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2022

समाचार पत्रों से चयित अंश Newspapers Clippings

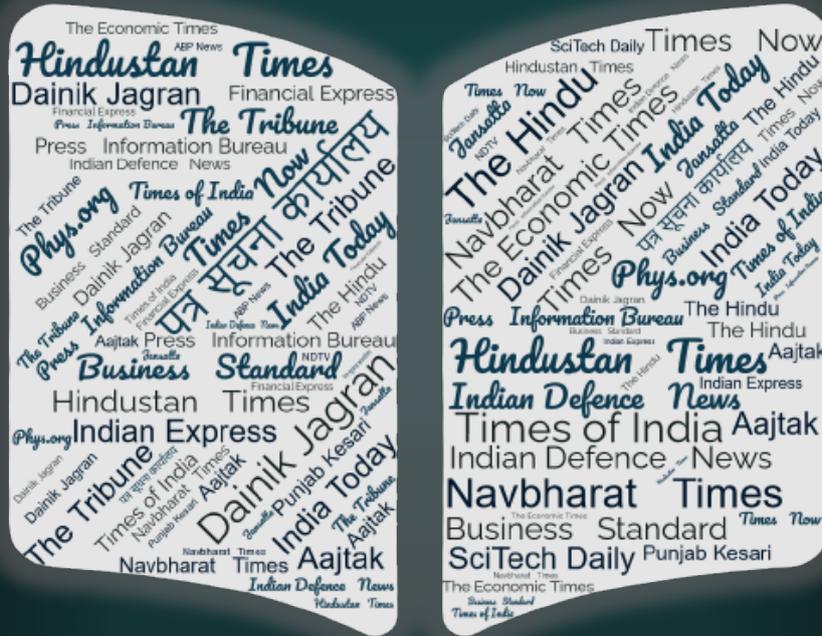
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Technologies, Defence Technologies, Defence Policies,
International Relations and Science & Technology

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DRDO on Twitter



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participated in Humanitarian Assistance and Disaster Relief (HADR) exercise - SAMANVAY 2022 exhibition held on 29-30 Nov 2022 in Agra. Products & technologies related to disaster relief management were displayed by various DRDO labs. [@DefenceMinIndia](#)



 A. Bharat Bhushan Babu

7:33 PM · Nov 30, 2022



**Press Information Bureau
Government of India**

Ministry of Defence

Joint HADR Exercise 'Samanvay 2022' Culminates at Air Force Station Agra

The Annual Joint HADR Exercise 'Samanvay 2022' was conducted by the IAF at Air Force Station, Agra from 28 November 2022 to 30 November 2022. Various stakeholders from the country and representatives from ASEAN member countries participated in the exercise. Hon'ble Raksha Mantri, Shri Rajnath Singh was the chief guest on the second day of the Multi Agency Exercise dedicated to Capability Demonstration. In his address, Hon'ble Raksha Mantri emphasized the need for collaborative HADR management at national and regional levels to improve interoperability and provide faster response to crisis situations. He advocated the necessity of speed, scale and solidarity in the disaster response mechanism to save valuable lives and property. While thanking the participants of ASEAN countries, he brought out that the focus of India has now shifted from a 'relief-centric' to a 'multi-pronged' approach to crises encompassing prevention, mitigation, preparedness, response, relief and rehabilitation. He commended the role played by all stakeholders in the domain of HADR and underlined the effectiveness of the Armed Forces as 'First Responders' in crisis situations.

Samanvay 2022 tested the efficacy of all available HADR resources. It emerged as a significant step towards achieving synergy between various stakeholders and facilitated exchange of knowledge, experience and best practices with the participants including those representing the ASEAN member countries.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1879984>

'Make-In-India' Success Story: India's Defence Exports Jump Over 6.5 Times Since 2014

While the DRDO has succeeded in producing an impressive arsenal of missiles capable of striking targets thousands of kilometres away, when it comes to weapons that directly affect the humble jawan, even manufacturing a decent rifle has proved to be a bridge too far. Despite almost constant conflict at the Line of Control (LoC) over the last seven decades and a host of insurgency movements across the nation, India is yet to develop a credible defence manufacturing industry. While the DRDO has succeeded in producing an impressive arsenal of missiles capable of striking targets thousands of kilometres away, when it comes to weapons that directly affect the humble jawan, even manufacturing a decent rifle has proved to be a bridge too far. However, with the Indian government led by Prime Minister Narendra Modi aggressively promoting 'Atmanirbhar Bharat' through the Make in India policy, that sorry record may change in the near future. The increased involvement of the private sector in defence manufacturing has contributed towards a substantial growth in India's defence exports. From a measly Rs. 1,940.64 crore in 2014-2015 to Rs. 12,814.54 crore in the last fiscal, Indian defence export has witnessed a big leap. Defence exports are expected to cross Rs. 15000 crore in the current fiscal. Srikar K. Reddy, Joint Secretary, Department of Commerce, Government of India has painted an even rosier picture of

India's defence manufacturing industry.

Addressing the 2nd edition of India MSME Defence Week on Tuesday, he stated that India is likely export defence equipment worth an estimated Rs 17,000 crores during the 2022-23 financial year. "Several factors like rising demand, greater innovation, more conducive policies and a maturing ecosystem in defence and aerospace manufacturing space are leading to the growth in the sector," he said in a statement. "It is not only the government but now even the MSMEs have realized their role as an untapped force multiplier for the defence sector. To put that in perspective, the total MSME vendors scattered across the country supplying to the Defence Public Sector Units (DPSUs) were 7,591 in FY18, 8,643 in FY19, and 10,506 till Q2 FY20. By December 2021, the total MSME count had increased to 12,000," he added.

He also noted that the ban imposed by the Indian government on a host of weapons and defence systems has helped boost the domestic defence industry. "India has imposed a phased import ban on 310 different weapons and systems during the last two years, which helped boost export," he said. One of the showcase weapons imported by India is the formidable Brahmos missile, which has been purchased by Philippines, which like India, has a territorial dispute with China. Another Indian defence product that may emerge as a big-ticket export item is the Tejas Light Combat Aircraft (LCA).

The US, Australia, Indonesia and the Philippines are among six countries, which have shown interest in India's Tejas aircraft while Malaysia has already shortlisted the jet under its acquisition programme, the government said on Friday. The other two countries that have

evinced interest in the aircraft are Argentina and Egypt, according to Minister of State for Defence Ajay Bhatt. Tejas, manufactured by Hindustan Aeronautics Ltd (HAL), is a single-engine multi-role fighter aircraft capable of operating in high-threat air environments. In February last year, the defence ministry sealed a Rs 48,000 crore deal with HAL for the procurement of 83 Tejas light combat aircraft for the Indian Air Force (IAF). Other defence items exported by India include protective gear, naval patrol vessels, helicopters, SU avionics, radios and coastal surveillance systems, Kavach MoD II launchers, spares for radars, electronic systems and light engineering mechanical parts.

<https://www.firstpost.com/india/make-in-india-sucsess-story-indias-defence-exports-jump-over-6-5-times-since-2014-11724431.html>



Wed, 30 Nov 2022

Integration of Aircraft with INS Vikrant Likely by May-June Next Year: Navy Chief

Chief of Naval Staff Admiral R. Hari Kumar on Wednesday said the integration of aircraft with the newly commissioned aircraft carrier INS Vikrant is likely to be accomplished by May or June next year. The sea-going trials are already over after which the carrier was commissioned. Now, the aircraft integration trials have been started, he told reporters after reviewing the Passing Out Parade of the 143rd course of the National Defence Academy (NDA) at Khadakwasla in Maharashtra's Pune district. The first thing we need to check is about the aircraft landing system. Those trials are going on currently. Normally, the integration of the aircraft takes anytime between six to eight months from the commissioning of the aircraft. We hope to accomplish it by May or June before the monsoon," he said. On the induction of the first batch of women cadets in the NDA, he said, "Our forces are gender neutral. Women are already doing combat services. There are women officers in the forces including Navy." The Navy has started inducting women sailors as well which is a landmark achievement, he said.

"This year, we had 3,000 vacancies for sailors for which we received 10 lakh applications including 82,000 from women," the Navy chief said. Asked about the Navy's modernisation plan, Admiral Kumar said, "The Indian Navy is on a modernisation programme. Our first small ship was commissioned indigenously in 1960. Since then, we are building ships bigger and bigger. After this, we started building destroyers, culminators and aircraft carriers. Incidentally, the (latest) aircraft carrier is 76 per cent indigenous, so it's a great achievement for the nation." In the last seven years, 29 ships and submarines built in India have been commissioned, he said. "We have 45 ships under construction out of which 43 are built in India. We are processing the acceptance of necessity for another 49 ships. Thus, there's much focus on the modernisation plan and the government is supporting us. The work is in progress as expected," he added. Asked about the budget for the Indian Navy, he said, "There's no problem of budget. There is adequate budgetary support from the government to support all the programmes which we are taking forward."

<https://www.thehindu.com/news/national/integration-of-aircraft-with-ins-vikrant-likely-by-may-june-next-year-navy-chief/article66204249.ece>

Business Standard

Wed, 30 Nov 2022

PTC Industries Gains on Signing MoU with Safran Aircraft Engine

PTC Industries rose 2.76% to Rs 2865.25 after the company announced that it has signed Memorandum of Understanding (MoU) with Safran Aircraft Engines (SAE) to bridge defence and civil aerospace sectors requirements. Safran Aircraft Engines is engaged in design, development, manufacturing, and maintenance of civil and military aircraft engines as well as other aerospace and defence-related equipment. PTC Industries signed MoU to explore opportunities for strategic business cooperation, to leverage the complementary talents, technologies and capabilities of both Parties, to support the development of a robust domestic defence, civil aerospace ecosystem and supply chain in India, consistent with the goals of the Government of India's 'Make in India' initiative. As part of the MoU two organisations will manufactured and supply titanium and super alloy castings and components through its wholly owned subsidiary, Aerolloy Technologies for LEAP engines, civil aircraft engine applications and M88 engines for military aircraft engine applications. They will also explore manufacturing and supply of Titanium and Super Alloy castings and components by PTC (through its wholly owned subsidiary, Aerolloy Technologies) for the M88 engines, for military aircraft engine applications. Further, both the organisations will mull any other business opportunities that may be mutually agreed upon, potentially in the field of military and/or civil aircraft engines.

The company said that aircraft engine market is expected to grow from \$54.7 billion in 2022 to \$112.6 billion in 2029 at a CAGR of approximately 11%. India is expected to have demand for over 2,200 civil aircraft in the next two decades. PTC and SAE have also agreed on a first potential scope of cooperation which will be focused on the manufacturing and supply of Titanium and Super Alloy castings and components for the LEAP engine program. Speaking on the partnership, Sachin Agarwal, chairman, and managing director, PTC Industries said: This collaboration with Safran AE represents an opportunity for advancement of the nation's core manufacturing capabilities and technologies along with PTC's growing role in indigenous production of critical aerospace components for applications in both military and civil aviation. Given the predicted global increase in requirement for aircraft engines, both for civil and military applications, there would be a proportional increase in demand for Titanium and Super Alloy cast components and the existing supply chain would be inadequate to be able to service this growth.

Further, the demand for military aircraft and helicopter engines in India would also have the same requirement and PTC Industries is the only company in the country having the requisite technology, know-how, and infrastructure to service the requirements for critical cast components for these applications. PTC Industries Limited is a manufacturer of high-quality engineering components for various critical and super-critical applications. It manufactures products for a wide spectrum of industrial applications including that for Oil and Gas and Liquefied Natural Gas (LNG), Offshore and Marine, Valves and Flow Control, Power Plants and turbines, Pulp and Paper Machinery, and Mining and other Engineering and Capital Goods Industries.

https://www.business-standard.com/article/news-cm/ptc-industries-gains-on-signing-mou-with-safran-aircraft-engine-122113000637_1.html

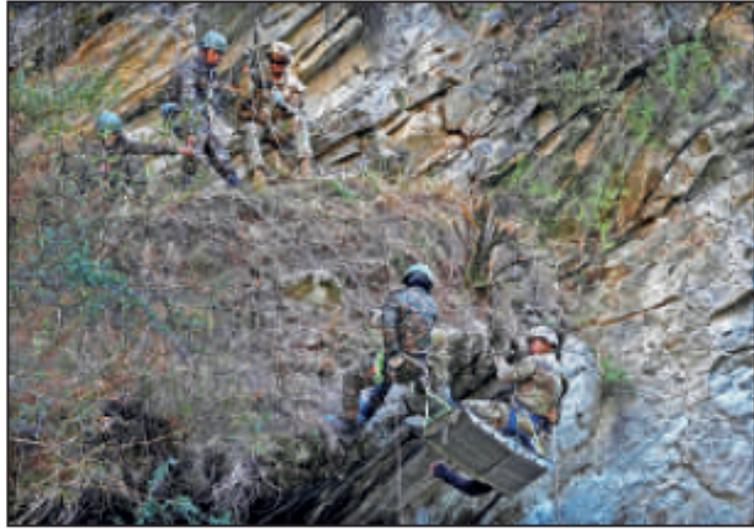
आपदा में कैसे बचाएं जान, एक-दूसरे से सीख रहे भारतीय-अमेरिकी जवान

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NBT

■ औली (उत्तराखंड): केदारनाथ की आपदा हो या फिर धौलीगंगा में बादल फटने के बाद मची तबाही... हर जगह भारतीय सेना के जवानों ने राहत और बचाव अभियानों को सफलता से अंजाम देकर लोगों की जान बचाई है। देश ही नहीं, मित्र देशों में भी आपदा के समय भारतीय सेना को मदद के लिए भेजा जाता है। आपदा के समय सेना इसलिए याद आती है कि अनजान जगहों/टेरिटरी में भी सफलतापूर्वक मिशन को पूरा करना सेना की खूबी है।

औली में चल रहे युद्धाभ्यास में भारतीय और अमेरिकी सैनिकों ने साझा अभ्यास के जरिए देखा कि कैसे आपदा पर तुरंत राहत और बचाव का काम किया जा सकता है। इस युद्धाभ्यास में सैनिकों ने पहले दो हफ्ते एक्सरसाइज की और फिर उस एक्सरसाइज के दौरान सीखी गई चीजों को परखा। इस परख के दौरान देखा कि आपदा आने पर सैनिक कितनी तेजी से काम करते हैं। इसके लिए भारत और अमेरिका के सैनिकों के सामने दो सिचुएशन रखी गईं। पहला, धौलीगंगा नदी में अचानक बाढ़ आ गई है। दूसरा, जोशीमठ से



उत्तराखंड के औली में बचाव के गुर सीखते जवान।

मलारी रोड का एक ब्रिज पूरी तरह से टूट गया है। सैनिकों से कहा गया कि वे फील्ड हॉस्पिटल बनाएं और घायलों को निकालकर तुरंत मेडिकल हेल्प दें। दोनों देशों के सैनिकों ने इस टास्क को पूरा करने के लिए 24 घंटे में फील्ड हॉस्पिटल बना लिया। पहाड़ी जगहों पर फील्ड हॉस्पिटल के लिए समतल जगह ढूंढना मुश्किल होता है। सैनिकों ने एक जगह पहचानी और फिर वहां फील्ड हॉस्पिटल बनाया। उसमें ICU से लेकर एक्सपट्स तक होते हैं। पहाड़ियों पर फंसे घायलों को निकालना चुनौती भरा टास्क होता है। इसके लिए दो सैनिकों ने स्ट्रैचर को रस्सी के साथ बांधा और

फिर रस्सी के सहारे ही पहाड़ी से नीचे घायल को सुरक्षित लेकर आए। ब्रिज और सड़कें टूट जाने की वजह से आगे जाने का रास्ता बंद है। ऐसे में सैनिकों ने जिप लाइन और टू-रोप ब्रिज बनाया। दरअसल पूरा हिमालयी इलाका भूकंप संभावित जोन में आता है। हिमालय रीजन कई आपदाएं देख चुका है। बादल फटना, हिमस्खलन, भूस्खलन, सड़कों का बहना, बहुत ज्यादा बर्फ, बहुत ज्यादा बारिश कहर बनकर टूटती है। ऐसे में दूरदराज के क्षेत्र बाकी दुनिया से पूरी तरह कट जाते हैं। ऐसे वक्त में वहां पर ऐसे लोगों की जरूरत होती है, जो सबसे पहले वहां पहुंच सकें।

Thu, 01 Dec 2022

Pak Drones Major Challenge: BSF DG

Border Security Force (BSF) Director General Pankaj Kumar Singh on Wednesday said the illegal activity of drones along the western front (Pakistan) remains a “major challenge” as the force “does not” have a fool-proof system to counter the menace. He, however, said the Government has sanctioned a fund of `30 crore to procure surveillance cameras, drones or unmanned aerial vehicles (UAVs) and other monitoring gadgets for the BSF deployed to guard Indian frontiers along Pakistan and Bangladesh even as it is deploying 5,500 security cameras in the front areas.

“we will find solutions in the times to come and we are increasingly detecting and killing the drones,” Singh said while addressing media on the eve of 58th Raising Day of BSF. “We have launched to enhance the surveillance in border areas on a very big scale. This entails use of surveillance cameras and drones on the western and eastern theatres (Pakistan and Bangladesh fronts respectively). We have got around 5,500 CCTV surveillance cameras and some other gadgets and the Union Home Ministry has sanctioned a `30 crore fund for this procurement,” he said. The BSF has also developed some “low-cost technology solutions” that help us to mount effective surveillance in the border areas. Similar tools provided by foreign vendors were found very costly and hence we have now developed locally low-cost sensors and surveillance devices, he said.

The DG said the troops were getting “more and more” efficient in detecting and shooting down drones that fly from across Pakistan into India. The BSF has shot down 16 drones along the Pakistan front this year, he said. According to the BSF, 114 drone sightings were made by its troops along the Pakistan front (both IB and LoC) last year while the numbers this year till November 10 have risen to almost double at 218. The BSF chief said ensuring robust cyber security was also a “major challenge” before security agencies like the BSF as he cited the recent example of the Ransomware attack on the servers of the AIIMS here.

“Now with 5G technology coming up, we need to be prepared to ensure that our systems are safe,” he said. The BSF secures the India-Pakistan international border running from Jammu to Punjab and further up to Rajasthan and Gujarat. It works under the operational command of the Army at the Line of Control. It also guards the frontiers with Bangladesh. Talking about instances of infiltration by terrorists from the Pakistan side into India, the DG said, “We will definitely not say that it is not possible (infiltration from Pak border) but we make all efforts to ensure that no terrorist can breach the border.”

<https://www.dailypioneer.com/2022/india/pak-drones-major-challenge--bsf-dg.html>

Govt Sanctioned Rs 30 cr Funds for 5.5K CCTVs, Surveillance Gadgets at PAK, Bangla Borders: BSF DG

The government has sanctioned a fund of Rs 30 crore to procure surveillance cameras, drones and other monitoring gadgets for the BSF deployed to guard Indian fronts along Pakistan and Bangladesh even as it is deploying 5,500 security cameras in the front areas, the chief of the paramilitary said Wednesday. Reiterating that the illegal activity of drones along the western front (Pakistan) remains a "major challenge" for them, BSF director general Pankaj Kumar Singh said at present the force "does not" have a fool-proof system or solution to counter the menace posed by unmanned aerial vehicles (UAVs).

"However, we will find solutions in the times to come and we are increasingly detecting and killing the drones," he said while interacting with reporters on the eve of the 58th Raising Day of the BSF. "We have tried to enhance the surveillance in border areas in a very very big way. This entails use of surveillance cameras and drones on the western and eastern theatres (Pakistan and Bangladesh fronts respectively)." "We have got around 5,500 CCTV surveillance cameras and some other gadgets and the Union home ministry has sanctioned a Rs 30 crore fund for this procurement," Singh said.

The BSF too has developed some "low-cost technology solutions" that helps us to mount effective surveillance in the border areas. Similar tools provided by foreign vendors were found very costly and hence we have now in-house developed low-cost sensors and surveillance devices, he said. The DG said the troops of his force were getting "more and more" efficient in detecting and shooting down drones that fly from across Pakistan into India. We shot down 16 drones along the Pakistan front this year as compared to one that was brought down in this region last year, he said.

According to the BSF, 114 drone sightings were made by its troops along the Pakistan front (both IB and LoC) last year while the numbers this year till November 10 have risen to almost double at 218. The BSF chief said ensuring robust cyber security was also a "major challenge" before security agencies like the BSF as he cited the recent example of the Ransomware attack on the servers of the AIIMS in Delhi. Now with 5G technology coming up, we need to be prepared to ensure that our systems are safe, he said.

The force has also "improved the defences" along the Line of Control (LoC) area in Kashmir, the DG said, informing that a total of 117 forward defence locations have been "reinforced" or strengthened by providing better housing infrastructure for the troops at those locations. The BSF independently guards the India-Pakistan international border running from Jammu to Punjab and further up to Rajasthan and Gujarat. It works under the operational command of the Army at the LoC.

Talking about instances of infiltration by terrorists from the Pakistan side into India, the DG said the force is undertaking all efforts to ensure that they cannot sneak in from its area of responsibility. "We will definitely not say that it is not possible (infiltration from Pak border) but we make all efforts to ensure that no terrorist can breach the border. We have undertaken a

number of initiatives in this context," the DG said. Talking about the drones menace, Singh said the force was now undertaking forensic study of the seized drones, shot while entering the border from Pakistan, and they were getting "wonderful information" from the chips inserted in them like its flight path, launch pad and destination and the duration of the flight etc.

"We are providing some very good monetary incentives to our troops who shoot down the drones even as we are coordinating with the state police forces to undertake patrolling in depth areas," he said. A senior officer of the force that the Punjab Police has provided as many as 300 police personnel to undertake deep patrols with the BSF in border areas of the state that are vulnerable from the angle of drugs and weapons smuggling from Pakistan. He said "largely", the drones captured by them are of Chinese origin. The DG said the security situation along the Bangladesh border was good but the issue of infiltration by people who come into India without documents remains.

There are continuous instances of smuggling of drugs and weapons along with some small items on this front but overall things have been good, he said. The use of lethal power (weapons) has been drastically down here (India-Bangladesh border) but the flip side is that the criminals know this and they take liberty by attacking our troops. However, the troops are authorised to use lethal weapons in such situations, he said. The government has sanctioned more non-lethal weapons to us for this front, the DG said. The top BSF commander said with the extension of BSF jurisdiction from 15 to 50 km, after an order issued by the Union government, the force has seen that it has been more successful in tackling border crimes and the rate of detecting these instances and apprehending criminals has "slightly gone up". The BSF was raised on December 1, 1965 and it is primarily tasked to guard international borders with Pakistan and Bangladesh. The force has about 2.65 lakh personnel in its ranks as part of 193 battalions and some other field formations.

<https://economictimes.indiatimes.com/news/defence/govt-sanctioned-rs-30-cr-funds-for-5-5k-cctvs-surveillance-gadgets-at-pak-bangla-borders-bsf-dg/articleshow/95890496.cms>



The Sentinel
of this land, for its people

Thu, 01 Dec 2022

French Defence Minister Proposes Fresh Counter-Terrorism Drive during Meeting with NSA Doval

India and one of its most trusted strategic partners, France have agreed to intensify counter-terrorism partnership as both countries work on expanding bilateral-regional cooperation, dealing with new threats, support India's defence industrialisation and self-reliance. In their meeting in New Delhi on Monday, French Defence Minister Sebastien Lecornu and National Security Adviser (NSA) Ajit Doval shared close assessments of major global and regional security issues and held a detailed discussion on close India-France cooperation in combating terrorism.

Lecornu continued from where Catherine Colonna - his colleague and Foreign Minister in the government led by Emmanuel Macron - left during her visit to the Indian capital in September. Colonna, who chose India as her first bilateral visit to Asia since assuming office in May, had

also called on NSA Doval, stressing France's continued commitment to the Indo-Pacific region as a resident power and partnership with India as a major pillar of its Indo-Pacific strategy. The minister not only supported India's stance that terrorism is one of the most serious challenges to global peace and security but also reaffirmed France's allegiance to persisting as India's foremost partner in its path towards strategic autonomy. It wasn't the first time that Paris was underscoring the importance of the mutual trust between France and India.

Indo-French partnership and both countries working together to strengthen multilateralism and defend a free and open Indo-Pacific based on the rule of law were also discussed extensively when NSA Doval chaired the annual Indo-French strategic dialogue in the French capital, last year. In New Delhi on Monday after visiting India's first indigenous aircraft carrier INS Vikrant in Kochi the day before, Lecornu also held the 4th India-France Annual Defence Dialogue with Defence Minister Rajnath Singh on a wide range of bilateral, regional, defence and defence industrial cooperation issues.

"During the dialogue, one of the key areas of discussion was defence industrial cooperation with a focus on 'Make in India'. Future collaborations and potential co-production opportunities were discussed. The Ministers agreed that the technical groups from both countries should meet early next year and take the key cooperation issues forward," said Defence Ministry said in a statement after the meeting. The two ministers also reviewed the ongoing military-to-military cooperation which has increased substantially in recent years.

"France is an old, faithful and reliable partner of India. Our cooperation is rich and multiple. This 4th defence dialogue between our two countries, which I chaired with Rajnath Singh, showed the convergence of our responses to common challenges in the Indo-Pacific," tweeted Lecornu. The French Defence Minister, in his meeting with External Affairs Minister S Jaishankar, conveyed France's full support for India's Presidency of the G20, which is beginning on December 1. Both ministers also discussed global issues of common concern and deepening the India-France strategic partnership as it nears its 25th anniversary in 2023. The deepening of cooperation between the two countries comes as Prime Minister Narendra Modi and French President Emmanuel Macron met on the sidelines of the G-20 Summit held in Bali, earlier this month.

<https://www.sentinelassam.com/national-news/french-defence-minister-proposes-fresh-counter-terrorism-drive-during-meeting-with-nsa-doval-625893>



Wed, 30 Nov 2022

Middle-East Countries could Soon Seal BrahMos Missile Deals

Countries from the Middle-east could soon be finalizing a deal with the Indian government to procure the country's first indigenous supersonic cruise missile – BrahMos. These nations initiated deliberations after they observed South Asian nations are in queue to buy this missile. Adding to it, these countries approached India to procure the missile witnessing changes in geo-political equation — where the US has refused to sell arms and ammunitions to various nations

in the region and Russia's ongoing war with Ukraine has changed the country to country alignments.

Financial Express Online has reported earlier about the discussions UAE was having regarding the BrahMos which are already in advanced stages. In fact this country was the first in the region to express interest in buying the BrahMos missile and has expressed interest in the indigenous Akaash missile. The discussions with Saudi Arabia too are in advanced stages. "The discussions had got delayed due to the COVID-19 pandemic, however, now the talks are back on track. It is expected that the deal could be sealed soon," a source said.

In fact when the former chief of Indian Army Gen MM Naravane had visited these countries, the export of BrahMos and other military platforms was on the agenda during his meetings with the top military leadership in these countries. The BrahMos Missiles is developed by BrahMos Aerospace Private Ltd– a joint venture between India and Russia. "These two countries are likely to ink the deal by the last quarter of this financial year," said sources, adding that more middle-east countries have expressed their interest in this indigenous missile.

Financial Express Online had reported earlier that both Saudi Arabia and the UAE had expressed interest in the BrahMos-NG air variant. This variant is expected to have a 300 kms range and is in various stages of development. India has already started delivering BrahMos missiles to the Asean country the Philippines. It has sealed the deal for the shore based anti-ship variant supersonic cruise missiles. And it became the first country where India exported the BrahMos missile which has been made under an Indo-Russian Joint Venture.

Talks are already in the advanced stages with Indonesia for the BrahMos supersonic cruise missile. The country is keen to buy these missiles and at the recently concluded Indo-Defence exhibition in Jakarta, the defence minister of that country had a long meeting with the CMD of BrahMos Aerospace. Indonesia is already operating Russian platforms like the Su-27 fighter jets and Kilo class submarines; therefore, it will not be a problem to fit the BrahMos missiles on board.

Other countries

There are other countries besides Indonesia, Malaysia, Singapore, and Vietnam which have expressed interest in this missile. Countries like Egypt too have expressed interest in this Indo-Russian missile which is being produced in India. South Africa, Brazil, among others too is interested in the BrahMos-NG version of the missile. These missiles are expected to be made at facilities located in the UP Defence Corridor.

<https://www.financialexpress.com/defence/middle-east-countries-could-soon-seal-brahmos-missile-deals/2897142>

China Warned American Officials Not to Interfere in Ties with India: Pentagon

China warned American officials not to interfere in Beijing's relations with New Delhi even as the Chinese side sought to prevent border tensions from prompting India to partner more closely with the US, a new Pentagon report has revealed. The China Military Power Report (CMPR) is an annual assessment by the US department of defense of challenges posed by the People's Liberation Army (PLA). The section on the India-China border in this year's report said the PLA sustained the deployment of forces and continued building up infrastructure along the Line of Actual Control (LAC) throughout 2021.

Since May 2020, India and China have been locked in a standoff in the Ladakh sector of the LAC that has taken bilateral relations to their lowest point in almost six decades. Twenty Indian soldiers and at least four Chinese troops were killed in a brutal clash at Galwan Valley in June 2020 and New Delhi has insisted that the overall relationship cannot be normalised till peace and tranquillity are restored in the border areas. "The PRC [People's Republic of China] seeks to prevent border tensions from causing India to partner more closely with the United States. PRC officials have warned U.S. officials to not interfere with the PRC's relationship with India," the report said, noting that India-China negotiations made "minimal progress as both sides resist losing perceived advantages on the border".

Following more than two dozen rounds of diplomatic and military talks, India and China withdrew their frontline troops from both banks of Pangong Lake, Gogra, and Hot Springs. However, they have not been unable to resolve the face-off at other friction points such as Depsang and Demchok. The report noted that throughout the standoff, "PRC officials sought to downplay the severity of the crisis, emphasizing Beijing's intent to preserve border stability and prevent the standoff from harming other areas of its bilateral relationship with India".

In recent months, Chinese officials have repeatedly said the standoff should be put in its "appropriate place" while the two sides take forward their ties in other areas such as trade, but such an approach has been roundly rejected by the Indian side.

In its brief assessment of the standoff on the LAC, the US report said that since May 2020, Chinese and Indian forces "faced off in clashes with rocks, batons, and clubs wrapped in barbed wire at multiple locations along the LAC". The standoff triggered the buildup of forces on both sides and each country demanded the withdrawal of the other's forces and a return to pre-standoff conditions, but "neither China nor India agreed on those conditions", it added. China "blamed the standoff on Indian infrastructure construction, which it perceived as encroaching on PRC territory", while India "accused China of launching aggressive incursions into India's territory".

Since the 2020 clash, the PLA has "maintained continuous force presence and continued infrastructure build up along the LAC". The incident in Galwan Valley was the "deadliest clash between the two nations in the past 46 years", the report said. The Pentagon said that because of the sustained military development along the LAC, the PLA Western Theater Command's

deployment will “likely continue through 2022”. The Western Theater Command is geographically the largest theatre command within China and is responsible for responding to conflict with India. PLA units within the Western Theater Command include 76th and 77th Group Armies and ground forces subordinate to Xinjiang and Xizang Military Districts, three air force bases, one transportation division, and one PLARF base.

Following the clash in Galwan Valley, the Western Theater Command conducted a “large-scale mobilization and deployment of PLA forces along the LAC” and Chinese leaders view the “PLA’s growing global presence as an essential part of the PRC’s international activities to create an international environment conducive to China’s national rejuvenation”, according to the report. The Chinese Communist Party has tasked the PLA to “develop the capability to project power outside China’s borders and immediate periphery” to secure China’s growing overseas interests and advance its foreign policy goals, the report added.

At the same time, China is “focusing efforts to develop security relationships with key countries along its periphery”, including through new cooperative security partnerships and the expansion of PLA’s global military attaché presence. The Pentagon report also warned that China’s stockpile of nuclear warheads almost doubled from around 200 in 2020 to 400 in 2022, whereas the US had earlier estimated that it would take China a decade to reach this figure by 2030. China could now be set to have about 1,500 nuclear warheads by 2035.

Though US officials have said they believe a Chinese invasion of Taiwan is not imminent, the report noted that the PLA’s goal of accelerating the integrated development of mechanisation, informatisation, and intelligentisation of the armed forces by 2027 could give the PLA “capabilities to be a more credible military tool for the Chinese Communist Party (CCP) to wield as it pursues Taiwan unification”. China has never renounced the use of military force for Taiwan’s unification and the circumstances under which the country has historically indicated it would consider using force “remain ambiguous and have evolved over time”, the report added.

<https://www.hindustantimes.com/india-news/china-warned-american-officials-not-to-interfere-in-ties-with-india-pentagon-101669802930693.html>

THE ECONOMIC TIMES

Thu, 01 Dec 2022

China Continuing Infra Work on India Border, Weighing Base in Pak: US

China is continuing development of infrastructure near the disputed border in Ladakh and is "very likely considering" expanding its overseas military logistics presence to friendly nations like Pakistan, besides boosting its nuclear arsenal, an annual Pentagon report on Chinese military power said.

The US report said that China has developed a comprehensive defence industry complex, has switched to domestically produced fighter jet engines and is focusing on next generation capabilities for multiple domain precision warfare.

On the nuclear front, the US estimates that China's warheads stockpile has surpassed 400 and, at the current rate, it could be expanded to 1,500 warheads by 2035. The report details Chinese efforts to improve nuclear weapons delivery platforms like long range missiles, strategic bombers as well as submarines.

The border tensions with India find special mention in the annual report, with the Pentagon noting that Chinese deployment along the Line of Actual Control (LAC) is likely to continue and the People's Liberation Army has been continuing build-up of infrastructure. The Pentagon also believes that China has been making efforts to deter growing India-US ties.

"The PRC (People's Republic of China) seeks to prevent border tensions from causing India to partner more closely with the United States. PRC officials have warned US officials to not interfere with the PRC's relationship with India," it read.

Post the bloody clash at Galwan in 2020, India and the US have worked closely to monitor Chinese troops and movements along the border. The US provided special winter clothing for Indian soldiers deployed on the front and has been assisting with satellite imagery and intelligence. Drones leased from the US have also been deployed by India to monitor Chinese troop movements along Ladakh.

Noting its close ties to Pakistan, the report said sophisticated weapons are being transferred by China, including armed drones and a deal for supply of new generation submarines to the Pakistani Navy. It also mentions the presence of a PLA Strategic Support Force (SSF) facility in Pakistan. The Pentagon said that it is likely that China is considering overseas bases, including one in Pakistan.

"Beyond the PLA support base in Djibouti, the PRC is very likely already considering and planning for additional military logistics facilities to support naval, air, and ground forces projection," the report said, adding that countries under consideration include Pakistan, Sri Lanka and Myanmar.

On the Djibouti base, which started operations in 2017, the Pentagon believes Chinese aircraft carriers and submarines could be accommodated in the future. Noting that in March, a large Chinese Navy supply ship docked at the base, the report said the "pier likely is able to accommodate the PLA Navy's aircraft carriers, other large combatants, and submarines".

<https://m.economictimes.com/news/international/world-news/china-continuing-infra-work-on-india-border-weighing-base-in-pak-us/articleshow/95894295.cms>



Thu, 01 Dec 2022

China Vows Full-Scale Modernization of All its Armed Forces to Beat ‘Strong Enemies’ – Pentagon

By Sakshi Tiwari

China plans to achieve its complete modernization of both strategic nuclear and conventional air, land, and sea military forces to conduct a full range of warfare across all domains against any

“strong enemy,” the annual US Defense Department to Congress on Beijing’s military capabilities, said. “The PLA [People’s Liberation Army] seeks to modernize its capabilities and improve its proficiencies across all warfare domains so that, as a joint force, it can conduct the full range of land, air, and maritime as well as nuclear, space, counter space, electronic warfare (EW) and cyberspace operations, the report, dubbed “Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China.”

The evolving capabilities of China’s armed forces continue to strengthen its abilities to win wars against strong enemy nations, including the United States, the report said. “The PLA’s evolving capabilities and concepts continue to strengthen the PRC [People’s Republic of China]’s ability to fight and win wars against a strong enemy (a euphemism likely for the United States), counter an intervention by a third party in a conflict along the PRC’s periphery and project power globally,” the report added. In 2021, the Chinese military carried out major exercises involving amphibious operations with its Navy and civilian roll-on and roll-off vessels, according to the report. For instance, the island-seizure drills “became more frequent and realistic,” says the US Department of Defense.

The PLA conducted more than 20 naval operations with some island-seizure element, compared to just 13 such exercises the year before. These maneuvers and drills, some of which were conducted by the Chinese military in waters near Taiwan, have previously been promoted by Chinese state media. “Many of these exercises focused on combat realism and featured night missions, training in adverse weather conditions, and simultaneous multi-domain operations,” the Pentagon said in its report. Combat realism in training is a very intrinsic component of President Xi Jinping’s military modernization efforts aimed at establishing a world-class force that can fight and win wars.

In examining probable Chinese military action against Taiwan, the Pentagon decided that a large amphibious invasion would be difficult for Beijing. Such an operation, which is among the most difficult to carry out, would necessitate substantial backup, air and sea control, and adequate supplies. In addition to aggression against Taiwan, The United States has accused China of becoming increasingly aggressive in the South China Sea, with US officials earlier warning that China’s “irresponsible behaviour” may lead to a “major incident or accident.” The latest warnings came amid heightened tensions between China and the United States over House Speaker Nancy Pelosi’s visit to Taiwan.

US Navy is Set to Return to Subic Bay

The US Military is poised to return to the relinquished Subic Bay, which oversees the disputed South China Sea, to counter the expanding Chinese dominance in the region. According to a top local authority official administering the free port zone, the US military will likely return to Subic Bay 30 years after abandoning what was once their largest military facility in Asia, Kyodo News reported. The move reflects concerns about China’s increasing maritime assertiveness in the region.

Subic Bay is on the west coast of the island of Luzon in the Philippines, which lies about a hundred kilometers northwest of Manila Bay and is near the disputed Scarborough Shoal. The US operated its naval base on Subic Bay for about 94 years before finally relinquishing it. The United States Naval Base Subic Bay, which faces the South China Sea, has now transformed into a busy free port that employs approximately 150,000 residents and is managed by the Subic Bay Metropolitan Authority.

On November 9, US Ambassador to the Philippines Mary Kay Carlson paid a visit to Subic Bay and the shipyard owned by US private equity firm Cerberus Capital Management LP. The Philippine Navy has also started using a portion of the facility as a new naval base. “Subic Bay and its historical naval refit facility are one of the best military infrastructures in Asia. It can dock aircraft carriers and nuclear-powered submarines and, if permitting, service these vessels for maintenance and repair. From Subic, which forms a perfect natural harbor, a Navy has direct access to the South China Sea or the West Philippine Sea and all the bodies of water that connect to it”, Philippines-based military analyst Miguel Miranda told EurAsian Times.

The development comes at a time when there’s another showdown between The Philippines and China. After a Chinese coast guard vessel allegedly retrieved Chinese rocket debris from Filipino Navy personnel in the disputed South China Sea, the Manila government has sought an official explanation from the Chinese government. The incident on November 20 off Philippine-occupied Thitu Island was the latest in hundreds of these incidents in the region where China’s “nine-dash line” maritime claim loops into Philippine-claimed South China Sea territory.

The announcement of the US return to Subic also follows American Vice President Kamala Harris’ visit to The Philippines. In an emphatic statement on her visit to the country, Harris said Washington would stand by the Philippines in the face of intimidation and coercion in the South China Sea. It was an indirect reference to China’s hostilities in the region. In recent years, Beijing has pushed vigorously to consolidate its claims to the majority of the South China Sea, exert military control over the waterways, and ultimately limit US influence. China has constructed islands and airstrips on reefs and islets in the Spratly archipelago, strategically located in the southern half of the sea.

The US can also ensure a steady logistical base by expanding its presence in the region by courting friendly countries. In May this year, a US Department of Defense (DoD) report revealed that the US had a problem of ‘insufficient logistics’ in Asia that could pose a severe hurdle in an armed conflict.

The Road To Countering China Goes Through Manila

The US Vice President Kamala Harris visited Palawan Island in the disputed waters on her visit to The Philippines. The Philippines is the oldest US ally in the South East Asian region and central to the US bid to counter China’s increasingly assertive policies in the South China Sea and Taiwan. Earlier in August, the US Secretary of State Antony Blinken reassured the Philippines that the US would defend it if it were attacked in the South China Sea. At the time, Blinken declared that a defense agreement with Manila that had been in place for 70 years was “ironclad.”

Besides the Subic Bay, under the Enhanced Defense Cooperation Agreement (EDCA), Manila and Washington have been negotiating to establish five new locations in the Asian country to build US military installations and preposition weaponry. The return to Subic Bay is just one of the many ways to enhance military presence in the region that is heavily guarded and dominated by Beijing. The officials in Subic Bay also seem to be on board with the decision. Recently, the Subic Bay Metropolitan Authority (SBMA) chairman, Rolan Paulino, told Kyodo News that he would be very surprised if Subic Bay did not become an EDCA site because, during the war, time was of the essence.

A variety of events were staged on November 24 at the free port to commemorate the SBMA's 30th founding anniversary, including a public exhibition of civilian planes and a Philippine Navy helicopter at the Subic airfield, which is now used for surveillance and aviation instruction. The EDCA, signed in 2014, is likely to be extended beyond its ten-year term, as evidenced by the United States' increased desire to create additional bases in the Philippines and extra funds for modernizing current EDCA facilities. Earlier, The Philippines' ambassador to the United States made remarks that could open the path for American-Filipino collaboration against Beijing. Jose Manuel Romualdez, the Philippine ambassador to the United States, had claimed that the South East Asian country would allow US forces to use its military installations in the event of a battle with Taiwan. The only rider was that such clearance would only be granted if it was critical to the Philippines' security.

<https://eurasianimes.com/china-vows-full-scale-modernization-of-all-armed-forces/>



Thu, 01 Dec 2022

China Boosts STC Airbase with J-16 Fighters as US could Break PLA Blockade of Taiwan from Northern SCS

By Parth Satam

A major air base under China's Southern Theatre Command (STC) has received J-16 fighters, indicating it continues to perceive a US attempt to break through its blockade of Taiwan through the northern part of the South China Sea (SCS). While its Eastern Theatre Command (ETC) will be primarily concerned with a Taiwan operation, August's unprecedented live military drills around the island also saw significant participation from the STC and some from the Northern Theatre Command (NTC).

Northern Part of South China Sea

A Tweet by Chinese military aviation expert Andreas Rupprecht showed a J-16 landing at Suixi air base in Guangdong, home to the 6th Air Brigade. Coming under the Southern Theatre Command (STC), Chinese observers hail it as the PLAAF "strengthening its southern direction," which might "bolster the ETC's Taiwan Special Military Operation (SMO)." On a different note, the firmness and surety in many such comments on three Chinese military discussion websites are stunning. This indicates that Beijing has resigned to the possibility of having to take Taiwan by force, which it never ruled out if "peaceful reunification" failed due to Taiwan declaring independence, external provocation, or Taiwan being internationally recognized as a country. China has long anticipated the United States military to break through a Chinese military blockade of Taiwan through the northern part of the South China Sea.

EurAsian Times had previously reported the PLAN sharpening its anti-submarine warfare skills by sending a Y-8Q aircraft under the STC for nighttime submarine detection drills. The PLAN's target is the US Navy's nuclear-powered submarines (SSNs and SSBNs) which would use the Basi Channel and the Luzon Strait in the upward slope of the SCS. The induction of the J-16 seems to be an effort in that direction. Speaking to the EurAsian Times, Rupprecht said that

Suixi and the 6th Air Brigade was the PLAAF's sole unit and base that operates the Russian-origin Su-35 and Su-30MKK as trainers. While long having hosted a WZ-Z unmanned aerial vehicle (UAV) detachment and bomber aircraft, it recently underwent "dramatic expansion."

While Rupprecht believes this will entail transferring the Su-30MKKs, he wonders if the Su-35s, too, might be sent elsewhere. "This hints the 6th AB possibly getting an additional 'dadui' or two of J-16s, making it de facto a much larger brigade than others," he added. A 'dadui' is a group of usually eight to ten aircraft.

Surround & Cut-Off

In the event of a Taiwan contingency, China's J-20, H-6K, J-10, and J-16 jets from the People's Liberation Army Air Force (PLAAF) and People's Liberation Army Navy (PLAN) would undertake "multi-directional" "high intensity" "close-in deterrence joint sea and air assaults."

These would be preceded by "joint containment and control, sea assault, land strike, and air superiority operations." The August drills conducted the above maneuvers and are expected to pan out more or less the same way. Swarming Taiwan with a flood of boats from its civilian militia and legacy jets turned drones like the J-6, J-7, and J-8 is another distinct possibility. This forces Taiwan to expend its anti-ship and air defense missiles. China has already identified possible landing zones if the need for an amphibious operation arises. These would be carried out by civilian roll-on roll-over (RoRo) vessels and car carriers carrying hundreds of tanks, armored personnel carriers, infantry fighting vehicles, and military trucks.

The Chinese military has practiced loading ZBD-04 or VN17 IFVs, PLZ-05 Self-Propelled Guns (SPG), tactical vehicles, and the ZTD-05 amphibious armored vehicles from RoRo vessels as a part of an official arrangement well documented by state media. The PLAN's dedicated landing platform docks (LPD) and landing helicopter docks (LHD) amphibious assault ships can launch their complement of ground vehicles and attack helicopters like the Z-10. While China doesn't face a military threat from the small and meager Taiwanese military, its only faces three challenges; first is a military intervention by the United States that might obstruct Chinese military operations. Even though China's current level of preparation can deter and possibly take on such an eventuality, it will still be a significant pressure point. This can lead to a regional conflagration that might ignite the other two flashpoints in the western Pacific, the South China Sea, and the Korean Peninsula.

The last is an unexpected resistance and insurgency on the island. Beijing expects any Taiwanese leadership to fold quickly, given a significant amount of the population that wants to bury the hatchet with Beijing for political, cultural, and economic reasons. The recent victory of the pro-unification Kuomintang (KMT) against President Tsai Ing-wen's Democratic People's Party (DPP) in municipal elections led to her resignation and has assured China of a dependable political capital in Taipei. Interestingly, the KMT is the Communist Party of China's (CPC) civil war rivals who, led by Chiang Kai-shek, lost and fled to Taiwan. Both CPC and Taiwan since then have claimed to be the authentic representative government of China, but most countries, including the US, adhere to the One China Policy. This recognizes the People's Republic of China (PRC) as China, of which Taiwan is a part. Lastly, the insurgency itself can lead China to use harsher military force, which might cause infrastructural, civilian, and, most importantly, industrial damage, impacting the supply of microchips to the world, including China.

Many Taiwanese and Chinese businesses have close ties, and a war that causes civilian casualties will trigger severe economic crises in both nations and east Asia and the world. China is well aware of the repercussions and would be banking on displaying overwhelming military force by either surrounding the Taiwanese military or undertaking limited military action to take out a significant proportion of their defenses. Beijing hopes the island will perceive the inevitability of mainland Chinese rule and present it as a *fait accompli*, finally forcing the leadership to cave in.

<https://eurasianimes.com/china-boosts-stc-airbase-with-j-16-fighters-as-us-could-break/>

ThePrint

Wed, 30 Nov 2022

Thailand Prepared to Pull Out of Submarine Deal with China

Thailand's government has again stated that it is ready to cancel the languishing Chinese submarine deal if the conditions of the procurement cannot be met. The Thailand Navy commander-in-chief Adm Choengchai Chomchoengpaet last week said they are prepared to pull out of its submarine purchase project with China if the conditions of the procurement are unfavourable, according to the English-language daily newspaper The Bangkok Post. In 2017, Thailand agreed to a 13.5 billion baht deal with state-owned China Shipbuilding & Offshore International Co (CSOC) for the procurement of an S26T Yuan-class submarine, with expected delivery in 2023.

According to Bangkok Post, the contract called for the installation of the well-proven German-made MTU 396 diesel engine. However, Berlin will not allow it to be sold to China. Earlier this year, construction on the submarine ground came to a halt when the German company said that it would not supply its cutting-edge MTU396 diesel engines to CSOC for installation in the Thai submarine. The German company said it was barred from making the sale due to a European Union government embargo on the sale of military items to China. In response to sanctions, the Chinese state-owned enterprise has instead offered to install a Chinese-made engine in the submarine or to offer Thailand two decommissioned boats from the People's Liberation Army Navy.

Writing for The Diplomat magazine, columnist Sebastian Strangio said the Thai government refused this offer, insisting that the German engines be installed as per the letter of the contract. "What do we do with a submarine with no engines? Why should we purchase it?" Prime Minister Prayut Chan-o-cha told reporters in March, as quoted by The Diplomat, raising the possibility that the deal could face the axe. Facing a choice between cancelling the procurement, Thailand's government and military have reportedly come to some sort of compromise. On Tuesday, the Thai Navy chief, in an apparent diluted stand, said the country wanted the Chinese navy to guarantee the Chinese-made CHD620 engine the builder wants to use in the S26T Yuan-class submarine ordered from China Shipbuilding & Offshore International Co (CSOC).

However, the Royal Thai Navy chief told reporters about "a delay in clarification about the engine." "There is a delay in clarification about the engine... The first-stage test of the engine was completed. The second stage concerns spare parts... The navy is making inquiries about the

matter with CSOC,” he was quoted as saying by The Bangkok Post. Furthermore, he said it would be good if the Chinese navy would guarantee the engine to be installed in the submarine. “Without a guarantee, we cannot be confident that it is good,” he said. Answering a question on termination of the contract if conditions are not met, he said, “Yes. At this stage, it can be terminated anytime.”

<https://theprint.in/world/thailand-prepared-to-pull-out-of-submarine-deal-with-china/1242308/>



Wed, 30 Nov 2022

Royal Australian Navy to Acquire Bluebottle USVs

The Royal Australian Navy (RAN) is acquiring five Bluebottle unmanned surface vessels (USVs) to enhance its ability to experiment and advance the operational employment of uncrewed systems under, on, and above the water. Disclosing a AUD4.9 million (USD3.3 million) contract with Sydney-based Ocius Technologies, Rear Admiral Peter Quinn, head of the Navy Capability in the RAN, said on 25 November that this represented a significant investment in sovereign industry capability to advance the ability of the RAN to effectively employ robotic and autonomous systems. “We have vast areas that we need to patrol, which we can’t do with a small number of crewed ships. We have to and will be investing in uncrewed platforms that will be out there persistently conducting surveillance,” he said.



When deployed, the solar sail of the Bluebottle (pictured) harnesses both solar and wind energy.

The 22 ft solar, wind, and wave-powered vessels would be used in developing new uncrewed underwater systems technology, and as testbeds for above-water and low-water surveillance, he said. Ocius CEO Robert Dane told Janes all five vessels would be delivered to the RAN by June 2023. Four similar Bluebottles under contract to the Australian Border Force (ABF) and

equipped with 360° day/night infrared cameras, radar, and satellite communications had recently successfully completed 23,000 n mile of unescorted maritime surveillance patrols off the coast of Western Australia, he said. The Australian Department of Defence (DoD) announced in mid-November that the Bluebottle USVs were operated by the Australian Army for the first time in 'Operation Resolute', a two-week deployment to support the protection of Australia's borders and offshore maritime interests.

<https://www.janes.com/defence-news/news-detail/update-royal-australian-navy-to-acquire-bluebottle-usvs>



Thu, 01 Dec 2022

Australian Defence Chief Warns of Rise in ‘Grey-Zone Activities’ in Indo-Pacific Region Amid China Tensions

The chief of the Australian defence force, Gen Angus Campbell, has offered a gloomy assessment of developments in the Indo-Pacific region, warning of a rise in “coercive statecraft and grey-zone activities”. Ahead of a major defence review, Campbell has declared that Australia and Japan are bound together by “increasingly shared strategic challenges” in our region. “Across our region, large-scale military modernisation is accelerating,” he said, in a clear reference to China. “National sovereignty, the law of the sea, freedom of navigation are all facing challenges from both states and non-state actors alike.

“Serious economic risks are emerging, natural disasters are more frequent and more severe, advanced technologies proliferate and the use of coercive statecraft and grey-zone activities continue to test the thresholds for conventional military response.” Grey-zone tactics refer to actions that are designed to tilt a situation in a country’s favour, but through steps that are not serious enough to trigger an armed response. China has pursued its claims in the South China Sea through island-building and installing military hardware. Campbell told an event at the Japanese embassy in Canberra on Wednesday night that the importance of the ADF and the Japanese self-defence forces was “brought into sharper relief” by the regional context.

He said a key element of a new security declaration signed by the prime minister, Anthony Albanese, and his Japanese counterpart, Fumio Kishida, was to consult each other “on contingencies that may affect our sovereignty and regional security interests, and consider measures in response”. “This clause is a natural, incremental step in an already close strategic partnership – one warmly welcomed by Australia,” Campbell said.

He was addressing a high-powered audience that included former ADF chief Angus Houston, who is working with former defence minister Stephen Smith on a defence strategic review for the Albanese government. Others in attendance included the Department of Defence secretary, Greg Moriarty, together with the chief of the navy, Vice Admiral Mark Hammond; the chief of the army, Lt Gen Simon Stuart; and the chief of joint operations, Lt Gen Greg Bilton. Japan’s ambassador to Australia, Shingo Yamagami, told the gathering the security environment in east Asia was “growing more severe”.

Japan is considering buying up to 500 Tomahawk cruise missiles from the United States in coming years as it seeks to counter threats from China and North Korea, according to reports published this week. Yamagami said Japan was undergoing “a transformation in societal attitudes to defence” but he argued “a similar and no less significant transformation in thinking can be discerned in Australia’s approach to the South China Sea and the East China Sea”. Japan has reported an influx of Chinese coast guard vessels and fishing boats near the Senkaku islands – uninhabited islets in the East China Sea that are administered by Japan but are also claimed by China, where they are known as Diaoyu Dao.

“For many years during my long career in the foreign service, my interaction with Australian diplomats, always the very epitome of decorum, would often end in disagreement on the strategic importance of the East China Sea,” Yamagami said. “For Australia, its attention was seemingly focused on the South China Sea and a fear of abandonment, as opposed to the East China Sea and a fear of entanglement.” But Yamagami said events over the past decade had “served to remove that line entirely, with recognition here that contingencies in the East China Sea can impact on Australia’s trade, investment and security, as assuredly as those in the South China Sea”.

The ambassador also pointed to polling by the United States Studies Centre that suggested 46% of Australian respondents would support sending military forces to help defend Taiwan if it was attacked by China, compared with about a third of American and Japanese respondents. Yamagami added that with “a changed dynamic at work in the region” it should come “as a surprise to no one that Japan and Australia sought to level up our defence relationship”. The state-run China Daily criticised the security agreement between Japan and Australia, arguing it was at odds with Albanese’s “generally” positive steps “to correct his predecessor’s wrongs”.

China’s president, Xi Jinping, told the 20th Communist party congress he would never rule out the use of force to achieve “reunification” with Taiwan, a self-governed democracy of 24 million people that he regards as central to his promise to achieve “national rejuvenation”. Xi denounced “foreign interference” for exacerbating tensions, saying Taiwan was “China’s own problem to solve”. As you’re joining us today from India, we have a small favour to ask. Tens of millions have placed their trust in the Guardian’s fearless journalism since we started publishing 200 years ago, turning to us in moments of crisis, uncertainty, solidarity and hope. More than 1.5 million supporters, from 180 countries, now power us financially – keeping us open to all, and fiercely independent. Will you make a difference and support us too?

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<https://www.theguardian.com/australia-news/2022/dec/01/australian-defence-chief-warns-of-rise-in-grey-zone-activities-in-indo-pacific-region-amid-china-tensions>

Hungary Eyes Iron Dome, as New Air Defense Radars are on the Way

Hungarian officials have signaled an interest in the Israel-made Iron Dome system, with radar components expected to arrive early next year that could fit into the air-defense weapon's architecture. Hungarian President Katalin Novák and Defense Minister Kristóf Szalay-Bobrovniczky watched an Iron Dome system demonstration during their visit in Tel Aviv, the Ministry of Defense wrote in a statement earlier this month. Following their visit, the officials told reporters that the air defense system is worth studying for Hungary, especially in light of the recent missile incident in Poland.

In what could be considered steps towards such an acquisition, the Hungarian Armed Forces (HAF) two years ago signed a contract with Rheinmetall Canada for the supply of several multi-mission ELMA-2084 radars produced by its partner ELTA, a subsidiary of Israel Aerospace Industries (IAI). The systems will replace Hungary's Soviet-era P-37, PRV-17 and ST-68U radars. The ELMA-2084 is an active electronically scanned array (AESA) radar designed to detect and track medium-range ballistic projectiles and aircraft threats, providing operators with early-warning and fire control guidance for their interception. More importantly, it also happens to be one of the three central components of the Iron Dome, which is said to have also been purchased by Canada, Singapore, Czech Republic, and Slovakia.

President and CEO of Rheinmetall Canada, Stéphane Oehrli hinted at possible plans of establishing an assembly or manufacturing plant for radars in Hungary at the time, stating that "in terms of technology transfer, our Hungarian partners also stand to benefit [in the future] from this project." Hungary is the company's most important export customer in the field of radar system integration. Rheinmetall already operates a 150-hectare munition production plant in Varpalota which supplies ammunition to the HAF and another factory in western Hungary producing part of the Lynx KF41 combat vehicles on order.

Despite reports that deliveries of the first ELMA-2084 radars had begun, Alain Tremblay, vice president of business development at Rheinmetall Canada, told Defense News that "the pandemic and conflict in Ukraine have caused some small delays, the first radar will be delivered in the second quarter of 2023." Hungary's defense spending is expected to reach \$2.9 billion in 2022, with the country pledging to spend 2% of its GDP on defense by 2026 as part of its Zrínyi defense and force development program.

<https://www.defensenews.com/global/europe/2022/11/30/hungary-eyes-iron-dome-as-new-air-defense-radars-are-on-the-way/>

नवभारत टाइम्स

गुरुवार, 01 दिसंबर 2022

रूसी, चीनी बमवर्षक विमानों ने प्रशांत क्षेत्र में संयुक्त गश्त की

रूसी और चीनी रणनीतिक बमवर्षकों ने दोनों देशों के बीच बढ़ते घनिष्ठ रक्षा संबंधों के मद्देनजर पश्चिमी प्रशांत क्षेत्र में एक संयुक्त गश्ती उड़ान भरी। रूसी रक्षा मंत्रालय ने बताया कि आठ घंटे के मिशन के दौरान रूसी वायु सेना के टीयू-95 बमवर्षकों और चीनी एच-6के बमवर्षकों ने जापान सागर और पूर्वी चीन सागर के ऊपर से उड़ान भरी। मंत्रालय ने एक बयान में कहा कि एक संयुक्त अभ्यास के तहत रूसी बमवर्षक पहली बार चीन में उतरे और चीनी बमवर्षकों ने रूस में एक हवाई ठिकाने के लिए उड़ान भरी।

चीन के रक्षा मंत्रालय ने बुधवार की गश्त को दोनों सेनाओं के बीच वार्षिक सहयोग योजना के तहत एक “नियमित” कवायद बताया। यह अभ्यास मास्को और बीजिंग के बीच बढ़ते सैन्य सहयोग को प्रदर्शित करने के उद्देश्य से किया गया। बीजिंग ने सितंबर में रूस के साथ व्यापक संयुक्त अभ्यास में भाग लेने के लिए 300 से अधिक सैन्य वाहनों, 21 लड़ाकू विमानों और तीन युद्धपोतों के साथ दो हजार से अधिक सैनिकों को भेजा था। रूसी राष्ट्रपति व्लादिमीर पुतिन द्वारा 24 फरवरी को यूक्रेन में अपनी सेना भेजने के बाद से मास्को और बीजिंग के बीच रक्षा सहयोग मजबूत हुआ है।

<https://navbharattimes.indiatimes.com/india/russian-chinese-bombers-conduct-joint-patrols-in-the-pacific/articleshow/95891379.cms>



Wed, 30 Nov 2022

Russia Set to Focus More on Nuclear Arms Infrastructure

Russia will pay special attention to building infrastructure for its nuclear forces in 2023, Defence Minister Sergei Shoigu said on Wednesday. Mr. Shoigu said in televised comments that Russia would also work to improve the combat capabilities of its missile forces and that facilities were being built to accommodate new missile systems. Russia has the largest stockpile of nuclear weapons in the world, with close to 6,000 warheads. President Vladimir Putin has placed territory seized by Russia in Ukraine under Moscow’s nuclear umbrella, warning that he is ready to defend Russia’s “territorial integrity” by all available means. Russia and the U.S. were due to hold talks in Cairo this week on their existing New START treaty, which limits the number of warheads each can deploy.

But Moscow pulled out on the eve of the meeting, accusing the U.S. of toxic anti-Russian behaviour and trying to manipulate the treaty to its advantage.

<https://www.thehindu.com/news/international/russia-set-to-focus-more-on-nuclear-arms-infrastructure/article66205435.ece>



Wed, 30 Nov 2022

South Korea Scrambles Jets as China, Russia Warplanes Enter Air Defence Zone

By Hyonhee Shin

South Korea's military said it scrambled fighter jets as two Chinese and six Russian warplanes entered its air defence zone on Wednesday. The two Chinese H-6 bombers repeatedly entered and left the Korea Air Defence Identification Zone (KADIZ) off South Korea's southern and northeast coasts starting at around 5:50 a.m. (2050 GMT Tuesday), Seoul's Joint Chiefs of Staff (JCS) said. They re-entered the zone hours later from the Sea of Japan, known in South Korea as the East Sea, together with the Russian warplanes, including TU-95 bombers and SU-35 fighter jets, and left after 18 minutes in the KADIZ, the JCS said. "Our military dispatched air force fighter jets ahead of the Chinese and Russian aircraft's entry of the KADIZ to implement tactical measures in preparation for a potential contingency," the JCS said in a statement. The planes did not violate South Korea's airspace, it said.

An air defence zone is an area where countries demand that foreign aircraft take special steps to identify themselves. Unlike a country's airspace - the air above its territory and territorial waters - there are no international rules governing air defence zones. Moscow does not recognise Korea's air defence zone. Beijing said the zone is not territorial airspace and all countries should enjoy freedom of movement there. Japan's Air Self Defence Force also scrambled fighter jets after the Chinese bombers flew from the East China Sea into the Sea of Japan, where they were joined by two Russian drones, Tokyo's defence ministry later said in a press release. China and Russia have previously said their warplanes were conducting regular joint exercises. In August, the JCS reported Russian warplanes entering the KADIZ, three months after Chinese and Russian aircraft made an incursion in May that was the first after South Korean President Yoon Suk-yeol took office. In 2019, South Korean warplanes fired hundreds of warning shots toward Russian military aircraft when they entered the KADIZ during a joint air patrol with China.

<https://www.reuters.com/world/asia-pacific/china-russia-warplanes-temporarily-entered-south-korea-air-defence-zone-yonhap-2022-11-30/>

Business Standard

Wed, 30 Nov 2022

US Working to Improve Early Warning System Against NKorean Missile Launches

The US is working to further improve its missile warning system, the commander of US Space Command has said, following a barrage of North Korean missile tests that included multiple intercontinental ballistic missile (ICBM) launches. "We are looking at how we integrate a sensor

architecture that gives us as much warning as possible in terms of any type of missile activity out of North Korea," Gen James Dickinson said on Tuesday in a webinar hosted by the Mitchell Institute for Aerospace Studies, a Washington-based research organisation. Dickinson said the Space Command is currently working to integrate existing US assets into "an architecture where we can provide both the US and our allies and partners as much advanced warning as possible", adding, "We are also looking at how we can incorporate commercial sensors in the same respect." His remarks come after a recent series of North Korean missile launches, Yonhap news agency reported.

Pyongyang fired over 30 ballistic missiles since late September, also conducting its 10th ICBM test of the year on November 18. Since the start of the year, the North launched an annual record of 63 ballistic missiles, far exceeding the previous record of 25 in 2019. The US Space Force established its first regional component command at US Indo-Pacific Command last week, a move apparently aimed at enhancing the US' missile defence capabilities in the region. Dickinson noted there had already existed a "coordination relationship" between the Space Force and INDOPACOM even before the establishment of the Space Force Indo-Pacific Command, but said the relationship will now mature more.

https://www.business-standard.com/article/international/us-working-to-improve-early-warning-system-against-nkorean-missile-launches-122113000128_1.html

Science & Technology News

अमर उजाला

बुधवार, 30 नवंबर 2022

इसरो के नए सैटेलाइट ने भेजीं तस्वीरें, हिमालय से गुजरात का कच्छ तक आया नजर

26 नवंबर को लॉन्च किए गए भारतीय अंतरिक्ष अनुसंधान संगठ (इसरो) के अर्थ ऑब्जर्वेशन सैटेलाइट-06 ने तस्वीरें भेजना शुरू कर दिया है। राष्ट्रीय अंतरिक्ष एजेंसी ने बुधवार को तस्वीरों को जारी किया। वहीं तस्वीर में गुजरात का भुज और अहमदाबाद क्षेत्र मार्क करके दिखाया गया है। इसरो ने अपने बेंगलुरु मुख्यालय में सैटेलाइट द्वारा ली गई तस्वीरों को ट्विटर पर साझा किया। सैटेलाइट ने 29 नवंबर को पहली तस्वीर ली। वहीं अर्थ ऑब्जर्वेशन सैटेलाइट-06 (EOS-06) ने हिमालय क्षेत्र, गुजरात के कच्छ क्षेत्र और अरब सागर को कवर करते हुए तस्वीरें ली हैं। इसरो ने बयान जारी कर कहा कि तस्वीरें ओशन कलर मॉनिटर (OCM) और सी सरफेस टेम्परेचर मॉनिटर (SSTM) सेंसर (ऑन बोर्ड EOS-06) द्वारा लिए जाते

हैं। आगे कहा कि छवियों को इसरो के अध्यक्ष एस सोमनाथ, सैटेलाइट सेंटर के निदेशक एम शंकरन और एनआरएससी के निदेशक प्रकाश चौहान की उपस्थिति में जारी किया गया।

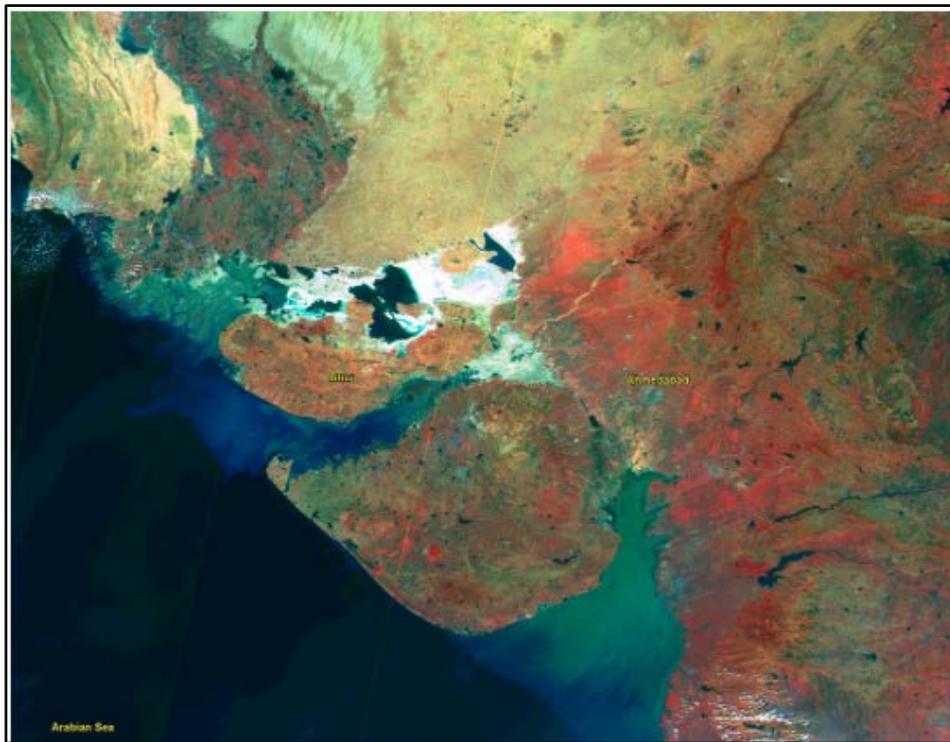
<https://www.amarujala.com/india-news/isro-india-latest-earth-observation-satellite-starts-serving-images>

THE  HINDU

Wed, 30 Nov 2022

India's Latest Earth Observation Satellite Starts Serving Images

ISRO released first-day images of the Earth Observation Satellite-06 covering the Himalayan region, Kutch region of Gujarat and the Arabian Sea. The Earth Observation Satellite-06 launched by the Indian Space Research Organisation on November 26 has started serving images, the national space agency said on Wednesday.



First-day images received by the Earth Observation Satellite-06 on November 29 2022, at NRSC, Shadnagar cover the Himalayan region, Gujarat Kutch region and the Arabian Sea

Bengaluru-headquartered ISRO shared on Twitter the first-day images received on Tuesday at National Remote Sensing Centre, Shadnagar, Telangana, covering the Himalayan region, Kutch region of Gujarat and the Arabian Sea. "They are captured by the Ocean Color Monitor (OCM) and Sea Surface Temperature Monitor (SSTM) sensors (on board EOS-06)", it said. The images

were released by ISRO Chairman S Somanath in virtual mode, in the presence of Director of U. R. Rao Satellite Centre, M. Sankaran, and NRSC Director Prakash Chauhan, it was stated.

<https://www.thehindu.com/sci-tech/science/indias-latest-earth-observation-satellite-starts-serving-images/article66204571.ece>



Thu, 01 Dec 2022

The AIIMS Cyber Attack is a Wake-Up Call for National Security

By Subimal Bhattacharjee

On November 23 this year, the premier medical institute in the country, the All India Institute of Medical Sciences New Delhi (AIIMS) was crippled by a major cyberattack. Most of its servers stopped working as also the eHospital network managed by the National Informatics Centre (NIC). All functions including the emergency, out-patient, in-patient and laboratory wings had to be shifted to manual management. This has continued for more than a week as the huge number of servers across the institute were being sanitised and restored after the identification of the impacted servers. While a case of extortion and cyber terrorism was registered by the Intelligence Fusion and Strategic Operations (IFSO) unit of the Delhi Police on November 25, it denied that AIIMS had reported to them a demand for Rs 200 crores in cryptocurrency, as typically witnessed with a ransomware attack. So it becomes more critical to understand the motive behind the attack and do a review of cyber security preparedness across organisations and systems.

Cyber attacks on medical institutes are getting common and the pandemic has been a turning point as hackers and criminal syndicates realised the dependence of these institutes on digital systems to optimally manage medical functioning as well as store and handle large volumes of patient data, including their reports. In such a situation, both the aspects of security and privacy surface. This is why most countries define the health and medical sector as critical information (CI) infrastructure.

In India, while health is not specified directly as a CI, an organisation like AIIMS New Delhi could be counted as a “strategic and public enterprise” as it deals with crores of patients, including the top leadership of the country, and treats around 38 lakhs patients every year. It also handles and stores very sensitive medical research data. It is a natural target for cyber attackers and ransom seekers because the data available here is more precious than even oil. The pertinent point that arises is whether the thousands of servers and devices that connect to the system were handled with the highest cyber security standards and whether solutions and disaster recovery plans were in place. Also did the audits of cyber networks that are mandated by CERTIn show that everything was in order? Did AIIMS follow a cyber hygiene ecosystem similar to what it would want its patients to follow in the real world?

Typically such forms of attacks to keep networks from functioning after encrypting data, are carried out by ransomware-seeking entities and organisations are sent demands which are often

negotiated and paid without informing law enforcement. In this case, both AIIMS and NIC have brought this outage to the public domain, reporting it on the first day. Since then, along with Delhi Police, multiple agencies are trying to investigate and identify the perpetrators and at the same time recovery and restoration efforts of the networks are on. The Delhi Police's use of the provisions of section 66 (F) of the Information Technology Amendment Act 2008 identifying this incident as a case of cyber terrorism is significant and indicates a much larger ambit than a typical ransomware case. As cyber attacks on CIs have national security connotations also, one cannot lose sight of the fact that AIIMS servers had the critical health data of several individuals at the helm of the country's government and the attack might have had a much larger motive than just garnering ransom. While this incident is another wake-up call for organisations across sectors to shore up cyber security measures, it is also important to push and announce the national cyber security strategy that the prime minister mentioned a couple of years back. That strategy will be a guiding document to motivate and monitor the preparedness of cyber readiness of institutes and also enhance capacity on many fronts including forensics, accurate attribution and cooperation. Significant budgets have to be allocated by various ministries to ensure that cyber security measures don't remain the last priority. Likewise, the capacity enhancement for the National Critical Information Infrastructure Centre (NCIIPC) and CERTIn has to be undertaken to address the emerging sophisticated nature of threats and attacks and sectoral CERTs have to be set up for many areas including health. At the same time, international cooperation on countering cyber attacks has to gain more teeth beyond the Group of Governmental Experts (GGE) meetings and the US-led Counter Ransomware Initiative (CRI) of 37 countries and the European Union.

<https://indianexpress.com/article/opinion/columns/aiims-cyber-attack-national-security-subimal-bhattacharjee-8298134/>



Wed, 30 Nov 2022

Ransomware Attack: Diverting Personnel, Seeking DRDO's Help, AIIMS Tries to Control Damage

Grappling with complete shutdown of the e-hospital system, the All India Institute of Medical Sciences (AIIMS) in the national capital has now diverted nearly 250 personnel attached with doctors in research projects to work on patient services, all of which is being done manually. A major ransomware attack that hit the leading teaching hospital last week has made centralised records inaccessible and has affected hospital services such as generation of unique health identification numbers, new registrations, laboratory reports, the process of billing and patient discharge, among others. The institute, which sees nearly 25,000 patients in the outpatient department every day, has been able to provide consultation services to just about one-fifth that number since November 23, when the cyberattack took place. Beginning Tuesday, the hospital—

after diverting the services of research assistants for clinical works—has managed to shorten the queues of waiting patients in most departments to some extent.

“Our effort has been not to return any patient without delivering requisite services,” insisted the head of a key department in the hospital who did not want to be named. Sources in the administrative department of the institute also said that help has been sought from the Defence Research and Development Organisation for at least four new servers that can be used to restore digital services. A team of experts from the Indian Computer Emergency Response Team (CERT-in) and National Informatics Centre (NIC) are already working on restoring online services, authorities maintained. On Wednesday morning, Sandhya Rani, 34, from Bihar, stood outside the paediatric OPD wearing a forlorn look. She had last come to consult for her 7-year-old daughter who is suffering from an impaired liver. “On November 21, my daughter got an ultrasound done and the report was expected on Monday, which I needed to show to the doctor,” she said. “But for the last three days, I am being told the same thing, that the server is down and reports are not getting generated, and without the report the doctor cannot see my child,” Rani said.

Nisha, a patient coordinator in the department, said that while reports of tests such as electrocardiogram and X-rays are being managed manually, tests such as ultrasound and magnetic resonance imaging (MRI) are suspended. “Many blood tests are also not being offered at the moment,” she said. A staffer at the billing counter in the cardiology department said that old patients were having a harrowing time as the hospital and treating doctors could not retrieve their past medical records. Insiders said that in the attack, detailed health data related to nearly four crore patients may have been compromised.

Impact on academics too

One of the prime reasons why the institute is considered so prestigious is because of the quality of teaching and the research work carried out here. The latest incident has dented these two as well. Many doctors who spoke off the record pointed out that they are unable to retrieve e-library or use other websites, which is halting academic work. “For the last one week, the functioning of the faculty is badly affected as we cannot access patients’ records for analysis or for teaching students,” said a senior faculty member in the neurosciences department. “I greatly fear that a large amount of data including case histories and studies may not be available even if new servers are brought in.” The hospital administration refused to comment on Wednesday when Moneycontrol tried to reach them with these concerns but on Tuesday, in a brief statement, it said that it had recovered all its data but “all hospital services, including outpatient, inpatient, laboratories, etc, continue to run on manual mode”. “The eHospital data has been restored on the servers,” said the statement. “Network is being sanitised before the services can be restored. The process is taking some time due to the volume of data and large number of servers/computers for the hospital services.”

‘Most serious attack’

The hospital so far has given no details about the nature of the cybersecurity incident and has refuted local media reports that the hackers had demanded a ransom of Rs 200 crore for restoring the servers but the first information report (FIR) lodged in the case has also mentioned extortion. Noted cyber expert Pavan Duggal called it the most serious cyberattack in the history of independent India and pointed out that sensitive personal data related to crores of Indians including a large number of bureaucrats, politicians and ministers is now with cybercriminals

and can be misused. “The fact that digital service in such a premier health institute in the country has been crippled for nearly a week shows that there is no data backup and that is very unfortunate,” he said. Duggal said that the episode should push authorities in India to bring a dedicated legislation targeted at strengthening cybersecurity.

“The European Union now has a Cyber Resilience Act and we should quickly have a strong legal framework on similar lines and the Information Technology Act, 2000, does not address aspects related to cybersecurity at all,” he pointed out. Duggal also said even if a ransom of Rs 200 crore, as reportedly demanded by the hackers, is paid, there is no guarantee that the stolen data would not reach the dark web and not be used for cybercrimes in the future.

<https://www.moneycontrol.com/news/trends/ransomware-attack-diverting-personnel-seeking-drDOS-help-aiims-tries-to-control-damage-9627811.html>

THE ECONOMIC TIMES

Tue, 29 Nov 2022

One Step Closer to a Universal Flu Vaccine?

Imagine a single dose of vaccine that prepares your body to fight every known strain of influenza — a so-called universal flu vaccine that scientists have tried to create for decades. A new study describes successful animal tests of just such a vaccine, offering hope that the country can be protected against future flu pandemics. Like the COVID vaccines made by Pfizer-BioNTech and Moderna, the experimental flu vaccine relies on mRNA. It is in early stages — tested only in mice and ferrets — but the vaccine provides important proof that a single shot could be used against an entire family of viruses. If the vaccine succeeds in people, the approach could be used against other virus families, perhaps including the corona virus.

The vaccine would not replace annual flu shots but would provide a shield against severe disease and death from potential pandemic threats. “There’s a real need for new influenza vaccines to provide protection against pandemic threats that are out there,” said Scott Hensley, an immunologist at the University of Pennsylvania, who led the work. “If there’s a new influenza pandemic tomorrow, if we had a vaccine like this that was widely employed before that pandemic, we might not have to shut everything down,” he said. He and his colleagues described the vaccine last week in the journal *Science*. By the age of 5, most children have been infected with the flu multiple times and have gained some immunity — but only against the strains they have encountered.

“Our childhood exposures to influenza lay down long-lived immune memory that can be recalled later in life,” Hensley said. But “we’re sort of living the rest of our life dependent on the random chance of whatever we got infected with as a kid.” Current influenza vaccines protect against seasonal flu but would provide little protection against a new strain that may emerge as a pandemic threat. During the 2009 H1N1 swine flu pandemic, for example, the conventional vaccine offered little defense against the virus. But older adults who had been exposed to H1N1 strains in childhood developed only mild symptoms. Scientists have long tried to create a vaccine that would introduce children to every possible strain of flu they may encounter later in life. But researchers have been constrained by technical hurdles and by the diversity of the flu virus.

Broadly speaking, there are 20 subgroups of influenza that each represents thousands of viruses. Current vaccines can target four subgroups at most. But the experimental vaccine contains all 20, and it would be faster to produce. The vaccine elicited high levels of antibodies to all 20 flu subtypes in ferrets and mice, the researchers found — a finding that several experts said was unexpected and promising. If the vaccine behaves similarly in people, “we’ll have a more broad coverage of influenza viruses — not only those that are circulating, but those that might spill over from the animal reservoir that might cause the next pandemic,” said Alyson Kelvin, a vaccinologist at the University of Saskatchewan in Canada.

Packing 20 targets into one vaccine does have a downside: Antibody levels in the test animals were lower than when they were given vaccines aimed at individual strains. But the levels were still high enough to be effective against influenza. Because a new pandemic strain of influenza might differ from the 20 targets included in the experimental vaccine, the researchers also tested it against viruses that were imperfectly matched. The vaccine still provided strong protection, suggesting that it would prevent at least severe illness, if not infection, from a novel pandemic flu virus.

This phenomenon is akin to that with the current COVID vaccines: Although the latest omicron variants are so different from the ancestral virus that the original vaccine does not prevent infections, it continues to help safeguard most people against severe illness. This quality may be a particular advantage of mRNA vaccines, Kelvin said. Conventional flu vaccines target only the specific viruses they are designed for. But mRNA vaccines seem to produce antibodies that defend the body against a broader range of viruses than those included.

The experts noted some important caveats and questions that must be answered before the vaccine becomes a viable candidate. The animals in the study built defenses against all 20 flu strains equally. But “these animals have not seen flu before,” said Richard J. Webby, an expert in influenza viruses at St. Jude Children’s Research Hospital in Memphis, Tennessee. Such a complete lack of immunity against flu is only true of very young children, Webby noted. Older people are exposed to many different strains over their lifetimes, and it’s not clear whether their immune responses to a universal vaccine would be quite so uniform.

“The proof of the pudding will be what happens when it goes into humans and how going into a preimmune population skews the response to it,” Webby said. Designing universal vaccines for varying age groups, if necessary, would be a challenge. It would also be important to see how long protection from such a vaccine lasts, some experts said. “The biggest issue about universal flu is what you need to target and how long you can continue to use the same vaccine,” Ted Ross, director of Global Vaccine Development at the Cleveland Clinic, said. “If you have to keep updating it, it may not increase the advantage of how we do vaccines today.”

The next step for the vaccine would be to test it in monkeys and in people. But proving its effectiveness might be challenging. “How do you evaluate and regulate a vaccine where their targets aren’t circulating, and so you can’t really show effectiveness?” Kelvin said. Perhaps the vaccine could be tested in small sporadic outbreaks, or in poultry workers who are at risk of becoming infected with an avian flu virus, she said: “Those are questions that I think we need to answer before we have our next pandemic.”

<https://economictimes.indiatimes.com/news/science/one-step-closer-to-a-universal-flu-vaccine/articleshow/95863163.cms?from=mdr>

