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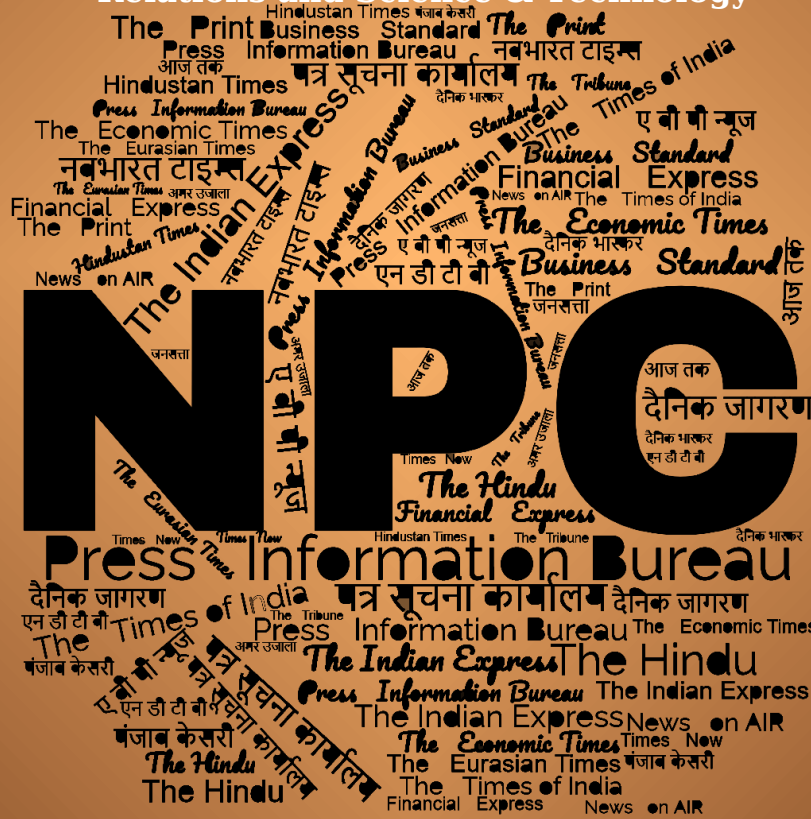
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समाचार पत्रों से चयित अंश Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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Thu, 18 May 2023

गगनयान मिशन के लिए आगरा में तैयार हुए पैराशूट:जुलाई में हो सकती है परीक्षण वाहन की पहली उड़ान; बंगलुरु भेजा गया पैराशूट सिस्टम

गगनयान मिशन के जरिए भारत ने अंतरिक्ष में मानव की उड़ान को साकार करने का सपना देखा है। इसके लिए एयरो डायनामिक डीसेलेरेटर प्रणाली का विकास किया गया है। इसकी सहायता से अंतरिक्ष यात्री सहित क्रू-मॉड्यूल को पृथ्वी पर सुरक्षित उतारा जाएगा। ADRDE वैज्ञानिकों ने प्रणाली में लगा पैराशूट सिस्टम विकसित किया है। शनिवार को पैराशूट सिस्टम को आगरा से बंगलुरु के लिए रवाना कर दिया गया है। माना जा रहा है कि जुलाई 2023 में परीक्षण वाहन की पहली उड़ान हो सकती है।

अब आपको गगनयान क्रू मॉड्यूल के पैराशूट सिस्टम के बारे में बताते हैं...

10 पैराशूट होंगे इस सिस्टम में

गगनयान क्रू मॉड्यूल के पैराशूट सिस्टम में 10 पैराशूट होंगे। भविष्य में पृथ्वी की निचली कक्षा से गगनयान अंतरिक्ष यात्रियों के जमीन पर लैंडिंग के लिए पहले चरण में 2 खास पैराशूट यानी अपेक्स कवर सेपरेशन पैराशूट होंगे। ये पैराशूट क्रू मॉड्यूल पैराशूट सिस्टम में सुरक्षा कवर की तरह काम करेंगे। एपेक्स कवर क्रू-मोड्यूल में लगे विभिन्न प्रकार के पैराशूट की बाहरी वातावरण से सुरक्षा करता है।

2 ड्रोग पैराशूट करेंगे स्पीड कंट्रोल

इसके बाद पृथ्वी की निचली कक्षा से नीचे धरती की तरफ आते हुए अंतरिक्ष यात्रियों की रफ्तार को कम करने और नीचे उतरने की इस प्रक्रिया को सुरक्षित रखने के लिए 2 ड्रोग पैराशूट भी इस्तेमाल में लाए जाएंगे। बता दें कि खुले सिरों वाले एक फनल के आकार के डिवाइस को ड्रोग कहा जाता है। ये ड्रोग तेज रफ्तार वाली किसी भी वस्तु की स्पीड को कम करने का काम करते हैं।

फिर 3 खास पायलट शूट का होगा इस्तेमाल

ड्रोग पैराशूट छोड़ने के बाद 3 खास पैराशूट को अलग-अलग खोलने के लिए 3 पायलट शूट का इस्तेमाल किया जाएगा। ये शूट एक झुका हुआ चैनल या रास्ता है, जिसमें वस्तुओं को गुरुत्वाकर्षण के जरिए चलाया या संचालित किया जाता है। ये लैंडिंग से पहले गगनयान क्रू मॉड्यूल की रफ्तार को एक सुरक्षित स्तर तक कम करने में मदद करेगा। धरती पर अंतरिक्ष यात्रियों की लैंडिंग लिए 3 खास या अहम पैराशूट में से 2 ही काफी होंगे और तीसरे का इस्तेमाल नहीं किया जाएगा।

क्रू-मॉड्यूल को सुरक्षित पृथ्वी पर उतारेगा पैराशूट

ADRDE के डायरेक्टर डॉ. मनोज कुमार ने बताया कि क्रू-मॉड्यूल में अंतरिक्ष यात्री को पृथ्वी की निचली कक्षा में एक सप्ताह के लिए ले जाया जाएगा। क्रू-मॉड्यूल को पृथ्वी के वायुमंडल में दोबारा प्रवेश के बाद ADRDE द्वारा विकसित पैराशूट प्रणाली की सहायता से पृथ्वी पर सुरक्षित उतारा जाएगा। उन्होंने बताया कि प्रणाली में विभिन्न

प्रकार के पैराशूट होंगे। सभी पैराशूट पर अलग-अलग परीक्षण किए गए हैं। परीक्षण वाहन की उड़ान द्वारा पहली बार संपूर्ण पैराशूट प्रणाली का परीक्षण किया जाएगा।

जुलाई 2023 में संभावित है पहली उड़ान

ADRDE ने परीक्षण वाहन की पहली उड़ान (टीवीडी-1) के लिए पैराशूट प्रणाली को बनाया है। इसका क्रू-मॉड्यूल के साथ इंटीग्रेशन बेंगलुरु स्थित इसरो के मानव अंतरिक्ष उड़ान केंद्र में किया जाएगा। इसकी पहली उड़ान जुलाई में संभावित है। परीक्षण वाहन की अलग-अलग सफल उड़ानों के बाद पहली मानव रहित अंतरिक्ष मिशन के लिए काम शुरू होंगे। शनिवार को ADRDE के डायरेक्टर डॉ. मनोज कुमार ने इसरो के मानव अंतरिक्ष उड़ान केंद्र के लिए पैराशूट को झंडी दिखा कर खाना किया। ADRDE के उप-जनसंपर्क अधिकारी सुनील कुमार ने बताया कि परीक्षण वाहन की सफल उड़ान देश की महत्वाकांक्षी अंतरिक्ष परियोजना गगनयान की सफलता की दिशा में एक शानदार उपलब्धि होगी। इस अवसर पर प्रोजेक्ट लीडर स्वदेश कुमार, अनुराग यादव व प्रोजेक्ट से जुड़े वैज्ञानिक, तकनीकी अधिकारी मौजूद रहे।

अब आपको बताते हैं कि नवंबर 2022 में कैसे पहला ट्रायल झांसी में हुआ...

सीरीज के पहले टेस्ट में नहीं खुला था एक पैराशूट

गगनयान पैराशूट सिस्टम के लिए इंटीग्रेटेड मेन पैराशूट एयरड्रॉप टेस्ट पिछले साल 18 नवंबर को झांसी के बवीना में किया गया था। इस टेस्ट को इस तरह के काल्पनिक घटना के साथ किया गया, जिसमें एक मेन पैराशूट खुलने में नाकाम रहा। इस तरह का परिदृश्य इसलिए रचा गया कि जब वास्तव में ऐसा होगा तो क्या सावधानी के तौर पर लगाए गए पैराशूट काम करेंगे कि नहीं।

ये इस तरह का पहला टेस्ट था, जिसमें गगनयान पैराशूट सिस्टम में भविष्य में होने वाली परेशानियों और नाकामियों की पहले ही उस तरह का माहौल तैयार कर पैराशूट सिस्टम को टेस्ट किया गया। ये इस सीरीज का पहला टेस्ट था।

ऐसा किया गया था परीक्षण

सीरीज के इस पहले एयरड्रॉप टेस्ट को करने के लिए 5 टन के क्रू मॉड्यूल के भार (Mass) बराबर ही डमी का इस्तेमाल किया गया था। इसे 2.5 किमी तक की ऊंचाई तक ले जाया गया। इसके बाद इस ऊंचाई से इस पैराशूट को भारतीय वायुसेना के IL-76 एयरक्राफ्ट का इस्तेमाल कर नीचे की तरफ फेंका गया। ये वैसे ही था जैसे आपात स्थिति में किसी भी विमान के पायलट पैराशूट का इस्तेमाल कर ऊंचाई से धरती की तरफ छलांग लगाते हैं।

इसके बाद दो छोटे पाइरो-बेस्ड मोटार पायलट पैराशूट छोड़े गए थे। ये दोनों पैराशूट 7 सेकेंड के अंदर खुल गए। यह परीक्षण को इसरो, डीआरडीओ, भारतीय वायुसेना और सेना की मदद से पूरा किया गया था।

इस टेस्ट के दौरान पूरी तरह से हवा से भरे या फूले हुए मेन पैराशूट ने पेलोड की रफ्तार को कम कर एक सुरक्षित लैंडिंग कराने वाली रफ्तार में ला दिया था। इस परीक्षण को पूरा होने में महज 2 से 3 मिनट का वक्त लगा था। इसके साथ ही ये एयरड्रॉप टेस्ट कामयाब रहा, क्योंकि पेलोड मास सुरक्षित तरीके से धीरे-धीरे जमीन पर उतर गया था।

सेनाओं के लिए पैराशूट तैयार करता है ADRDE

रक्षा विकास अनुसंधान एवं संगठन (DRDO) की आगरा स्थित लैब "हवाई वितरण अनुसंधान एवं विकास संस्थापन (ADRDE) सैन्य सेनाओं के लिए उन्नत प्रकार की पैराशूट प्रणाली विकसित करता है। कई सालों से ADRDE मानव अंतरिक्ष परियोजना के लिए अंतरिक्ष अनुसंधान एवं विकास संगठन (इसरो) के साथ काम कर रहा है। इसके तहत ही ADRDE ने देश की महत्वाकांक्षी परियोजना "गगनयान" के लिए उन्नत प्रकार के एयरोडायनामिक डीसेलेरेटर प्रणाली को विकसित कर रहा है।

<https://www.bhaskar.com/local/uttar-pradesh/agra/news/the-first-flight-of-the-test-vehicle-may-happen-in-july-parachute-system-sent-from-adrde-to-bangalore-131296650.html>



Wed, 17 May 2023

Indian Navy to Conduct Sea Trial of its First Indigenous Fast Interceptor Boat in Goa Tomorrow

The Indian Navy is all set to conduct the maiden sea trial of its first indigenous Autonomous Fast Interceptor Boat (A-FIB) from Goa to Mumbai between May 18 and 22, a Naval spokesperson said on Wednesday, reported news agency PTI.

The spokesperson said, "Continuing with the impetus for indigenisation, 'Aatmanirbhar Bharat' and with the aim to harness cutting edge technologies for maritime capabilities, an Autonomous Fast Interceptor Boat (A-FIB) is capable of autonomous operation in dense maritime traffic."

The boat will be flagged off from Vasco on Thursday morning, according to PTI.

The agency reported that the A-FIB has been jointly developed by Indian Navy's Weapons and Electronics Systems Engineering Establishment (WESEE) and M/s BEL(Bg) under Technology Incubation Forum (TIF). The boat will undergo endurance trials and will cast off from Goa on May 18 for Mumbai, the spokesperson added. On Sunday, a BrahMos supersonic cruise missile was successfully test-fired from the Indian Navy's frontline guided missile destroyer INS Mormugao.

"INS Mormugao, the latest guided-missile destroyer, successfully hit 'bulls eye' during her maiden BrahMos supersonic cruise missile firing," a Navy official said.

"The ship and her potent weapon, both indigenous, mark another shining symbol of 'AatmaNirbharta' and Indian Navy's firepower at sea," the official added.

According to PTI, BrahMos Aerospace Pvt Ltd, an India-Russian joint venture, produces supersonic cruise missiles that can be launched from submarines, ships, aircraft, or land platforms.

BrahMos missile flies at a speed of 2.8 Mach or almost three times the speed of sound. India is also exporting BrahMos missiles.

In January last year, India sealed a USD 375 million deal with the Philippines for supplying three batteries for the missile. Last month, the Defence Research and Development Organisation (DRDO) and the Indian Navy successfully conducted a sea-based endo-atmospheric interceptor missile maiden flight trial off the coast of Odisha in the Bay of Bengal.

The purpose of the trial, according to the defence ministry, was to engage and neutralise a hostile ballistic missile threat, thereby elevating India into the elite club of nations with Naval Ballistic Missile Defence (BMD) capability.

<https://news.abplive.com/news/india/indian-navy-to-conduct-sea-trial-of-its-first-indigenous-fast-interceptor-boat-in-go-a-tomorrow-1602984>

नवभारत टाइम्स

Wed, 17 May 2023

मिसाइल भंडार बढ़ाने की चौतरफा रणनीति पर तेज हुआ काम, इस बार चीन से धोखा नहीं खाएगा भारत

चीन के साथ संघर्ष लंबा खिंच गया है। बातचीत और बैठकों के तमाम दौर के बीच आश्वासन पर आश्वासन मिले, लेकिन वास्तविक नियंत्रण रेखा (LAC) पर स्थिति सामान्य हो नहीं पाई। सलामी स्लाइसिंग की नीति के तहत अतिक्रमण की पुरानी वारदातों के कारण चीन पर अब और भरोसा नहीं किया जा सकता है। इसलिए अब किसी भी खतरे से निपटने की तैयारी ही वक्त की मांग है। भारत इसी मांग को पूरा करने में जुटा है और चीन की चुनौतियों के मद्देनजर अपनी सामरिक शक्ति बढ़ाने के लिए मिसाइलों का भंडार तेजी से बढ़ा रहा है। इस भंडार में छोटी और लंबी, दोनों दूरी की मिसाइलें शामिल की जा रही हैं। ये मिसाइलें दुश्मन के खेमे में तबाही तो बरपाएंगी ही, परमाणु प्रतिरोध के रणनीतिक त्रिकोण का भी एक मोर्चा बनेंगी।

बनकर तैयार है प्रलय मिसाइल

150 से 500 किमी की मारक क्षमता वाली बैलिस्टिक मिसाइल प्रलय बनकर तैयार है। इसे रक्षा अनुसंधान एवं विकास संगठन (DRDO) ने बनाया है। वहीं, लंबी दूरी से जमीन पर मार करने वाली क्रूज मिसाइलों (LR-LACMs) और पनडुब्बी से छोड़ी जाने वाली क्रूज मिसाइलों (SLCMs) का उत्पादन भी कुछ सालों में शुरू हो जाएगा। शीर्ष रक्षा सूत्रों ने हमारे सहयोगी अखबार द टाइम्स ऑफ इंडिया (ToI) को बताया कि ये मिसाइलें 1,000 किमी दूर निशाने को भेद सकने में सक्षम होंगी। सतह से सतह पर मार करने वाली प्रलय मिसाइलें और आवाज की गति से कम तेजी से मार करने वाली (सबसोनिक) एलआर-एलएसीएम उस बेड़े का हिस्सा होंगे जिसमें ब्रह्मोस सुपरसोनिक क्रूज मिसाइलें, पिनाका मल्टि रॉकेट सिस्टम और मौका लगते ही मार करने को तैयार अन्य हथियार (Stand-off weapons) शामिल हैं। इन्हें मिलाकर तीनों सेनाओं से बनने वाले थिएटर कमांड्स के अधीन नया इंटीग्रेटेड रॉकेट फोर्स (IRF) तैयार किया जाएगा।

वायुसेना को 120, थल सेना को 250 प्रलय मिसाइलें मिलेंगी

रक्षा मंत्री राजनाथ सिंह की अगुवाई वाली रक्षा अधिग्रहण परिषद (DAC), वायुसेना को 120 प्रलय मिसाइलें खरीदने की शुरुआती अनुमति पहले ही दे चुकी है। उसके बाद 250 प्रलय मिसाइलें थल सेना (Army) के लिए भी खरीदी जाएंगी। एक सूत्र ने बताया, 'आर्मी, नेवी और एयर फोर्स की ऐसी सभी मिसाइलें और उनके रॉकेट सिस्टम आईआरएफ के तहत इंटीग्रेट कर दिए जाएंगे ताकि इनका बेहतर कमांड और कंट्रोल हो सके। चीन के साथ लगी हमारी उत्तरी सीमाओं के लिए इसकी खास जरूरत है।'

बरकरार रहेंगे IRF और SFC

भारत की योजना है कि इंटीग्रेटेड रॉकेट फोर्स (IRF) और स्ट्रैटिजिक फोर्स कमांड (SFC) को बरकरार रखा जाए। इन्हें 2003 में परमाणु हथियारों के खजाने के मैनेजमेंट के लिए बनाया गया था। ये दोनों ही एसएफसी ही परमाणु क्षमता संपन्न पृथ्वी 2 (350 किमी रेंज), शौर्य (750 किमी रेंज), अग्नि 1 (700 किमी रेंज), अग्नि 2 (2,000 किमी रेंज), अग्नि 3 (3,000 किमी रेंज), अग्नि 4 (4,000 किमी रेंज) और अग्नि 5 (5,000 किमी से ज्यादा रेंज) की बैलिस्टिक मिसाइलें और परमाणु क्षमता युक्त पनडुब्बियों के साथ-साथ न्यूक्लियर ग्रैविटी बम गिराने में सक्षम युद्धक विमानों का प्रबंधन करते हैं। चीन के पास भी जमीन से दागी जाने वाली परमाणु और पारंपरिक बैलिस्टिक मिसाइलों का बड़ा भंडार है। ये सभी उसकी पीपल्स लिबरेशन आर्मी (PLA) के अधीन हैं जिसके करीब 40 ब्रिगेड हैं।

बदल गई बैलिस्टिक मिसाइलों की पॉलिसी

प्रलय मिसाइल को बेड़े में शामिल करने के साथ ही भारत ने सिर्फ परमाणु हथियारों को दागने के लिए ही बैलिस्टिक मिसाइलों के उपयोग की नीति त्याग दी है। सूत्र ने कहा, 'भारत के लिए अब तक बैलिस्टिक मिसाइल का मतलब परमाणु हथियारों को ले जाने वाली मिसाइल ही हुआ करती थी। लेकिन चीन और पाकिस्तान, दोनों के पास पारंपरिक के साथ-साथ न्यूक्लियर बैलिस्टिक मिसाइलें भी हैं।'

हल्की मिसाइलों पर जोर

जमीन आधारित मिसाइलों का इंटीग्रेशन करीब एक साल में पूरा हो जाना है। योजना के मुताबिक, एसएलसीएम का पहला परीक्षण रूस निर्मित सिंधुघोष क्लास (किलो-क्लास) पनडुब्बी पर किया जाना है। एक सूत्र ने बताया कि इन सस्ती सबसोनिक मिसाइलों की रेंज ब्रह्मोस से ज्यादा है। ब्रह्मोस के 800 किमी वेरियेंट पर काम चल रहा है। हालांकि, उसकी रेंज 290 किमी से बढ़ाकर 450 किमी की जा चुकी है। छोटे और हल्के लेकिन समान मारक क्षमता वाले ब्रह्मोस की शुरुआती डिजाइन तैयार है। सूत्र ने कहा, 'यह भारी-भरकम सुखोई 30 एमकेआई के सिवा हल्के युद्धक विमान भी ब्रह्मोस से दुश्मनों को निशाना बना पाएंगे।'

<https://navbharattimes.indiatimes.com/india/india-moves-to-boost-conventional-missile-arsenal-amid-row-with-china/articleshow/100306075.cms>

THE ECONOMIC TIMES

Wed, 17 May 2023

Be Fully Prepared to Meet All Contingencies Along LoC: Northern Army Commander to Troops

Northern Army Commander Lieutenant General Upendra Dwivedi on Wednesday visited forward areas along the Line of Control (LoC) in twin border districts of Rajouri and Poonch, and exhorted the troops to be fully prepared to meet all contingencies, officials said. The visit assumes significance in view of the G20 meeting scheduled in Srinagar from May 22-24.

He visited two units along the Line of Control in Poonch and Rashtriya Rifles in Rajauri sectors to review operational preparedness, and was briefed on the counter-infiltration grid and processes being adopted, the officials said.

He appreciated the measures adopted and lauded the troops for maintaining the highest standards of professionalism.

He further exhorted them to be fully prepared to meet all contingencies, the officials said.

This is the fourth visit of the General Officer Commanding-in-Chief (GoC-in-C) to the Rajouri-Poonch sector since the April 20 terror attack on an army vehicle that killed five personnel.

He earlier visited the sector on April 22, April 26 and May 6.

<https://economictimes.indiatimes.com/news/defence/be-fully-prepared-to-meet-all-contingencies-along-loc-northern-army-commander-to-troops/articleshow/100302086.cms>

Indian Army Chief Gen Manoj Pande Meets Egypt Counterpart; Discusses Strengthening of Ties

Indian Army chief General Manoj Pande and his Egypt counterpart Lt Gen Osama Ahmad Roshdy Abdullah Askar discussed ways to strengthen India-Egypt bilateral ties during a bilateral meet on Tuesday, May 16. During the interaction of the two military leaders, a book titled 'Indian Army in Egypt' was released to commemorate the service and sacrifice of the Indian soldiers in Egypt.

The Indian Army Chief also interacted with the chief of operations of the Egyptian military Lt.Gen. Ahmed F Khalifa. The Indian Army chief is on a three-day visit to Egypt to enhance bilateral defence cooperation. Both countries will also discuss ways to improve and strengthen ties in areas of mutual interest of both the countries.

Military relations between India and Egypt

India and Egypt enjoy cordial defence relations. The president of Egypt Abdel Fattah El-Sisi was invited as chief guest on India's 74th Republic Day celebrations to reaffirm the strong relations between both countries. The MEA in a statement had said that this is for the first time the President of the Republic of Egypt has been invited to India to witness the Republic Day parade.

The military contingent of the Egyptian army also participated in the parade. India and Egypt are also celebrating 75 years of the establishment of Diplomatic relations between both countries. Both nations enjoy warm and friendly relations marked by civilisational, cultural as well as economic linkages and deeper and stronger people-to-people ties.

The multifaceted relationship is based on shared cultural values, commitment to fostering economic growth, and collaboration in the field of defence and security. Discussions between the two military leaders were also held regarding the commitment to work closely at multilateral and international platforms. The Joint defensive Committee (JDC) activities, which have been followed by exchange activities such as joint military drills and exercises in each other's countries, determine the majority of the defensive cooperation between the two countries.

Many exercises, ship transits, aircraft transits and defence exhibitions and military trade also contribute to ties between both nations. In January 2023, both nations participated in the Indo-Egypt joint exercise in Rajasthan known as 'Exercise Cyclone'. It was a 14-day exercise which was carried out in the deserts of Rajasthan engaging both the contingents to advance special forces skills such as Sniping, Combat Free Fall, Reconnaissance, Surveillance and Target designation, sharing of information on weapons, equipment, innovations, tactics, techniques and procedures.

<https://www.republicworld.com/india-news/general-news/indian-army-chief-gen-manoj-pande-meets-egypt-counterpart-discusses-strengthening-of-ties-articleshow.html>

THE ECONOMIC TIMES

India, US Look to Enhance Defence Industrial Cooperation

More than a month ahead of Prime Minister Narendra Modi's visit to Washington, India and the US on Wednesday held extensive talks focusing on operationalising their 'Major Defence Partnership'

and co-development of military platforms. Boosting defence industrial cooperation, sharing of critical technology and having joint long-term research were also the focus of the 17th meeting of India-US Defence Policy Group (DPG) that was held in Washington.

The two sides also deliberated on operationalising the 'Major Defence Partnership' and ways to improve supply chain security at the 17th meeting of India-US DPG that was held in Washington.

"The two sides reviewed the progress made in furthering defence industrial cooperation and operationalising the India-US major defence partnership," the defence ministry said.

In June 2016, the US designated India a "Major Defence Partner" paving the way for sharing of critical military equipment and technology. Defence Secretary Giridhar Aramane and US Under Secretary of Defence for Policy Colin Kahl co-chaired the DPG meeting. In a statement, the ministry described the talks as "cordial and productive". "Important aspects such as military-to-military cooperation, implementation of foundational defence agreements, exercises and the ongoing and future cooperative activities in the Indian Ocean Region were discussed," it said.

The ministry said considerable focus was given on the ways and means to enhance defence industrial cooperation, including technology partnership, long-term research and development and improving supply chain security. "The meeting also discussed promoting co-development and co-production in India including potential areas and projects where Indian and US defence companies could work together," it said.

It said the two sides agreed to encourage both the private and government stakeholders to utilise the innovation ecosystems and promote defence start-ups. The DPG is the apex official-level mechanism between India's defence ministry and US department of defence. It comprehensively reviews and guides all aspects of bilateral defence cooperation with a focus on policy.

The Indo-US defence ties have been on an upswing in the last few years.

The two countries have inked key defence and security pacts over the past few years, including the Logistics Exchange Memorandum of Agreement (LEMOA) in 2016 that allows their militaries to use each other's bases for repair and replenishment of supplies.

The two sides also signed COMCASA (Communications Compatibility and Security Agreement) in 2018 which provides for interoperability between the two militaries and provides for the sale of high-end technology from the US to India.

In October 2020, India and the US sealed the BECA (Basic Exchange and Cooperation Agreement) agreement to further boost bilateral defence ties.

The pact provides for sharing of high-end military technology, logistics and geospatial maps between the two countries.

<https://economictimes.indiatimes.com/news/defence/india-us-look-to-enhance-defence-industrial-corporation/articleshow/100311990.cms>



Wed, 17 May 2023

India in Talks with the US, France for Fighter Jet Engines

Even as India is pushing the 'Make in India' programme in the defence sector, New Delhi is holding crucial discussions on manufacturing of the engines for its future indigenous fighter jet projects with France and the United States of America.

Discussions are going on with the US for the General Electric (GE) engines for the Light Combat Aircraft (LCA) MK2, while the French proposal is for a high-powered engine for the Advanced Medium Combat Aircraft (AMCA), government officials informed India Today.

The engines are crucial for India as it is looking to manufacture all its future fighter aircraft within India under the 'Make in India' programme, officials further told India Today.

The Light Combat Aircraft (LCA) Mk2 is expected to be ready for induction by 2028 while the first flight of the Advanced Medium Combat Aircraft (AMCA) may take seven years and the induction can take ten years.

Prime Minister Narendra Modi is scheduled to visit the United States of America (USA) in June next month while he will also fly to France later this year in July to participate in the French National Day. The Indian side is evaluating the performances of both the jet engines well as the aspects related to price, and the extent of transfer of technology and manufacturing in India.

LCA Tejas Mk2 and AMCA are the two major fighter aircraft whose manufacturing projects are currently going on in India. India also has plans of manufacturing 114 multirole fighter aircraft where Indian lenders would partner with foreign defence firms to manufacture advanced fighter jets within the country outside the Hindustan Aeronautics Limited (HAL) facilities for the first time.

<https://www.indiatoday.in/india/story/india-usa-france-fighter-jet-engines-lcamk2-2380646-2023-05-18>

THE ECONOMIC TIMES

Wed, 17 May 2023

French Defence Major Safran Group Opens Unit in Kerala

French defence major Safran Group on Wednesday opened a unit and began operations here, in a development that is expected to invigorate the state's efforts to become the nation's hub in the aerospace sector. Kerala Industries Minister P Rajeev inaugurated the test centre for aerospace and defence products set up near Technopark on Wednesday.

Safran provides services in the fields of satellite communication and satellite tracking, along with manufacturing critical machinery for fighter aircraft, rockets and missiles.

In a Facebook post, Rajeev said Safran plans to turn its first unit in Kerala into a space test centre in the Asia Pacific region in the near future. He said the company has also expressed interest in starting an assembling/manufacturing unit for Safran Space Products in Kerala itself.

Safran also aims to produce 50 per cent of the products required by India's space agency ISRO, the minister said, adding that it will give strength to Kerala's efforts to become the nation's hub in the aerospace sector. In July last year, the company had announced the setting up of a production facility in Hyderabad to produce parts and components for advanced aircraft engines with an investment of Euro 36 million, besides a big-ticket joint venture with state-run aerospace behemoth HAL in Bengaluru. After a meeting between Defence Minister Rajnath Singh and Safran CEO Olivier Andries, it was also announced that the joint venture in Bengaluru will produce engines for helicopters, while the French company will also set up an MRO (Maintenance, Repair and Overhaul) facility for Indian and foreign commercial aircraft.

<https://economictimes.indiatimes.com/news/defence/french-defence-major-safran-group-opens-unit-in-kerala/articleshow/100311115.cms>

Wed, 17 May 2023

UK's Sunak to Partner with Japan on Defence, Technology Ahead of G7

British Prime Minister Rishi Sunak is set to sign a historic "Hiroshima Accord" on Thursday when he meets with Japan's Prime Minister Fumio Kishida ahead of a G7 meeting, to step up defence cooperation with Japan, according to a statement from the UK government.

As part of the accord, the countries will also announce the launch of a "semiconductors partnership" to strengthen chip supply chain in an increasingly competitive market, the statement said. "The Hiroshima Accord will see us step up cooperation between our armed forces, grow our economies together and develop our world-leading science and technology expertise," Sunak said.

On Thursday, Sunak will visit a naval base and confirm new UK-Japan defence cooperation, the statement said, adding that the partnership includes doubling UK troop numbers in upcoming joint exercises.

Last week, Reuters reported that Washington and the European Union would also pledge joint action to tackle concerns focused on China about non-market practices and coordinate export controls on semiconductors and other goods at a meeting this month.

At the G7 summit, the Prime Minister will again push for more assistance for Ukraine as it prepares for escalating military action against Russia.

<https://www.reuters.com/world/uk/uks-sunak-set-sign-accord-defence-cooperation-with-japan-2023-05-17/>

THE ECONOMIC TIMES

Wed, 17 May 2023

Ukraine Denies Russia Destroyed Patriot Missile Defence System

Ukraine denied on Wednesday that a Russian hypersonic missile had destroyed a U.S.-made Patriot missile defence system during an air strike on Kyiv.

Russia's defence ministry made the assertion on Tuesday after an overnight air attack on the Ukrainian capital. Two U.S. officials later said a Patriot system had probably suffered damage but that it did not appear to have been destroyed.

"I want to say: do not worry about the fate of the Patriot," Ukrainian air force spokesperson Yuriy Ihnat told Ukrainian television.

He ruled out the possibility of a Russian "Kinzhal" missile knocking out a Patriot system.

"Destroying the system with some kind of 'Kinzhal', it's impossible. Everything that they say there, it can remain in their propaganda archive," he said. The Patriot system is one of an array of sophisticated air defence units supplied by the West to help Ukraine repel Russian air strikes following Moscow's invasion last year.

It is considered one of the most advanced U.S. air defence systems, including against aircraft, cruise missiles and ballistic missiles, and typically includes launchers along with radar and other support vehicles. Russian President Vladimir Putin has touted the Kinzhal missile as proof that his country has world-beating military hardware.

Ukraine said it had shot down six Kinzhal missiles on Tuesday, but Russia denied this. It was not clear which Western weapon Ukraine used, and the Pentagon had no immediate comment.

<https://economictimes.indiatimes.com/news/defence/ukraine-denies-russia-destroyed-patriot-missile-defence-system/articleshow/100299477.cms>



Wed, 17 May 2023

Ukraine Conflict: Ukraine will Receive Additional Air-Defence Radars

Ukraine will receive additional Hensoldt TRML-4D active electronically scanned array (AESA) radars to strengthen its air defences.

Under the agreement, Hensoldt will supply six systems to Ukraine for EUR100 million (USD108.2 million), the company announced on 16 May.

The radars will be delivered in the second half of 2023, after adequate training has been provided.

In 2022, the company delivered four TRML-4D radars for Ukraine's Diehl Defence IRIS-T surface-launched medium-range (SLM) air-defence systems. In January 2023, two additional TRML-4D radars were ordered, although these systems were not intended for the IRIS-T SLM system, Janes understands. This latest order, funded by the German government, is similarly not intended for the IRIS-T SLM system, a Hensoldt spokesperson told Janes.

The TRML-4D is a software-defined C-band (4–8 GHz) AESA radar that utilises a gallium nitride (GaN) solid-state transmitter. The system can detect close to 1,500 targets in a 250 km radius to a height of 30 km and is capable of detecting platforms with a radar cross-section of 0.01 m². Fighter aircraft can be tracked as confirmed targets at ranges of more than 120 km and supersonic missiles from more than 60 km. It can automatically trigger electronic counter-countermeasures and allows locally developed solutions to be integrated into the radar's operations suite.

<https://www.janes.com/defence-news/news-detail/ukraine-conflict-ukraine-will-receive-additional-air-defence-radars>



Wed, 17 May 2023

North Korea is About to Launch its 1st Spy Satellite as Kim Jong Un Seen on Site

Leader Kim Jong Un visited a facility assembling North Korea's first spy satellite, indicating the state could soon conduct its first space rocket launch in about seven years.

Kim was accompanied by his preteen daughter in the field guidance visit to inspect the “military reconnaissance satellite No. 1 which is ready for loading,” the official Korean Central News Agency reported Wednesday. The device is designed to monitor US forces and their allies in Asia.

The leader stressed the need for the spy satellite as “the US imperialists and south Korean puppet villains escalate their confrontational moves against the DPRK,” KCNA reported, referring to North Korea by its formal name and avoiding a formal reference for its neighbor to the south.

North Korea is barred by United Nations Security Council resolutions from conducting ballistic missile tests, but Pyongyang has long claimed it’s entitled to a civilian space program for satellite launches. The US and its partners have warned that technology derived from North Korea’s space program could be used to advance its ballistic missiles.

While no date was given for a possible launch, North Korea could be looking to upstage South Korea ahead of the May 24 launch of its homegrown Nuri space rocket, which is designed to put satellites into orbit.

Kim’s public appearance at the satellite facility was his first in 28 days, specialist service NK News reported. His reemergence comes before leaders of the Group of Seven nations gather in the Japanese city of Hiroshima from Friday to discuss issues including the security threats posed by Pyongyang.

Recent commercial satellite imagery from North Korea’s Sohae Satellite Launching Station shows construction progressing rapidly at several key facilities, and what’s likely a new launch pad being built, the 38 North website reported this week.

North Korea last launched a space rocket in February 2016, when the country claimed to have put an earth-observation satellite into orbit. Observers of the secretive regime believe that satellite never reached orbit.

Pyongyang’s space program has diminished in importance over the years as the state greatly enhanced its ability to build intercontinental ballistic missiles capable of carrying nuclear warheads that could strike the US.

“We used to view North Korean space launch attempts as ICBM tests in disguise— this is no longer the case since they frequently test ICBM class missiles,” said David Schmerler, a senior research associate at the James Martin Center for Nonproliferation Studies.

“They have progressed pretty far since their last space launch attempt. The new space launcher will incorporate the developments they’ve accumulated to date, and it would make sense for the new system to be more advanced,” he said.

Still, a satellite launch would add to security concerns that have recently ratcheted up to levels not seen in years with Kim’s tests of new weapons for nuclear strikes.

These have included a solid-fuel ICBM launched for the first time in April that could be quickly deployed to target the US, and new missiles systems designed to hit US troops stationed in South Korea and Japan.

<https://www.hindustantimes.com/world-news/north-korea-is-about-to-launch-its-1st-spy-satellite-as-kim-jong-un-seen-on-site-101684286126953.html>



Wed, 17 May 2023

Study Finds How Inflammatory Diseases Diagnosed with Synthetic Peptides

Calprotectin levels in stool samples can be used to diagnose or monitor common inflammatory conditions such as ulcerative colitis and Crohn's disease, while serum levels of calprotectin can be used to monitor the inflammation state in rheumatoid arthritis. Calprotectin concentrations in patient samples are commonly evaluated utilising antibodies that bind and detect the protein, such as those used in lateral flow assays such as the now-familiar home COVID-19 test kits.

However, there is a drawback to antibody-based calprotectin assays: the findings might differ depending on the kind of antibody and test utilised. This occurs because antibodies might attach to different places on the protein or have an uneven composition. Antibodies can also become inactive over time as a result of unfolding or precipitation.

One possible solution is to use peptides instead of antibodies to detect and measure disease markers like calprotectin. Peptides are sequences of up to 50 amino acids that can bind to proteins with high affinity and selectivity, but, unlike antibodies, they can be chemically produced with high purity and homogeneity. In addition, peptides are stable over time, are cheaper to produce than antibodies and with lower inter-batch variability, and they can be attached to a specific location on a surface, significantly simplifying diagnostic assay development because it allows for a more accurate and controlled way of detecting biomarkers.

With this idea, Christian Gerhold, CTO of the diagnostics company BUHLMANN, worked with the group of Professor Christian Heinis at EPFL to develop human calprotectin ligands based on peptides. From a library of more than 500 billion different peptides, Cristina Diaz-Perlas, a postdoc in Heinis's group, isolated several binders of calprotectin, and showed that the peptides are suited for calprotectin quantification in simplified lateral flow assays. The best peptide had a dissociation constant of 26 nM - a measure of how tightly it binds calprotectin, making it a good candidate for diagnostic tests. The peptide not only binds to a large surface region of calprotectin but also to a specific form of calprotectin that is the relevant species in patient samples. Under the guidance of Benjamin Ricken at BUHLMANN, the peptide was finally tested in professionally assembled lateral flow cassettes and found that it was suited for accurate detection and quantification of calprotectin. In a proof-of-concept study, this setup was used to quantify the concentration of calprotectin in serum obtained from patient blood samples.

The peptide developed is the first synthetic affinity reagent that could be generated against the biomarker calprotectin. "The EPFL and BUHLMANN teams are currently performing more tests with the calprotectin-specific peptide to translate the assay into a product that can bring the diagnostic power of this increasingly important biomarker to a new level to help patients suffering from inflammatory diseases," said Christian Heinis.

<https://www.aninews.in/news/science/study-finds-how-inflammatory-diseases-diagnosed-with-synthetic-peptides20230517164008/>

