

CONTENTS

S. No.	TITLE		Page No.
Defence News			1-13
Defence Strategic: National/International			
1	'Towards an Inclusive Approach': DG ICG inaugurates the 7th ICG Subordinate Officers' Conclave	<i>Press Information Bureau</i>	1
2	Lt Gen Vikas Lakhera takes charge as Assam Rifles DG	<i>The Times of India</i>	2
3	AFHQ Civil Services can serve as imp link in connecting armed forces, civilian govt: Rajnath Singh	<i>The Economic Times</i>	2
4	Vietnam PM, PM Modi inaugurate Army Software Park in Vietnam	<i>The Economic Times</i>	4
5	Strengthening India-Vietnam ties: Focus on trade, maritime security, and defence	<i>Financial Express</i>	5
6	Strengthening Indo-Vietnam Relations: India Offers USD 300 Million Loan to Boost Maritime Security	<i>Financial Express</i>	6
7	LAC पर चीन के साथ क्यों नहीं बन पा रही बात? नो-पेट्रोलिंग या फिर नियंत्रित पेट्रोलिंग...जानें कहां है गतिरोध	<i>NavBharat Times</i>	8
8	Engines for LCA-MK1 jets delayed, HAL prepares back-up plan with used engines to begin deliveries	<i>The Hindu</i>	9
9	Indian Army constructs 190-ft-long Bailey bridge at Wayanad to connect landslide affected areas	<i>The Hindu</i>	10
10	Historic First – Bangladesh Air Force To Operate From India For 1st Time During IAF's 'Tarang Shakti' Exercise	<i>The EurAsian Times</i>	11
Science & Technology News			13-17
11	AstroSat exposes the mystery of vampire star rejuvenation	<i>Press Information Bureau</i>	13
12	Indian astronomers discover 34 new Giant Radio Sources using GMRT	<i>Hindustan Times</i>	15
13	DSU and SISA Collaborate to Launch Center of Excellence in Cybersecurity	<i>Financial Express</i>	16



Press Information Bureau
Government of India

Ministry of Defence

Thu, 01 Aug 2024

‘Towards an Inclusive Approach’: DG ICG inaugurates the 7th ICG Subordinate Officers’ Conclave

The 7th Indian Coast Guard (ICG) Subordinate Officers’ Conclave was inaugurated on August 01, 2024 by Director General Rakesh Pal at the ICG HQ in New Delhi. The two-day Conclave, scheduled for August 01-02, is themed 'Towards an Inclusive Approach'. It features a series of brainstorming & plenary sessions, along with lectures on holistic living, stress management through Ayurveda, meditation & Yoga, IT, health, HR, and leadership.

The event brings together highly motivated and committed Subordinate Officers from various ICG units across the country, providing a platform for them to share innovative ideas and thought processes with decision-makers. In his inaugural address, Director General Rakesh Pal emphasized that the Conclave aligns with the Prime Minister Shri Narendra Modi’s vision of fostering innovative ideas for the inclusive growth of the service, embodying the ethos of ‘Sabka Saath, Sabka Vikas, and Sabka Prayas.’

Key discussions at the event include future inductions in the ICG based on the principles of Aatmanirbhar Bharat, the refinement of HR policies for inclusive career growth under the ‘Karmyogi’ initiative, and the enhancement of operational capabilities through advanced technology integration. The Conclave showcases best management practices derived from principles of good governance, aiming to enhance collective progression, esprit de corps, and cohesiveness across all ranks. The ICG remains dedicated to empowering its subordinate officers, ensuring their growth and development as integral members of the force.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2040368>

THE TIMES OF INDIA

Fri, 02 Aug 2024

Lt Gen Vikas Lakhera takes charge as Assam Rifles DG

Lt Gen Vikas Lakhera took over as the 22nd director general of Assam Rifles on Wednesday. He succeeds Lt Gen (retd) PC Nair, who relinquished the command of the force on superannuation from military service. According to an official statement, Lt Gen Lakhera was commissioned from the Indian Military Academy into 4 SIKH LI on June 9, 1990, the unit which he subsequently commanded in lower Assam under the Red Horn division.

The General Officer is a postgraduate from Defence Service Staff College, Wellington and is an alumnus of the Higher Defence Management Course from College of Defence Management, Secunderabad. He completed the prestigious National Defence Course from The Royal College of Defence Studies, London (UK).

The General Officer has tenanted various command and staff appointments during his illustrious career, which include division officer and tactical training officer at NDA, Khadakwasla, deputy military advisor to GOC-in-C, Eastern Command, staff officer and deputy military advisor to COAS, director in Military Operations Directorate, deputy commander of an Inf Bde and Brig (Q) of HQ 4 Corps. The general officer commanded 15 Infantry Brigade at Sriganganagar and was Inspector General of AR (north) at Kohima.

He was tenanted the appointment of additional DG military operations handling information warfare prior to taking over as DGAR.

The General Officer has extensive experience of planning and executing counter-insurgency and counter-terrorist operations in J&K and the northeast region.

He is a highly decorated officer with Ati Vishisht Seva Medal, Sena Medal, Chief of Army Staff Commendation Card and two Army Commander Commendation Cards to his credit.

<https://timesofindia.indiatimes.com/city/guwahati/lt-gen-vikas-lakhera-takes-charge-as-assam-rifles-dg/articleshow/112209290.cms>

THE ECONOMIC TIMES

Wed, 01 Aug 2024

AFHQ Civil Services can serve as imp link in connecting armed forces, civilian govt: Rajnath Singh

Defence Minister Rajnath Singh on Thursday said the Armed Forces Headquarters (AFHQ) Civil Services can serve as an "important link" in connecting the armed forces and the rest of the civilian government, adding there is a need to strengthen this service. In his address at the AFHQ Day here, he also termed the civil services as a "steel frame of governance".

The AFHQ Day is celebrated on August 1 every year to recognise the role of the personnel, who work shoulder-to-shoulder with the service personnel, primarily in the three Integrated Service Headquarters; HQ, Integrated Defence Staff and 24 Inter-Services Organisations of the defence ministry.

The aim is to foster esprit de corps of the civilian employees of AFHQ cadres, who play the role of a bridge between Service Headquarters and the defence ministry, both during peace and war, the ministry said in a statement.

The defence minister in his address also urged that people who work with grace and humility rise in life and cautioned that one should not have an ego and be willing to seek ideas even from other people and function as a team.

"By looking at the role that civil services play in the country's administrative system, if the civil services be termed as the steel frame of the administrative system, then it won't be an exaggeration. If the civil services is the steel frame, then the defence ministry gets benefit of it in the form of the AFHQ Civil Services," he said.

Singh asserted that officers in the three services of the armed forces are doing "excellent work" and underlined the need for such a civilian service.

He said the AFHQ Civil Services can work as an "important link" in connecting the the armed forces and rest of the civilian government, adding there is a need to "strengthen this service".

"From Command headquarters and Service headquarters to the Ministry of Defence, armed forces and civil services need to work together, which you do," he said in his address on the 83rd AFHQ Civil Services Day in New Delhi.

He called upon the personnel of the Armed Forces Headquarters (AFHQ) Civilian Services to continue enhancing their skills in today's fast-changing times for efficient policy making and implementation and execution of reforms being undertaken in the Ministry of Defence.

Singh commended the dedication and hard work of the AFHQ personnel in taking forward the ongoing works, including efforts to attain 'Aatmanirbharta', and contributing to the welfare of soldiers.

He said the three services form a large part of the functioning in the ministry and the AFHQ cadre ensures the "possibility of 'group-think', which results in poor decision-making, is negated in policy formulation".

"Unprecedented reforms have been undertaken in the defence ministry in the last five years, and there has been tremendous progress in several areas. Our achievements have been recognised globally. This has happened due to team work," he said.

Singh urged the department of defence to explore the possibilities of better career progression for the personnel of AFHQ Civilian Services.

"As their capabilities increase, their career progression will improve, and these personnel will be able to provide better support to the armed forces, bolstering our defence system. Ensuring better career progression will also attract best candidates to the AFHQ Civil Services," he added.

Singh exhorted the personnel to pay attention to the core values of honesty, discipline and uniformity.

Minister of State for Defence Sanjay Seth, Army Chief General Upendra Dwivedi, Chief of the Naval Staff Admiral Dinesh K Tripathi, IAF Chief Air Chief Marshal V R Chaudhari, Secretary (Ex-Servicemen Welfare) Niten Chandra, Secretary, Department of Defence R&D and Chairman DRDO, Samir V Kamat and other senior civil and military officials of the defence ministry were also present on the occasion.

"The foundation of AFHQ cadres was laid on August 1, 1942 by organising the then decentralised civilian posts/cadre operation as distinct entities under various Service Headquarters and Secretariat of Ministry of Defence and Finance (Defence) under the control of Chief Administrative Officer," the ministry said.

<https://economictimes.indiatimes.com/news/defence/afhq-civil-services-can-serve-as-imp-link-in-connecting-armed-forces-civilian-govt-rajnath-singh/articleshow/112199715.cms>

THE ECONOMIC TIMES

Thu, 01 Aug 2024

Vietnam PM, PM Modi inaugurate Army Software Park in Vietnam

Prime Minister Narendra Modi and Vietnam PM Pham Minh Chinh at Hyderabad House on Thursday jointly inaugurated the Army Software Park at the Tele-Communications University in Nha Trang, Vietnam. Moreover, India has extended a credit line of \$300 million that will strengthen Vietnam's maritime security.

Various delegates from both sides signed several Memorandums of Understanding, aimed at strengthening the bilateral ties between both the countries.

An MoU detailing the plan of action to advance comprehensive strategic partnership between India and Vietnam 2024-2028 was exchanged by Vietnam Foreign Minister Bui Thanh Son and External Affairs Minister S Jaishankar.

MoU for cooperation in customs capacity building between CBIC India and the General Department of Vietnam Customs, Vietnam was signed by Nguyen Van Can, Director-General of the General Department of Vietnam Customs and Sanjay Agarwal, chairman, CBIC.

Another MoU between Central Agricultural University Imphal Manipur and the Vietnam Academy of Agricultural Science, Hanoi for cooperation in agriculture, research and education was signed by Dao The Anh, Vice President of Vietnam Academy of Agriculture Sciences and Anupam Mishra, vice chancellor of CoW, Imphal.

MoU between Ministry of Law and Justice of India and Ministry of justice of Vietnam on cooperation in legal field was signed by Nguyen Pong Nok, Deputy Minister of Justice and Rajiv Mani, Law secretary.

An MoU between Prasar Bharti and voice of Vietnam for cooperation on radio and television was signed between Do Tien Sy, President of the Voice of Vietnam and on the Indian side Gaurav Dwivedi, CEO Prasad Bharti.

There was an exchange of dollar credit line agreement of USD120 million between the government of Socialist Republic of Vietnam represented by Ministry of Finance and Export Import bank of India and the dollar credit line agreement of USD120 million between government of Socialist Republic of Vietnam represented by Ministry of Finance and the Export Import bank of India between WoTan Hong, Deputy Minister of Finance and Harsha Bangli, Managing Director, Import Export bank of India.

A letter of intent was also exchanged between India and Vietnam for restoration and conservation of F block of Mysoon UNESCO World Heritage site between Trin ThiTui, Deputy Minister for Culture, Sports and Tourism and Jaideep Majumdar, Secretary east.

<https://economictimes.indiatimes.com/news/defence/vietnam-pm-pm-nodi-inaugurate-army-software-park-in-vietnam/articleshow/112194094.cms>



Thu, 01 Aug 2024

Strengthening India-Vietnam ties: Focus on trade, maritime security, and defence

Prime Minister Narendra Modi welcomed his Vietnamese counterpart, Pham Minh Chinh, at Hyderabad House in Delhi. This meeting is aimed to deepen the Comprehensive Strategic Partnership between India and Vietnam. The two leaders are holding discussions centered on bolstering cooperation in key areas such as trade, maritime security, and defence.

The meeting began with a warm reception for Pham Minh Chinh, who is on a three-day state visit to India. Upon arrival, Chinh paid tribute to Mahatma Gandhi at Rajghat, laying a floral wreath at the memorial site. The gesture underscored the shared values of peace and non-violence that bind the two nations. Following the tribute, a ceremonial reception was held at the Rashtrapati Bhavan, where PM Modi received Chinh with a warm embrace, followed by an inspection of the Guard of Honour.

High-ranking officials, including External Affairs Minister S Jaishankar, Union Minister of Parliamentary Affairs Kiren Rijiju, Union Minister of State for Health and Family Welfare Anupriya Patel, and Union Minister of Ports, Shipping and Waterways Sarbananda Sonowal, were present to greet the Vietnamese delegation. The presence of these key figures highlighted the importance of the visit and the areas of collaboration under discussion.

During a prior meeting, S Jaishankar extended a warm welcome to Chinh, who expressed his gratitude for the reception and congratulated PM Modi on his historic third-term victory. Chinh emphasized the importance of this visit in furthering the strategic partnership between the two

nations. He highlighted Vietnam's appreciation for India's efforts in arranging the visit despite the tight schedule and short notice.

The discussions between the two leaders focused on strengthening bilateral ties, with particular emphasis on enhancing trade, maritime security, and defence cooperation. Both countries recognize the strategic importance of the Indo-Pacific region and the need for collaboration to ensure regional stability. Vietnam's strategic location and India's growing influence in the region make their partnership crucial in addressing shared security concerns, including maritime security challenges.

In trade, both countries have seen significant growth, with Vietnam being a key partner in India's "Act East Policy." The two nations are working towards increasing bilateral trade and investment, exploring new areas of economic cooperation, and enhancing connectivity. The focus on trade is vital for both economies, with Vietnam's rapidly growing market and India's diverse economic strengths offering complementary opportunities.

In the defence sector, India and Vietnam have a history of cooperation, with India providing training and capacity-building support to the Vietnamese military. The two countries are looking to deepen this cooperation further, with discussions on joint exercises, equipment procurement, and technology transfers. This partnership is essential for maintaining regional peace and security, particularly in the context of rising tensions in the South China Sea.

The visit of PM Pham Minh Chinh is a testament to the strong and growing ties between India and Vietnam. As noted by the Ministry of External Affairs, the relationship is rooted in historical and civilizational ties, elevated to a Comprehensive Strategic Partnership during PM Modi's visit to Vietnam in 2016. This visit serves as a reaffirmation of the mutual trust and shared vision that underpin this partnership, with a focus on enhancing cooperation in critical areas for the benefit of both nations and the broader region.

In conclusion, the meeting between Prime Ministers Modi and Chinh marks a significant step in advancing the India-Vietnam relationship. By focusing on trade, maritime security, and defence, the two nations are poised to strengthen their partnership, contributing to regional stability and prosperity. The comprehensive strategic partnership continues to evolve, reflecting the shared interests and common goals of both countries in an increasingly complex global landscape.

<https://www.financialexpress.com/business/defence-strengthening-india-vietnam-ties-focus-on-trade-maritime-security-and-defence-3570880/>



Thu, 01 Aug 2024

Strengthening Indo-Vietnam Relations: India Offers USD 300 Million Loan to Boost Maritime Security

India's relationship with Vietnam reached a significant milestone on Thursday as Prime Minister Narendra Modi announced a USD 300 million loan to enhance Vietnam's maritime security. The

announcement came during the visit of Vietnamese Prime Minister Pham Minh Chinh, highlighting the growing partnership between the two nations. The leaders expressed a shared commitment to double trade and investment within five years, further cementing their alliance in the Indo-Pacific region.

A Key Pillar in India's Southeast Asian Policy

Prime Minister Modi stated that India views Vietnam as a key pillar of its policy towards Southeast Asia and an essential partner in its Indo-Pacific vision. During their discussions, the leaders acknowledged the major security challenges faced globally, yet they also saw opportunities for cooperation. The visiting leader PM Chinh noted, "The Asia Indo-Pacific region is a locomotive for growth, but it is also where major politics is taking place fiercely. We need an approach and methodology that is global and upholding multilateralism."

Expanding Cooperation in Various Sectors

The meeting underscored the desire to expand cooperation beyond defence, delving into areas such as semiconductor and green technology, artificial intelligence, cloud computing, and climate action. The inauguration of the "Army Software Park" in Vietnam, facilitated by India's support, stands as a testament to this commitment. This educational facility, located at the Tele-Communications University in Nha Trang, will equip Vietnamese soldiers with vital digital skills, enhancing their capabilities in an increasingly digital world.

Strategic Agreements and MoUs

The visit also saw the signing of multiple Memorandums of Understanding (MoUs), further solidifying the bilateral ties between India and Vietnam. These agreements cover a broad spectrum of sectors:

- **Comprehensive Strategic Partnership (2024-2028):** An MoU was exchanged by Vietnam's Foreign Minister Bui Thanh Son and India's External Affairs Minister S Jaishankar to advance the partnership between the two countries.
- **Customs Capacity Building:** An agreement between the Central Board of Indirect Taxes and Customs (CBIC) of India and the General Department of Vietnam Customs was signed, aiming to enhance cooperation in customs.
- **Agricultural Collaboration:** The Central Agricultural University in Imphal, Manipur, and the Vietnam Academy of Agricultural Sciences in Hanoi inked an MoU to collaborate on agriculture, research, and education.
- **Legal Cooperation:** An MoU between the Ministry of Law and Justice of India and Vietnam's Ministry of Justice was signed to foster cooperation in the legal field.
- **Media Cooperation:** Prasar Bharati and the Voice of Vietnam signed an agreement to collaborate on radio and television content.
- **Credit Line Agreements:** Two credit line agreements, each worth USD 120 million, were exchanged between the Vietnamese Ministry of Finance and the Export-Import Bank of India, supporting various projects in Vietnam.

- Cultural Conservation: A letter of intent was exchanged for the restoration and conservation of the My Son UNESCO World Heritage site, highlighting the cultural ties between the two nations.

A Partnership Rooted in Shared Vision

Prime Minister Pham Minh Chinh praised India's global outlook and its effective strategy during the COVID-19 pandemic. He acknowledged India's significant role in providing vaccines and treatments, which benefited Vietnam. Chinh highlighted the evolving global landscape shaped by artificial intelligence, cloud computing, and green transformation. He stressed the importance of international solidarity in addressing the security challenges in the Asia Indo-Pacific region, describing it as a "locomotive for growth."

A Deepening Bond of Friendship

Chinh expressed gratitude to Prime Minister Modi for sending a National Security Advisor to honour the passing of Vietnam's Comrade General Secretary Nguyen Phu Trong, emphasizing the depth of the bilateral relationship.

Robust Trade Relations

Bilateral trade between India and Vietnam has seen substantial growth, with trade volumes increasing by 27 percent in 2022, reaching USD 14.14 billion. India's exports to Vietnam include iron and steel, cotton, cereals, meat and fishery products, electrical machinery, automobile parts, cement, chemicals, and pharmaceuticals. Meanwhile, Vietnam's exports to India primarily consist of electrical and electronic equipment, inorganic chemicals, machinery, copper, rubber, coffee, tea, spices, iron, and steel. India's investments in Vietnam are estimated at around USD 1.9 billion, spanning energy, mineral exploration, agriculture, and information technology. In contrast, Vietnam has invested over USD 28.55 million in India, focusing on pharmaceuticals, information technology, chemicals, and building materials.

<https://www.financialexpress.com/business/defence-strengthening-indo-vietnam-relations-india-offers-usd-300-million-loan-to-boost-maritime-security-3571214/>

नवभारत टाइम्स

Thu, 01 Aug 2024

LAC पर चीन के साथ क्यों नहीं बन पा रही बात? नो-पेट्रोलिंग या फिर नियंत्रित पेट्रोलिंग...जानें कहां है गतिरोध

ईस्टर्न लद्दाख में LAC पर भारत और चीन के बीच गतिरोध खत्म करने के लिए एक बार फिर बुधवार को इंडिया-चीन बॉर्डर अफेयर्स पर WMCC की मीटिंग हुई। WMCC यानी वर्किंग मेकेनिजम फॉर कंसल्टेशन एंड कॉर्डिनेशन। अब उम्मीद की जा रही है कि जल्दी ही भारत और चीन की सेना के बीच कोर कमांडर स्तर की मीटिंग होगी। डेपसांग और डेमचॉक दो ऐसे पॉइंट हैं जहां अब भी विवाद बना हुआ है। हर मीटिंग में इन दो पॉइंट को लेकर बातचीत हो रही है।

पेट्रोलिंग हो या नहीं इस पर अटकी है बात

सूत्रों के मुताबिक बातचीत इस पर अटकी हुई है कि विवाद के इन दो पॉइंट यानी डेपसांग और डेमचॉक में पेट्रोलिंग यानी सैनिकों की गश्ती हो या नहीं। सूत्रों के मुताबिक चीन की तरफ से हर मीटिंग में यह कहा जा रहा है कि यहां नो-पेट्रोलिंग जोन बना दिया जाए यानी न तो चीनी सैनिक गश्ती करें ना ही भारतीय सैनिक। लेकिन भारत की तरफ से कहा जा रहा है कि नो-पेट्रोलिंग की बजाय कंट्रोल्ड पेट्रोलिंग यानी नियंत्रित पेट्रोलिंग की जाए। इसी बिंदु पर बात अटकी है। सूत्रों का कहना है कि भारत नहीं चाहता कि यहां नो-पेट्रोलिंग जोन बनाया जाए। अब तक कोर कमांडर स्तर की 21 मीटिंग हो चुकी हैं। 21 वें दौर की मीटिंग फरवरी में हुई थी। उसमें भी बात नहीं बनी। हालांकि दोनों तरफ से बयान जारी कर कहा गया कि दोनों पक्ष गतिरोध को बातचीत के जरिए सुलझाने के लिए प्रतिबद्ध हैं और लगातार बातचीत जारी रहेगी साथ ही दोनों पक्ष जमीनी स्तर पर शांति बनाए रखने पर राजी हैं।

चार जगह पहले ही बने हैं नो-पेट्रोलिंग जोन

मई 2020 में ईस्टर्न लद्दाख में एलएसी पर भारत और चीन के बीच तनाव शुरू हुआ था, जब चीनी सैनिक कई जगहों पर आगे आ गए थे। बातचीत के बाद चार जगहों पर डिसइंगेजमेंट हुआ। यानी दोनों देशों के सैनिकों ने अपने सैनिकों को पीछे किया। सबसे पहले पैंगोंग एरिया यानी फिंगर एरिया और गलवान में पीपी-14 में डिसइंगेजमेंट हुआ, फिर गोगरा में पीपी-17 से सैनिक हटे, फिर गोगरा-हॉट स्पिंग एरिया में पीपी-15 से सैनिक पीछे हटे। जिन जगहों पर डिसइंगेजमेंट हुआ वहां पर नो-पेट्रोलिंग जोन बने हैं। यानी जब तक दोनों देश मिलकर कुछ रास्ता नहीं निकाल लेते तब तक इन चारों जगहों पर 1 किलोमीटर से लेकर 3 किलोमीटर तक का एरिया नो-पेट्रोलिंग जोन है यानी यहां कोई पेट्रोलिंग (गश्ती) नहीं करेगा।

स्थिति सामान्य होने में लगेगा लंबा वक्त

ईस्टर्न लद्दाख में स्थिति पहले की तरह सामान्य होने में लंबा वक्त लगेगा। जब तक दोनों देश सैनिकों को पीछे हटाकर और हथियारों को तैनाती से हटाकर पीस पोजिशन नहीं भेज देते तब तक स्थिति सामान्य नहीं कही जा सकती। डिसइंगेजमेंट के बाद की प्रक्रिया है डी-एस्केलेशन। जिसका मतलब है कि दोनों देशों के सैनिक और सैन्य साजोसामान जो इस तरह तैनात किया गया है कि जरूरत पड़ने पर कभी भी एक दूसरे पर हमला हो सकता है, उसे सामान्य स्थिति में लाना। जिन चार पॉइंट पर डिसइंगेजमेंट हुआ है वहां अभी भी सैनिक और हथियार दोनों एक दूसरे की रेंज पर हैं। डिसइंगेजमेंट और डीएस्केलेशन के बाद की प्रक्रिया होगी डी-इंडक्शन। यानी जो भारी तादाद में सैनिक और सैन्य साजो सामान वहां तैनात है उसे वापस अपनी पुरानी पोजिशन में भेजना। अभी वहां दोनों तरफ से 50-50 हजार से ज्यादा सैनिक तैनात हैं।

<https://navbharattimes.indiatimes.com/india/india-china-border-dispute-core-commander-meeting-will-held-after-wmcc-meeting/articleshow/112203520.cms>

THE  **HINDU**

Thu, 01 Aug 2024

Engines for LCA-MK1 jets delayed, HAL prepares back-up plan with used engines to begin deliveries

Delay in engine deliveries has further delayed the delivery of the Light Combat Aircraft (LCA)-Mk1A by Hindustan Aeronautics Limited (HAL) to the Indian Air Force (IAF). There is further delay of a few months in the delivery of F-404 engines by General Electric and HAL is now preparing a back up to install used engines. Subsequently, delivery of the first LCA-Mk1A to the IAF now aimed for November looks highly unlikely.

“Not a single engine has been received at the moment. They are now expected to be delivered from September onwards,” a defence official in the know said. “Since the engines have not arrived, HAL has come up with an alternate plan to install used engines on the initial batch of jets as an interim measure,” the official stated. The IAF is also involved in this process of using Category-2 or used engines as it is a temporary measure till the new engines arrive for which HAL is constantly engaged with GE, officials said.

In February 2021, the Defence Ministry had signed a ₹48,000 crore deal with HAL for 83 LCA-Mk1A, a more capable fighter than the current LCA-MK1 in service. Following this, in August 2021 HAL signed a \$716 mn deal with GE Aviation for 99 F404 aircraft engines and support services for the LCA-Mk-1A. As per contract, three LCA-MK1A were to be delivered to the IAF in February 2024 and 16 aircraft per year for subsequent five years. In response to questions from *The Hindu* on the delays, end-June a GE Aerospace spokesperson had said, “The aerospace industry continues to experience unprecedented supply chain pressures. GE Aerospace is working with our partner HAL and suppliers to resolve constraints and deliver F404-IN20 engines.”

Another defence official said expectation is that at least one LCA-Mk1A jet is delivered by year end and half a squadron or eight to nine jets by the end of this fiscal year. Officials stated that manufacturing of the jets is underway at HAL and while there were other supply chain issues, the primary hold up is the engine delay. Even if some number of engines are delivered in the next few months, small batch of jets can delivered within short time frame, officials asserted.

For IAF the delay is alarming, as the LCA is going to constitute a bulk of the IAF in the next few decades and key to arresting the fighter squadron strength from going below 30 squadrons in the near term and subsequently increase the strength.

In addition to the 83 Mk1A aircraft on order, the Defence ministry has given preliminary approval for procurement of another 97 LCA-Mk1A. This would eventually make 180 LCA-MK1 jets and 220 jets of the MK1 variant. The combined cost of the 180 Mk1As is an estimated of ₹1.15 lakh crore. In addition, a larger and more capable LCA-Mk2 is under development which will be powered by the GE F-414 engines. A deal to license manufacture the F-414 engines in India is in advanced stages. As of now, the IAF has committed to procuring around 120 LCA-Mk2.

<https://www.thehindu.com/news/national/engines-for-lca-mk1-jets-delayed-hal-prepares-back-up-plan-with-used-engines-to-begin-deliveries/article68473442.ece>

THE  HINDU

Fri, 02 Aug 2024

Indian Army constructs 190-ft-long Bailey bridge at Wayanad to connect landslide affected areas

The Madras Engineering Group of the Indian Army on August 1 completed the construction of a 190-ft-long Bailey bridge that will help connect the worst-affected areas of Mundakkai and Chooralmala in Wayanad district which were hit by devastating landslides on July 30.

The construction of the bridge started at 9.30 p.m. on July 31 and was completed by 5.30 p.m. on August 1.

Major General V.T. Mathew, General Officer Commanding of the Kerala and Karnataka Sub-Area, crossed the bridge in his official vehicle after the completion of the construction of the structure, which has a weight-carrying capacity of 24 tonnes.

The Class 24 Bailey Bridge constructed in Wayanad district will connect Chooralmala with Mundakkai over the Iruvazhinjipuzha river.

“From #Landslide to #Lifeline. When nature knocked down a bridge,#IndianArmy swiftly constructed a more resilient one. True to form, the Army Commander fearlessly led the way across the #BaileyBridge,” the Defence PRO said in a post on X.

Following the vehicle of the Commander, the Army medical unit and a military truck passed through the bridge, after which it was handed over to the civil administration.

The bridge connecting the two places had washed away in the devastating landslides that happened on July 30.

The rescue workers had made temporary wooden bridges between landmasses to cross over and help those stranded there.

However, in the heavy rains on July 31, those temporary structures too failed.

The materials for building the bridge were flown into Kannur airport from Delhi and Bengaluru and brought to Wayanad by 17 trucks.

The Army’s rescue operation is being coordinated under the leadership of Major General Mathew.

<https://www.thehindu.com/news/national/kerala/indian-army-constructs-190-ft-long-bailey-bridge-at-wayanad-to-connect-landslide-affected-areas/article68474877.ece>



Thu, 01 Aug 2024

Historic First – Bangladesh Air Force To Operate From India For 1st Time During IAF’s ‘Tarang Shakti’ Exercise

More than four decades after its creation, Bangladesh military aircraft will roar over the skies of India for the first time. In the exercise Tarang Shakti (Power of Waves), the Bangladesh Air Force will participate with its fighter jets, along with other Western air forces. So far, Bangladesh Air Force aircraft have never operated from Indian soil. They will participate in the second phase of the exercise at Jodhpur Air Base in Rajasthan, home to the Indigenous Light Combat Helicopter (LCH) ‘Prachand’.

The first squadron of the LCH, 143 Helicopter Unit, was raised at the Jodhpur Air Base. It is the only attack helicopter in the world that can operate in Siachen, the world’s highest battlefield.

Bangladesh aircraft will be among the fighter jets from Australia, Greece, the UAE, and Singapore participating in the second phase. Bangladesh is among the 10 countries sending its aircraft to participate in the first and largest international wargames hosted by the Indian Air Force (IAF).

“This is the largest international air exercise being conducted in India and invitations were extended to 51 countries, and we have confirmation from 10 countries for participation with their assets and 18 countries as observers,” said vice chief of air staff, Air Marshal AP Singh.

In terms of fighter jets, BAF operates Russian-origin MiG-29 multi-role aircraft, Yakovlev Yak-130 light attack aircraft, and Chinese Chengdu F-7 interceptors. They also have Russian An-32 and American C-130 J Super Hercules aircraft in their inventory. In the rotary fleet, they have Bell UH-1N from the US, AgustaWestland AW139 from Italy, and Mi-17 from Russia.

While the confirmation of which aircraft will be sent is yet to come, it is doubtful that the F-7s will debut on Indian soil. If the MiG-29s come, it will be interesting to see them operating alongside the Indian MiG-29 UPG. The exercise will involve combat missions within and beyond visual range, large force engagements, air mobility operations, dynamic targeting, low-light operations, high-value aerial asset protection and busting, air-to-air refueling missions, and combat search and rescue. India has asserted that the military drills are not directed at any one country.

Behind Enemy Lines! When IAF Jets Operated From Bangladesh, Erstwhile Pakistan

The IAF played a pivotal role in the 1971 Liberation War of Bangladesh. In fact, in a feat unparalleled in modern air force history since World War II, the IAF not only dominated the skies over East Pakistan in a matter of two days, but it was also able to capture an airfield there and wreaked havoc against Pakistan Air Force (PAF) and Army from their airfield.

India has also supplied aircraft to the combat aviation formation of Mukti Bahini, the guerrilla force seeking the liberation of Bangladesh from Pakistan. At that time, the nascent Bangladesh Air Force had one DHC-3 Otter and one Alouette III helicopter. Both were equipped with rocket pods and machine guns. The formation also had one DC-3 Dakota for logistical missions.

The first air strikes against targets in East Pakistan were conducted on December 4, 1971, under the codename Operation Kilo Flight. The mission was led by Squadron Leader Sultan Mahmud.

The IAF's air base in east Jorhat had operational control over the mission Kilo Flight. The Mukti Bahini unit was trained in Dimapur, Nagaland, and during the first air strikes, it attacked the oil depots at Narayanganj and Chittagong. After Bangladesh's liberation, the Kilo flight formed the core of the Bangladesh Air Force. The mission was named Kilo Flight after Group Captain Khandker, who was the deputy chief of staff of the Bangladesh Armed Forces during the Liberation War. Khandker would become the first chief of air staff of Bangladesh immediately after the war.

Hence, Bangladesh aircraft's participation in the Tarang Shakti will be a historic first for the two South Asian countries joined by the umbilical cord.

The Power Of Waves

Tarang Shakti will take place in two phases, spanning August and September. Fighters and support aircraft from 10 nations will participate, and representatives from 18 other countries will also participate. Russia and Israel, two of India's main defense partners, are not taking part in the war games due to ongoing wars back home.

The first phase will take place at Sullur from August 6. The base in South India is home to the Light Combat Aircraft (LCA) Tejas. Tejas will be going up against Rafale, Typhoons, and F-16s from France, Germany, Spain and the UK.

About 40 combat aircraft of the IAF will also participate. The second phase at Jodhpur will involve Bangladesh, Singapore, the US, UAE, and Australia. In addition to fighter jets and helicopters, tactical aircraft, mid-air refuellers, and airborne warning and control systems will participate. The IAF has increased participation in foreign wargames to foster interoperability with friendly other air forces.

The IAF's Rafale went on their first overseas wargames in 2023 when they participated in Exercise Orion at Mont-de-Marsan, an Air Force base of the French Air and Space Force (FASF). The IAF Contingent comprises four Rafale, two C-17, two Il-78 aircraft, and 165 air warriors. This would be the first overseas exercise for the IAF's Rafale aircraft. The IAF also participated in air exercises INIOCHOS, hosted by the Hellenic Air Force, in which four Su-30 MKI and two C-17 aircraft were deployed. In 2023, the USAF came to India with its B1 Bomber jets and the F-15 fighter aircraft for Exercise Cope India in Kalaikunda, Panagarh and Agra.

<https://www.eurasiantimes.com/historic-first-bangladesh-air-force/>

Science & Technology News



Press Information Bureau
Government of India

Ministry of Science & Technology

Thu, 01 Aug 2024

AstroSat exposes the mystery of vampire star rejuvenation

Researchers have made a groundbreaking discovery of a vampire star in the star cluster M67 located in the constellation Cancer, that has been rejuvenating its youth by sucking up material from a companion. The study provides rare insights into the binary star evolution process and provides an important missing link in the rejuvenation in these stars.

Vampire stars, known to astronomers as blue straggler stars (BSS), are identified easily in star clusters. These stars defy simple models of stellar evolution and show many characteristics of younger stars. This anomalous youth is explained theoretically as due to rejuvenation by eating up material from a binary stellar companion. Star clusters are useful test-beds to test this theory as they host a large number of binary stars, some of which can lead to the formation of vampire stars. Once rejuvenated, these stars follow a different path of evolution when compared to Sun-like single stars. So far, detection of sucked up material along with the sighting of their remnant binary companion was elusive.

Star clusters, being born from the same molecular cloud, can contain hundreds to thousands of stars with a wide range of masses but all contain very similar surface chemistry, making them ideal laboratories to understand how single and binary stars live and die. One such intriguing star cluster is M67, a collection of over 500 stars that are loosely gravitationally bound, a grouping known as an open cluster.

Recently, a team of astronomers from the Indian Institute of Astrophysics (IIA), an autonomous institute of the Department of Science & Technology, Government of India made a groundbreaking discovery of a vampire star in M67, that sheds light on a complex rejuvenation process, known as mass-transfer in a binary system.

The star bears the chemical imprint of recently sucked barium rich material from its binary companion and unambiguously detected emission from dead-remnant of its companion. The key to this detection was data from the UltraViolet Imaging Telescope, on board AstroSat, India's first dedicated space observatory. This finding to be published in *The Astrophysical Journal Letters*, is an important missing link in the rejuvenation of these stars and provides rare insights into the binary star evolution process.

The scientists studied the surface composition of the vampire star in M67, called WOCS 9005, using spectroscopy, a technique where the light of the star is dispersed into its colors like the rainbow. The spectra of stars are bar-codes that decipher its surface/atmosphere chemistry. The team used the archival spectral data from the GALAH survey (GALactic Archeology using Hermes) that uses the Two-Degree Field fibre positioner with the HERMES spectrograph at the Anglo-Australian Telescope. "This star is expected to show chemistry very similar to our Sun, but we found that its atmosphere is rich in heavy elements such as barium, yttrium, and lanthanum", said Harshit Pal, the lead author of the paper. Harshit Pal is a former BS-MS student of IISER Berhampur and he carried out this work as a part of his MS thesis project.

These heavy elements are rare and are found in a class of stars called 'asymptotic giant branch (AGB) stars', where abundant neutrons for a slowly occurring neutron capture process (s-process) are available to produce these heavy elements from lighter ones. This process is responsible for creating approximately half the atomic nuclei heavier than Iron. However, these AGB stars shed their outer layers enriched with heavy elements into their surroundings before ending their lives as white dwarfs (WDs). However, these AGB stars are more massive and evolved than WOCS 9005, leading to a puzzle.

"The presence of heavy elements in the spectrum pointed to a polluted atmosphere of the vampire star and the source of pollution being an external source. The external source is likely to be its binary companion, which must make the heavy elements when it passed through its AGB phase, and later became a white dwarf star", said Prof. Annapurni Subramaniam, co-author of the paper and Director IIA. "The blue straggler star that we see now must have eaten up most of this barium-rich material due to its gravitational pull, and is now presenting itself as a rejuvenated star", she added.

When the enhancement of barium (and other s-process elements) is detected in stars at earlier than the AGB evolutionary phase, such as the main sequence (MS), subgiant (SG), or red giant branch (RGB), these stars are called barium stars. "The presence of significant barium in this vampire star makes it the first barium blue straggler star discovered in the cluster M67", said Dr. Bala Sudhakara

Reddy, a co-author of the paper. The mass transfer from a companion AGB star has been extensively studied, though only a few chemically enriched post-mass transfer binaries have been identified in star clusters. Having established that the mass-transfer took place, the team started their search for the unseen companion.

This vampire star was already known to have a very small unseen companion of half the mass of the Sun. White dwarf stars are hot and small and are bright in the ultra-violet, but very faint in the visible range of the electromagnetic spectrum. The team made use of the Ultra-Violet Imaging Telescope (UVIT) onboard AstroSat, India's first multi-wavelength satellite launched in 2015, for their study. Using the UVIT on AstroSat, the scientists took images of the vampire star and estimated its UV brightness. As the vampire star has a temperature similar to the Sun, it is not expected to be bright in the UV. "Instead, we detected considerable UV brightness for this star, which on analysis proved that it indeed originated from its hot and small companion", said Dr. Jadhav, who is a co-author and a Humbolt fellow at University of Bonn, Germany. The scientists then theoretically calculated and validated that this is indeed the remnant of the star that produced heavy elements and that the two stars are close enough to transfer the matter from the donor star through wind.

"This is for the first time the white dwarf remnant of the donor is sighted in the case of the polluted blue straggler star", said Pal. This discovery experimentally confirms the theoretical prediction that the vampire stars are formed by acquiring polluted matter through transfer from their companion, leaving behind a remnant white dwarf. The rarity of such chemically polluted systems is still a mystery and the team thinks that it may be due to the quick settling of the pollutants in the atmosphere of the vampire stars.

Publication Links:

<https://doi.org/10.48550/arXiv.2407.06897>

<https://doi.org/10.3847/2041-8213/ad6316>

<https://pib.gov.in/PressReleasePage.aspx?PRID=2040159>



Fri, 02 July 2024

Indian astronomers discover 34 new Giant Radio Sources using GMRT

A team led by Indian radio astronomers has discovered 34 new giant radio sources (GRSs) using the Tata Institute of Fundamental Research (TIFR) Giant Metrewave Radio Telescope (GMRT) Sky Survey Alternative Data Release 1 (TGSS ADR1) at 150 MHz. Some of these are among the most distant objects of this type. Two of these objects defy the widely accepted notion about their environments. The GRSs are among the largest objects in the universe and their enormous size and rarity has puzzled astronomers as to how they grew to such a gigantic size.

The team of astronomers comprises two PhD students, Netai Bhukta (SKBU, India) and Souvik Manik (MCC, India); and two astronomers, Sabyasachi Pal (MCC, India) and Sushanta K Mondal (SKBU, India). They used TGSS for their research due to its low frequencies and the sensitivity of the GMRT. The team discovered 34 GRSs during their research.

Sabyasachi Pal said, “GRSs, some of the Universe’s most colossal structures, span millions of light years, equivalent to lining up several tens of Milky Ways in a row. At the heart of the GRSs lies a supermassive black hole, typically with a mass ranging from ten million to one billion times that of the Sun. Serving as the central engine, this black hole pulls in the surrounding matter, which becomes ionised, creating a powerful electromagnetic force that propels the material outward to the edges. The resulting jets of hot plasma produce massive lobes of radio emissions, spanning much greater distances than the visible size of the galaxy.”

Astronomers believe that GRSs represent the final stage of radio galaxy evolution due to their enormous sizes. Netai Bhukta said, “Such enormous projected lengths of GRSs make them interesting candidates for understanding the evolution of radio sources and studying the intergalactic medium that confines the lobes far from the parent galaxy. However, detecting such GRSs is challenging because the bridge emission connecting the two lobes is often not visible. Low-frequency radio surveys are better suited for identifying this population than higher-frequency radio surveys as the aged plasma is brighter at low frequencies.”

Two of the GRSs (J0843+0513 and J1138+4540) challenge the common understanding that GRSs grow in low-density environments. Souvik Manik said, “The environment alone does not play a major role in the exceptionally large size of GRSs. We plan to present new GRS samples in our forthcoming articles, along with detailed physical properties based on multi-wavelength observations, to unveil the mystery. This discovery has been published in the Astrophysical Journal Supplement Series (APJS) of the American Astronomical Society.”

The GMRT is located near Khodad village, approximately 90 km north of Pune. It was built and is being operated by the National Centre for Radio Astrophysics (NCRA) Pune of the TIFR. Between 2010 and 2012, a survey was carried out using the GMRT to map the radio sky at 150 MHz, known as the TIFR GMRT Sky Survey (TGSS) covering about 90% of the sky.

<https://www.hindustantimes.com/cities/pune-news/indian-astronomers-discover-34-new-giant-radio-sources-using-gmrt-101722539106180.html>



Thu, 01 Aug 2024

DSU and SISA Collaborate to Launch Center of Excellence in Cybersecurity

Dayananda Sagar University (DSU) has partnered with SISA Information Security Pvt Ltd to establish a Center of Excellence in Cybersecurity. This collaboration, formalized through a

Memorandum of Understanding (MoU), aims to enhance skill development and provide practical training for students in the rapidly evolving field of cybersecurity.

A Milestone in Cybersecurity Education

Dharshan Shanthamurthy, CEO of SISA, stressed the significance of this partnership, stating, “We are excited to partner with Dayananda Sagar University to establish the Center of Excellence in Cybersecurity. This collaboration is a testament to our commitment to nurturing the next generation of cybersecurity professionals.” The initiative will offer students hands-on experience and cutting-edge knowledge, preparing them for the challenges in the cybersecurity industry.

Key Features of the Collaboration

Representatives from DSU’s School of Engineering’s Computer Science Engineering Cluster, including CSE, CST, CSE (Cyber Security), CSE (AIML), and CSE (DS), visited SISA to solidify the partnership. The Center of Excellence will initially accommodate 10 seats, with an expansion potential of 5 additional seats exclusively for DSU students. Interns will receive stipends and bonuses based on project performance, with opportunities for permanent positions at SISA.

Alignment with National Initiatives

This collaboration aligns with the Union Budget 2024-25’s internship scheme for 10 million youth, reflecting the government’s focus on employment and skill development. The partnership aims to train students in best practices and international standards, making them industry-ready. SISA’s role includes refining DSU’s cybersecurity curriculum to meet future demands, with SISA advisors potentially joining DSU’s advisory board.

Additional Training and Resources

SISA will also provide special training sessions, limited to 60 hours annually, for the broader cybersecurity student community at DSU. Furthermore, DSU will utilize SISA’s proprietary Purple Range Platform, hosted on a dedicated Virtual Private Cloud, to train students and integrate it into the curriculum.

Future Prospects

Uday Kumar Reddy, Dean of the School of Engineering at DSU, highlighted the benefits of this academia-industry collaboration for students, urging for more such partnerships. CEO Dharshan Shanthamurthy also mentioned the importance of government support for skill-based internships, as emphasized in the recent Union Budget. He noted that this initiative is crucial in achieving the goal of Viksit Bharat by 2047.

<https://www.financialexpress.com/business/defence-dsu-and-sisa-collaborate-to-launch-center-of-excellence-in-cybersecurity-3570744/>

