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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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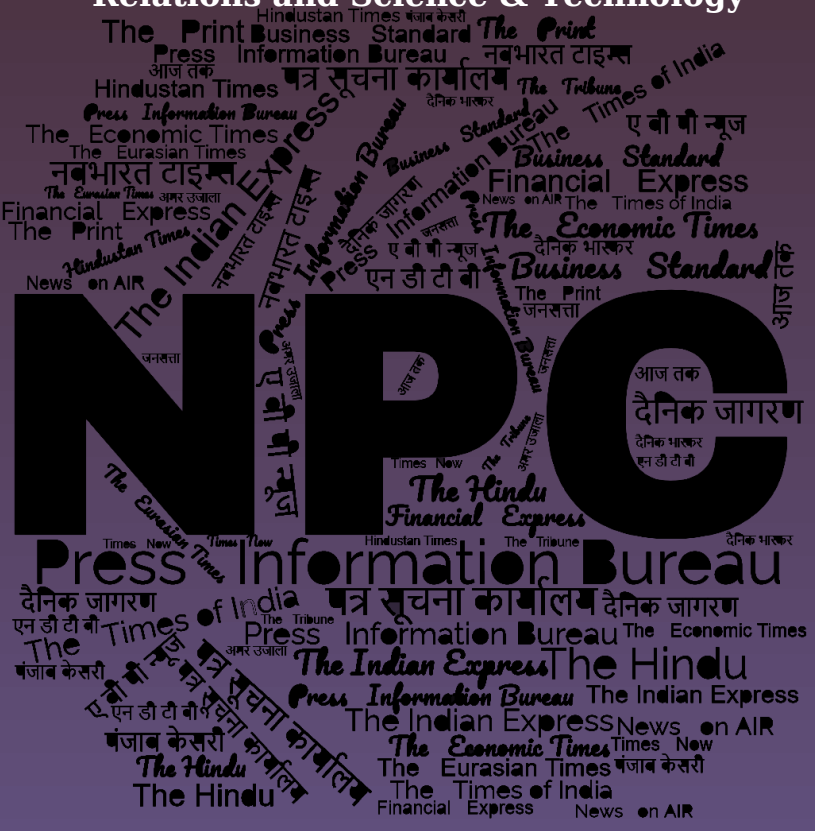

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पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Fri, 14 Jul 2023

चीफ ऑफ डिफेंस स्टाफ जनरल अनिल चौहान ने डीआरडीओ निदेशकों के सम्मेलन में कहा - राष्ट्रीय सुरक्षा रणनीति भू-राजनीतिक व्यवस्था में बदलाव के अनुरूप विकसित होनी चाहिए

चीफ ऑफ डिफेंस स्टाफ (सीडीएस) जनरल अनिल चौहान ने कहा है कि अंतरराष्ट्रीय भू-राजनीति परिवर्तनशील है और राष्ट्रीय रणनीति का लक्ष्य बदलावों को इस तरीके से आत्मसात करना होना चाहिए ताकि चुनौतियों का सामना किया जा सके और अवसरों का लाभ उठाया जा सके। 14 जुलाई, 2023 को नई दिल्ली में डीआरडीओ के वार्षिक कार्यक्रम, डीआरडीओ निदेशक सम्मेलन का उद्घाटन करते हुए जनरल चौहान ने उभरती चुनौतियों का सामना करने के लिए प्रदर्शन, सुधार, परिवर्तन, जानकारी और अनुरूपता की आवश्यकता पर जोर दिया।

"युद्धक्षेत्र के अनुरूप तैयारी से उभरती प्रौद्योगिकी आवश्यकताओं" का उल्लेख करते हुए उन्होंने कहा कि प्रौद्योगिकी और रणनीति में श्रेष्ठता समय की मांग है और भारतीय सशस्त्र बल नई प्रौद्योगिकियों में निवेश कर रहे हैं। संयुक्तता, एकीकरण और युद्धक्षेत्र के अनुरूप तैयारी के सिद्धांतों पर प्रकाश डालते हुए जनरल अनिल चौहान ने कहा कि राष्ट्रीय सुरक्षा के क्षेत्र में युद्धक्षेत्र के अनुरूप तैयारी की अवधारणा एक मौलिक परिवर्तन है, जो शुरु की जाने वाली है।

जनरल अनिल चौहान ने कहा, "यह आज़ादी के बाद किए गए दूरगामी प्रभावों वाले सबसे महत्वाकांक्षी परिवर्तनों में से एक है। संयुक्तता और एकीकरण की दिशा में उठाए जाने वाले सही कदमों पर, इस यात्रा की शुरुआत निर्भर करती है। युद्धक्षेत्र के अनुरूप तैयारी में संघर्ष के पूरे परिदृश्य पर प्रभावी प्रतिक्रिया के लिए तीनों सेवाओं वाले युद्धक्षेत्र विशिष्ट संरचनाओं का निर्माण शामिल है।"

सीडीएस ने कहा, भौतिक डोमेन में एकीकरण का उद्देश्य गुणात्मक प्रभाव प्राप्त करना है क्योंकि यह युद्ध लड़ने की क्षमता को बढ़ाने के लिए एकीकृत प्रक्रियाओं और संरचनाओं के माध्यम से सेवाओं की विशिष्ट क्षमताओं को संयोजित करता है। रक्षा अनुसंधान एवं विकास विभाग के सचिव और डीआरडीओ के अध्यक्ष डॉ. समीर वी. कामत ने अपने उद्घाटन भाषण में युद्ध की प्रकृति में होने वाले बदलावों और उनमें शामिल गंभीरता पर प्रकाश डाला। उन्होंने प्रधानमंत्री श्री नरेन्द्र मोदी के आत्मनिर्भरता और मेक इन इंडिया के लक्ष्य के अनुरूप सुधार और बदलाव की आवश्यकता पर जोर दिया।

जनरल चौहान ने डीआरडीओ की प्रणालियों और उप-प्रणालियों की दूसरी सूची जारी की, ताकि आत्मनिर्भर भारत के अनुरूप उद्योग जगत इनका डिजाइन, विकास और निर्माण कर सकें। डीआरडीओ की यह दूसरी सूची, पहले जारी की गई 108 वस्तुओं की सूची का अगला क्रम है। उन्होंने "उत्पादन समन्वय के लिए

डीआरडीओ दिशा-निर्देश" भी जारी किए, जो डीआरडीओ द्वारा विकसित सैन्य उपकरणों/प्लेटफार्मों/प्रणालियों के उत्पादन से जुड़े मुद्दों के उत्पादन समन्वय और समाधान की रूपरेखा तैयार करते हैं। दिशा-निर्देश डिजाइनरों, उपयोगकर्ताओं, उत्पादन एजेंसियों, गुणवत्ता एजेंसियों और अन्य हितधारकों को शामिल करके इन प्रणालियों के उत्पादन से संबंधित मुद्दों को हल करने के लिए दो स्तरीय व्यवस्था प्रस्तुत करते हैं। यह पहल भारतीय रक्षा उद्योग के लिए आत्मनिर्भर भारत की दिशा में रक्षा प्रौद्योगिकियों/प्रणालियों को विकसित करने का मार्ग प्रशस्त करेगी।

विभिन्न चिंतन शिविर बैठकों और रक्षा मंत्री श्री राजनाथ सिंह द्वारा इनके परिणामों की समीक्षा के बाद इस दो दिवसीय सम्मेलन का आयोजन किया गया है। इसमें डीआरडीओ के शीर्ष अधिकारी भाग ले रहे हैं, जिनमें विभिन्न प्रौद्योगिकी के साथ-साथ कॉर्पोरेट कंपनियों के निदेशक, डीआरडीओ प्रयोगशालाओं के निदेशक, डीआरडीओ मुख्यालयों के निदेशक और एकीकृत वित्तीय सलाहकार (आईएफए) शामिल हैं। इसके छह तकनीकी सत्रों में "नई सरकारी नीतियों और उभरते परिदृश्यों के मद्देनजर डीआरडीओ की भूमिका को फिर से परिभाषित करना" विषय के अनुरूप विभिन्न मुद्दों पर विचार-विमर्श किया जाएगा। प्रत्येक सत्र के बाद, एक पैनल चर्चा आयोजित की जाएगी।

https://pib.gov.in/PressReleasePage.aspx?PRID=1939597

Press Information Bureau
Government of India

Ministry of Defence

Fri, 14 Jul 2023

National Security Strategy must Evolve in line with Changes in Geo-Political Order: Chief of Defence Staff General Anil Chauhan at DRDO Directors' Conclave

Chief of Defence Staff (CDS) General Anil Chauhan has said that international geo-politics is in a flux and the national strategy should aim to absorb the changes in such a way that it meets the challenges and exploits the opportunities. Inaugurating the DRDO Directors' Conclave, an annual event of DRDO, in New Delhi on July 14, 2023, General Chauhan stressed the need to perform, reform, transform, inform and conform to meet the emerging challenges.

Referring to the "Technology Requirements emerging from Theaterisation", he said superiority in technology and tactics is the need of the hour and Indian Armed Forces are investing in new technologies to win engagements. Highlighting the principles of jointness, integration and theaterisation, General Anil Chauhan said in the national security realm, the concept of theaterisation is a fundamental change that is on the anvil.

"It is one of the most ambitious changes with far reaching implications attempted post-independence. The start on this journey depends on the right steps being taken first towards jointness and integration. Theaterisation involves creation of tri service theatre specific structures for effective response along the entire spectrum of conflict," said General Anil Chauhan. The CDS said, integration in the physical domain aims to achieve a multiplier effect as it combines the unique capabilities of the Services through integrated processes and structures to increase the war fighting capability.

Secretary, Department of Defence R&D and Chairman DRDO Dr Samir V Kamat, in his inaugural address, highlighted the changes occurring in the nature of warfare and criticality involved in them. He stressed on the need to reform and transform the perspectives in tandem with Prime Minister Shri Narendra Modi's goal of Aatmanirbharta and Make in India.

General Chauhan released the DRDO's second list of systems and subsystems for industry to design, develop and manufacture, in line with the Aatmanirbhar Bharat. This second list of DRDO is in continuation to the list of 108 items released earlier. He also released the "DRDO Guidelines for Production Coordination", which outlines the mechanism for production coordination and resolution of issues associated with production of DRDO developed military equipment/ platforms/ systems. The guidelines bring out a two-tier mechanism to resolve issues related to production of these systems by involving designers, users, production agencies, quality agencies and other stakeholders. The initiative will further pave the way for the Indian Defence Industry to develop defence technologies/ systems towards Aatmanirbhar Bharat.

The two-day conclave is organised as follow up to the various Chintan Shivir meetings and review of their outcome by the Raksha Mantri Shri Rajnath Singh. It is being attended by top officials of DRDO including Directors General of various technology as well as corporate clusters, directors of DRDO laboratories, directors of DRDO headquarters and Integrated Financial Advisors (IFAs). It will include deliberations on various issues in line with the theme "Redefining Role of DRDO in the Wake of New Government Policies and Emerging Scenarios" through six technical sessions each followed by a panel discussion.

https://pib.gov.in/PressReleasePage.aspx?PRID=1939501

FINANCIAL EXPRESS
Read to Lead

Fri, 14 Jul 2023

Theaterisation will Ensure Effective Response along the Entire Spectrum of Conflict: CDS General Anil Chauhan

The geopolitics is in flux and the national strategy should aim to absorb the changes in such a way that it meets the challenges and exploits the opportunities, said the Chief of Defence Staff (CDS) General Anil Chauhan. He was Inaugurating the DRDO Directors' Conclave, an annual event of DRDO, in New Delhi on July 14.

General Chauhan stressed the need to perform, reform, transform, inform and conform to meet the emerging challenges. The CDS said integration in the physical domain aims to achieve a multiplier effect as it combines the unique capabilities of the Services through integrated processes and structures to increase the war-fighting capability.

General Chauhan highlighted the "Technology Requirements emerging from Theaterisation". He elaborated that superiority in technology and tactics is the need of the hour and Indian Armed Forces are investing in new technologies to win engagements. "The concept of theaterisation is a fundamental change that is on the anvil," he said.

"It is one of the most ambitious changes with far-reaching implications attempted post-independence. The start of this journey depends on the right steps being taken first towards jointness and integration. Theaterisation involves the creation of tri-service theatre-specific structures for effective response along the entire spectrum of conflict," said General Anil Chauhan.

Theatre Command

Leading the Department of Military Affairs (DMA), General Anil Chauhan has been focusing on the realization of theatre command with the service chiefs. The concept is taking shape as the first integrated theatre command (ITC) will likely be rolled out by August, as per the reports. According to the military sources, the South-Western Command –based in Jaipur– will be the first western ITC. There is also the talks of the second, Northern ITC. This will be like to be the Central command. Adding to this, there will be the maritime ITC which will be led by the Indian navy. It is likely to be in Karnataka's Karwar. In the new structure, the theatre commanders will be four-star rank officers.

Additionally, there will be other joint commands, for logistics, training, cyber and space, missiles and intelligence which will be led by three-star officers — Lt Gen, Vice Admirals and Air Marshals. According to sources, the commanders will report to the Chief of Integrated Defence Staff to the Chairman Chiefs of Staff Committee (CISC) who come under the CDS.

DRDO's new list

General Chauhan also released the DRDO's second list of systems and subsystems for the industry to design, develop and manufacture, in line with the Aatmanirbhar Bharat. This second list of DRDO is in continuation of the list of 108 items released earlier. It also includes "DRDO Guidelines for Production Coordination", which outlines the mechanism for production coordination and resolution of issues associated with the production of DRDO-developed military equipment, platforms and systems. The guidelines bring out a two-tier mechanism to resolve issues related to the production of these systems by involving designers, users, production agencies, quality agencies and other stakeholders.

The two-day conclave is organised as a follow-up to the various Chintan Shivir meetings and a review of their outcome by Defence Minister Rajnath Singh. It will include deliberations on various issues in line with the theme "Redefining Role of DRDO in the Wake of New Government Policies and Emerging Scenarios" through six technical sessions each followed by a panel discussion.

https://www.financialexpress.com/business/defence-theaterisation-will-ensure-effective-response-along-the-entire-spectrum-of-conflict-cds-general-anil-chauhan-3171270/

THE ECONOMIC TIMES

Sat, 15 Jul 2023

Safran and DRDO to Jointly Make Combat Aircraft Engine

In a significant decision, India and France on Friday decided to extend their ground-breaking defence cooperation in advanced aeronautical technologies by supporting the joint development of a combat aircraft engine. A roadmap on this project will be prepared between French company Safran and Defence Research and Development Organisation (DRDO) before the end of this year. They also decided to support industrial cooperation for motorization of heavy-lift helicopters under the Indian Multi Role Helicopter (IMRH) programme with Safran Helicopter Engine.

The announcement was made after Prime Minister Narendra Modi's talks with French President Emmanuel Macron in Paris. The two leaders adopted 'Horizon 2047: 25th Anniversary of the India-France Strategic Partnership, Towards A Century of India-France Relations'. The statement on partnership for security and sovereignty talked about building sovereign defence capabilities

together. It said that France is one of India's key partners in the development of a self-reliant defence industrial and technological base.

"India and France are committed to cooperating in the co-development and co-production of advanced defence technologies, including for the benefit of third countries," it said. "In line with their outstanding cooperation in military aviation spanning over five decades, India and France welcome the timely delivery of the 36 Rafale ordered by India. In the future, India and France will extend their ground-breaking defence cooperation in advanced aeronautical technologies by supporting the joint development of a combat aircraft engine. (A roadmap on this project will be prepared[TT1] [P2] between Safran and DRDO before the end of this year.) They also support industrial cooperation for motorization of heavy-lift helicopters under the Indian Multi Role Helicopter [IMRH] programme with Safran Helicopter Engine, France," the statement said.

It said that to enable progress on the IMRH programme, a Shareholders' Agreement between Hindustan Aeronautics Limited (HAL), India and Safran Helicopter Engine, France has been concluded for engine development. "These ventures are in line with the spirit of trust that prevails between India and France in the sharing and joint development of critical components and technology building blocks, based on the successful Indo-French experience in technology transfer," it said. India had been in an advanced stage of discussions with French firms for co-developing engines for fifth-generation fighter and IMRH being developed by the Hindustan Aeronautics Limited. Discussions with the French firms have going on for co-developing high powered engines for the Advanced Medium Combat Aircraft (AMCA) being designed and developed by Defence Research and Development Organisation, government sources had told ANI.

The Indian aerospace public sector unit Hindustan Aeronautics Limited had also been in talks with French firms for the co-development of an engine for the Indian multirole helicopter being developed by HAL for multiple roles in the above 12-tonne class. The negotiations between the DRDO and French engine maker Safran had been "progressing well" where the deal would be for stronger engines for both the planned versions of the indigenous AMCA aircraft. The specifications of the AMCA are planned in a way that they would require very strong engines. The Horizon 2047 statement said that India and France are long-standing strategic partners in the Indo-Pacific.

"Since the establishment of diplomatic relations between the two countries in 1947, and the upgrading of the partnership to the strategic level in 1998, our two countries have consistently acted together, building on a high level of mutual trust, shared commitment to the principles enshrined in the United Nations Charter and common values rooted in international law," it said. "To mark the 25th anniversary of the Indo-French partnership, both countries agree to adopt a roadmap to set the course for the bilateral relationship up to 2047, which will celebrate the centenary of India's independence, the centenary of the diplomatic relations between the two countries and 50 years of the strategic partnership."

The statement said India and France intend to work together in the interest of international peace and stability and reaffirm their commitment to a rules-based order in the Indo-Pacific and beyond. "They agree to work within the framework of a partnership between equals, in consonance with their respective sovereign and strategic interests, as they have done since 1998. In order to further deepen this Strategic Partnership, and in keeping with universal values of liberty, equality, democracy and the rule of law, India and France have decided to strengthen cooperation in the sectors of the future, so as to reinforce their sovereignty and decision-making autonomy, and to respond together to the major challenges confronting our planet, including through the cooperation between India and the European Union."

https://economictimes.indiatimes.com/news/defence/frances-safran-and-drdo-to-jointly-make-combat-aircraft-engine/articleshow/101766675.cms

अमर उजाला

Sat, 15 Jul 2023

पेरिस स्थित दूतावास में DRDO का तकनीकी कार्यालय स्थापित करेगा भारत, इससे क्या होगा फायदा; जानें

प्रधानमंत्री नरेंद्र मोदी का फ्रांस का दो दिवसीय दौरा पूरा हो चुका है और अब वह संयुक्त अरब अमीरात (यूएई) पहुंच चुके हैं। इस बीच, भारत और फ्रांस ने एक साझा बयान जारी किया है जिसमें बताया गया है कि रक्षा अनुसंधान और विकास संगठन (डीआरडीओ) पेरिस स्थित भारतीय दूतावास में एक तकनीकी कार्यालय स्थापित कर रहा है।

आत्मनिर्भर रक्षा उद्योग के निर्माण में फ्रांस अहम

बयान में बताया गया है कि फ्रांस आत्मनिर्भर रक्षा उद्योग और तकनीकी नींव के निर्माण में भारत के सबसे महत्वपूर्ण सहयोगियों में से एक है। अत्याधुनिक रक्षा प्रौद्योगिकियों का सह-विकास और सह-उत्पादन भारत और फ्रांस की संयुक्त प्रतिबद्धता है। इसके लिए दोनों देश रक्षा औद्योगिक सहयोग पर एक रोडमैप अपनाने की दिशा में भी काम कर रहे हैं।

35 राफेल विमानों की समय पर आपूर्ति का स्वागत

इसमें आगे कहा गया है कि प्रधानमंत्री नरेंद्र मोदी ने अपने दौरे के दौरान बैस्टिल डे परेड में सम्मानित अथिति के रूप में भाग लिया और दोनों देशों ने ऑर्डर किए गए 35 राफेल विमानों की समय पर आपूर्ति का स्वागत किया। उन्होंने कहा, पांच दशक से ज्यादा समय से सैन्य उड्डयन में अपने उत्कृष्ट सहयोग के अनुरूप भारत और फ्रांस, नई दिल्ली द्वारा ऑर्डर किए 36 विमानों की समय पर आपूर्ति का स्वागत करते हैं। भविष्य में दोनों देश एक लड़ाकू विमान इंजन के संयुक्त विकास का समर्थन करके उन्नत वैमानिकी प्रौद्योगिकियों में अपने रक्षा सहयोग का विकास करेंगे। इस परियोजना पर सैफरन और डीआरडीओ के बीच इस साल के अंत से पहले रोडमैप तैयार किया जाएगा।

एचएल और सैफरन हेलीकॉप्टर इंजन के बीच समझौता

साझा बयान में कहा गया है कि दोनों नेता इंडियन मल्टी-रोल हेलीकॉप्टर (आईएमआरएच) कार्यक्रम के तहत हेवी-लिफ्ट हेलीकॉप्टर के मोटरीकरण के लिए सैफरन हेलीकॉप्टर इंजन (फ्रांस) के औद्योगिक सहयोग के समर्थन में खड़े हुए। इंजन विकास के लिए भारत के हिंदुस्तान एयरोनॉटिक्स लिमिटेड (एचएएल) और फ्रांस के सैफरन हेलीकॉप्टर इंजन के बीच एक शेयरधारक समझौता हुआ, ताकि आईएमआरएच कार्यक्रम को आगे बढ़ाया जा सके।

मैझगांव डॉकयार्ड और नौसेना समूह के बीच एमओयू

इसके अलावा, भारत और फ्रांस ने 'मेक इन इंडिया' के एक मॉडल पहले स्कॉर्पीन पनडुब्बी निर्माण कार्यक्रम (पी 75 - कलवरी) की सफलता और दोनों देशों में कंपनियों के बीच नौसेना विशेषज्ञता साझा करने की सराहना की। दोनों देशों ने पी75 कार्यक्रम के तहत तीन अतिरिक्त पनडुब्बियों के निर्माण के लिए मैझगांव डॉकयार्ड लिमिटेड और नौसेना समूह के बीच समझौता ज्ञापन (एमओयू) का भी स्वागत किया।

https://www.amarujala.com/world/india-to-set-up-technical-office-of-drdo-at-its-embassy-in-paris-announces-india-france-joint-statement-2023-07-15?pageId=4

DRDO on Twitter

DRDO
@DRDO_India

#DRDOUpdates | Two days DRDO Directors' Conclave 2023 being held at the Manekshaw Centre, New Delhi was inaugurated by General Anil Chauhan, Chief of Defence Staff today.
@DefenceMinIndia
@SpokespersonMoD

2:07 pm · 14 Jul 2023 · **16.4K** Views

Press Information Bureau
Government of India

Ministry of Defence

Sun, 16 Jul 2023

India-Mongolia Joint Military Exercise "Nomadic Elephant – 2023" to Commence at Ulaanbaatar, Mongolia

Indian Army contingent comprising of 43 personnel left for Mongolia today. The contingent will participate in the 15th edition of bilateral joint military exercise "NOMADIC ELEPHANT-23". The exercise is scheduled to be conducted at Ulaanbaatar, Mongolia from 17 to 31 July 2023. Exercise NOMADIC ELEPHANT is an annual training event with Mongolia which is conducted alternatively in Mongolia and India, the last edition was held at Special Forces Training School, Bakloh in October 2019.

Soldiers of the Mongolian Armed Forces Unit 084 from and Indian Army soldiers from the JAMMU AND KASHMIR LIGHT INFANTRY Regiment will be participating in the exercise. Indian Army contingent reached Ulaanbaatar on 16 July 23 by an Indian Air Force C-17 aircraft. The aim of this exercise is to build positive military relations, exchange best practices, develop inter-operability, bonhomie, camaraderie and friendship between the two armies. The primary theme of the exercise will focus on counter-terrorism operations in mountainous terrain under United Nations mandate.

The scope of this exercise involves Platoon level Field Training Exercise (FTX). During the exercise, Indian and Mongolian troops will engage in various training activities designed to enhance their skills and capabilities. These activities include endurance training, reflex firing, room intervention, small team tactics and rock craft training. Soldiers from both sides will learn from each other's operational experience.

India and Mongolia have a shared commitment to regional security and cooperation. Exercise NOMADIC ELEPHANT-23 will be yet another significant milestone in the defence cooperation between the Indian Army and Mongolian Army which will further foster bilateral relations between the two nations.

https://pib.gov.in/PressReleasePage.aspx?PRID=1939904

THE ECONOMIC TIMES

Sun, 16 Jul 2023

From Joint Weapon Acquisitions to Cross Postings, Defence Ministry Promoting Integration Culture in Armed Forces

Even as the government is moving towards creating theatre commands, the Department of Military Affairs is working towards creating a culture of integration among the forces for which many steps have been taken and many are in the pipeline.

To further strengthen integration and jointness among the defence forces, many steps have been taken like the decision to have cross postings of personnel in other services, holding of joint exercises and joint staffing in organisations, the senior government officials said.

"The forces will soon see the three services chiefs having personal staff from other services to help them carry out their tasks on a daily basis to promote the integration of the three services," they said.

Many other steps have been taken like bringing personnel from all three services on par in terms of giving admissions in schools run by respective services. "Earlier, for example, a school run by the navy gave first priority to wards of its personnel while Defence Ministry civilians were given second priority and Army and Air Force personnel were kept after them," the officials said.

"Now the wards of personnel from all three services would be in the first priority category and this would be applicable in schools run by all three services," they said. Similarly, the institutes like the Kota House or Army or Air Force Golf Course in the national capital would give memberships to their personnel only but now they would be open to all the personnel, they said.

The officials said over the years, the services had developed infrastructure and systems for their service-specific requirements only but now this culture of integration has to be created as the country moves towards creating theatre commands which will have personnel from all three services fighting the wars of the future jointly. The government took a critical step in increasing jointness among the forces by appointing a Chief of Defence Staff.

CDS General Anil Chauhan and the three services chiefs have been working towards creating three theatre commands and discussions are progressing to raise them within this financial year. The Department of Military Affairs headed by the CDS is responsible for the task under the Defence Ministry. The forces have also decided that all the major future exercises will be held jointly with participation from all three services.

The acquisition procedure for the Predator drones from the US was also done in a joint way by the forces with tri-services Integrated Defence Staff handling the case and deciding on the numbers to be acquired for the surveillance of the entire country.

Many more critical acquisitions for future weapon systems to be procured mostly from indigenous sources would be led by the tri-services IDS only to optimise the expenditure for procurement and maintenance. Officials said the DMA and the three services would be taking many more such steps to achieve the desired level of jointness among the forces.

https://economictimes.indiatimes.com/news/defence/from-joint-weapon-acquisitions-to-cross-postings-defence-ministry-promoting-integration-culture-in-armed-forces/articleshow/101802241.cms

FINANCIAL EXPRESS
Read to Lead

Sun, 16 Jul 2023

Tactical Acumen to Strategic Brilliance: How Indian Air Force Has Upped Its Professional Military Education

One of the many motivations for teenagers to join the National Defence Academy (NDA) was a dream of 'escape from studies'.One reason was the fallacious assumption that 'brawns' were more valued than 'brains' in the military. Even those who joined the forces directly after graduation felt that their phase of studies was over. Of course, all these dreams (and day-dreams) came crashing when one joined the NDA or the follow-on academies such as Indian Military Academy (IMA), Air Force Academy (AFA) and Indian Naval Academy (INA). These academies laid a high proportion of weightage to academics and one couldn't just ignore it.Sharpening of the brain was as important as strengthening the body. So as every officer would attest, their relationship with books, manuals and training notes continued for a long time into their careers.However, the focus predominantly remained on training and very little thought or importance was given to Professional Military Education (PME). One constantly heard the senior leadership talking and writing about 'Training' but hardly ever about PME. The late Air Commodore Jasjit Singh passionately espoused the cause of PME, unfortunately without much success, at least till the Kargil conflict. It was the Kargil Review Committee that reiterated the importance of PME and recommended establishing an Indian National Defence University (INDU).

One may well ask if there is any difference in training and PME. Although both are necessary, compatible and complementary, there are differences. Training is more focussed on the immediate skills necessary for a warrior. It seeks to develop those psycho-motor and technical skills required for the job at hand and develop muscle memory. In essence one trains for certainty. PME, on the other hand, includes intellectual, conceptual and ethical foundations of good leadership. PME is more indirect, long term and delves into the 'why' of issues. It seeks to develop critical thinking skills and an ability to think strategically. PME thus aims to prepare and educate leaders to deal with uncertainty. Traditionally, however most militaries including in India have tended to favour training over education. Consequently, the cultivation of a strategic mindset, honing of intellectual ability and tolerance for ambiguity have suffered.

Fortunately, the Indian Air Force (IAF) was quick to realize the importance of PME. A beginning was made when it became the first service to facilitate the establishment in 2001 of a think tank – Centre for Air Power Studies (CAPS). Housed within the precincts of Western Air Command, and often mistaken as an 'in-house' think tank of IAF, CAPS is autonomous and independent but has a symbiotic and mutually enriching relationship with IAF. Towards educating the IAF personnel on matters of national security, geo-politics, aerospace power, nuclear issues and diplomacy, CAPS has been conducting seminars and conferences on mutually agreed themes with all Commands of the IAF. These seminars have been very useful in acquiring knowledge that shapes a strategic bent of mind. IAF officers, both serving and retired, have been undergoing fellowships in CAPS and have published books/papers that are intuitive, analytical and a treasure trove of knowledge.

Various 'in-house' measures have been taken by IAF towards PME in the last decade and half. Till 2006, the first PME programme/course that officers were exposed to was the Air Staff Course at DSSC, Wellington. Based on a tough selection criterion, only a small percentage of officers could undergo the course. A large number of officers never got exposed to strategic studies, geo-politics, war studies, and higher direction of war. Alive to these lacuna, a major revamp took place in 2007,

when for the first time, the IAF introduced two mandatory PME courses for all its junior officers. The first was Basic Air Staff Course (BASCO) for Flight Lieutenants and the other was Intermediate Air Staff Course (ISCO) for Squadron Leaders. These courses had a year long distance learning component followed by a four week contact programme. The methodology adopted was that of self-learning, peer learning, sharing of domain knowledge and mentoring/ guidance by highly experienced, qualified and competent officers posted as Directing Staff or DS (akin to Professors in civil parlance) in the Faculty of Leadership & Air Power at Air Force Administrative College. The USP of these courses is that all officers are exposed to subjects such as Regional Studies, Area Studies, Geo-Politics, International Relations, Air Campaigns, Military History, Jointness, and Leadership. The coursework involves intense reading and research and sows the seeds of strategic thinking at an early age in service. Word about the quality of education and the good outcome has spread beyond the shores of India. These courses are much sought after and subscribed by officers from countries such as Mauritius, Bangladesh, Benin, Nepal, Afghanistan and many others. The Indian Army (IA) sent officers for these courses in 2019. According to those in the know, the feedback from IAF officers, foreign officers and IA has been exceptionally good. Unfortunately, for some inexplicable reason, BASCO was done away with, in 2021. However, the ISCO continues to be an enriching course and 'lead-in' step towards the Air Staff Course.

At the middle level(senior Squadron Leaders and Wing Commanders), the IAF PME programme comprises the Air Staff Course and Defence Services Technical Staff Course (DSTSC). The next major structured PME programme is the Higher Air Command Course (HACC). The HACC is almost a year long course for meritorious Group Captains and equivalents in the other two services conducted at College of Air Warfare (CAW). The IAF also sends some of its meritorious Group Captains to Army War College for the Higher Command Course, Naval War College for the Naval Higher Command Course and College of Defence Management for the Higher Defence Management Course.Besides these programmes, select IAF officers also attend the Nuclear Strategy Capsule (conducted by CAPS), National Defence & Strategic Studies Course at National Defence College and Advance Professional Programme in Public Administrationat Indian Institute of Public Administration. To further enhance PME andpreventstasis, one more programme was started in 2022. Called the Warfare and Aerospace Strategy Programme (WASP), it is a strategic education programme of 15 weeks duration and is structured to provide the participants with a deep understanding of strategy. The broader aim is to nurture critical thinkers who can blend cross-domain knowledge to generate policy-driving ideas at the strategic level. WASP aims to take 'self-learning' that began with BASCO and ISCO to an even higher strategic level. The second WASP cohort, jointly conducted by CAW and CAPS concluded with a capstone seminar on 28 June. Once again, IAF is the first and only service to take-off on such a venture.

However, there are some systemic challenges that the service will have to overcome. The importance of PME is still not widely understood and confused with training. Often, PME is sacrificed at the altar of immediate tactical requirements. It is necessary for the rank and file to take a long term view of PME rather than be happy with short term training outcomes. The PME will need continuous evolution to focus on forward thinking and resist conservatism. Military culture lays emphasis on action and not reflection. PME is about reflection and thus prone to a cultural bias. The service needs to nurture and ensure that officers who are well read, inquisitive, creative and have a strategic bent of mind are not disadvantaged in their promotional prospects. The IAF will have to guard itself against rewarding those who are mere echo chambers of their seniors. Most importantly, it will require the leadership at all levels to take ownership and continuously strive to inculcate intellectual dynamism.

The impetus given to PME by IAF since the last 15 years is laudable. The knowledge band-width of its officers in matters strategic has substantially increased. Young officers today are more aware of geo-politics. The Chief of Air Staff (CAS) has promulgated a CAS reading list. Every officer is

expected to read at least one book. This is a step in the right direction, especially since reading books has become rare due to social media. Educational courses such as ISCO, HACC and WASP have unleashed the insatiable hunger for more knowledge. This augurs well because in fulfilling this hunger, more numbers will transform from mere 'air warriors' to 'scholar-air warriors.'The IAF Doctrine 2022, envisions itself to be an agile and adaptable air force that provides decisive aerospace power in furtherance of our national interests.Fulfilling this vision requires leaders empowered with strategic brilliance and not mere tactical acumen. IAF's endeavour to upgrade its PME is therefore a step in the right direction to develop the critical mass of strategic leadership required in the service of the nation.

https://www.financialexpress.com/business/defence-tactical-acumen-to-strategic-brilliance-how-indian-air-force-has-upped-its-professional-military-education-3172962/

The Indian EXPRESS

Sat, 15 Jul 2023

What is the Rafale Marine Jet, which India is going to Buy from France?

As Prime Minister Narendra Modi's two-day Paris visit began on Thursday (July 13), the Defence Acquisition Council (DAC) held a crucial meeting to clear proposals to buy 26 Rafale Marine fighter jets for the Navy, along with three Scorpene submarines for the force.

The approval by the DAC — which clears proposals for big-ticket capital procurements and is headed by defence minister Rajnath Singh — paves the way for a possible announcement on procuring the Rafale M aircraft during Modi's Paris visit.

While the DAC has granted the Acceptance of Necessity (AoN) to procure the 26 fighter jets — which is the first step of the long defence procurement process — the price and other terms of purchase will be negotiated subsequently with the French government, since they will be bought on an Inter-Governmental Agreement (IGA) basis.

Difference between Rafale jets and their Marine version. The Rafale Marine fighters are the naval variant of the Rafale fighter jets, 36 of which are operated by the Indian Air Force.

Manufactured by France's Dassault Aviation, the Rafales are advanced twin engine, multirole fighter jets are equipped with latest weapon systems — including Meteor-beyond visual range air-to-air missiles, Hammer air to surface smart weapon system, Scalp cruise missiles — and are fitted with modern sensors, and radar to detect and track and attack targets. The jets can carry exceptionally high payloads.

Additionally, the jets have also been equipped with certain India-specific enhancements and can carry out a range of missions. The Marine version of the jets will be slightly different, given that they will operate from aircraft carriers on sea. The differences include foldable wings, a longer airframe for landing on carriers, and a tail hook for arrested landing on a carrier. As per French firm Safran, the nose and main landing gears on the navy version have been reinforced to satisfy the difficult aircraft carriers landing and catapulting conditions for the aircraft.

The Rafale M nose gear also incorporates the "jump strut technology" in the shock absorber to give the aircraft an angle of attack during catapulting. This naval version of the aircraft can also carry a

wider range of weapons, including anti-ship missiles and air to surface missiles and radar meant for maritime operations.

Rafale M and MiG 29Ks

The Navy currently operates the MiG-29Ks from its aircraft carrier INS Vikramaditya. The Russian MiG-29Ks are a carrier-based multirole fighter aircraft and can have a maximum speed over twice the speed of sound (about 2,000 kmph) and can climb to an altitude of over 65,000 feet.

It is equipped with sophisticated weapon systems and is capable of engaging targets in air, at sea or on land. As per the Navy, the latest avionics, with data link capabilities coupled with its range of armament enables "true power projection" and its air-to-air refueling capability offer major extension to its ranges.

However, with some of them expected to retire in a decade and with the Navy now having two operational aircraft carriers at present, there was a need to procure additional deck-based fighters to meet its operational requirements until it acquires the indigenous Twin Engine Deck-Based Fighter (TEDBF) which is currently under development by the Aeronautical Development Agency (ADA) under the DRDO.

However, only two aircraft had managed to meet the criteria for the Navy's fighter jet deal–the Boeing's F/A-18 E/F Super Hornet and Dassault Aviation's Rafale-M. The Rafale M, having common spares and support as the Rafale operated by the Indian Air Force, thus had an edge over the other.

Rafale exports

As per Dassault Aviation, the Rafale is one of the key components of France's nuclear deterrence. It said by the end of 2022, France had ordered a total of 192 Rafales, including 12 aircraft to compensate for those sold to Greece; out of these, 153 have already been delivered.

A further order (to be announced in 2023) for 30 more fighters is planned as part of the 2019-2025 military spending bill, to which 12 further Rafales will be added 12 further Rafales to offset those sold to Croatia, it said. The aircraft has logged a total of 405,000 flight-hours– including 63,500 operational hours flown by French pilots since 2007.

https://indianexpress.com/article/explained/rafale-marine-jet-india-france-features-8836091/lite/

नवभारत टाइम्स

Fri, 14 Jul 2023

अमेरिका को पछाड़ भारत का दूसरा सबसे बड़ा डिफेंस पार्टनर कैसे बना फ्रांस, बस 6 पॉइंट्स में समझें

प्रधानमंत्री नरेंद्र मोदी फ्रांस की दो दिवसीय यात्रा पर हैं। इस दौरान आज वे फ्रांस के राष्ट्रीय दिवस बैस्टिल डे परेड में भी मुख्य अतिथि के तौर पर शामिल हुए। यह दूसरी बार है जब किसी भारतीय प्रधानमंत्री को परेड में गेस्ट ऑफ ऑनर के रूप में आमंत्रित किया गया है। पीएम मोदी के इस दौरे को भारत और फ्रांस के बीच मजबूत होते संबंधों में एक महत्वपूर्ण मील का पत्थर माना जा रहा है।

इस यात्रा के दौरान पीएम मोदी और फ्रांस के राष्ट्रपति इमैनुएल मैक्रों रक्षा, व्यापार और निवेश सहित कई द्विपक्षीय मुद्दों पर चर्चा करेंगे। इतना ही नहीं, भारत और फ्रांस में राफेल एम और स्कॉर्पीन पनडुब्बी की डील

भी फाइनल होगी। पीएम मोदी की इस यात्रा को दोनों देशों की ऐतिहासिक और सांस्कृतिक संबंधों के जश्न के तौर पर भी देखा जा रहा है।

भारत और फ्रांस की दोस्ती कैसे बढ़ी

हाल के वर्षों में लगातार मजबूत हो रहे भारत-फ्रांस संबंध का एक लंबा और समृद्ध इतिहास है। रक्षा सहयोग से लेकर व्यापार संबंधों और जलवायु परिवर्तन तक, भारत और फ्रांस ने कई वैश्विक मुद्दों पर साथ मिलकर काम किया है। प्रधानमंत्री नरेंद्र मोदी की यात्रा भारत और फ्रांस के बीच रणनीतिक साझेदारी के 25 साल पूरे होने के जश्न के साथ भी मेल खाती है।

1998 में, तत्कालीन फ्रांसीसी राष्ट्रपति जैक्स शिराक ने भारत का दौरा किया था। इस दौरान दोनों दश ठोस द्विपक्षीय सहयोग पर आधारित अपनी-अपनी रणनीतिक स्वतंत्रता विकसित करने पर सहमत हुए थे। ऐसे में जानें कि वो कौन से कारण हैं, जो फ्रांस को दुनिया में भारत का दूसरा सबसे बड़ा रक्षा सहयोगी बनाते हैं।

1 - ऐतिहासिक संबंध

फ्रांस के बैस्टिल डे परेड में भारतीय सेना की भागीदारी 100 साल पुरानी है। भारत के रक्षा मंत्रालय के अनुसार, 1.3 मिलियन से अधिक भारतीय सैनिकों (ब्रिटिश भारत और फ्रांसीसी भारत दोनों से) ने प्रथम विश्व युद्ध में भाग लिया था। इनमें से कई सैनिकों ने फ्रांसीसी धरती पर फ्रांस के सैनिकों के साथ कंधे से कंधा मिलाकर लड़ाई लड़ी थी। उस वक्त भारतीय सेना के सिख रेजीमेंट ने बैस्टिल डे परेड में हिस्सा भी लिया था।

इन भारतीय सैनिकों की याद में फ्रांस में एक मेमोरियल भी बना है। प्रधानमंत्री मोदी 2015 की फ्रांस यात्रा के दौरान उत्तरी फ्रांस के न्यूवे चैपल में मौजूद स्मारक जाकर शहीद हुए 4700 भारतीय सैनिकों को श्रद्धांजलि दी थी।

2- रक्षा साझेदारी

फ्रांस, भारत का दूसरा सबसे बड़ा डिफेंस सप्लायर है। फ्रांस 1950 के दशक से सैन्य विमान क्षेत्र में भारत के लिए एक विश्वसनीय भागीदार रहा है। भारतीय वायु सेना (आईएएफ) में पहली पीढ़ी के डसॉल्ट ऑरागन लड़ाकू विमान की खरीद से लेकर हाल की पनडुब्बी और राफेल-एम सौदे तक भारत ने फ्रांस से कई हथियार खरीदे हैं। इनमें स्कॉर्पीन क्लास पनडुब्बी, मिराज-2000 लड़ाकू विमान, राफेल लड़ाकू विमान प्रमुख हैं।

भारत ने अपनी वायु सेना की ताकत बढ़ाने के लिए फ्रांस से 1985 में डसॉल्ट मिराज 2000 विमान खरीदा था। यह वही लड़ाकू विमान है, जिसने 1999 के कारगिल युद्ध के दौरान हिमालय की पहाड़ियों के ऊपर छिपे पाकिस्तानी दुश्मनों पर बमबारी की थी। इसके अलावा इस विमान ने 2019 में बालाकोट स्ट्राइक के दौरान पाकिस्तान के अंदर घुसकर आतंकवादी शिविरों क निशाना बनाया था। इसके अलावा फ्रांस टेक्नोलॉजी ट्रांसफर कर स्वदेशी उत्पादन क्षमताओं और संयुक्त उद्यमों के जरिए भारत के रक्षा आधुनिकीकरण के प्रयासों में सहायता कर रहा है।

3- भारत के हितों का समर्थन

अटल बिहारी वाजपेयी के प्रधानमंत्रित्व काल में 1998 में भारत ने पोखरण परमाणु परीक्षण किया था। इस परीक्षण के कारण दुनिया ने भारत से मुंह मोड़ लिया था। उस वक्त भी संयुक्त राष्ट्र सुरक्षा परिषद का सदस्य होने के बावजूद भारत का समर्थन करने वाला फ्रांस पहला देश था। फ्रांस ने अमेरिकी प्रतिबंधों को धता बताकर उसी दौरान भारत के साथ नागरिक परमाणु समझौते पर हस्ताक्षर किया। अगस्त 2019 में जब भारत ने जम्मू-कश्मीर में अनुच्छेद 370 को निरस्त किया, तब भी फ्रांस ने खुलकर भारत का साथ दिया।

फ्रांस ने सबसे पहले कहा था कि यह फैसला भारत का आंतरिक मामला है। इसके अलावा, फ्रांस ने संयुक्त राष्ट्र सुरक्षा परिषद (यूएनएससी) में स्थायी सीट के लिए भारत की दावेदारी का समर्थन किया है। फ्रांस ने भारत को परमाणु आपूर्तिकर्ता समूह (एनएसजी) में शामिल होने के लिए अपना समर्थन दोहराया है और

वैश्विक क्षेत्र में भारत को प्रमुख खिलाड़ी बताया है। आतंकवाद की सार्वजनिक रूप से निंदा करने के अलावा, फ्रांस और भारत ने अंतरराष्ट्रीय आतंकवाद पर व्यापक सम्मेलन (सीसीआईटी) को अपनाने के लिए संयुक्त राष्ट्र के साथ काम करने का भी वादा किया है।

4- रणनीतिक संबंध

भारत और फ्रांस के बीच बहुत पुराना रणनीतिक संबंध है। यह संबंध दोनों देशों की रणनीतिक स्वायत्तता और राष्ट्रों की संप्रभुता के सम्मान की साझा इच्छा से भी पोषित हैं।

सितंबर 2022 में चीन से पैदा हुई चुनौतियों के बावजूद भारत और फ्रांस विकास परियोजनाओं को शुरू करने और रणनीतिक सहयोग का विस्तार करने के लिए एक इंडो-पैसिफिक त्रिपक्षीय ढांचा स्थापित करने पर सहमत हुए। इस बैठक के दौरान फ्रांसीसी विदेश मंत्री कैथरीन कोलोना ने इस बात पर जोर डाला कि कैसे फ्रांस और भारत दोनों चीन के बढ़ते प्रभाव पर समान चिंताओं को साझा करते हैं।इस साल की शुरुआत में फ्रांस ने रणनीतिक रूप से महत्वपूर्ण हिंद महासागर क्षेत्र में क्वाड देशों - भारत, अमेरिका, ऑस्ट्रेलिया, जापान और ब्रिटेन की नौसेनाओं के साथ एक बहुपक्षीय अभ्यास 'ला पेरोस' का नेतृत्व किया।

फ्रांस और भारत के बीच एक हालिया रणनीतिक समझौता भी दोनों देशों के युद्धपोतों को हिंद महासागर में एक दूसरे के नौसैनिक स्टेशनों तक पहुंच की अनुमति देता है। भारतीय नौसेना के पास अब महत्वपूर्ण फ्रांसीसी बंदरगाहों तक पहुंच है, जिसमें जिबूती में एक बंदरगाह भी शामिल है, जहां चीन का एकमात्र विदेशी सैन्य अड्डा है।

5- आर्थिक सहयोग

भारत और फ्रांस आर्थिक रूप से भी एक दूसरे के बड़े सहयोगी हैं। अप्रैल 2000 से सितंबर 2022 तक 10,389 मिलियन अमेरिकी डॉलर के कुल एफडीआई स्टॉक के साथ फ्रांस भारत में 11वां सबसे बड़ा विदेशी निवेशक है। 1,000 से अधिक फ्रांसीसी व्यवसाय भारत में काम कर रहे हैं और 20 बिलियन अमेरिकी डॉलर का कारोबार कर रहे हैं। वर्तमान में भारत और फ्रांस के बीच द्विपक्षीय व्यापार का मूल्य 10.7 बिलियन यूरो है।

फ्रांस में, 200 से अधिक भारतीय बिजनेस 1 बिलियन यूरो के इन्वेस्टमेंट स्टॉक के साथ काम कर रहे हैं। इंडिया ब्रांड इक्विटी फाउंडेशन के अनुसार, फ्रांसीसी स्टॉक एक्सचेंज में सूचीबद्ध 40 में से 39 कंपनियां भारत में अपना व्यवसाय संचालन कर रही हैं। भारत और फ्रांस क्त व्यापार समझौते (एफटीए) पर पर भी बात कर रहे हैं।

6- जलवायु सहयोग:

भारत और फ्रांस ने जलवायु परिवर्तन से निपटने और टिकाऊ भविष्य के लिए नवीकरणीय ऊर्जा और अंतरराष्ट्रीय सहयोग को बढ़ावा देने के लिए एक मजबूत साझेदारी बनाई है।

COP21 के दौरान भारतीय प्रधानमंत्री नरेंद्र मोदी और पूर्व फ्रांसीसी राष्ट्रपति फ्रांस्वा ओलांद के संयुक्त रूप से लॉन्च किया गया अंतरराष्ट्रीय सौर गठबंधन, सौर ऊर्जा को बढ़ाने और सौर ऊर्जा उत्पादन की लागत को कम करने में एक महत्वपूर्ण वैश्विक मील का पत्थर साबित हुआ है। इस अंतरराष्ट्रीय अंतरसरकारी संगठन का सचिवालय नई दिल्ली में है, जिसके अब 114 सदस्य हैं।

https://navbharattimes.indiatimes.com/world/rest-of-europe/india-france-news-in-hindi-why-france-is-india-top-defence-supplier-and-partner-in-europe/articleshow/101762745.cms

THE ECONOMIC TIMES

Fri, 14 Jul 2023

Defence Cooperation is one of the Main Pillars of India-France Ties: PM Modi in Paris

Prime Minister Narendra Modi on Friday said a roadmap to strengthen India-France strategic ties over the next 25 years was being prepared with bold and ambitious goals, as he asserted that defence cooperation was a strong pillar of the relationship.

Modi, who is here on a two-day official visit, was received warmly at the Elysee Palace by French President Emmanuel Macron after which the two leaders made press statements. We are celebrating the 25th anniversary of our Strategic Partnership. On the strong foundation of the last 25 years, we are preparing a roadmap for the coming 25 years. We are setting bold and ambitious goals for this," Modi said at a joint press statement with President Macron.

He said defence ties have always been the basic pillar of bilateral relations between the two countries. “This is a symbol of mutual trust between the two countries," he said. "France is an important partner in ‘Make in India' and Aatmanirbhar Bharat...Be it submarines or naval aircraft, together we want to fulfil not just ours but also the requirements of other friendly countries," Modi said.

Noting that the Covid-19 pandemic and the Ukraine conflict have impacted the whole world, Modi said the countries of the Global South have been particularly impacted negatively. "This is a matter of concern. To find solutions to such problems, it is important for countries to make efforts unitedly. We believe that all disputes can be resolved only through dialogue and diplomacy. India is willing to contribute to lasting peace,” the prime minister said.

"In the fight against terrorism, India and France have been together. We believe that strong action needs to be taken against cross-border terrorism," Modi said. In his remarks, Modi also said the two countries have agreed to launch India's Unified Payment Interface in France. He also announced that India would open a new Consulate in the port town of Marseilles.

Earlier in the day, Prime Minister Modi joined President Macron for the Bastille Day parade as the Guest of Honour with an Indian tri-services marching contingent wowing crowds here during the French National Day celebrations. Rafale fighter jets of the Indian Air Force (IAF) also joined the flypast on the occasion along with French jets.

https://economictimes.indiatimes.com/news/india/defence-cooperation-is-one-of-the-main-pillars-of-india-france-ties-pm-modi-in-paris/articleshow/101764504.cms

mint

Sat, 15 Jul 2023

After France, PM Modi Embarks on Visit to UAE Today

After the two-day visit to France came to an end, PM Modi will be heading towards UAE to visit Abu Dhabi on July 15. In his official statement, PM Modi said that India and UAE are engaged across various sectors, including fintech, defence, security and energy. During his visit, he is scheduled to meet UAE President Sheikh Mohamed bin Zayed Al Nahyan.

"From Paris, I will be travelling to Abu Dhabi, United Arab Emirates, for an Official Visit on July 15. I look forward to meeting my friend, H.H. Sheikh Mohamed bin Zayed Al Nahyan, President of the UAE and Ruler of Abu Dhabi," PM Modi said in a statement before his departure from India.

Bastille Day celebrations made France visit ‘memorable’

Terming the France visit more ‘memorable’ because off Bastille Day celebrations, PM Modi expressed his gratitude to French President Emmanuel Macron and the people of France for their warmth and hospitality.

"This France visit was a memorable one. It was made even more special because I got the opportunity to take part in the Bastille Day celebrations. Seeing the Indian contingent get a pride of place in the parade was wonderful. I am grateful to President @EmmanuelMacron and the French people for the exceptional warmth and hospitality. May friendship continue to soar," tweeted PM Modi.

During his two-day visit, PM Modi participated in the Bastille Day celebrations on Friday as Guest of Honour at the invitation of French President Emmanuel Macron on the Champs-Elysees.

PM Modi joined the celebration to markt the 25th anniversary of the India-France Strategic Partnership. Other than this, a 241-member tri-service Indian armed forces contingent led by a military band also participated in the parade. The army contingent was led by the Punjab Regiment, along with the Rajputana Rifles Regiment.

During his visit, PM Modi also met top CEOs to discuss ways to diversify business cooperation. He called the his meeting with French President Emmanuel Macron very productive as the two leaders reviewed the full range of India-France relations and discussed ways to deepen cooperatoon in futuristic secotrs like green hydrogen, renewable energy, AI, semiconductors and more.

https://www.livemint.com/news/world/after-france-pm-modi-embarks-on-visit-to-uae-today-emmanuel-macron-abu-dhabi-sheikh-mohamed-bin-zayed-al-nahyan-11689385246914.html

INDIA TODAY

Sun, 16 Jul 2023

US, South Korea, Japan hold Missile Defence Drill after North's ICBM Launch

The US, South Korea and Japan held a joint naval missile defence exercise on Sunday to counter North Korea's evolving nuclear and missile threats, the South's navy said, days after the North launched an intercontinental ballistic missile (ICBM).

North Korea fired its latest Hwasong-18 missile, which Pyongyang describes as the core of its nuclear strike force, off the east coast on Wednesday in what it said was a "strong practical warning" to the adversaries.

Sunday's trilateral drill was conducted in international waters between South Korea and Japan, bringing together destroyers equipped with Aegis radar systems from the three countries, the navy said.

Washington and its Asian allies have been working to improve their information-sharing system on North Korea's missiles. South Korea and Japan are independently linked to US radar systems but not to each other's.

The exercise aimed at mastering the allies' response to a North Korean ballistic missile launch with a scenario featuring a virtual target, the military said.

"We will effectively respond to North Korea's nuclear and missile threats with our military's strong response system and the trilateral cooperation," a South Korean Navy officer said.

The North's ICBM launch was denounced by the US, South Korea and Japan, though Pyongyang has rejected the condemnation, saying it was an exercise of its right to self-defence.

The latest launch followed heated complaints from North Korea in recent days, accusing American spy planes of flying over its exclusive economic zone waters, condemning a recent visit to South Korea by an US nuclear-powered cruise missile submarine and vowing to take steps in reaction.

https://www.indiatoday.in/world/story/us-south-korea-japan-hold-missile-defence-drill-after-north-icbm-launch-2407180-2023-07-16

THE ECONOMIC TIMES

Mon, 17 Jul 2023

Israel Quietly Embeds AI Systems in Deadly Military Operations

The Israel Defense Forces have started using artificial intelligence (AI) to select targets for air strikes and organise wartime logistics as tensions escalate in the occupied territories and with arch-rival Iran.

Though the military won't comment on specific operations, officials say that it now uses an AI recommendation system that can crunch huge amounts of data to select targets for air strikes. Ensuing raids can then be rapidly assembled with another AI model called Fire Factory, which uses data about military-approved targets to calculate munition loads, prioritize and assign thousands of targets to aircraft and drones, and propose a schedule.

While both systems are overseen by human operators who vet and approve individual targets and air raid plans, according to an IDF official, the technology is still not subject to any international or state-level regulation. Proponents argue that the advanced algorithms may surpass human capabilities and could help the military minimize casualties, while critics warn of the potentially deadly consequences of relying on increasingly autonomous systems.

If there is a mistake in the calculation of the AI, and if the AI is not explainable, then who do we blame for the mistake?" said Tal Mimran, a lecturer of international law at the Hebrew University of Jerusalem and former legal counsel for the army. "You can wipe out an entire family based on a mistake." Details of the army's operational use of AI remain largely classified, yet statements from military officials suggest that the IDF has gained battlefield experience with the controversial systems through periodic flareups in the Gaza Strip, where Israel frequently carries out air strikes in response to rocket attacks.

In 2021, the IDF described the 11-day conflict in Gaza as the world's first "AI war," citing its use of artificial intelligence to identify rocket launchpads and deploy drone swarms. Israel also conducts raids in Syria and Lebanon, targeting what it says are weapons shipments to Iran-backed militias like Hezbollah. In recent months, Israel has been issuing near-daily warnings to Iran over its uranium enrichment, vowing it will not allow the country to obtain nuclear weapons under any circumstances. Should the two enter into a military confrontation, the IDF anticipates that Iranian

proxies in Gaza, Syria and Lebanon would retaliate, setting the stage for the first serious multi-front conflict for Israel since a surprise attack by Egypt and Syria 50 years ago sparked the Yom Kippur War. AI-based tools like Fire Factory are tailored for such a scenario, according to IDF officials. “What used to take hours now takes minutes, with a few more minutes for human review,” said Col. Uri, who heads the army’s digital transformation unit and who spoke at the IDF headquarters in Tel Aviv on the condition that only his first name be used for security reasons. “With the same amount of people, we do much more.”The system, these officials stressed, is designed for all-out war.

Expanding intelligence?

The IDF has long made use of AI, but in recent years it has expanded those systems across various units as it seeks to position itself as a global leader in autonomous weaponry. Some of these systems were built by Israeli defense contractors; others, like the StarTrack border control cameras, which are trained on thousands of hours of footage to identify people and objects, were developed by the army.

Collectively, they comprise a vast digital architecture dedicated to interpreting enormous amounts of drone and CCTV footage, satellite imagery, electronic signals, online communications and other data for military use. Dealing with this torrent of information is the purpose of the Data Science and Artificial Intelligence Center, run by the army’s 8200 unit. Based within the intelligence division, that unit is where many of the country’s tech multi-millionaires, including Palo Alto Networks Inc.’s Nir Zuk and Check Point Software Technologies Ltd founder Gil Shwed, did their mandatory military service before forming successful startups.

According to a spokesman, the Center was responsible for developing the system that “transformed the entire concept of targets in the IDF.” The secretive nature of how such tools are developed has raised serious concerns, including that the gap between semi-autonomous systems and entirely automated killing machines could be narrowed overnight. In such a scenario, machines would be empowered to both locate and strike targets, with humans removed entirely from positions of decision-making.

“It’s just a software change that could make them go to not being semi but to being completely autonomous,” said Catherine Connolly, an automated decision researcher at Stop Killer Robots, a coalition of nongovernmental organisations that includes Human Rights Watch and Amnesty International. Israel says it has no plans to remove human oversight in coming years.

Another worry is that the fast adoption of AI is outpacing research into its inner workings. Many algorithms are developed by private companies and militaries that do not disclose propriety information, and critics have underlined the built-in lack of transparency in how algorithms reach their conclusions. The IDF acknowledged the problem, but said output is carefully reviewed by soldiers and that its military AI systems leave behind technical breadcrumbs, giving human operators the ability to recreate their steps.

“Sometimes when you introduce more complex AI components, neural networks and the like, understanding what ‘went through its head,’ figuratively speaking, is pretty complicated. And then sometimes I’m willing to say I’m satisfied with traceability, not explainability. That is, I want to understand what is critical for me to understand about the process and monitor it, even if I don’t understand what every ‘neuron’ is doing,’” said Uri.

The IDF declined to talk about facial recognition technology, which has been strongly criticized by human rights groups, although it did say it has refrained from integrating AI into recruitment software out of concern that it could discriminate against women and potential cadets from lower socioeconomic backgrounds.

The main advantage of integrating AI into battlefield systems, according to some experts, is the potential to reduce civilian casualties. “I think that there’s an efficiency and effectiveness benefit to using these technologies correctly. And within good functioning technological parameters, there can be very, very high precision,” said Simona R. Soare, a research fellow at the London-based International Institute of Strategic Studies. “It can help you with a lot of things that you need to do on the go, in the fog of battle. And that is very difficult to do on the best of days.”

“There are also many things that can go wrong, too,” she added.

Ethical concerns

While Israeli leaders have outlined their intention to make the country an “AI superpower,” they’ve been vague on the details. The Defense Ministry declined to comment on how much it’s invested in AI, and the army would not discuss specific defense contracts, though it did confirm that Fire Factory was developed by Israeli defense contractor Rafael.

Further obscuring the picture is that, unlike during the nuclear arms race, when leaking details of weapons’ capabilities was a key aspect of deterrence, autonomous and AI-assisted systems are being developed by governments, militaries, and private defense companies in secret.

“We can assume that the Americans and even the Chinese and maybe several other countries have advanced systems in those fields as well,” said Liran Antebi, a senior researcher at the Israel-based Institute for National Security Studies. But unlike Israel, “they have, as much as I know, never demonstrated operational use and success.” For now, there aren’t any limitations. Despite a decade of UN-sponsored talks, there is no international framework establishing who bears responsibility for civilian casualties, accidents or unintended escalations when a computer misjudges.

“There’s also a question of testing and the data that these systems are trained on,” said Connolly from the Stop Killer Robots coalition. “How precise and accurate can you know a system is going to be unless it’s already been trained and tested on people?” Such concerns are why Mimran, the law lecturer at Hebrew University, believes that the IDF should exclusively use AI for defensive purposes. During his tenure in the army, Mimran manually vetted targets to make sure that attacks complied with international law. That taught him that, regardless of technology, “there is a point where you need to make a value-based decision.”

“And for that,” he said, “we cannot rely on AI.”

https://economictimes.indiatimes.com/tech/technology/israel-quietly-embeds-ai-systems-in-deadly-military-operations/articleshow/101797724.cms

Sat, 15 Jul 2023

US House Passes Controversial Defence Spending Bill

The 2024 National Defense Authorization Act (NDAA) must still be passed by the Democrat-controlled Senate, which is unlikely to approve the existing bill. Democrats say Republicans have hijacked the bill and risk US national security. The $886bn (£675bn) bill funds the Pentagon for one year.

It also sets its policy agenda and includes a 5.2% pay rise for troops and measures to address China and Russia. The narrow margin - 219 to 210 - by which the annual defence bill passed the House is yet another indication of the sharp partisan divides within the chamber. Only four Democrats supported the spending package, while four Republicans opposed it.

Military expenditures are usually one area that garners broad bipartisan support in Washington - few politicians want to be seen as soft on national security, and big military contracts are often a way legislators can direct federal money - and jobs - to their home constituencies.

Conservative Republicans, however, have been focused on using the defence legislation to advance hot-button cultural and social priorities, including limiting government support for abortion and transgender health services. That virtually ensured Democrats would oppose the bill en masse.

"The hyper-partisan GOP bill undermines our military readiness and hurts America's national security," Democratic House Minority Leader Hakeem Jeffries said on Twitter. In 2019, the roles were reversed - with Republicans largely opposing that year's defence bill because Democrats included provisions blocking new admissions to the Guantanamo Bay detention facility, preventing the redirection of military funds for a Mexican border wall and restricting the deployment of low-yield nuclear weapons.

Measures added by Republicans to this year's bill stop the White House from sending cluster munitions to Ukraine and to prohibit US security assistance to the country were blocked by the full House. But conservative social issues made it through, including eliminating the Pentagon's offices of diversity, equity and inclusion.

While the passage of this defence bill is a victory for congressional conservatives, Democrats in the Senate are working on their own military spending legislation, which is unlikely to contain the House's controversial abortion and transgender provisions. The two chambers - and the two parties - will have to reconcile their differences in order for the legislation to be enacted into law. That may be a challenging task, however, as House conservatives could rebel if Republican House Speaker Kevin McCarthy makes concessions to his political opponents.

Congress successfully has passed the annual defence spending legislation for 62 straight years - a streak that will be in jeopardy unless one side backs down - or both sides compromise.

https://www.bbc.com/news/world-us-canada-66206542

THE ECONOMIC TIMES

Sat, 15 Jul 2023

US Sending F-16 Fighter Jets to Protect Ships from Iranian Seizures in Gulf Region

The US is beefing up its use of fighter jets around the strategic Strait of Hormuz to protect ships from Iranian seizures, a senior defence official said Friday, adding that the U.S. is increasingly concerned about the growing ties between Iran, Russia and Syria across the Middle East.

Speaking to Pentagon reporters, the official said the US will send F-16 fighter jets to the Gulf region this weekend to augment the A-10 attack aircraft that have been patrolling there for more than a week. The move comes after Iran tried to seize two oil tankers near the strait last week, opening fire on one of them.

The defence official, who spoke on condition of anonymity to provide details of military operations in the region, said the F-16s will give air cover to the ships moving through the waterway and

increase the military's visibility in the area, as a deterrent to Iran. The US Navy said in both instances the Iranian naval vessels backed off when the USS McFaul, a guided-missile destroyer, arrived on the scene.

In addition, the defence official told reporters the US is considering a number of military options to address increasing Russian aggression in the skies over Syria, which complicated efforts to strike an Islamic State group leader last weekend.

The official declined to detail the options but said the US will not cede any territory and will continue to fly in the western part of the country on anti-Islamic State missions.

The Russian military activity, which has increased in frequency and aggression since March, stems from growing cooperation and coordination between Moscow, Tehran and the Syrian government to try to pressure the US to leave Syria, the official said. The official said Russia is beholden to Iran for its support in the war in Ukraine, and Tehran wants the US out of Syria so it can more easily move lethal aid to Lebanese Hezbollah and threaten Israel. The US has seen more cooperation, collaboration, planning and intelligence sharing, largely between mid-level Russian and Iranian Quds force leaders in Syria, to pressure the US to remove troops from Syria, the official added.

There are about 900 US forces in the country, and others move in and out to conduct missions targeting Islamic State group militants. he US does not believe Russian aircraft plan to drop bombs on US troops or shoot down manned aircraft. But there are concerns that Russian pilots will knock a Reaper drone out of the sky and that Moscow believes that type of action would not get a strong US military response, the official said.

As an example, in March, a Russian warplane poured jet fuel on a US surveillance drone and then struck its propeller, forcing the US military to ditch the MQ-9 Reaper into the Black Sea. The incident spiked tensions between the two countries and triggered a call between their defence chiefs, but led to no direct military response. Last week, Rear Adm. Oleg Gurinov, head of the Russian Reconciliation Center for Syria, said the Russian and Syrian militaries have been doing joint training. In comments carried by Syrian state media, he said Moscow is concerned about drone flights by the US-led coalition over northern Syria, calling them "systematic violations of protocols" designed to avoid clashes between the two militaries.

US and Russian military commanders routinely communicate over a deconfliction phone line that has been in place for several years to avoid unintended clashes in Syria, where both sides have troops on the ground and in the air. There are often many calls a day, and at times result in angry threats as commanders argue over an ongoing operation, said the US official. Describing a conversation, the official said the Russians will often declare an area of space a restricted operating zone and say they are doing military exercises there. The US sees no exercises and tells Russia that American forces are on a counterterror mission against the Islamic State group and plan to fly in that area. The Russians then say they can't guarantee US aircraft safety if they go there.

And once the mission begins, and the aircraft moves into the zone, "it sometimes gets very heated," said the official, as both sides loudly protest and reject the other's assertions. The most recent incident was on Friday morning when a Russian aircraft flew repeatedly over the at-Tanf garrison in eastern Syria, where US forces are training Syrian allies and monitoring Islamic State militant activity. The official said the Russian An-30 aircraft was collecting intelligence on the base. The US did not have fighter aircraft in the area and took no direct action against the Russian flight.

https://economictimes.indiatimes.com/news/defence/us-sending-f-16-fighter-jets-to-protect-ships-from-iranian-seizures-in-gulf-region/articleshow/101771780.cms?from=mdr

Sat, 15 Jul 2023

Taiwan Refutes Reports of Developing 'Bioweapons', says New Biosafety Lab for Bolstering Defence

Taiwan announced its plans to construct a new generation of biosafety research and development facilities for bolstering its defence against biological warfare as pressure ramps up on the self-ruled island by the People's Liberation Army.

However, the country's authorities emphasised that the project will not develop biological weapons. "The (planned construction) is in response to the rise of highly contagious pathogens in recent years," stated Taiwan's defence ministry on Monday it was reported by a local news outlet that Taiwan was asked by the United States to develop weaponised biological agents. The report was refuted by Taipei.

The ministry stated that in enhancing to increasing the ability of Taiwan to detect counter-weaponised biological agents, the facilities which have been planned and will be built by the ministry's Medical Affairs Bureau, will also strengthen the ability of the island to prevent a pandemic.

Taiwan has been facing constant threats from Beijing which considers the island as part of its territory and has vowed to take it back under its control – by force if required. Many countries, including the United States, have not yet recognised Taiwan as an independent state, however, they oppose any unilateral change being brought by force in the cross-strait status quo.

Cross-strait tensions escalate

Since August, cross-strait tensions have escalated as military activities around Taiwan were intensified by the PLA, which included sending warplanes over the median line almost every day.

Speaking about the biosafety lab, bureau spokesman Yang Chung-chi said, "In dealing with nuclear and biological warfare, the military emphasises defence and protection. The purpose of building a P4 lab by the National Defence Medical Centre is primarily for detection of the pathogens of diseases and pandemics in order to find countermeasures."

Yang stated that the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction has been signed by Taiwan, which places a ban on the production, acquisition, development and retention of biological and toxin weapons.

"We will never develop, manufacture, stockpile and acquire biological and toxic agents for military use," he stated. The presidential office and foreign ministry of Taiwan also issued multiple statements stating that no meetings were held to discuss the development of bioweapons.

It called the report a fabrication and disinformation which is aimed at undermining the ruling Democratic Progressive Party government. Former premier Su Tseng-chang also claimed that he has never convened any such meetings.

https://www.wionews.com/world/taiwan-claims-not-developing-bioweapons-in-new-biosafety-lab-615849

The Indian EXPRESS

Sun, 16 Jul 2023

ISRO's Chandrayaan-3 Takes Off for the Moon: Here's Everything You Need to Know

With the launch of Chandrayaan-3 today (July 14), the Indian Space Research Organisation (Isro) is set to make its second attempt to land a spacecraft on the Moon. Earlier in 2019, due to problems that had emerged during the last stage of the descent, Chandrayaan-2's lander and rover crashed on the moon's surface.

Should this mission see a successful "soft" landing, India will become only the fourth country – after the United States, Russia, and China – to have done so.

We explained what is being planned this time around in this explainer. But what is the larger aim of India's moon missions, and what are the parts – the propulsion module, the lander module and the rover – involved for helping Isro "bring the moon closer to us", as the space agency says?

Firstly, how do space missions work?

Any space mission essentially has two parts – the rocket, or the carrier, and the spacecraft, which could be a satellite or any other payload. The rocket has the limited job of transporting the spacecraft into space. In most missions, the rockets get destroyed after completing their job. The spacecraft continues to operate as designed.

As NASA explains, "The launch of a spacecraft comprises a period of powered flight in the beginning, during which the vehicle rises above Earth's atmosphere and accelerates" with the help of a rocket.

The rocket is powered by a propellant, which is a mix of fuel and oxidisers (that allow for burning to happen), all meant to generate enough energy to help the spacecraft lift-off. Once that happens, this powered flight continues and ends only when the rocket's last stage burns out and the spacecraft separates. The payload should have been, ideally, placed into the orbit of the planetary body that it is supposed to reach by this time.

What are the Chandrayaan missions?

India's Chandrayaan missions are aimed at lunar exploration, beginning with Chandrayaan-1 that launched on October 22, 2008. "The primary science objective of the mission was to prepare a three dimensional atlas of both near and far side of the Moon and to conduct chemical and mineralogical mapping of the entire lunar surface with high spatial resolution," Isro said at the time.

It made more than 3,400 orbits around the moon and was operational for at least 312 days, until August 29, 2009, when radio contact with the spacecraft was lost.

However, the fact that it used indigenously developed technology was a major achievement. On November 14, 2008, a payload named MIP (Moon Impact Probe) carried by the spacecraft was separated and it struck the lunar South Pole in a controlled manner. India was then able to make discoveries related to the detection of water (H2O) and hydroxyl (OH) on the lunar surface. The

data also revealed their enhanced abundance towards the polar region. It further found ice in the North polar region of the Moon.

What happened with Chandrayaan-2?

Chandrayaan-2 brought together an Orbiter (to orbit the planetary body and not land on it), Lander (to land on its surface) and Rover (to move on the surface) with the goal of exploring the south pole of the Moon. It was launched in July 2019 and was only a partial success, because on September 7 that year, its lander, Vikram, and rover, Pragyaan, crashed on the Moon's surface.

While Vikram was supposed to lose most of its velocity by the time it was 400m from the lunar surface, system errors led to it having a high velocity, resulting in a crash. Nevertheless, its Orbiter functioned well and was able to gather data. It built on the discovery of water from Chandrayaan-1, and found signatures of water at all latitudes.

The Large Area Soft X-Ray Spectrometer (CLASS), which measures the Moon's X-ray spectrum to examine the presence of major elements such as magnesium, aluminium, silicon, calcium, titanium, iron, etc., found the minor elements chromium and manganese for the first time through remote sensing.

And what does Chandrayaan-3 aim to do?

Mainly, the Chandrayaan-3 mission is to demonstrate India's growing technical capabilities in the field and conduct a successful soft landing on the moon. Amitabha Ghosh, a scientist for NASA's Rover mission to Mars, explained what this means in *The Indian Express* thus: "Imagine a spacecraft hurtling through space, at 10 times the speed of an airplane, having to nearly come to a standstill in order to land gently on the Earth — all in a matter of a few minutes and, more importantly, without any human intervention. This, in a nutshell, is a soft landing."

The payloads on the lander and rover remain the same as the last mission. There will be four scientific payloads on the lander to study lunar quakes, thermal properties of the lunar surface, changes in the plasma near the surface, and a passive experiment to help accurately measure the distance between Earth and moon. The fourth payload comes from NASA.

There are two payloads on the rover, designed to study the chemical and mineral composition of the lunar surface and to determine the composition of elements such as magnesium, aluminium and iron in the lunar soil and rocks. Notably, the landing site of the latest mission is more or less the same as the Chandrayaan-2: near the south pole of the moon at 70 degrees latitude. If everything goes well, the Chandrayaan-3 will become the world's first mission to soft-land near the lunar south pole.

But why land near the south pole?

As NASA says, "Extreme, contrasting conditions make it a challenging location for Earthlings to land, live, and work, but the region's unique characteristics hold promise for unprecedented deep space scientific discoveries."

It also noted the importance of Lunar polar volatiles. Volatiles are chemical elements or compounds in a solid state that melt or evaporate at moderately warm temperatures and can be found on the moon. Space missions could help understand their distribution on the moon. If they contain elements like Hydrogen and Oxygen, this "could have a profound impact on the future of deep space exploration and commerce", NASA says. It would reduce the amount of supplies that would have to be sent from Earth to support humans in deep space.

What is a launch window, and why is it so precise?

The launch window refers to the time period in which a particular mission must be launched. Chandrayaan-3 took off at 2:35 pm.

According to the European Space Agency (ESA), if the spacecraft intends to get close to another spacecraft, a planet, or other point in space, the launch must be carefully timed so that their orbits overlap at some point in the future. If the weather is bad or a malfunction occurs during a launch window, the mission must be postponed until the next launch window appropriate for the flight.

It illustrates with an example: "Imagine the Solar System as an athletics race track. If you were watching the 400 metres race from the centre of the track and wanted to intercept one of the runners taking part, one way would be to simply chase the runner you wish to stop. If you were fast enough, you might eventually catch up but only after expending a lot of energy and travelling a long way.

A much better way to intercept your athlete is simply to walk across the centre to the other side of the circular track. It is a much shorter distance and you use a lot less energy and time getting there. You calculate your walk so that you arrive at the other side of the track at the same time as they do. Too early, and you are waiting around for them. Too late, and you have missed them completely – you'd have to wait one lap until they came around again.

In spaceflight, straight-line paths do not exist for the same reason. All planets move in long, curved paths around the Sun that take the shape of circular and elliptical orbits." Further, the Earth and other planetary bodies are also not stationary and their constant movement needs to be calculated to devise the shortest, most fuel-efficient path for the spacecraft.

Why will it take so many days for the lander to reach the moon?

This whole process is likely to take around 42 days, with the landing slated for August 23 at the lunar dawn. The Chandrayaan-3 mission will be launched into space by the Launch Vehicle Mark-III, (LVM-III).

After launching into an orbit around the Earth at an altitude of 179 km on Friday, the spacecraft will gradually increase its orbit in a series of manoeuvres to escape the Earth's gravity and slingshot towards the moon. After reaching close to the moon, the spacecraft will need to be captured by its gravity.

Once that happens, another series of manoeuvres will reduce the orbit of the spacecraft to a 100×100 km circular one. Thereafter, the lander, which carries the rover inside it, will separate from the propulsion module and start its powered descent towards the moon's surface.

The craft lander and rover have a mission life of one Lunar day. Each Lunar day lasts for 14 earth days, as does each Lunar night, as it takes around one month (close to 28 earth days) for the moon to complete one rotation on its axis (and one revolution around the earth). The rover and lander cannot survive the extreme drop in temperatures during lunar nights, which is why they are being landed right at dawn.

And finally, why do we want to go to the moon?

The Moon is the closest cosmic body to earth, where space discovery can be attempted and documented, said Isro at the time of Chandrayaan-2. It was also described as a promising test bed to demonstrate technologies required for future deep-space missions.

It would further help "stimulate the advancement of technology, promote global alliances and inspire a future generation of explorers and scientists", it said.

https://indianexpress.com/article/explained/explained-sci-tech/isros-chandrayaan-3-to-moon-all-you-need-to-know-8834344/

news9

Fri, 14 Jul 2023

ISRO to Follow Chandrayaan 3 Mission with Aditya-L1 Launch around August End

ISRO has another high profile mission lined up after the successful launch of the Chandrayaan 3 mission. The Aditya-L1 mission will take place towards the end of August. Aditya-L1 is headed to the first Lagrange point in the Sun-Earth system, a stable point in space between the gravitational influences of the Earth and the Sun. A spacecraft in this location can observe the Sun continuously, without any interruptions.

The solar corona or the outer atmosphere is over a million degrees Celsius hotter than the surface, the photosphere. Why this is so has been an enduring puzzle, comparable to a candle getting warmer the farther away you move from it. Aditya-L1 is India's first dedicated heliophysics observatory, and will take a crack at solving this puzzle.

Within a span of a few months, ISRO is launching missions to better understand the Moon and the Sun. The Aditya-L1 mission will use a coronagraph, which is a disc in the instrument that covers the disc of the Sun, so that the corona can be examined. The sensors would be oversaturated without the coronagraph. Earlier in the year, the Indian Institute of Astrophysics (IIA) handed over the Visible Line Emission Coronagraph (VELC) for the Aditya-L1 mission to ISRO.

The VELC is only one of the seven scientific payloads or instruments on board Aditya-L1. Four payloads will be used for conducting remote observations, that is studying the Sun from a distance. The three others will conduct in-situ analysis, measuring and investigating the soup of high energy particles streaming out of the Sun, in the form of Solar wind, that has an influence on the entire Solar System.

The temper tantrums of the Sun can adversely affect human civilisation, causing power blackouts, interfering in radio communications, prevent ships and spacecraft from using navigation infrastructure, and expose passengers in high altitude aircraft to high levels of radiation. This is why it is important to understand the processes that inject heat into the Solar Corona, as understanding the underlying processes can help humans better prepare for solar outbursts.

Space agencies around the world pool resources to reduce costs, and ESA is supporting ISRO with the use of ground stations, the Goonhilly Earth Station in UK and ESA's spaceport in Kourou, French Guiana. The Aditya-L1 mission will be using the ground stations, and so will the Chandrayaan 3 spacecraft, which will be particularly useful during the journey to the Moon.

https://www.news9live.com/science/isro-to-follow-chandrayaan-3-mission-with-aditya-l1-launch-around-august-end-2213517