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Press Information Bureau
Government of India

Ministry of Defence

Wed, 14 Dec 2022

Indo-Kazakhstan Joint Military Exercise “Kazind – 2022” to Commence at Umroi (Meghalaya)

The 6th Edition of Indo - Kazakhstan joint training exercise “KAZIND-22” is scheduled to be conducted at Umroi (Meghalaya) from 15 to 28 December 2022. Joint annual training exercise with the Kazakhstan Army was instituted in 2016 as Exercise Prabal Dostyk, which was later upgraded to a company level exercise and renamed as Ex Kazind in 2018. Kazakhstan Army soldiers comprising of troops from the Regional Command, South and Indian Army soldiers from the 11 Gorkha Rifles will be participating in the exercise.

Aim of the exercise is to build positive military relations, imbibe each other’s best practices and promote the ability to operate together while undertaking counter terrorist operations in semi urban / jungle scenario, under a UN peace enforcement mandate. This joint exercise will enable the two armies to train, plan and execute a series of combined

tactical drills for neutralising of likely threats that may be encountered in UN peace keeping operations. The scope of this exercise involves a Command Post Exercise (CPX) at the Battalion level and Company level Field Training Exercise (FTX) on sub-conventional operations. During the exercise, participants will engage in variety of missions ranging from joint planning, joint tactical drills, basics of special arms skills, HADR and raiding a hostile target. “Exercise KAZIND” will enhance the level of defence cooperation between Indian Army and Kazakhstan Army which will further foster the bilateral relations between the two nations.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1883520>



बुधवार, 14 दिसंबर 2022

तवांग झड़प' विवाद के बीच भारतीय वायुसेना करेगी युद्धाभ्यास, गरजेंगे Rafale और दिखेगी सुखोई की ताकत

अरुणाचल प्रदेश के तवांग सेक्टर में भारत और चीन के सैनिकों के बीच झड़प के बाद भारतीय वायुसेना भी पूरी तरह से चौकस नजर आ रही है. तवांग के यांगत्से वाले झड़प विवाद के बीच भारतीय वायुसेना (Indian Air Force) की पूर्वी कमांड (Eastern Command) गुरुवार (15 दिसंबर) से दो दिवसीय युद्धाभ्यास करने जा रही है. वायुसेना की ओर से दो दिवसीय युद्धाभ्यास 15 और 16 दिसंबर को किया जाएगा. ये एक्सरसाइज (IAF Exercise) असम, अरुणाचल प्रदेश और पश्चिम बंगाल सहित उत्तर-पूर्व के सभी राज्यों के एयर-स्पेस में की जाएगी. इसको लेकर वायुसेना की ओर से नोटिस जारी किया गया है.

तवांग विवाद के बीच वायुसेना का युद्धाभ्यास

भारतीय वायुसेना के इस युद्धाभ्यास में विशेष तौर से पश्चिम बंगाल के हाशिमारा और कलाईकुंडा, असम के तेजपुर और झबुआ और अरुणाचल प्रदेश की एडवांस लैंडिंग स्ट्रिप हिस्सा ले रही हैं. इस एक्सरसाइज में राफेल लड़ाकू विमान भी हिस्सा लेंगे. इसके अलावा सुखोई और कई हेलीकॉप्टर भी इसका हिस्सा बनेंगे. जानकारी के मुताबिक, ये एक्सरसाइज 9 दिसंबर की घटना से पहले ही प्लान कर ली गई थी.

9 दिसंबर को तवांग सेक्टर में हुई थी झड़प

पूर्वी लद्दाख में भारत और चीन के बीच 30 महीने से अधिक समय से सीमा गतिरोध जारी है. पिछले शुक्रवार यानी 9 दिसंबर को संवेदनशील क्षेत्र में वास्तविक नियंत्रण रेखा (LAC) के पास यांगत्से के नजदीक झड़प हुई थी. 9 दिसंबर को चीनी सैनिकों ने 300-400 की संख्या में यांगत्से की एक चोटी पर चढ़कर भारतीय सैनिकों को हटाने की कोशिश की थी लेकिन भारतीय सैनिक पहले से तैयार बैठे थे और चीनी सैनिकों को वहां से खदेड़ दिया था.

भारतीय सैनिकों ने दिया मुहंतोड़ जवाब

भारत सरकार (Indian Govt) का कहना है कि चीनी सैनिकों (PLA) ने यांगत्से इलाके में एलएसी (LAC) पर अतिक्रमण कर यथास्थिति को एकतरफा रूप से बदलने की कोशिश की लेकिन चीन के इस प्रयास को भारतीय सैनिकों (Indian Army) ने पूरी तरह से नाकाम कर दिया. इस घटना में दोनों देशों के सैनिकों को मामूली चोटें आई थीं.

<https://www.abplive.com/news/india/indian-air-force-to-conduct-exercise-in-eastern-sector-amid-india-china-border-clash-tawang-dispute-ann-2281641>

IAF to Carry Out 2-Day Exercise in Northeast from Thursday

The Indian Air Force will carry out a two-day exercise in the Northeast involving almost all its frontline fighter jets and other assets deployed in the region amid the fresh tensions between Indian and Chinese troops in the Tawang sector of Arunachal Pradesh following the last week's face-off in the area. Sources said the exercise is aimed at checking the IAF's overall combat capability and military preparedness in the region. They, however, said the exercise was planned much before the face-off between the Indian and Chinese armies and it is not related to the incident. The sources said IAF's frontline fighter jets including Sukhoi-30MKIs and Rafale jets will be part of the exercise besides several other platforms deployed in the region.

All frontline air bases and some key Advanced Landing Grounds (ALGs) in the Northeast are set to be involved in the exercise, said a source. The sources said the top brass of the Eastern Air Command will also undertake a comprehensive review of the IAF's preparedness in the region in view of the overall security matrix. The Army and IAF have been maintaining a high state of operational readiness along the Line of Actual Control with China in the Arunachal Pradesh and the Sikkim sector for over two years following the eastern Ladakh row. The IAF scrambled fighter jets last week following China's increasing air activities on its side of the LAC in the Tawang sector of Arunachal Pradesh. The deployment of some aerial platforms including drones by China in the region preceded the Chinese attempts on December 9 to unilaterally change the status quo in the Yangtse area of the Tawang sector, sources said. They said a number of Chinese drones flew close to the LAC prompting the IAF to scramble the jets and increase the overall combat readiness. On Monday, the Indian Army said troops from the two sides clashed along the Line of Actual Control (LAC) in the Tawang sector and the face-off led to "minor injuries" to a few personnel from both sides". The face-off took place amid the over 30-month border standoff between the two sides in eastern Ladakh. Defence Minister Rajnath Singh told Parliament on Tuesday that the Indian troops bravely thwarted the attempt by Chinese PLA from "unilaterally" changing the status in Yangtse area of the Tawang sector and there were no fatalities or serious casualties to the Indian troops in the scuffle.

"On December 9, PLA troops tried to transgress the LAC in Yangtse area of Tawang Sector and unilaterally change the status quo. The Chinese attempt was contested by our troops in a firm and resolute manner," Singh said. "The ensuing face off led to a physical scuffle in which the Indian Army bravely prevented the PLA from transgressing into our territory and compelled them to return to their posts," he said. Indian and Chinese troops were engaged in a brief face-off near Yangtse in October last year as well and it was resolved following talks between local commanders of the two sides as per established protocols. Meanwhile, an old video of clashes between Indian and Chinese troops along the LAC purportedly has gone viral on social media. The video has surfaced in the backdrop of the December 9 incident. Officials said the video is old.

<https://economictimes.indiatimes.com/news/defence/iaf-to-carry-out-2-day-exercise-in-northeast-from-thursday/articleshow/96232889.cms?from=mdr>

नवभारत टाइम्स

गुरुवार, 15 दिसंबर 2022

चीन को जवाब देंगे सेना के बैटल ग्रुप

LAC पर होगी इंटिग्रेटेड बैटल ग्रुप की तैनाती

■ नई दिल्ली: चीन को LAC पर जवाब देने के लिए भारतीय सेना नई रणनीति पर काम कर रही है। इसके तहत LAC पर सेना के IBG यानी इंटिग्रेटेड बैटल ग्रुप की तैनाती होगी। इस ग्रुप में सेना की अलग-अलग फील्ड के जवान होंगे। इनमें पैदल सैनिक, टैंक, तोप, इंजिनियर्स, लॉजिस्टिक, सपोर्ट यूनिट सहित वे सभी सैनिक होंगे, जो किसी जंग के लिए जरूरी हैं। सेना के ये समूह ज्यादा घातक होंगे। इन्हें ऊंची चोटियों की जंग में माहिर बनाया गया है।

अभी भारतीय सेना की दो कोर - 9वीं और 17वीं तीन साल से IBG का अभ्यास कर रही हैं। पिछले साल ही ऐसे इंटिग्रेटेड बैटल ग्रुप का वैलिडेशन हो चुका है। वैलिडेशन का मतलब है कि कई एक्सरसाइज के जरिए परखा गया है कि ये बैटल ग्रुप कैसे ज्यादा असरदार होंगे। इसके बाद इन्हें मान्यता दी गई है। अब IBG बनाने के लिए सरकार की मंजूरी का इंतजार है। आदेश मिलने के एक महीने के अंदर सेना LAC पर अपनी इस नई रणनीति पर काम शुरू कर देगी।

इंटिग्रेटेड बैटल ग्रुप का टेस्ट सबसे पहले अरुणाचल में किया गया है। साल 2019 में भारतीय सेना ने अरुणाचल में 15 हजार फीट की ऊंचाई पर 'हिम विजय' नाम से इसका अभ्यास किया। इस दौरान चोटियों पर परखा गया कि भारतीय सेना किस तरह नई रणनीति से दुश्मन का मुकाबला करेगी। इसमें देखा गया कि 15 हजार फीट की ऊंचाई और कठिन भौगोलिक परिस्थितियों में सेना जल्द से जल्द कैसे एक से दूसरी जगह पहुंचेगी, कैसे कम्युनिकेशन होगा और कैसे कोऑर्डिनेशन होगा। यह इंटिग्रेटेड बैटल ग्रुप (IBG) का पहला टेस्ट था। अभी सेना की एक कोर के तहत डिविजन और फिर डिविजन के नीचे ब्रिगेड होती है। लेकिन IBG में कोर से सीधे

Contd....

■ सेना की 9वीं और 17वीं कोर 3 साल से कर रही है IBG का अभ्यास

■ इस ग्रुप में जंग के लिए जरूरी सेना की सभी फील्ड से शामिल होते हैं लोग

■ ज्यादा ऊंचाई वाली चोटियों की जंग में माहिर हैं ये बैटल ग्रुप

अरुणाचल में LAC पर IBG का है छोटा रूप

अरुणाचल प्रदेश में LAC पर भारतीय सेना की इंटीग्रेटेड डिफेंस लोकेशन हैं। इसे IBG का छोटा रूप मान सकते हैं। इंटीग्रेटेड होने से यह ज्यादा घातक होती हैं। इंटीग्रेटेड डिफेंस बैटल सेना की बस एक कंपनी या बटैलियन नहीं लड़ती है। यह साइज़ लड़ाई है, जिसमें सेना की सभी फील्ड और सर्विसेज हिस्सा लेती हैं। इसमें पैदल सैनिकों के साथ इंजिनियर्स, आर्टिलरी, आर्मी एविएशन, अटैक हेलिकॉप्टर और वायुसेना के एयरक्राफ्ट शामिल हैं।

ब्रेगेड को निर्देश मिलेंगे। इस नई युद्ध रणनीति में बीच की लेयर नहीं है। इससे फैसले लेने और उन्हें लागू करने में तेजी आएगी। आईवीजी की अगुआई मेजर जनरल करेंगे। सेना की 9वीं और 17वीं कोर ने कई अभ्यास के जरिए IBG में महारत हासिल की है। इनमें 17वीं कोर माउंटेन स्ट्राइक कोर है।



बुधवार, 14 दिसंबर 2022

जनरल नरवणे ने कहा- ड्रैगन की विस्तारवादी नीति को विफल कर सकता है भारत, सीमाओं पर हमेशा बना रहता है खतरा

अरुणाचल प्रदेश के यांगत्से में नजदीक बह रही नदी को पार करके चीनी सैनिक भारतीय क्षेत्र में आए। वहां पर पीपुल्स लिबरेशन आर्मी (पीएलए) हर साल दो-तीन बार ऐसी हरकत करती है, इसलिए भारतीय सैनिक जवाबी कार्रवाई के लिए तैयार रहते हैं। वहां पर हम रणनीतिक रूप से बेहतर स्थिति में हैं। इसलिए चीनी सैनिकों का आगे बढ़ पाना मुश्किल होता है। लेकिन साल दर साल वे अपनी हरकतें बंद नहीं करते और अंततः उन्हें चोट खाकर वापस जाना पड़ता है। यह बात पूर्व सेनाध्यक्ष जनरल एमएन नरवणे ने साक्षात्कार में कही है।

गलवन में भारतीय सेना दिए थे मुंहतोड़ जवाब

जनरल नरवणे ने कहा, हाल के वर्षों में देखा गया है कि इलाके में बर्फबारी से पहले चीनी सैनिक यह हरकत करते हैं, क्योंकि बर्फ जमने के बाद वहां की स्थिति ज्यादा दुर्गम हो जाती है और नदी पार कर आगे बढ़ना संभव नहीं हो सकता। गलवन में 2020 में पीएलए के साथ हुई टकराव की घटना का उल्लेख करते हुए जनरल नरवणे ने कहा कि वहां पर भारतीय सैनिक कमजोर नहीं पड़े थे। उन्होंने चीन की हरकत का मुंहतोड़ जवाब दिया था। डोकलाम के बाद गलवन में भी चीन की विस्तारवादी नीति को झटका लगा था।

पड़ोसी देशों की भूमि हड़पने के फिराक में चीन

उन्होंने कहा कि चीन पिछले दो दशकों से पड़ोसी देशों की भूमि हड़पने में लगा हुआ है। दक्षिण चीन सागर उसका प्रत्यक्ष उदाहरण है। गलवन की घटना के जरिये भारत ने दुनिया को दिखा दिया था कि चीन की विस्तारवादी नीति को विफल करने में भारत सक्षम है। हाल के वर्षों में देश की उत्तरी सीमा पर स्थितियां चुनौतीपूर्ण हुई हैं। इसलिए वहां पर सेनाओं की सघन तैनाती और सतर्कता बहुत जरूरी हो गई है।

चीनी सेना हड़दंग मचाने वाली

जनरल नरवणे ने कहा कि भारतीय सेना का पेशेवर और जिम्मेदारीपूर्ण तरीके से कार्य करती है जबकि चीन की सेना का रुख हड़दंग मचाने वालों और सड़क पर लड़ने वालों जैसा है। गलवन में उन्होंने ऐसा ही किया था। वे वहां पर कंटीले तार, कील लगी लाठियां और लोहे की छड़ें लेकर हमला करने आए थे।

चीन बलिदान को छिपाता है

एक प्रश्न के उत्तर में जनरल नरवणे ने कहा, देश का प्रत्येक जवान किसी का बेटा या बेटी होती है। जब उसके बलिदान की खबर आती है तो स्वाभाविक रूप से सभी को दुख होता है। लेकिन साथ ही यह गर्व भी होता है कि उसने कर्तव्य का निर्वहन करते हुए देश के लिए जान दी है। लेकिन चीन में ऐसा नहीं है। वहां पर सीमा पर जान देने वालों की जानकारी छिपाई जाती है।

भारतीय सेना चीन को जवाब देने में सक्षम

जनरल नरवणे ने कहा, चीन अगर 1993 में हुए समझौते को तोड़ते हुए सीमा को बदलने की कोशिश करता है तो भारत उसके खिलाफ कार्रवाई करने में सक्षम है। उन्होंने कहा, चीन की नीयत का पता इसी से चलता है कि वह स्थान बदल-बदल कर बार-बार ऐसी कोशिश कर रहा है। वह टकराव पर उतारू है-इसलिए उसके मंसूबे विफल करने के लिए भारतीय सेना को सतर्क रहना होगा। दुनिया में इस समय तेजी से बदलाव हो रहे हैं। इसलिए भारत को उनके अनुसार कदम उठाने के लिए खुद को तैयार रखना होगा। सेनाओं को हमेशा युद्ध के लिए तैयार रखना होगा। सीमाओं पर खतरा एक सतत प्रक्रिया है। वह परिस्थितियों के अनुसार घटता-बढ़ता रहता है लेकिन खत्म कभी नहीं होता।

<https://www.jagran.com/news/national-former-army-chief-general-manoj-mukund-naravane-said-china-got-the-first-blow-during-the-galvan-conflict-forced-to-re-evaluate-23258198.html>

Wed, 14 Dec 2022

Indian Army Fully Prepared with its Fire Power along China Border

Amidst the ongoing 30 month long stand-off between the Indian Army and Chinese PLA troops, the army has been gradually ramping up its fire power along the Line of Actual Control (LAC) in the Eastern Sector. This has been done to match the Chinese deployment of equipment and weapons on its side of LAC. It has not only inducted upgraded its legacy guns, it has also deployed the Ultra Light Howitzer M-777, and automated artillery systems like Bofors guns and Air Defence systems. The indigenously upgraded L-70 Air Defence gun is used to counter low-level air threats and this includes unmanned combat vehicles, unmanned aerial vehicles, and with its automatic tracking capabilities it can also bring down modern aircraft and attack helicopters.

This gun comes with a laser range finder, thermal imaging, and a high resolution electro-optic sensor to include day and night television cameras. It comes equipped with muzzle velocity radar and this helps increase firing accuracy of the gun and also a system management computer which receives all the data from the major components of the gun that helps provide target positions. This gun which was first procured from Sweden in 1960 has since then been upgraded by defence PSU Bharat Electronics Limited (BEL) and has a range of over 3 km.

Ultra-Light Howitzer M-777

Financial Express Online has earlier reported that the ULH M777 which has been bought from the US based BAE Systems and assembled in India is deployed in the eastern sector. This gun is movable and can be taken to any terrain, unlike the other gun systems including Bofors. Financial Express has reported in 2016 that the country had entered into an agreement with the US for the procurement of 145 M-777 ULHs for \$737 million and out of these 75 has been deployed along the LAC by the army. So far three regiments have been raised and the process for raising the fourth is in progress.

More about M-777

This is 155 mm 39-calibre towed artillery and weighs 4-tonne. This system can easily be transported under-slung from helicopters like the Chinook. According to a senior officer, the Gun display Unit computerizes the entire artillery process and has enhanced the response time with lesser human error.

<https://www.financialexpress.com/defence/indian-army-fully-prepared-with-its-fire-power-along-china-border/2913330/lite/>

नवभारत टाइम्स

बुधवार, 14 दिसंबर 2022

चीन क्यों है परेशान? लद्दाख से लेकर अरुणाचल तक भारत की तैयारियों का मतलब अब समझ में आ रहा

जून 2020 गलवान की घटना के करीब ढाई साल बाद चीन की ओर से दोबारा ही ऐसी हिमाकत करने की कोशिश हुई। 9 दिसंबर को अरुणाचल प्रदेश के तवांग में चीन के सैनिकों की ओर भारतीय सीमा में दाखिल होने की कोशिश हुई लेकिन भारतीय सैनिकों के आगे चीन की एक न चली। भारतीय सैनिकों ने भी चीन को मुंहतोड़ जवाब दिया और चीन का एक भी सैनिक भारत की धरती पर दाखिल नहीं हो सका। चीन को भारत की ताकत का अहसास हो चुका है और उसके बौखलाहट के पीछे भी यही कारण है। भारतीय सेना की ताकत हाल के वर्षों में काफी बढ़ी है तभी यह कहा जा रहा है कि यह 1962 नहीं है। चीन की ओर से ऐसी हरकत की गई उसके पीछे कई रक्षा एक्सपर्ट का यही मानना है कि भारत की जिस प्रकार तैयारी चल रही है वह बात उसे पसंद नहीं आ रही है। पिछले कुछ समय में भारत ने लद्दाख से लेकर अरुणाचल तक अपनी सैन्य शक्ति को मजबूत किया है।

अरुणाचल के पास भारत की तैयारी देख अब चीन भी परेशान

चीन की तैयारी के बीच भारत की ओर से भी सेना की ताकत बढ़ाए जाने पर जोर है। मोदी सरकार की ओर से रक्षा बजट बढ़ाया गया है और एलएसी के पास इंफ्रास्ट्रक्चर को मजबूत करने पर जोर है। सरकार का जोर चीन से सटे सीमा पर भारतीय सेना की ताकत कैसे बढ़े इस पर है। किसी भी आपात स्थिति से निपटने और भारतीय सैनिकों तक तत्काल पहुंच के मद्देनजर सड़कों का जाल बिछाया जा रहा है। अरुणाचल प्रदेश में सड़क के साथ ही सुरंग, पुल और एयरबेस का भी निर्माण किया जा रहा है। अरुणाचल फ्रंटियर हाइवे प्रोजेक्ट पर काम शुरू है। जब यह सारे प्रोजेक्ट पूरे हो जाएंगे तब एलएसी तक भारतीय सैनिकों की पहुंच और भी आसान हो जाएगी। एक रिपोर्ट में दावा किया गया है कि अरुणाचल प्रदेश में केंद्र सरकार ने खास पैकेज के तहत 2319 किलोमीटर सड़क बनाने की मंजूरी दी है जिसमें 1150 किमी से अधिक सड़क का निर्माण हो चुका है।

चीन हो या पाकिस्तान... हर बॉर्डर पर सुरक्षा की है खास तैयारी

पिछले मानसून सत्र में सरकार की ओर से यह बताया गया कि केंद्र सरकार ने पिछले 5 सालों में चीन की सीमा से लगे इलाकों में करीब 2100 किलोमीटर सड़कों का निर्माण किया है जिसके लिए 15 हजार 477 करोड़ रुपये खर्च किए गए। सरकार की ओर से दी गई जानकारी के मुताबिक 3 हजार 595 किलोमीटर लंबी सड़क परियोजना पर 20 हजार 767 करोड़ रुपये खर्च किए गए। जिसमें बांग्लादेश, पाकिस्तान, म्यांमार के

साथ का बॉर्डर एरिया है। रक्षा राज्य मंत्री अजय भट्ट ने बताया था कि पिछले 5 साल में चीन के साथ लगी सीमा पर 2088 किलोमीटर सड़क का निर्माण किया गया है। वहीं पाकिस्तान के साथ बॉर्डर पर 1336 किलोमीटर सड़क निर्माण के लिए 4242 करोड़ रुपये खर्च किए गए। इसके साथ ही म्यांमार, बांग्लादेश की सीमा के साथ भी सड़क निर्माण जोरों पर है।

टनल है खास, भारतीय सेना की और बढ़ जाएगी ताकत

तवांग में भारत और चीनी सैनिकों की झड़प के बीच सेला टनल की भी चर्चा जोरों पर है। सेला टनल भारतीय सेना के लिए एक मजबूत लाइफ लाइन होगी। अरुणाचल प्रदेश में 13 हजार फीट की ऊंचाई पर बनी 2 किलोमीटर से ज्यादा लंबी सेला सुरंग लगभग बनकर तैयार है और इसके जनवरी 2023 में शुरू होने की उम्मीद है। इस सुरंग के जरिए चीन की सीमा के पास से गुजरने वाले तवांग सेक्टर तक मिसाइल और टैंक आसानी से पहुंच जाएंगे। इस सुरंग को खास तकनीक का प्रयोग करके बनाया गया है। हर मौसम में इस टनल से कनेक्टिविटी प्रदान करेगी। यह टनल तवांग और वेस्ट कामेंग जिलों के बीच की यात्रा दूरी को 6 किलोमीटर और ट्रेवल टाइम को एक घंटा कम कर देगी।

लद्दाख में भी तैयारी है खास, हर मोर्चे पर जवाब देने की तैयारी

चीन के साथ सीमा विवाद के बीच भारत चीन से मुकाबले के लिए पूरी तरह से तैयारी कर रहा है। भारत का रक्षा बजट बढ़ाया गया है। सेना को विदेशी और स्वदेशी अत्याधुनिक हथियारों से लैस किया जा रहा है। पूर्वी लद्दाख में विवाद के बीच भारत ने चीन से सटी सीमा पर हाई फ्रीक्वेंसी एयर डिफेंस सिस्टम, लेजर गाइडेड अत्याधुनिक मिसाइलें, मॉडर्न ड्रोन, आर्टिलरी गन, अत्याधुनिक कार्बाइन, पहाड़ी और दुर्गम स्थानों के अनुरूप तैयार टैंक को भी तैनात किया है। इतना ही नहीं बॉर्डर पर सर्विलांस बढ़ाने के लिए सेना को लेटेस्ट हार्डवेयर से भी लैस किया जा रहा है। पूर्वी लद्दाख के उंचाई वाले इलाके में पहले जवानों के रहने का इंतजाम 10 हजार था अब वह संख्या बढ़कर 22 हजार से अधिक जा पहुंची है। पूरी तरह से आधुनिक और कॉम्पैक्ट शेल्टर 15 हजार, 16 हजार और 18 हजार की उंचाई पर बनाए गए हैं। 3 डी बंकर बनाए जा रहे हैं जिस पर टैंक से करीब से भी हमला किया जाएगा तो तब भी वे इसका सामना कर पाएंगे।

<https://navbharattimes.indiatimes.com/india/indian-army-preparation-ladakh-to-arunachal-pradesh-india-china-clash-modi-government/articleshow/96227200.cms>

तवांग पर आंखे क्यों गड़ाए बैठा है चीन: यहां से भड़क सकता है तिब्बत विद्रोह, इंडियन आर्मी के मिसाइल निशाने पर सीधा बीजिंग

लेखक : नीरज सिंह

21 नवंबर 1962 की बात है। चीन ने भारत के खिलाफ एकतरफा सीजफायर का ऐलान किया। इसी के साथ भारत-चीन के बीच चल रहे एक महीने लंबे युद्ध का अंत हो गया। उस वक्त तक चीन पश्चिमी क्षेत्र में अक्साई चिन और पूर्वी क्षेत्र में अरुणाचल प्रदेश के कई हिस्सों पर कब्जा कर चुका था। सीजफायर के ऐलान के बाद चीन ने अक्साई चिन पर तो कब्जा बरकरार रखा, लेकिन अरुणाचल प्रदेश में मैकमोहन लाइन से 20 किलोमीटर पीछे हट गया। अरुणाचल से पीछे हटने पर लगा कि चीन अब यहां हस्तक्षेप नहीं करेगा, लेकिन 1980 में चीन ने फिर से भारत के नॉर्थ-ईस्ट में लगभग 90,000 वर्ग किलोमीटर क्षेत्र पर दावा करना शुरू किया। 9 दिसंबर 2022 की रात एक बार फिर से चीन के सैनिकों इसी अरुणाचल प्रदेश के तवांग में घुसने की कोशिश की, हालांकि इंडियन आर्मी ने उन्हें वापस खदेड़ दिया। तवांग पर आंखे क्यों गड़ाए बैठा है चीन: यहां से भड़क सकता है तिब्बत विद्रोह, इंडियन आर्मी के मिसाइल निशाने पर सीधा बीजिंग

21 नवंबर 1962 की बात है। चीन ने भारत के खिलाफ एकतरफा सीजफायर का ऐलान किया। इसी के साथ भारत-चीन के बीच चल रहे एक महीने लंबे युद्ध का अंत हो गया। उस वक्त तक चीन पश्चिमी क्षेत्र में अक्साई चिन और पूर्वी क्षेत्र में अरुणाचल प्रदेश के कई हिस्सों पर कब्जा कर चुका था। सीजफायर के ऐलान के बाद चीन ने अक्साई चिन पर तो कब्जा बरकरार रखा, लेकिन अरुणाचल प्रदेश में मैकमोहन लाइन से 20 किलोमीटर पीछे हट गया। अरुणाचल से पीछे हटने पर लगा कि चीन अब यहां हस्तक्षेप नहीं करेगा, लेकिन 1980 में चीन ने फिर से भारत के नॉर्थ-ईस्ट में लगभग 90,000 वर्ग किलोमीटर क्षेत्र पर दावा करना शुरू किया। 9 दिसंबर 2022 की रात एक बार फिर से चीन के सैनिकों इसी अरुणाचल प्रदेश के तवांग में घुसने की कोशिश की, हालांकि इंडियन आर्मी ने उन्हें वापस खदेड़ दिया। भास्कर एक्सप्लेनर में जानेंगे कि अरुणाचल प्रदेश पर चीन नजरें क्यों गड़ाए हैं और भारत अरुणाचल प्रदेश से चीन का कितना नुकसान कर सकता है...

अरुणाचल प्रदेश पर चीन नजरें गड़ाए क्यों बैठा है?

अरुणाचल प्रदेश पूर्वोत्तर का सबसे बड़ा राज्य है। नार्थ और नॉर्थ वेस्ट में तिब्बत, वेस्ट में भूटान और ईस्ट में म्यांमार के साथ यह अपनी सीमा साझा करता है। अरुणाचल प्रदेश को पूर्वोत्तर का सुरक्षा कवच कहा

जाता है। चीन अरुणाचल प्रदेश को दक्षिणी तिब्बत का हिस्सा बताता है। उसका दावा तो पूरे राज्य पर है, लेकिन उसकी जान तवांग जिले पर अटकी है। तवांग अरुणाचल के नॉर्थ-वेस्ट में हैं, जहां पर भूटान और तिब्बत की सीमाएं हैं।

1. युद्ध के लिहाज से बेहद अहम लोकेशन

तवांग में चीन की दिलचस्पी सामरिक वजहों से है, क्योंकि यह भारत के पूर्वोत्तर क्षेत्र में स्ट्रैटजिक एंट्री दिलाता है। तवांग तिब्बत और ब्रह्मपुत्र वैली के बीच कॉरिडोर का एक महत्वपूर्ण बिंदु है। तवांग के नॉर्थ में महत्वपूर्ण बुम ला दर्रा है, जो भारत के तवांग जिले और चीनी कब्जे वाले तिब्बत के बीच एक सीमा पास है। संयोग से 1962 में चीनी सैनिकों ने भारत पर हमला करने के लिए इसी दर्रे का इस्तेमाल किया था।

2. तिब्बत में चीन के खिलाफ विद्रोह का केंद्र बन सकता है तवांग मठ

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अरुणाचल प्रदेश पूर्वोत्तर का सबसे बड़ा राज्य है। नार्थ और नॉर्थ वेस्ट में तिब्बत, वेस्ट में भूटान और ईस्ट में म्यांमार के साथ यह अपनी सीमा साझा करता है। अरुणाचल प्रदेश को पूर्वोत्तर का सुरक्षा कवच कहा जाता है। चीन अरुणाचल प्रदेश को दक्षिणी तिब्बत का हिस्सा बताता है। उसका दावा तो पूरे राज्य पर है, लेकिन उसकी जान तवांग जिले पर अटकी है। तवांग अरुणाचल के नॉर्थ-वेस्ट में हैं, जहां पर भूटान और तिब्बत की सीमाएं हैं। अरुणाचल प्रदेश पर चीन की टेढ़ी नजर के पीछे ये 3 बड़ी वजहें हैं...

1. युद्ध के लिहाज से बेहद अहम लोकेशन

तवांग में चीन की दिलचस्पी सामरिक वजहों से है, क्योंकि यह भारत के पूर्वोत्तर क्षेत्र में स्ट्रैटजिक एंट्री दिलाता है। तवांग तिब्बत और ब्रह्मपुत्र वैली के बीच कॉरिडोर का एक महत्वपूर्ण बिंदु है। तवांग के नॉर्थ में

महत्वपूर्ण बुम ला दर्रा है, जो भारत के तवांग जिले और चीनी कब्जे वाले तिब्बत के बीच एक सीमा पास है। संयोग से 1962 में चीनी सैनिकों ने भारत पर हमला करने के लिए इसी दर्रे का इस्तेमाल किया था।

2. तिब्बत में चीन के खिलाफ विद्रोह का केंद्र बन सकता है तवांग मठ

तवांग मठ 400 साल पुराना है। माना जाता है कि साल 1683 में तवांग के पास छठे दलाई लामा का जन्म हुआ था। तवांग मठ 400 साल पुराना है। माना जाता है कि साल 1683 में तवांग के पास छठे दलाई लामा का जन्म हुआ था। तवांग में ही तवांग मठ भी है। यह दुनिया में तिब्बती बौद्ध धर्म का दूसरा सबसे बड़ा मठ है। पांचवें दलाई लामा के सम्मान में साल 1680-81 में मेराग लोद्रो ग्यामत्सो ने इस मठ की स्थापना की थी। चीन का दावा है कि मठ इस बात का सबूत है कि यह जिला कभी तिब्बत का था। चीन अरुणाचल पर अपने दावे के समर्थन में तवांग मठ और तिब्बत में ल्हासा मठ के बीच ऐतिहासिक संबंधों का हवाला देता है। इस तथ्य के बावजूद कि 1914 के शिमला सम्मेलन में एक तिब्बती प्रतिनिधि के साथ समान स्तर पर एक चीनी प्रतिनिधि भी शामिल हुआ था। इसी दौरान मैकमोहन लाइन खींची गई थी, जो भारत के पूर्वी क्षेत्र को तिब्बत से अलग करती है। इसने स्पष्ट रूप से भारत और तिब्बत के बीच सीमा को स्पष्ट किया है।

तवांग तिब्बती बौद्ध धर्म का एक महत्वपूर्ण केंद्र है। इसी के चलते अरुणाचल के ऊंचाई वाले क्षेत्रों में रहने वाली कुछ जनजातियों का तिब्बत के लोगों से कल्चरल कनेक्शन यानी सांस्कृतिक संबंध है। मोनपा आदिवासी आबादी तिब्बती बौद्ध धर्म को मानती है और तिब्बत के कुछ क्षेत्रों में भी यह मौजूद है। चीन को डर है कि अरुणाचल में इन जातीय समूहों की उपस्थिति किसी समय बीजिंग के खिलाफ लोकतंत्र समर्थक तिब्बती आंदोलन को जन्म दे सकती है। अंतरराष्ट्रीय संबंधों पर लिखने वाली न्यूज वेबसाइट द डिप्लोमैट ने अपनी एक रिपोर्ट में लिखा है कि तवांग मठ ही वह जगह है, जहां 1959 में चीन से भागने के बाद वर्तमान दलाई लामा हफ्तों तक रुके थे। इसलिए चीन के दृष्टिकोण से यह चीनी शासन के तिब्बती प्रतिरोध की जगह है। चीन का मानना है कि तिब्बत में यदि कभी चीन सरकार के खिलाफ विद्रोह होगा तो तवांग इसका प्रमुख केंद्र होगा। 1959 में चीन जब तिब्बत पर कब्जा कर रहा था, तब दलाई लामा तवांग के रास्ते ही भारत में आए थे और कुछ समय के लिए तवांग मठ में रहे।

3. अरुणाचल के रास्ते भूटान पर भी चीन की नजर

अरुणाचल प्रदेश की सीमाएं भूटान की ईस्टर्न बॉर्डर से मिलती हैं। चीन का प्लान है कि वो अरुणाचल प्रदेश पर कब्जा कर ले, जिससे वो भूटान का पड़ोसी बन जाए। भूटान के वेस्टर्न हिस्से में स्ट्रैटेजिक पाइंट को जोड़ने के लिए चीन पहले से ही बड़े स्तर पर सड़कें बना रहा है। रिपोर्ट्स के मुताबिक, चीन डोकलाम से गामोचिन तक अपनी सड़कों का विस्तार करना चाहता है, जिसकी सुरक्षा का जिम्मा अभी भारतीय सेना के पास है। सिलीगुड़ी कॉरिडोर के करीब जाने का चीन का प्रयास भारत और भूटान दोनों के लिए एक

सुरक्षा खतरा है। चीन इस क्षेत्र में रेलवे लाइनों के अपने नेटवर्क का विस्तार कर रहा है, जिससे युद्ध के समय उसकी सेना को बड़ा एडवांटेज मिल सकता है।

अरुणाचल प्रदेश से चीन का कितना नुकसान कर सकता है भारत?

चीन के बीजिंग जैसे बड़े शहर अरुणाचल प्रदेश से नजदीक हैं। अरुणाचल के ईटानगर से बीजिंग की हवाई दूरी लगभग 2537 किमी है। यानी भारत यहां से आसानी से चीन पर मिसाइल हमला कर सकता है। साथ ही चीन की ओर से संभावित हमलों से बचने के लिए भारत के मल्टी लेयर्ड एयर डिफेंस को लगाने का सबसे उपयुक्त स्थान अरुणाचल प्रदेश है। इंडियन एयर फोर्स की मजबूती के लिए अरुणाचल में 4 एयरपोर्ट्स ईटानगर, जीरो, पासीघाट और तेजू बनाए गए हैं। इसके साथ ही आला, मेचूका, पासीघाट, तवांग एयर फोर्स स्टेशन, टूटिंग, विजयनगर, वालोंग, जीरो, दापोरिजो में 9 एयर स्ट्रिप भी हैं। मैकमोहन लाइन के पास कई सारे हेलीपैड बनाए गए हैं। युद्ध की स्थिति में एयरफोर्स इन जगहों से चीन के खिलाफ मोर्चा खोल सकता है।

<https://www.bhaskar.com/amp/db-original/explainer/news/china-india-tawang-border-dispute-explained-wants-arunachal-pradesh-130679348.html>

ThePrint

Thu, 15 Dec 2022

“We Fully Support India’s Ongoing Efforts to De-Escalate Situation,” US on India-China Arunachal Border Clash

The United States’ Department of Defence said that it continues to closely watch developments along the Line of Actual Control at the India-China border and noted that China “continues to amass forces and build military infrastructure along the so-called LAC.” Pentagon Press Secretary Air Force Brig. Gen. Pat Ryder in an on-Camera Press Briefing on December 13 (local time) said that China is growingly asserting itself and being proactive in areas directed toward US allies and partners in Indo-Pacific. Asked about the December 9 face-off between Indian and Chinese troops in the Tawang sector in Arunachal Pradesh, the spokesperson said, “The DoD continues to closely watch developments along the line of actual control at the India-China border.

“We have seen the PRC continue to amass forces and build military infrastructure along the so-called LAC. But I would defer you to India in terms of their views. It does reflect though, and it’s important to point out, the growing trend by the PRC to assert itself and to be provocative in areas directed towards US allies and our partners in the Indo-Pacific,” the Pentagon spokesperson said. “We will continue to remain steadfast in our commitment to ensuring the security of our partners. And we fully support India’s ongoing efforts to de-escalate this situation, Ryder said. Defence Minister Rajnath Singh told Parliament on Tuesday that Chinese troops had attempted to transgress the LAC at Yangtse in Tawang sector of Arunachal Pradesh in

a bid to “unilaterally change the status quo” but were given a firm and resolute response forcing the Chinese side to retreat. In his statement in both the Lok Sabha and Rajya Sabha, Singh said the face-off led to a physical scuffle that led to injuries to a few personnel on both sides but “there was no fatalities or serious casualties” to Indian soldiers.

“The Chinese side was asked to refrain from such actions and maintain peace and tranquility along the border. The issue has also been taken up with the Chinese side through diplomatic channels,” Singh told Parliament. On Tuesday (local time), the White House Press Secretary Karine Jean-Pierre said that US is closely monitoring the situation and that Washington is “glad to hear that both sides appear to have quickly disengaged from the clashes.” “We are closely monitoring the situation. We encourage India and China to utilize existing bilateral channels to discuss disputed boundaries. Again, we are — we’re glad to see that there has been some disengagement on the clashes at this time,” the White House Press Secretary said. The US State Department Spokesperson Ned Price also in his press briefing on December 13 (local time) stated that the Price stated that the US is glad to hear both sides have quickly disengaged after the clashes in Tawang. “we’re continuing to monitor very closely and to engage with our Indian partners,” Price said.

Responding to a question on the strategy of the US in case the situation escalates, the spokesperson said, “India is indeed an important strategic partner of the United States bilaterally, in the Quad, and other multilateral fora as well. So we’re always, with that in mind, in close contact with our Indian partners, both from our mission in India as well as from the State Department here in Washington.” “we do strongly oppose any unilateral attempts to advance territorial claims by incursions, military or civilian, across the border at the established Line of Actual Control,” he said adding that, “We encourage India and China to utilize existing bilateral channels to discuss disputed boundaries.”

<https://theprint.in/world/we-fully-support-indias-ongoing-efforts-to-de-escalate-situation-us-on-india-china-arunachal-border-clash/1264721/>



Thu, 15 Dec 2022

‘Very Concerned’, Says German Ambassador on India-China Clash in Tawang

The skirmish between Indian and Chinese troops along the Line of Actual Control (LAC) in Arunachal Pradesh is a matter of concern and there should be no violation of international borders, German ambassador Philipp Ackermann said on Wednesday. Ackermann acknowledged during an interview that while European countries now have a greater understanding of India’s position on the Ukraine conflict, they also hope the Indian side understands the European position since the war is having a “very big impact” across the continent, in terms of energy prices, refugees and the fallout on the global rules-based order. Following German foreign minister Annalena Baerbock’s recent visit to India, both sides have agreed to stay in close contact at the top level on the issue of China and Russia, the envoy said, noting that the relationship with these two countries is a “strategic geopolitical priority”.

Ackermann also outlined Germany's plans to back green transition in India, including providing about €1.5 billion a year over the next 10 years for climate change, biodiversity and smart city sustainability projects. Referring to the clash on the LAC near Tawang in Arunachal Pradesh on December 9 that left several soldiers injured on both sides, the German envoy said: "I'm not fully aware of every detail, what I'm reading are media reports, but I can say that we are very concerned. We should avoid violation at international borders at all times." He added, "There was violence in the western part [of the LAC], there is violence in the eastern part. I think this is a matter of concern. There shouldn't be violence." Ackermann further said, "We in Europe see this war of aggression of Russia in our daily lives when it comes to energy prices, refugees or dealing with Russians, and at all levels. But on an abstract level, it's a concern for the whole world because it's a breach of international law."

Asked if the Ukraine conflict has implications for the rules-based order in other parts of the world, he replied, "Absolutely, frankly, this is what we see. You may say it's not our part of the world, but what we see is a blatant violation of international law and we should only try hard to not make these violations happen. What we've seen in Arunachal [Pradesh] lately is also kind of just that." Expressing confidence that the Indian presidency of the G20 will be able to bridge divisions caused within the grouping by the Ukraine crisis, Ackermann said: "We have high hopes, but I think the guess is certainly not unfounded that this conflict will play a role in the G20. You can't exclude it." While European states have "understood the Indian position [on the Ukraine crisis] to a certain extent", they "hope the Indians have also understood the European position to a certain extent. The war in Ukraine is something that is having a very big impact on our daily life in Europe. It's not only for Germany or Ukraine, it's for the whole continent," he added.

Referring to Baerbock's discussions with her Indian counterpart S Jaishankar during her visit last week, Ackermann described China and Russia as a "strategic geopolitical priority". He added, "I think both ministers agreed to keep in close contact at the top level on these two areas, where I think in our analysis when it comes to China, we are listening very carefully to what India has to say. We feel that India has a lot to say on China and I think there is a lot of overlap in our analysis." The two ministers had a "very fruitful discussion on the Russian war of aggression in Ukraine" as that is also a priority, he said. Under the partnership for green and sustainable development, Germany will back a range of projects in India, from helping energy providers in Rajasthan switch from fossil fuels to renewables to supporting a solar-driven water transport project and helping biodiversity and organic farming projects in the northeastern states. Germany is also keen to collaborate with India on the production closely in the Indo-Pacific, including through the deployment of warships and joint exercises, Ackermann said.

<https://www.hindustantimes.com/india-news/very-concerned-says-german-ambassador-on-india-china-clash-in-tawang-101671021778583.html>

The Tribune

Thu, 15 Dec 2022

Chinese Army Overtly Aggressive Since Summer, Flouting All Pacts

Since the onset of summer this year, the People's Liberation Army (PLA) of China has been overtly aggressive along the Line of Actual Control (LAC) in Sikkim and Arunachal Pradesh. China was regularly breaching the agreements inked since 1993, probably to create a "new normal" along the border in the two states, said sources. The face-offs between Indian and Chinese soldiers had increased manifold and were a regular feature while jostling had happened on some occasions, the sources told The Tribune. The increase in physical contact during the face-offs had been gradual, they said. When patrol parties of the two armies come face-to-face at the LAC and they unfurl a banner asking either side to retreat, this is called the 'banner drill'. If the troops hold ground after the 'banner drill', it is termed as a face-off. The efficacy of the border agreements and protocols is under question.

The two sides are aware of the disputed points at the LAC and the conduct of troops in such areas is part of the agreements. Yangtse—the site of the clash in Arunachal on December 9—is an "accepted disputed" area. The 3,488-km LAC running all along the Himalayan ridgeline is undemarcated. The perception of where the LAC runs varies by several km at certain places and troops of either side patrol in these disputed sections. Since 1993, the two countries have had a few key agreements aimed at ensuring peace along the border. There have been a series of agreements that dictate the conduct of soldiers and also how a high-powered committee with members of both sides would sort out matters. The agreements, however, have not been holding good.

In January 2012, the two countries inked an agreement and established a 'Working Mechanism for Consultation and Coordination on India-China Border Affairs'. It is tasked to address issues and situations that may arise in border areas and affect peace and tranquillity. The recent incidents have raised a question mark over the 2005-inked "protocol on modalities for implementation of confidence-building measures in military fields along the Line of Actual Control".

The mandate of the agreement is: "Neither side shall use or threaten to use force against the other." It also calls upon both sides to stop their activities (like patrols) in disputed areas and not advance any further. After coming face-to-face, troops of the both countries unfurl a banner asking each other to back off. The protocol too is being regularly breached.

<https://www.tribuneindia.com/news/nation/chinese-army-overtly-aggressive-since-summer-flouting-all-pacts-461005>

Chinese Air Force Builds Infra in Ladakh Theatre Amid Tense LAC

The Chinese air force's infrastructure push across the contested Line of Actual Control (LAC) in eastern Ladakh to support its forward deployments is in top gear as tensions between India and China loom, and a resolution to border problems in the sensitive sector appears elusive even as the December 9 Yangtse clash has turned the spotlight on lingering issues with China along the eastern frontier in Arunachal Pradesh, officials familiar with the matter said on Wednesday. While the People's Liberation Army Air Force (PLAAF) is undeniably focused on creating and modernising infrastructure across LAC to maximise its capabilities, India is keeping tabs on developments, factoring the adversary's capabilities in its operational planning, and taking matching measures to stay prepared for any contingency, said one of the officials cited above, who asked not to be named.

"India has closed the infrastructure gap significantly since the Ladakh standoff began two and a half years ago. Scaling up infrastructure to support sustained operations forms part of the country's broader strategy to tackle the China challenge not only in Ladakh but all along LAC," the official said. From hardened aircraft shelters to surface-to-air missile (SAM) sites and a robust radar network to more hangars and runways at air bases to support missions, PLAAF's ongoing activities in the Ladakh theatre are aimed at sharpening its capabilities and projecting itself as a combat-ready force, said a second official, who also asked not to be named. "The Indian Air Force is alert, and it is in a high state of preparedness to defend the country's interests and deter aggression," he added. After the Ladakh border row erupted in May 2020, IAF has continuously projected its capability to carry out day-and-night, all-weather combat missions, with front-line fighter jets, special operations aircraft, attack helicopters and multi-mission choppers regularly operating in the area. Most Chinese airfields in Xinjiang and Tibet are meant for dual-use, and PLAAF has consciously built hardened shelters for fighter aircraft and other logistics infrastructure for weapons and fuel storage, said Air Marshal Anil Chopra (retd), director general, Centre for Air Power Studies. "IAF has also built considerable infrastructure in Ladakh and the Northeast to counter China," he added.

In August, India raised the issue of increased Chinese air activity close to LAC in eastern Ladakh with China, and asked it to adhere to existing confidence-building measures that bar fighter aircraft from flying within 10 km of the border. "Whenever we find that Chinese aircraft or remotely piloted aircraft systems are coming a little too close to LAC, we take appropriate measures by scrambling our fighters or putting our systems on high alert. This has deterred them to quite an extent," IAF chief Air Chief Marshal Vivek Ram Chaudhari said in July.

Despite four rounds of disengagement from Galwan Valley, Pangong Tso, Gogra (PP-17A) and Hot Springs (PP-15), the Indian and Chinese armies still have more than 60,000 troops each and advanced weaponry deployed in the Ladakh sector. The Indian and Chinese armies have held 16 rounds of talks so far, but problems at Depsang in Daulet Beg Oldi sector and Charding Nullah Junction (CNJ) in Demchok sector are still on the negotiating table. The army has carried out an

overarching reorientation of its forces to sharpen its focus on LAC, even as induction of new weapons and systems, capability building and a strong infrastructure push form the bedrock of its strategy to counter challenges along LAC. The latest confrontation between Indian and Chinese soldiers in Yangtse is a reminder that while eastern Ladakh is the focus of the current border tensions between the two countries, trouble could spill over into other sectors too even as the Indian military is keeping its guard up all along LAC to deal with any contingency. “Now the focus is on the entire LAC from Ladakh to Uttarakhand to the Northeast. Keeping our guard up along the entire LAC will tax our equipment, human endurance and affect deployment schedules of units (peace/field location). It’s not a happy thought, but has to be planned,” said Air Vice Marshal Manmohan Bahadur (retd), former additional director general, Centre for Air Power Studies.

<https://www.hindustantimes.com/india-news/chinese-air-force-builds-infra-in-ladakh-theatre-amid-tense-lac-101671040323619.html>



DEFENCE AVIATION POST
Your Connect To The World Of Defence And Aviation

Wed, 14 Dec 2022

Chinese Warships in Target, “Brahmos” Coastal Missile System is Sent to the Philippines By India

Indian company BrahMos Aerospace Private Ltd. has started sending BrahMos coastal-based anti-ship missile systems to the Philippine Navy’s Marine Corps. On December 12, DA-REAL Military Channel, a YouTube channel for the Philippines military, said that the first parts of the system are now being approved. India and the Philippines have not said anything official about it. Indian Ambassador to the Philippines Shambhu Kumaran told the state-run Philippine News Agency in mid-August that the first BrahMos missile system will be sent to the Armed Forces of the Philippines (AFP) in 2023.

The Brahmos Contract

End of 2021, Secretary of National Defense Delfin Lorenzana released a “notice of award of contract” that said the Philippines accepted BrahMos Aerospace Private Ltd’s offer to provide shore-based anti-ship missile systems as part of an intergovernmental agreement. The price of the order was 374,96,000,000 USD (18.9 billion pesos). The Philippine Navy will buy three batteries of coastal defence systems based on the BrahMos cruise missile, which was made by India and Russia. Along with training for operators and maintenance staff, the delivery package also includes help with integrated logistics.

Protecting a disputed territory

The missile will be able to defeat the enemy inside the Philippines’ exclusive economic zone. In South China, where there is a dispute, the PLA Navy and Coast Guard have been bothering Philippine ships. Also, in 2016, an independent tribunal set up by the United Nations Convention on the Law of the Sea (UNCLOS) sided with the Philippines against China in an arbitration case. But Beijing does not agree with how this case turned out. The government of the Philippines has decided to buy the version of Brahmos that lets launchers be set up along the coast. Its range of

290 kilometres is enough to cover a part of the disputed maritime areas that Brunei, Malaysia, Vietnam, and Taiwan all claim. The Philippine government paid \$55.5 million (2.8 billion pesos) in advance for the system to be delivered in December 2021. On January 28, 2022, a deal was made with the Russian-Indian joint venture BrahMos Aerospace to buy some complexes.

“Recently, I signed a document saying that I agreed to the terms of the contract for the Philippine Navy to buy coastal anti-ship missiles. As agreed with the Indian government, it includes the delivery of three systems, training for operators and operational staff, and the necessary integrated logistics support (ILS) package,” the minister wrote on Facebook. In his post, he said that the idea was “conceived” in 2017 and that President Rodrigo Duterte approved the plan in 2020.

Activating Shore-based Defence

In April, the Philippine Marine Corps activated the Shore-Based Anti-Ship Missile (SBASM) unit. This unit will be in charge of running anti-ship missile systems. Members of the SBASM staff were sent to India in June to train there. In addition, the Marine Corps’ Shore-Based Air Defense System (SBADS) battalion has been made fully operational. AFP says that the SBADS will protect SBASM assets from threats from the air while operations to launch anti-ship missiles are going on. The Marine Corps Coastal Defense Regiment just came together in August 2020. SBASM and SBADS are parts of this new group. As part of the Revised Armed Forces of the Philippines Modernization Program (RAFPMP), which runs from 2023 to 2027, the Philippine Army plans to buy two BrahMos batteries for coastal defence operations.

The first export customer for Brahmos Missile

The Philippines were the first country to buy the BrahMos missile system after it was made. As a result of the deal made with the Philippines, it is likely that missile defence systems will be able to be sold to other Southeast Asian countries like Vietnam and Indonesia. BrahMos Aerospace, Hypersonic cruise missiles from the Brahmos line are made by a Russian-Indian company that was set up in 1998. Their development was done by both the Russian National Research Nuclear University of Mechanical Engineering and the Indian Defense Science Organization DRDO.

During a test in 2001, the missile was launched for the first time and went off without a hitch. The missile can go as fast as Mach 2.8 and is used by the Air Force, the Navy, and the Ground Forces, which are all parts of the Indian Armed Forces (3,430 kilometres per hour). One of the unexpected parts of the deal between the Brahmos Company and the Philippines is that Russia has agreed to it. The Philippines is one of the oldest allies of the United States. Russia, on the other hand, is closer to Beijing. Even though Russia might not say why it takes this stance toward the Philippines, it probably does so to make sure that UNCLOS stays legal.

<https://defenceaviationpost.com/chinese-warships-in-target-india-send-of-brahmos-to-philippines/>

Operation Vijay: All You Want to Know

Historical

The stage is all set to celebrate the 52nd anniversary Vijay Diwas later this week on December 16, 2022. Each year on December 16 Vijay Diwas is celebrated to honour the victory of Indian armed forces over Pakistan in the 1971 war. And it is on this day that India pays homage to all the soldiers of the forces who defended the country. That year, Pakistan Forces had suffered the maximum casualties. Based on the information available in the public domain, while Pakistan had 8,000 dead and 25,000 wounded soldiers, India had lost 3000 soldiers and 12,000 were injured.

Operation Vijay was against the infiltrating Pakistani troops. In 1971 on December 16, India won the war against Pakistan which had lasted almost 13 days. Along with 93,000 Pakistani troops the chief of the Pakistani Forces, Maj General Amir Abdullah Khan Niazi had surrendered to the joint forces of the Indian Army and Bangladesh's Mukti Bahini.

Niazi was at that time the Commander of the Pakistan Eastern Command; he had also signed the 'Instrument of Surrender' on that day at Ramna Race Course in Dacca (In the present time this is known as Dhaka, capital of Bangladesh). This was on that day signed and accepted by Lieutenant General Jagjit Singh Aurora, who was the then General Officer Commanding-in-Chief of India's Eastern Command.

Background

The struggle for independence in East Pakistan, it all started on December 3, 1971 and 13 days later it resulted in unconditional surrender of the Pakistan Army. On this day rich tributes are paid to those who had put their lives on line during the war. Since the 1947 partition, there has always been animosity between India and Pakistan for several reasons and one of them being East Pakistan.

The events leading up to the 1971 war were what had prompted the Indian Army troops to get involved. The war between the two countries lasted almost 13 days – resulting in the liberation of a new country – Bangladesh on December 16, 1971. And, this not only established the prowess of the Indian Army, Air Force and Navy, this changed the contours of the world map too. Bangladesh celebrates this day as 'Bijoy Dibos' – marking its formal independence from Pakistan.

<https://www.financialexpress.com/defence/operation-vijay-all-you-want-to-know/2912492/>



Wed, 14 Dec 2022

Chinese Spy Ship Yuan Wang 5 Back in Indian Ocean as Beijing Mapping Seabed for Submarine Operations

Chinese spy ship Yuan Wang 5 entered the Indian Ocean Region on December 5 and exited Sahul Banks, in north-west of Australia, on December 12 to track Chinese space activity, a report has claimed. Yuan Wang 5 is now heading towards Sanya Port on Hainan Island, which has China ballistic missile nuclear submarine base, and is mapping Sunda and Lombok Straits for future submarines operations in the Indian Ocean, Hindustan Times reported. Earlier this month, reports said that the surveillance vessel had entered the Indian Ocean Region on December 4 through Sunda strait, off Indonesia.

In a similar incident last month, another vessel 'Yuan Wang 6' had entered the Indian Ocean Region (IOR) coinciding with a planned Indian missile launch, but the launch was then deferred. The Yuan Wang 5 spy ship had been used by China and its army to spy on its enemies. The spy ship - which Beijing claims to be a research vessel - earlier this year has been the subject of a diplomatic tussle between New Delhi and Beijing and also involved Sri Lanka.

<https://www.news18.com/amp/news/world/chinese-spy-ship-yuan-wang-5-back-in-indian-ocean-as-beijing-mapping-seabed-for-submarine-operations-6614623.html>

Business Standard

Wed, 14 Dec 2022

Chinese Missile, Satellite Tracking Ship Exits Indian Ocean Region

Chinese missile and satellite tracking ship 'Yuan Wang V' has exited the Indian Ocean after spending over a week in the region, people familiar with the development said on Wednesday. The Chinese spy ship, known to be fitted with various tracking and surveillance devices, entered the Indian Ocean around December 5 ahead of a plan by India for a likely test firing of a long-range ballistic missile in the Bay of Bengal, they said. The Indian Navy kept a close eye on the movement of the ship. The docking of the ship at Hambantota port in August had triggered a diplomatic row between India and Sri Lanka.

Open source intelligence expert Damien Symon on Monday tweeted that "Yuan Wang 5, #China's missile and satellite tracking vessel has entered the #IndianOcean region." There was no official comment on either entry or exit of the ship from the Indian Ocean Region. The visit of the Chinese ship to the Indian Ocean comes amid increasing concerns over growing forays into the region by Chinese military and research vessels. India is bolstering defence and security

ties in the Indian Ocean with like-minded countries in the backdrop of concerns over China's growing forays into the region, considered the backyard of the Indian Navy.

https://wap.business-standard.com/article/current-affairs/chinese-missile-satellite-tracking-ship-exits-indian-ocean-region-122121401159_1.html



Wed, 14 Dec 2022

Japan to Radically Overhaul Defence Policy on China Threats

Japan is expected to announce its biggest defence overhaul in decades this week, hiking spending, reshaping its military command and acquiring new missiles to tackle the threat from China. The policies, to be outlined in three defence and security documents as soon as Friday, will reshape the defence landscape in a country whose post-war constitution does not even officially recognise the military. Fundamentally strengthening our defence capabilities is the most urgent challenge in this severe security environment," Prime Minister Fumio Kishida said at the weekend. "We will urgently ramp up our defence capabilities over the next five years."

The shift is the result of Tokyo's fears about China's growing military strength and regional posturing, as well as threats ranging from North Korean missile launches to Russia's invasion of Ukraine. Key among the new policies is a pledge to boost spending to two percent of GDP by 2027 to bring Japan in line with NATO members. That marks a significant increase from historic spending of around one percent, and has sparked criticism over how it will be financed. The money will fund projects including the acquisition of what Japan calls "counterstrike capacity" — the ability to hit launch sites that threaten the country, even preemptively. Japan has previously shied away from acquiring that ability over disputes on whether it could violate the constitution's limit on self-defence. In a nod to the controversy, the policy documents will reportedly insist that Japan remains committed to a "self-defence-oriented security policy" and will "not become a military power". Part of that capacity will come from up to 500 U.S.-made Tomahawk cruise missiles Japan is reportedly considering purchasing as a backstop while it develops longer-range missiles domestically.

<https://www.thehindu.com/news/international/japan-to-radically-overhaul-defence-policy-on-china-threats/article66263016.ece/amp/>



Wed, 14 Dec 2022

Japan's 'Self-Defence-Oriented Security Policy' on China Threats

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China. The policies, to be outlined in three defence and security documents as soon as Friday, will reshape the defence landscape in a country whose post-war constitution does not even officially recognise the military. "Fundamentally strengthening our defence capabilities is the most urgent challenge in this severe security environment," Prime Minister Fumio Kishida said at the weekend. "We will urgently ramp up our defence capabilities over the next five years." The shift is the result of Tokyo's fears about China's growing military strength and regional posturing, as well as threats ranging from North Korean missile launches to Russia's invasion of Ukraine.

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<https://www.hindustantimes.com/world-news/japans-self-defence-oriented-security-policy-on-china-threats-101671008123296.html>



Wed, 14 Dec 2022

‘Historic Upgrade’: Pacifist New Zealand Takes Delivery of P-8 Poseidon amid China’s Assertiveness in the Region

By Sakshi Tiwari

According to a news release from Boeing, the aircraft was delivered to the Royal New Zealand Air Force (RNZAF) on December 7 at the Museum of Flight in Seattle, Washington. After the aircraft’s keeling ceremony was announced on March 16, the delivery took over eight months. This is the first of four brand-new P-8A Poseidon aircraft that the government will buy as part of a historic upgrade of the New Zealand defense force in the wake of rising regional threats. The rest of the three aircraft will be delivered by May 2023. The aircraft was received by the country’s Defense Minister, Peeni Henare, who remarked that “The P-8s will replace the Orions, conducting maritime surveillance, resource protection, natural disaster support and search and rescue operations as we work alongside our Pacific partners to support the security and stability of the region.”

The Royal New Zealand Air Force (RNZAF) has operated six P-3K2 Orion maritime patrol aircraft since the 1960s. In July 2018, the government announced plans to replace them with four

Boeing P-8A Poseidon maritime patrol aircraft. The Orions are expected to be phased out of service by the end of January 2023. The Poseidons would improve New Zealand's capacity to react swiftly throughout the region, especially in light of the expanding Chinese influence in the Pacific. China has been steadily advancing into the southern Pacific region, considered a stronghold of Australia and New Zealand. Earlier this year, it signed a security agreement with the Solomon Islands, igniting fear of a potential Chinese military base springing up in the region. In addition, Beijing has also been courting Kiribati Islands, among others.

Even though Australia has been more vocal about the threat posed by China in the region, New Zealand is slowly shedding its inhibitions and taking a strong stand against Beijing. Last month, Prime Minister Jacinda Ardern said China has undoubtedly become more assertive in the region over time. In December 2021, the defense forces of New Zealand issued a warning about the security risk posed by an assertive China growing in strength and pursuing its objectives in the Indo-Pacific. The country also reasserted that it was united with Australia in its policies toward the Pacific islands, where China's influence is growing. Even though New Zealand has been reluctant to take a belligerent position against China, with which it has a strong trading relationship, the threat posed by the country has slowly grown on it. Adding P-8 aircraft to its Air Force would, thus, allow it to monitor the region better in tandem with Australia.

However, Australia's P-8A aircraft have often run into trouble with the PLA. In February this year, a PLAN warship reportedly shone a military-grade laser on an Australian P-8 aircraft flying a patrol mission over the Pacific. A similar incident has already been recorded by the same aircraft of the US Air Force. With New Zealand deploying the P-8 soon, a similar incident could be on the cards.

P-8 Reconnaissance Aircraft For New Zealand

According to manufacturer Boeing, the P-8 excels at anti-submarine, anti-surface, intelligence, surveillance, and reconnaissance (ISR), as well as search and rescue operations. The P-8 can travel farther and faster by flying higher. It has demonstrated its capabilities in support of humanitarian and search and rescue missions and is also designed for low-altitude tasks. According to a Defense Security Cooperation Agency (DSCA) announcement, each aircraft will be outfitted with a Tactical Open Mission Software (TOMS), a Wescam MX-20HD electro-optical/infrared (EO/IR) pod, the AN/AAQ-2(V)1 Acoustic System, Raytheon Space and Airborne Systems' AN/APY-10 X-band multimission radar, and Northrop Grumman Electronic Systems' ALQ-240 electronic support measures system.

The Multifunctional Information Distribution System Joint Tactical Radio Systems (MIDS JTRS), Guardian Laser Transmitter Assemblies (GLTA), system processors, and Northrop Grumman AN/AAR-54 missile-warning sensors for the Northrop Grumman AN/AAQ-24(V)N distributed aperture infrared countermeasures (DAIRCM) are also included, reported Janes. Additionally, the aircraft will be equipped with a Northrop Grumman LN-251 with incorporated GPS and inertial navigation systems. Since New Zealand has not yet ordered weapon systems like torpedoes and anti-ship missiles for these aircraft, the initial scope of their mission will be ISR-only. Anti-submarine warfare operations won't be possible for them.

<https://eurasianimes.com/historic-upgrade-pacifist-new-zealand-takes-delivery-p-8-poseidon/>

1st African Country to Provide Military Support to Ukraine, Morocco could Send T-72 Tank Spare Parts to Kyiv

By Tanmay Kadam

Morocco has reportedly decided to send military aid to Ukraine after the US secretly convinced Rabat to transfer spare parts for T-72 tanks to Kyiv. If true, this would make Morocco the first African country to provide military assistance to Ukraine. On December 6, 'Africa Intelligence,' a leading publication about African government and corporate affairs, reported that Washington convinced Morocco to deliver spare parts for T-72 tanks to Ukraine through secret diplomacy. The Royal Moroccan Armed Forces have several dozen T-72B/BK-type tanks purchased from Belarus between 1999 and 2001. These include 136 T-72B and 12 T-72 BK tanks. Apart from that, Morocco has a massive arsenal of tanks sourced from various manufacturers, which include 384 American-made M1A1 and M1A2 Abrams, 150 Sino-Pakistani VT-1A Al Khalid tanks, as well as hundreds of American M48 and M60 Pattons, and 116 Austrian SK-105 tanks held in reserve.

As per reports, Ukraine had asked Morocco for spare parts for its T-72 tanks in 2015, which is not the first time Kyiv will engage with Rabat on this issue. However, the present time is different, as the alleged transfer of spare parts will be happening amid Russia's invasion of Ukraine, placing Morocco on the side of Ukraine in the ongoing conflict, which is a position Rabat was trying to avoid until recently. Initially, Rabat tried to maintain a neutral stance by abstaining during the UN General Assembly's March 2022 vote to deplore Russian aggression in Ukraine. Morocco was among the 25 out of 54 African states that abstained or did not vote in that UN resolution. In recent years, the African continent has been Russia's foreign policy priority, with Moscow establishing new ties and refreshing its alliances formed during the Cold War when the former Soviet Union supported socialist movements across Africa.

After the Soviet Union's disintegration in 1991, it mainly withdrew from Africa. However, since around 2007, Russia has been increasing its political, military, and other economic involvement in the continent. The Kingdom of Morocco has close commercial ties with Russia, with the former being the latter's largest trading partner in Africa. This explains why Rabat may have hesitated to jeopardize its relations with Russia over a conflict far away in Eastern Europe. That said, the latest development of Morocco, having reportedly agreed to send Ukraine spare parts for tanks, may come as a setback for Moscow, which is regarded as one of the major geopolitical players on the African continent. However, it is essential to note that Morocco has historically been close to the US, with the former being one of the first countries to recognize the United States in 1777. *Algeria-Morocco Tensions And Rabat's Shifting Stance On Russia-Ukraine War*

The formal agreement signed between Morocco and the US following the end of the American War of Independence in 1786 is described as "the longest unbroken relationship in US history" by the US State Department. Also, Morocco was designated as a crucial US non-NATO ally in 2004. Reports suggest relations between Morocco and the US have generally remained warm

throughout the past 250 years. Morocco maintained a neutral position during the Cold War but was clearly aligned closer to the US and the West. In the initial weeks of the ongoing Russia-Ukraine war, Rabat tried to take a neutral stance, but that shifted later, with Morocco attending the April summit on defending Ukraine held in Germany and chaired by the US Secretary of Defense Lloyd Austin.

That said, Russia's clout in Africa is not to be undermined. Shortly after Morocco attended the summit, the Russian Foreign Minister Sergei Lavrov visited Morocco's nemesis Algeria, where he declared that both Russia and Algeria "see eye to eye on all key issues of international politics." The Kingdom of Morocco has close commercial ties with Russia, with the former being the latter's largest trading partner in Africa. This explains why Rabat may have hesitated to jeopardize its relations with Russia over a conflict far away in Eastern Europe. That said, the latest development of Morocco, having reportedly agreed to send Ukraine spare parts for tanks, may come as a setback for Moscow, which is regarded as one of the major geopolitical players on the African continent. However, it is essential to note that Morocco has historically been close to the US, with the former being one of the first countries to recognize the United States in 1777.

Algeria-Morocco Tensions And Rabat's Shifting Stance On Russia-Ukraine War

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Reports suggest relations between Morocco and the US have generally remained warm throughout the past 250 years. Morocco maintained a neutral position during the Cold War but was clearly aligned closer to the US and the West. In the initial weeks of the ongoing Russia-Ukraine war, Rabat tried to take a neutral stance, but that shifted later, with Morocco attending the April summit on defending Ukraine held in Germany and chaired by the US Secretary of Defense Lloyd Austin. That said, Russia's clout in Africa is not to be undermined. Shortly after Morocco attended the summit, the Russian Foreign Minister Sergei Lavrov visited Morocco's nemesis Algeria, where he declared that both Russia and Algeria "see eye to eye on all key issues of international politics." Tensions between Algeria and Morocco have been growing lately, resulting in the former severing its diplomatic ties with the latter in August 2021.

The two North African countries disagree about the political status of the Western Sahara, which Morocco claims. An independence movement in Algeria, known as the Popular Front for the Liberation of the Saguia el Hamra and Rio de Oro (Polisario Front), comprising the indigenous Sahrawi tribe, asserts a claim on the land. Western Sahara is under Morocco's occupation after the Kingdom of Morocco annexed it in two stages in 1976 and 1979. However, it is not considered a legal part of Morocco according to International Law. Nevertheless, former US President Donald Trump recognized Morocco's Western Saharan territory as a quid pro quo for Rabat normalizing its relations with Israel as part of the historic Abraham Accords in 2020.

In response to Morocco's bonhomie with Israel and the US, Algeria has been cultivating closer relations with Russia, providing Moscow a foothold within the Northern African region. Therefore, the shift in Morocco's stance on the war in Ukraine must also be viewed in the context of its regional rivalry with Algeria, which happens to be one of the biggest global customers of Russian weaponry.

Arms Race In North Africa Fueled By US And Russia

Algeria has historically had close defense ties with Moscow, dating back to the Soviet era, and those ties have only strengthened in recent years. In 2006, Russian President Vladimir Putin wrote off Algeria's \$4.7 billion Soviet-era military debt in return for a promise to purchase \$7.5 billion in new Russian weaponry in the future. Eventually, Algiers became Russia's third largest customer, thanks to the rise in Algeria's oil and natural gas revenues. Therefore, the Algerian Air Force's combat aircraft inventory comprises only Russian-made aviation platforms, including MiG-29 multirole fighters, Su-24 attack aircraft, Su-30 air superiority fighters, and Mi-17, Mi-24, and Mi-28 attack helicopters. Also, satellite imagery surfaced in August, suggesting that Algeria may have acquired the Russian-made S-350 'Vityaz' air defense system, which, so far, is known to be operated only by the Russian military, meaning Algeria could be the first foreign customer of this system.

So far, there is no official confirmation from Algeria or Russia about selling this air defense system. Algeria had deployed these alleged S-350 systems near the border with Morocco. It deliberately leaked the satellite imagery to send a message to Morocco after its recent purchase of the Barak MX air defense system from Israel Aerospace Industries (IAI). Furthermore, Algeria is also in line to receive Russia's most advanced Su-57 fifth-generation fighter aircraft. In November 2020, Russia's Sputnik News reported that Algeria signed a contract to purchase around 14 Su-57s for nearly \$2 billion, with the deliveries expected to begin by 2025. Meanwhile, Morocco is also trying to bolster its airborne systems by investing heavily in American-made fighter jets and helicopters. In 2019, Rabat signed a contract for 25 F-16C/D Block 72 aircraft, with the deliveries to the Royal Moroccan Air Force expected to begin by 2025. In addition, the US also agreed to upgrade Morocco's existing F-16s to a more advanced F-16V Block 52+ configuration at an estimated cost of \$4.8 billion. In June 2020, Morocco signed a contract with Boeing to acquire 24 AH-64 Apache helicopters, with deliveries expected to start in 2024.

<https://eurasianimes.com/1st-african-country-to-provide-military-support-to-ukraine-morocco/?amp>

The Tribune

Wed, 14 Dec 2022

Russia-Ukraine War: US Considers Sending Advanced Air Defence System to Ukraine

The United States was finalising plans to send its sophisticated Patriot air defence system to Ukraine in a potentially pivotal move while allies pledged just over 1 billion euros (\$1.05 billion) to help Ukrainians survive the freezing winter. Ukraine's air defence systems were tested again on Wednesday in Kyiv with reports of explosions in the capital. Mayor Vitali Klitschko said the blasts hit the city's central Shevchenkivskyi district. "Emergency services dispatched," Klitschko said on the Telegram messaging app. "Details later". Oleksiy Kuleba, the Governor of the Kyiv's region, said that air defence systems were at work. Washington could announce a decision as soon as Thursday on providing the Patriot, two officials told Reuters on Tuesday. The Patriot is considered one of the most advanced US air defence systems and is usually in short supply, with allies around the world vying for it. Former Russian President Dmitry Medvedev has warned

NATO against equipping Kyiv with Patriot missile defences, and it is likely the Kremlin will view the move as an escalation.

With the war in its 10th month, the Patriot system would help Ukraine defend against waves of Russian missile and drone attacks that have pounded the country's energy infrastructure. Millions of civilians who are enduring Europe's biggest conflict since World War Two have had to contend with cuts to power, heat and water as harsh winter conditions take hold. Gaining Patriot air defence capability would be "very, very significant" for the Kyiv government, said Alexander Vindman, a retired Army lieutenant colonel and onetime leader of Ukraine policy at the White House. "These are going to be quite capable of dealing with a lot of different challenges the Ukrainians have, especially if the Russians bring in short-range ballistic missiles" from Iran. The Pentagon declined comment. There was no immediate comment from Ukrainian officials.

Kyiv held high-level military talks on Tuesday with Washington, Ukrainian President Volodymyr Zelenskiy's office said. The United States has given Ukraine \$19.3 billion in military assistance since Russia's invasion on February 24. One of the US officials said Ukrainian forces would likely be trained in Germany before the Patriot equipment was delivered. Vindman said the training could take several months. The Pentagon says Russia's recent surge in missile strikes is partly designed to exhaust Ukraine's supplies of air defences so it can dominate the skies above the country. For that reason, the United States and its allies have been delivering more air defences to Kyiv, everything from Soviet-era systems to more modern, Western ones. Washington has provided NASAMS air defence systems that the Pentagon says have flawlessly intercepted Russian missiles in Ukraine.

In Paris, about 70 countries and institutions pledged just over 1 billion euros (\$1.05 billion) to help maintain Ukraine's water, food, energy, health and transport in face of Russia's attacks, French Foreign Minister Catherine Colonna said. Sergey Kovalenko, the head of the YASNO power company, said on Facebook that repairs continued on the electric grid but that Kyiv still only had two-thirds of the power it needed.

Environmental Destruction

In a video speech to the New Zealand parliament on Wednesday, Ukrainian President Volodymyr Zelenskiy said the environmental harm from Russia's war will affect millions of people for years. Russian attacks have contaminated the country's oceans and 3 million hectares (7.4 million acres) of forest, he said. "Dozens of rivers are polluted, hundreds of coal mines are flooded, dozens of the most dangerous enterprises, including chemical ones have been destroyed by Russian strikes," he said, according to translation provided by the parliament. "All this ... will have a direct impact on millions of people," he said, referring to leaks of hazardous chemicals and contamination from mines and munitions. "You cannot rebuild the destroyed nature, just as you cannot restore the destroyed lives," Zelenskiy added. In eastern Ukraine, Russian and Ukrainian forces pounded each other around the small city of Bakhmut on Tuesday.

Invading Russian forces have fought to seize Bakhmut for months as part of a grinding battle for control of the Donetsk region, one of the four territories the Kremlin claims to have annexed in votes rejected by most countries as illegal. There are no peace talks under way to end the conflict, which Moscow describes as a "special military operation" against security threats posed by its neighbour. Ukraine and its Western allies call it an unprovoked, imperialist land grab.

Russia on Tuesday dismissed a peace proposal from Zelenskiy that would involve a pullout of Russian troops and demanded that his government accept Russia's annexations.

<https://www.tribuneindia.com/news/world/washington-considers-sending-advanced-air-defence-system-to-ukraine-460928>



Wed, 14 Dec 2022

Ukraine War: US planning to Send Patriot Air Defence Missiles

The US is planning to send Patriot air defence missiles to Ukraine, US media reports say. President Joe Biden is likely to announce the move this week, according to unnamed officials. Ukraine has been requesting further air defence support for some time, as Russian attacks have continued to kill civilians and cause major blackouts. Patriot is one of the most advanced US air defence systems but supplies to Ukraine are likely to be limited. It is not known how many of the batteries will be sent to Ukraine. Once the move is approved, the systems are likely to be sent over in the coming days, with Ukrainian soldiers trained to use them at a US Army base in Grafenwoehr, Germany, the officials said. The Patriot system would be a legitimate target for Russian strikes, the Kremlin said on Wednesday. This significant decision recognises that the greatest immediate threat is currently from the air, not the ground. Russia has been regularly targeting Ukraine's critical infrastructure with missiles and drones - leaving millions without power, electricity and running water in the middle of winter.

In recent months Ukraine has been supplied with advanced air defences from the West - including NASAMs and Iris-T systems. But it still needs more. It needs air defences not just to intercept missiles fired at power supply and distribution centres in and around its cities, and to prevent Russia from gaining air superiority near the frontline. Ukraine is struggling to do both. Justin Bronk, a senior fellow at the defence think-tank RUSI, believes that the US decision to supply Patriot batteries is linked to Western concerns that Iran may supply Russia with longer range ballistic missiles. The supply of Patriot batteries to Ukraine will likely be limited. The system is in high demand right across the world, it is expensive, and it requires significant training to operate. All reasons why this decision has not been fast, and Ukraine's initial pleas for Patriots were ignored. But the threat of Iran supplying Russia with long-range ballistic missiles has changed the equation. The news came as explosions rocked the Ukrainian capital Kyiv, in the latest of a steady stream of attacks by Russia.

Moscow has repeatedly targeted Ukrainian energy infrastructure since October. Ukraine has been asking the US for more air defence support for months. US national security spokesman John Kirby said last week that Russia and Iran's relationship had warmed to a fully fledged defence partnership. Patriot has been described as the most advanced air defence system the US possesses. Each missile costs about \$3m (£2.4m), the Washington Post reported in 2017. The systems have been bought by more. Itery includes the missile launcher, a radar, command and control centre, and other support vehicles, and needs a large team to operate and maintain it.

<https://www.bbc.com/news/world-us-canada-63977645.amp>

US Military Creates Space Unit in S Korea amid N Korea Threats

The US military formally launched a space force unit in South Korea on Wednesday, a move that will likely enable Washington to better monitor its rivals North Korea, China and Russia. The activation of the U.S. Space Forces Korea at Osan Air Base near Seoul came after North Korea test-fired a barrage of nuclear-capable ballistic missiles designed to strike the U.S. Mainland and its allies South Korea and Japan in recent months. “Just 48 miles north of us exists an existential threat; a threat that we must be prepared to deter, defend against, and – if required — defeat,” Lt. Col. Joshua McCullion, chief of the new space unit, said during the activation ceremony at Osan. He apparently referred to North Korea, whose heavily fortified border with South Korea is just an hour's drive from Seoul, the South's capital.

The unit belongs to the U.S. Space Force, which was launched in December 2019 under then-President Donald Trump as the first new U.S. Military service in more than 70 years. The Space Force was seen soberly as an affirmation of the need to more effectively organize for the defense of U.S. Interests in space — especially satellites used for civilian and military navigation, intelligence and communication. A previous Pentagon report said China and Russia had embarked on major efforts to develop technologies that could allow them to disrupt or destroy American and allied satellites in a crisis or conflict. The U.S. Space Forces Korea is a subordinate of a bigger U.S. Space Force unit established within the Indo-Pacific command in Hawaii last month.

Jung Chang Wook, head of the Korea Defense Study Forum think tank in Seoul, said the U.S. Space Force was created to bring together diverse surveillance assets including space-based satellites in one organization to manage and develop them in an effective, systemic manner. He said its unit in South Korea would work like a field unit while the other one in the Indo-Pacific Command would be its headquarters. “The U.S. Space Forces Korea would maintain, operate and assess related equipment. Simply speaking, I would say the actual U.S. Space operations will be done at Osan Air Base,” Jung said. He said the main role of the U.S. Space Forces Korea would be receiving, processing and analyzing tremendous amount of data and information transmitted by U.S. Satellites.

<https://www.dailypioneer.com/2022/world/us-military-creates-space-unit-in-s-korea-amid-n-korea-threats.html>

German Parliament Committee Approves \$10.6 Billion Purchase of F-35 Stealth Fighters from Lockheed Martin – Reports

By Sputnik

The Budget Committee of the German parliament approved the contract with the United States on the purchase of F-35 fighter jets worth 10 billion euros (\$10.6 billion), Reuters reported on Wednesday, citing sources in the committee. According to the news agency, the committee green-lighted the purchase using money from a 100 billion euro (\$106 billion) special defense fund established by the German government shortly after the start of Russia's military operation in Ukraine in February. The first eight fighter jets are expected to be delivered by the US to Germany in 2026, the report said, adding that the new planes could replace old Tornado jets. In July, Washington also approved a possible \$8.4 billion sale of 35 F-35 jets to Germany, including missiles and equipment. Meanwhile, the costs of developing a new cockpit computer for the Lockheed Martin F-35 Joint Strike Fighter (JSF), originally set at \$712 million four years ago, have soared by another \$239 million, generating extra expenses of \$680 million so far, Bloomberg reported.

In all, the F-35 Joint Program Office has acknowledged that cost overruns on the project now total \$680 million, almost doubling the original cost and also delaying delivery of the first aircraft with the upgraded hardware and software by several months from the planned completion date of July 2023, the report said.

The US government and allied nations that have bought the aircraft will pay the additional costs under the terms of the computer's development contract, the report noted. The F-35 is the most expensive military system ever recorded, and its overall cost rose in 2021 to \$412 billion from \$398 billion, a Department of Defense report said in September 2022. The F-35's projected total cost was \$233 billion when Lockheed Martin won the contract in 2001 to develop and build the aircraft, the report said.

Earlier, there were reports that the Defense Department is \$1.4 billion short in its current budgetary allocations of sufficient funding to complete its planned next order of F-35 multi-purpose fighter jets from Lockheed Martin so that its eventual fleet will fall significantly short of the 375 aircraft currently expected. The shortfall was revealed in a new list of unfunded priorities sent to Congress, the Bloomberg report mentioned. If the \$1.4 billion is not additionally provided, the anticipated new three-year contract worth up to \$30 billion will go ahead, but it will purchase fewer aircraft for the expensive program, whose total cost is now estimated at \$412 billion, the report said.

The Defense Department and Lockheed Martin are reportedly in the final stages of negotiating a contract for 375 aircraft in the F-35's 15th through 17th production lots, but because of the

shortfall, fewer aircraft are likely to be ordered, the report said. The current figure was already 110 aircraft short of the 485 F-35 jets originally anticipated in February 2019, the report added.

<https://eurasianimes.com/german-parliament-committee-approves-10-6-billion-purchase-of-f-35-stealth-fighters-from-lockheed-martin-reports/>

Science & Technology News



Wed, 14 Dec 2022

160-Metre Trisonic Wind Tunnel to Help ISRO Test, Validate Future Space Vehicle Designs

The most reliable method to test a rocket or an aerospace vehicle is by launching or flying it. However, if one is to design an all-new aerospace vehicle and intends to validate the newly-developed prototype, the preliminary step would be to test it in a wind tunnel. A large tube with air flowing through it can be used to replicate the interaction between the air and an object flying through the air, such is the working principle of a wind tunnel. The Indian Space Research Organisation (ISRO) recently conducted the maiden blow-down test of their all-new wind tunnel, installed at the Vikram Sarabhai Space Centre (VSSC). The Trisonic Wind tunnel, as it is known, facilitates testing under three conditions - subsonic (below the speed of the sound), at the speed of sound and supersonic (faster than the speed of sound). The tunnel measures 160 metres in length and has a maximum cross-section of 5.4 metres.

ISRO has said that this tunnel is a system to aid the aerodynamic design of rockets and re-entry spacecraft by characterising a scaled model by evaluating forces, moments, load distribution, unsteady pressures, acoustic levels etc. The tunnel has an overall length of about 160m and a maximum cross-section of 5.4m. The tunnel can be used for testing various space vehicles in three flight regimes - below the speed of sound, at the speed of sound and above the speed of sound: hence the name Trisonic Wind Tunnel. The tunnel can simulate flight conditions from 0.2 times the speed of sound (68 m/s) to 4 times the speed of sound (1360 m/s).

The wind tunnel moves air around an object, making it seem as if the object is flying. However, the object is held in a stationary and steady manner. The object could be a sub-component, a scale model of the aerospace vehicle or a full-sized vehicle. As the tunnel is in operation, special equipment can be used to study the various forces that are acting upon the test object. It is known that the Indian space agency is working on a manned spaceflight programme, on a test vehicle (RLV-TD) that can be launched like a rocket and land like a plane and also various heavy-lift rockets for future use. Every new concept and design being developed by the Indian space agency can now be validated at the new wind tunnel and thereby be fine-tuned further.

<https://www.wionews.com/technology/160-meter-wind-tunnel-to-help-isro-test-validate-future-space-vehicle-designs-542942>

Wed, 14 Dec 2022

India's ISRO Sets Sights on Venus and SpaceX-Like Autonomous Precision Landing of Rockets

Union Minister of State for Space Jitendra Singh on Wednesday (14 December) informed that the Indian Space Research Organisation (ISRO) has taken initiatives for feasibility studies on missions to Venus as well as Aeronomy studies. The term “aeronomy,” coined and introduced about 60 years ago, refers to the scientific study of the upper atmospheric regions of the Earth and other solar system bodies. It covers the chemistry, dynamics and energy balance of both neutral and charged particles. In a written reply to a question in the Lok Sabha, Singh said that both these missions are being conceptualised and the scientific scopes are being deliberated nationally with participation of science community.

Earlier last week, Singh had informed the Lower House of the Parliament that the Department of Space has initiated studies towards undertaking the development of critical technologies required to achieve Autonomous Precision Landing of Space Rockets and their demonstration through Vertical Take-off and Vertical Landing (VTVL) of test vehicles. The autonomous precision landing technology, used by US space company SpaceX, will help in reducing the cost of space launch as the same rocket can be used for multiple launches.

<https://swarajyamag.com/tech/indias-isro-sets-sights-on-venus-and-spacex-like-autonomous-precision-landing-of-rockets>

ThePrint

Wed, 14 Dec 2022

ISRO Took Initiatives for Feasibility Studies on Missions to Venus: Union Minister Jitendra Singh

Replying to a written question in the Lok Sabha Union Minister Jitendra Singh on Wednesday said that ISRO has taken initiatives for feasibility studies on missions to Venus. “Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh today informed that ISRO has taken initiatives for feasibility studies on missions to Venus as well as Aeronomy studies,” read an official statement by the Union Department of Space. The term “aeronomy,” coined and introduced about 60 years ago, refers to the scientific study of the upper atmospheric regions of the Earth and other solar system bodies. It covers the chemistry, dynamics and energy balance of both neutral and charged particles.

“Both these missions are being conceptualized and the scientific scopes are being deliberated nationally with participation of science community,” said Singh. Earlier on Tuesday, Union Agricultural minister Narendra Singh Tomar and Minister of State Dr Jitendra Singh formally released the data products and services of RISAT-1A satellite for the user community, as per an

official press release. According to an official press release, an MoU was signed between the Department of Agriculture and Farmers Welfare and the Department of Space to develop the Krishi-Decision Support System (Krishi-DSS) using geospatial technologies and related databases for enhancing evidence-based decision-making capability of all the stakeholders in the agriculture sector.

Addressing on the occasion, Union Minister Narendra Singh Tomar said, “A new dimension is being added in the field of agriculture. Revolution is being initiated in the agriculture sector through space science. He said that the agreement between the Department of Agriculture and the Department of Space will further enhance the strength of the agriculture sector. If this knowledge reaches the farmers, their production and productivity will increase. The quality of production will increase and export opportunities will also increase.” Tomar said that the agriculture sector is very important in our country and in the whole world. Along with livelihood, this sector is working to speed up the country’s economy and provide employment to a large population.

“Earlier the sector suffered due to a lack of knowledge and private investment. The amount of change, knowledge and investment needed in this area has not happened. This is the reason why the agriculture sector has not progressed as much as it should. In the year 2014, when Prime Minister Narendra Modi took over the work, he had a desire to take the country forward and work was done to connect it with new dimensions. Because of this, all the departments including the Department of Space changed their working methods, fixed targets and planned effective targets. Its effect is visible in the country today,” he said. He further added that the agriculture department is also working on AgriStack. Work is being done to increase the income of the farmer and to save him from losses by forecasting.

“Crop estimation, allotment to states, survey to declare an area dry, disaster assessment, – all these tasks will become easy after adopting technology. This technology is very beneficial for the agriculture sector as well as the country. After the completion of AgriStack, there will be a revolutionary change in the field of agriculture,” said Union Minister Narendra Singh Tomar. Addressing the gathering, Minister of State, Dr Jitendra Singh said that RISAT-1A data would be extremely useful in developing decision support systems for Agriculture, Bioresources, Environment, Water Resources and Disaster Management. He said efforts were made to make this coordination and cooperation possible.

“The main achievement in the last eight years under the leadership of Prime Minister Modi was to use science for Ease of Living and it should be taken out from the laboratory. He further informed that in the year 2020, the rules of the Department of Space were amended,” said Jitendra Singh. He said that the Prime Minister talks about the “whole of Government” approach, and today is a good example of this being achieved. The Ministry of Jal Shakti and the Ministry of Home Affairs have been connected through this technique and now the Ministry of Agriculture is also getting on board. “When the next generation of RISAT satellites will come, they will have more frequency as well as accuracy. This cooperation should increase further,” he added. Secretary, of Agriculture and Farmers Welfare, Manoj Ahuja and Secretary, Department of Space, ISRO Chairman and Chairman, Space Commission, S. Somnath, Dr Himanshu Pathak, Secretary (DARE) and Director General (ICAR) and other senior officials were present at this occasion. The event was attended by representatives of various user Ministries/ Departments on online mode.

The Ministry of Agriculture and Farmers Welfare is developing Krishi-DSS, a decision support system, on the lines of Gati Shakti, using RISAT-1A and VEDAS of the Department of Space. This will enhance the evidence-based decision-making capability of all the stakeholders in the agriculture sector by way of integration with MOSDAC and BHUVAN (Geo-platform) of ISRO and systems of ICAR.

<https://theprint.in/india/isro-took-initiatives-for-feasibility-studies-on-missions-to-venus-union-minister-jitendra-singh/1265137/>



बुधवार, 14 दिसंबर 2022

Nuclear Fusion में नई खोज बन सकती है स्वच्छ ऊर्जा में गेमचेंजर

ऊर्जा के क्षेत्र में नाभकीय ऊर्जा (Nuclear Energy Source) एक बड़ा अच्छा स्रोत माना जाता है. इसके दो प्रकार होते हैं एक नाभकीय विखंडन और नाभकीय संलयन (Nuclear Fusion). हम अभी तक केवल नाभकीय विखंडन का दोहन करना सीख पाए हैं. लेकिन उसमें नाभकीय कचरे और रेडियोधर्मी विकिरण (Radioactive Radiation) जैसे घातक नुकसान होते हैं. वहीं अभी तक नाभकीय संलयन नियंत्रित स्थितियों में पैदा करना बहुत मुश्किल होता है. लेकिन वैज्ञानिकों ने अब ऐलान किया है किया कि उन्होंने पहली बार संलयन प्रतिक्रिया को शुरू करने में लगने वाली ऊर्जा से ज्यादा ऊर्जा निकालने में सफलता हासिल की है.

ऊर्जा क्षेत्र क्रांति की संभावना

इस आविष्कार को एक बहुत बड़ी उपलब्धि माना जा रहा है जिससे ऊर्जा क्षेत्र में क्रांति आ सकती है. वैज्ञानिक दशकों से ही सूर्य की ही तरह नाभकीय संलयन ऊर्जा का उत्पादन करने की क्षमता विकसित करने का प्रयास कर रहे थे जिसमें प्रतिक्रिया शुरू करने में ही बहुत ही ज्यादा ऊर्जा की खपत होती है. अमेरिका के ऊर्जा विभाग ने बताया कि यह उपलब्धि पिछले हफ्ते ही कैलिफोर्निया के लॉरेस लिवरमोर नेशनल लैबोरेटरी के शोधकर्ताओं ने हासिल की है.

एक मुश्किल होती है ऐसी उपलब्धि

इस प्रयोग में एक तरह का शुद्ध ऊर्जा लाभ प्राप्त हुआ है. प्रयोग का लक्ष्य बहुत ही मुश्किल था क्योंकि संलयन प्रक्रिया इतने ज्यादा तापमान और दबाव पर होता है कि उसे नियंत्रित करना बहुत ही ज्यादा मुश्किल होता है. इस बड़ी उपलब्धि की वजह से रक्षा क्षेत्र और भविष्य में स्वच्छ ऊर्जा उत्पादन के लिए रास्ता साफ हो जाएगा.

केवल सूर्य और तारे में ही ऐसी ऊर्जा

शोधकर्ताओं का कहना है कि इग्नीशन यानि प्रतिक्रिया शुरू करने से उन्हें पहली बार ऐसे हालात पैदा हो सके जो केवल तारों और सूर्य में ही पैदा होते हैं. इस वजह से अब वे संलयन ऊर्जा से एक बड़े कदम के रूप में सामने आ सकता है जिससे हमारे समाज को शून्य कार्बन वाली ऊर्जा मिल सकती है.. यह 21वीं सदी की सबसे बड़ी उपलब्धि कही जा सकती है.

अब कर सकते हैं हम उम्मीद

इस विशेष उपलब्धि को अमेरिका शासन और प्रशासन के हर स्तर पर सराहा जा रहा है. शोधकर्ताओं का कहना है कि यह प्रयोग 5 दिसंबर को सफलतापूर्वक अंजाम दिया गया था जो एक बेहतरीन और अविश्वनीय इंजिनियरिंग मिसाल है. अब उम्मीद की जा सकती है कि एक दिन यह ऊर्जा जीवाश्म ईंधन का स्थान ले लेगी और हमारे घर और व्यवसाय कार्बन मुक्त ऊर्जा से चलेंगे.

आसान नहीं आगे की राह

लेकिन इसे हकीकत में बदलने में अभी काफी कुछ करना बाकी है. और यह ऐलान एक बड़े कदम की पहचान है. वैज्ञानिकों को अभी इस ऊर्जा के उत्पादन के लिए सुरक्षित और कारगर तंत्र विकसित करने के प्रयासों पर जोर दिया है जिससे जलवायु परिवर्तन और ऊर्जा सुरक्षा की दिशा में सफलता मिल सके जो कि आसान नहीं है, लेकिन जहां पहले इसे पांच या छह दशकों में लगने वाला काम समझा जा रहा था अब यह कुछ ही दशकों में हो जाएगा.

क्या होता है न्यूक्लियर फ्यूजन

न्यूक्लियर फ्यूजन या नाभकीय संलयन में दो हाइड्रोजन परमाणुओं को एक दूसरे के इतना पास लाया जाता है जिससे वे मिलकर एक हीलियम परमाणु में बदल जाते हैं. इससे बहुत ही भारी मात्रा में ऊर्जा और गर्मी निकलती है लेकिन इसकी खास बात यह होती है कि नाभकीय विखंडन या न्यूक्लियर फिशन की तरह इसमें अवशेष के रूप में रेडियोधर्मी कचरा नहीं बनता है. एक सेकेंड के हिस्सों के लिए ही इस फ्यूजन के नतीजों को हासिल करने के लिए कई दशकों का शोध और अरबों डॉलर खर्च किए गए हैं. इससे पहले 192 लेजर वगैरह का उपयोग कर वैज्ञानिक सूर्य के केंद्र के तापमान से भी ज्यादा गर्म की स्थितियां बहुत ही ज्यादा कम समय के लिए पैदा करने में सफल हुए थे. इस प्रयोग में एक अतिगर्म प्लाज्मा का वातावरण बना जिससे प्रतिक्रिया संभव हो सकी जिसमें प्रयोग में लगाई गई ऊर्जा से 1.5 ज्यादा गुना ऊर्जा पैदा हो सकी.

<https://hindi.news18.com/news/knowledge/nuclear-fusion-breakthrough-is-a-milestone-for-climate-and-clean-energy-5049331.html>

Understanding the Fusion Energy Breakthrough Announced By the U.S.

U.S. government officials announced on December 13 that a federal facility had achieved a significant milestone in nuclear fusion research, to much fanfare. The feat puts us on the path to “zero-carbon abundant fusion energy powering our society”, energy secretary Jennifer Granholm said.

Does it?

Officials said that the National Ignition Facility (NIF) at the Lawrence Livermore National Laboratory (LLNL), California, had conducted a fusion test on December 5 that produced 153% as much energy as went into triggering it. NIF uses powerful lasers to heat and compress hydrogen nuclei. When the nuclei fuse, they release heat. When this heat is equal to or greater than the heat delivered to the container, the event is called ignition. The ratio of the output energy to the input delivered to the container is the gain. In 2021, NIF reported that it had achieved a gain of 0.72, taking a big step closer to 1. Now, it has reportedly achieved ignition with a gain of 1.53 with a yield of 3 megajoules. “The recent results from the NIF are a major achievement on the road to fusion energy,” Matthew Zepf, professor at the Friedrich Schiller University Jena and a director of the Helmholtz Institute Jena, said.

A gain of 1 is called ‘scientific breakeven’ – “an important milestone in the development of fusion energy because it signifies that very significant (but not all) plasma-physics challenges have been retired,” a 2022 paper by U.S. Department of Energy (DoE) scientists wrote. A plasma is a gas of charged particles, ions in this case.

Inertial confinement

Magnetic confinement and inertial confinement are two popular ways to achieve nuclear fusion. Magnetic confinement uses a torus-shaped reactor called a tokamak, in which a hydrogen plasma is heated to a high temperature and the nuclei are guided by strong magnetic fields to fuse. ITER is a famous example of an experiment trying to achieve fusion using magnetic confinement. An international collaboration, it is under construction at a site in France and is scheduled to be built by 2025. It is considered to be more technologically mature than what NIF is attempting. In NIF’s setup, 192 high-power lasers fire pulses at a 2-mm-wide capsule inside a 1-cm-long cylinder called a hohlraum, in less than 10 billionths of a second. The capsule holds deuterium and tritium atoms. As the pulses strike the hohlraum’s insides, the latter heats up and releases X-rays, which heat the nuclei to millions of degrees centigrade and compress them to billions of Earth-atmospheres.

The high temperature is required to energise the positively charged nuclei to overcome their mutual repulsion. The technique is called inertial confinement because the nuclei’s inertia creates a short window between implosion and explosion in which the strong nuclear force dominates, fusing the nuclei. The total mass of the final helium nucleus is lower than the masses of the fusing hydrogen nuclei. The difference is released as energy according to the mass-energy

equivalence ($E = mc^2$). Specifically, when two hydrogen-2 nuclei fuse, they yield a helium-4 nucleus, a neutron and 17.6 MeV of energy.

‘Burning plasma’

For fusion reactions to be sustainable, the energy released by the initial reaction needs to set the stage for more reactions. To this end, NIF’s goal has been to create a “burning plasma”. “Burning plasma” is created when nuclei are encouraged to fuse not by the external heat source but by the heat of other fusion reactions. NIF achieved this in 2021. The gain was 0.72: 1.37 megajoules produced by the fusing nuclei versus 1.97 megajoules delivered by the lasers. In August 2022, the facility reported it had produced a burning plasma that met the Lawson criterion: the heat generated was sufficient to potentially trigger other fusion reactions as well as offset heat loss during the reaction. Now, the facility has reportedly achieved a burning plasma that meets the Lawson criterion as well as a gain greater than 1. Part of the new success might be the result of a technical upgrade NIF reported in November: a higher energy yield if the capsule is magnetised first.

Caveats

NIF’s achievement is significant in the evolving story of inertial confinement. Fusion produces more energy than it consumes. The reaction also doesn’t produce environmentally deadly waste like nuclear fission does. This is why it’s so lucrative as a power source. Financial Times reported that until June, the “total private sector investment to date” in fusion energy was “almost \$4.9 bn”. But there might be some gaps between expectations and reality.

First: After NIF achieved a gain of 0.72 in 2021, the people in charge of the experiment tried thrice to repeat their feat. They failed – because the NIF fusion facility is a highly sophisticated system with tiny moving parts. Even small changes in input conditions, like microscopic bumps on the capsule, can lead to large variations in output. So NIF will need to reproduce its new results.

Second: For fusion to be truly gainful, the energy released by the reactions needs to be greater than the energy going into the lasers, about 300 megajoules, and not just the energy delivered to the hohlraum. This hasn’t yet been achieved. “The energy transferred to the plasma is just about 1%, the rest is all lost in other processes,” said Shishir Deshpande, a professor at the Institute for Plasma Research, Gandhinagar.

According to Mr. Zepf, “Future research will need to focus on reaching the next major milestone – a target gain of $G > 100$, which is required to run a power plant efficiently.” That is, if the lasers deposit 2 megajoules, as they did on December 5, the reactions in a power plant will have to produce at least 200 megajoules to be feasible. And “even if one were to achieve high gain,” Mr. Deshpande continued, “questions about how often one can repeat the pulse, to get sustained power, and couple a higher fraction of the initial energy investment [to the fuel] will be crucial in future.”

Third: The road to a power plant from the NIF’s current achievement isn’t well-understood. For example, at NIF, lasers fire at a hohlraum, generating X-rays that heat the capsule – instead of hitting the capsule directly. This prevents the laser pulses from being pinpoint accurate and allows the capsule to be heated in a symmetric way, which is highly desirable. But the cost is lower gain. Another issue is that some of the input energy is devoted to compressing the capsule instead of raising the temperature (unlike in magnetic confinement). This fraction will increase

as the amount of fuel increases, creating another barrier to high gain. “It wouldn’t be possible to set a timeline [about a power plant] as the scientific understanding is still evolving,” Mr. Deshpande said. But LLNL director Kim Budil said at the announcement that inertial confinement could be commercialised in a few decades. Even by then, global warming will have crossed the 1.5° C mark.

<https://www.thehindu.com/sci-tech/science/understanding-the-fusion-energy-breakthrough-announced-by-the-us/article66264381.ece>



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The AIIMS Cyberattack and its China Links: What we Know So Far

By Mahender Singh Manral , Kaunain Sheriff M

The probe into the cyberattack on some servers at AIIMS in the national capital has found that the IP addresses of two emails, which were identified from the headers of files that were encrypted by the hackers, originated from Hong Kong and China’s Henan province, sources told The Indian Express. Multiple agencies, including the Indian Computer Emergency Response Team (CERT-In), are investigating the cyberattack that is feared to have compromised the records of nearly 3-4 crore patients, including high-profile political personalities. According to sources, all backup data directly linked to the patient details has been repopulated to the main system. “All previous patient records are back on the system,” they said.

What has the probe uncovered so far?

Sources said the senders used the email service Protonmail. CERT-In, the country’s premier cybersecurity agency, has found that the hackers had two Protonmail addresses – “dog2398” and “mouse63209”. The sources said that during the probe, the encrypted files were sent to these two Protonmail IDs through CERT-In and Interpol. “After investigation, they found that ‘dog2398’ and ‘mouse63209’ were generated in the first week of November in Hong Kong. They also found that another encrypted file was sent from China’s Henan. But as of now, they have been able to establish the first layer and are trying to find out about further layers,” sources said. Sources also said that the targeted servers were infected with three ransomware: Wammacry, Mimikatz and Trojan. “CERT-In and DRDO (CIRA) found five servers of NIC infected with ransomware and seven servers of the computer facility in AIIMS infected with these three ransomware,” they said.

The Intelligence Fusion and Strategic Operations (IFSO) unit of Delhi Police has registered an FIR under IPC section 385 (putting a person in fear of injury in order to commit extortion), and sections 66 and 66-F of the IT Act after receiving a complaint from AIIMS.

What did the cyberattack do?

The cyber attack derailed many day-to-day activities at AIIMS, with OPD registrations and blood sample reports being halted at the premier institute. While AIIMS was able to restart some

of these services, records were being kept manually causing delays and inconvenience to medical personnel and patients alike. Patients told The Indian Express that their treatment was impacted due to this cyber attack. 20-year-old Raja said, “My mother got the blood tests done on November 16 and was asked to come on November 30 to consult a doctor, but we have not gotten the reports yet and the treatment has gone awry.”

A CERT-In team found that the encryption of data was triggered by one of the Windows servers attached to the same network, but “files of this server were not encrypted”, sources said. The investigation also revealed that the main server and applications responsible for OPD services were down as all the system files in the home directory were encrypted by changing their extension to .bak9 – a new file that encrypted the extension files of the system. “The breach in security has particularly affected the e-hospital application, which was provided and managed by NIC since 2011-12, stopping the online functioning of OPD, emergency, and other patient care services on the AIIMS premises,” sources said. There are 52 physical servers: 37 of the computer facility in AIIMS, 15 of NIC – and 148 virtual servers installed at the institute’s computer facility.

Things that are still unclear

Probe agencies have still not located the person, organisation and exact physical location linked to the cyberattack. “They have tracked a server address in China. It does not mean that they have located a person or an organisation or the exact physical location. What they have located is an IP address, which is from China. It could be a Chinese physical server or a virtual server. This we will find eventually in the next few days,” top Government sources told The Indian Express. Furthermore, sources said investigations are still underway to find if any other critical data of the institute has been compromised. “...if part of the data from the main system is gone, but not from the backup server, there is a far more time-consuming and prolonged process to find out which part has gone. This is presently underway,” sources said.

Lessons to be learnt

Sources said that two glaring loopholes have been uncovered due to the cyber attack at AIIMS. First, sources said, a large institution like AIIMS should have had a “hierarchical digital structure” rather than a “flat digital structure”. “So that if an attack happens, it adversely affects only one level of that hierarchy...At present, there is only one backup server at a remote location. In a hierarchical structure, you would have a backup built-in redundancy for each level,” sources said. Second, sources said, was “they only had a troubleshooting cell, who did not have the expertise to prevent a cyber attack”. Now, the process has been initiated at AIIMS to start a dedicated cyber security cell, they said. “The new Cyber security cell will ensure that there is an SoP for the use of both intranet and internet. There would be certain prohibited sites, which the system will not permit you to download from because those sites are the most popular means of infecting your computers and through your computer network,” sources said.

<https://indianexpress.com/article/explained/the-aiims-cyberattack-and-its-china-links-8324982/>

