change in relative humidity.



Scientists from the Institute of Advanced Study in Science and Technology (IASST), an autonomous institute of the Department of Science and Technology led by Prof.

DevasishChowdhury, Professor in the Physical Sciences Division, and his INSPIRE Senior Research Fellow (SRF) student Mr. SazzadurRahman have developed a smart biodegradable biopolymer nanocomposite which can detect relative humidity. In this, two biopolymers, Guar Gum (a variety of beans obtained from plant) and Alginate (obtained from brown algae), were blended with carbon dots (nanomaterial) to make a nanocomposite film that was successfully used to detect relative humidity. The fabricated nanocomposite film was an excellent smart sensor based on the fluorescence 'on-off' mechanisms against humidity. Their research has been published in the International Journal of Biological Macromolecules.

The nanocomposite film shows change in fluorescence in presence of high humidity. Hence, the fabricated nanocomposite film can monitor the packed food freshness using just a UV light source. "Smart and active packaging can help consumers select a fresh product without breaking the pack. Such innovative packaging boosts sales and reduces consumers' time to identify fresh food products," said Prof. Chowdhury.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1847403>



Tue, 02 Aug 2022

Developing a New Approach for Building Quantum Computers

By Wayne Lewis

Quantum computing, though still in its early days, has the potential to dramatically increase processing power by harnessing the strange behavior of particles at the smallest scales. Some research groups have already reported performing calculations that would take a traditional supercomputer thousands of years. In the long term, quantum computers could provide unbreakable encryption and simulations of nature beyond today's capabilities. A UCLA-led interdisciplinary research team including collaborators at Harvard University has now developed a fundamentally new strategy for building these computers. While the current state of the art employs circuits, semiconductors and other tools of electrical engineering, the team has produced a game plan based in chemists' ability to custom-design atomic building blocks that control the properties of larger molecular structures when they're put together.

The findings, published last week in Nature Chemistry, could ultimately lead to a leap in quantum processing power. "The idea is, instead of building a quantum computer, to let chemistry build it for us," said Eric Hudson, UCLA's David S. Saxon Presidential Professor of Physics and corresponding author of the study. "All of us are still learning the rules for this type of quantum technology, so this work is very sci-fi right now." The basic units of information in traditional computing are bits, which are each limited to one of only two values. In contrast, a group of quantum bits—or qubits—can have a vastly wider range of values, exponentially increasing a computer's processing power. More than 1,000 normal bits are required to represent just 10 qubits, while 20 qubits require more than 1 million bits.

That characteristic, at the heart of quantum computing's transformational potential, depends on the counterintuitive rules that apply when atoms interact. For instance, when two particles interact, they can become linked, or entangled, so that measuring the properties of one determines the properties of the other. Entangling qubits is a requirement of quantum computing. However, this entanglement is fragile. When qubits encounter subtle variations in their environments, they lose their "quantumness," which is needed to implement quantum algorithms. This limits the most powerful quantum computers to fewer than 100 qubits, and keeping these qubits in a quantum state requires large pieces of machinery.

To apply quantum computing practically, engineers must scale up that processing power. Hudson and his colleagues believe they have made a first step with the study, where theory guided the team to tailor-make molecules that protect quantum behavior. The scientists developed small molecules that include calcium and oxygen atoms and act as qubits. These calcium-oxygen structures form what chemists call a functional group, meaning that it can be plugged into almost any other molecule while also conferring its own properties to that molecule. The team showed that their functional groups maintained their desired structure even when attached to much larger molecules. Their qubits can also stand up to laser cooling, a key requirement for quantum computing.

"If we can bond a quantum functional group to a surface or some long molecule, we might be able to control more qubits," Hudson said. "It should also be cheaper to scale up, because an atom is one of the cheapest things in the universe. You can make as many as you want."

In addition to its potential for next-generation computing, the quantum functional group could be a boon for basic discovery in chemistry and the life sciences, for instance by helping scientists uncover more about the structure and function of various molecules and chemicals in the human body. "Qubits can also be exquisitely sensitive tools for measurement," said study co-author Justin Caram, a UCLA assistant professor of chemistry and biochemistry. "If we could protect them so they can survive in complex environments such as biological systems, we would be armed with so much new information about our world."

Hudson said that the development of a chemically based quantum computer could realistically take decades and is not certain to succeed. Future steps include anchoring qubits to larger molecules, coaxing tethered qubits to interact as processors without unwanted signaling, and entangling them so that they work as a system. The project was seeded by a Department of Energy grant that gave the physicists and chemists the chance to cut through discipline-specific jargon and speak in a common scientific language. Caram also credits UCLA's atmosphere of easy collaboration. "This is one of the most intellectually fulfilling projects I've ever worked on," he said. "Eric and I first met having lunch at the Faculty Center. This was born out of fun conversations and being open to talking to new people."

More information: Guo-Zhu Zhu et al, Functionalizing aromatic compounds with optical cycling centres, *Nature Chemistry* (2022). [DOI: 10.1038/s41557-022-00998-x](https://doi.org/10.1038/s41557-022-00998-x)

<https://phys.org/news/2022-08-approach-quantum.html>

Andhra Pradesh: SRM-AP to Host National Meet of Indian Academy of Sciences

By P. Samuel Jonathan

AP will host the 88th Annual National Conference of the prestigious Indian Academy of Sciences from November 4, 2022. The first annual meeting of the Indian Academy of Sciences, Bangalore, was held in 1934 under the chairmanship of Nobel Laureate Sir C.V. Raman. The primary purpose of the conference, which is counted among the most prestigious conferences organised in the country, is to invite scientists from all over the country and abroad, on to a single platform for developing scientific and technological knowledge with their suggestions and to convey the outcome to budding scientists in the country. In a special meeting held at the university on Tuesday, Pro-Vice Chancellor D. Narayana Rao said that over 300 reputed scientists and experts in science and technology will be attending the conference.

There will be lectures and discussions by eminent scientists on emerging and frontline areas of science and technology, he added. As part of the conference, there will be panel discussions, lectures by fellows, and an illustrious defence missile exhibition. The Indian Space Research Organisation (ISRO) and Defence Research and Development Organisation (DRDO) are collaborating for the exhibition to cater to rural students. A national-level science exhibition would be held for students and the winners will be rewarded with cash prizes, Prof. Narayana Rao said.

<https://www.thehindu.com/news/national/andhra-pradesh/srm-ap-to-host-indian-academy-of-sciences-national-conference/article65716876.ece>

