

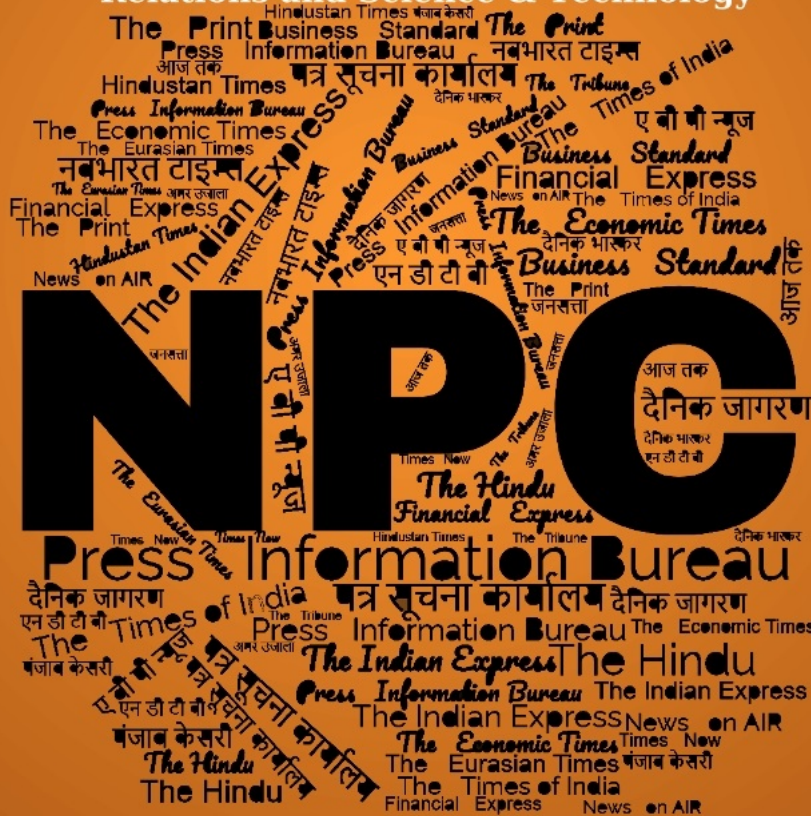
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समाचार पत्रों से चयनित अंश Newspapers Clippings

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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Press Information Bureau
Government of India

Ministry of Defence

Thu, 26 Sep 2024

DRDO & INAE organise 11th Engineers Conclave in Hyderabad to discuss emerging technologies & advancements in indigenisation

The 11th Engineers Conclave, jointly organised by Defence Research & Development Organisation (DRDO) and Indian National Academy of Engineering (INAE) in Hyderabad, commenced on September 26, 2024. The aim of the two-day annual conclave is to deliberate on two strategic priorities i.e., 'Additive Manufacturing for Defence Applications' and 'Defence Manufacturing Technologies'. The event, being held at Defence Research & Development Laboratory (DRDL) of DRDO, brings together engineers, scientists, academicians and industry leaders to discuss emerging technologies & advancements in indigenisation.

The conclave was inaugurated by the Chief Guest, Former Chairman, Atomic Energy Commission Dr Anil Kakodkar and Guest of Honour, Secretary Department of Defence R&D and Chairman DRDO Dr Samir V Kamat. DRDL Director (Hyderabad) Shri GA Srinivasa Murthy, Director General, Missiles and Strategic Systems Shri U Raja Babu, and INAE President Prof Indranil Manna addressed the gathering.



<https://pib.gov.in/PressReleasePage.aspx?PRID=2058999>



Thu, 26 Sep 2024

Delivery Of LSAM 13 (Yard 81), Fifth Missile Cum Ammunition (MCA) Barge For INS Tunir

The delivery of 'Missile Cum Ammunition Barge, LSAM 13 (Yard 81)', the fifth Barge of 08 x Missile Cum Ammunition Barge project, built by MSME Shipyard, M/s SECON Engineering Projects Pvt Ltd, Visakhapatnam for Indian Navy, was undertaken on 25 Sep 24 at Naval Dockyards, Mumbai for INS Tunir. The Induction Ceremony was presided over by Cmde C Rami Reddy, Commanding Officer, INS Tunir.

The contract for building 08 x Missile Cum Ammunition Barge was signed between MoD and M/s SECON Engineering Projects Pvt Ltd, Visakhapatnam on 19 Feb 21. Induction of these Barges would provide impetus to operational commitments of IN by facilitating Transportation, Embarkation and Disembarkation of articles/ ammunition to IN platforms both alongside jetties and at outer harbours.

These Barges are indigenously designed and built under relevant Naval Rules and Regulation of Indian Register of Shipping. The model testing of the Barge during design stage was undertaken at **Naval Science and Technological Laboratory, Visakhapatnam**. These Barges are proud flag bearers of Make in India initiative of Government of India.



<https://pib.gov.in/PressReleasePage.aspx?PRID=2059098>

DRDO to fund first-of-its-kind deep tech research for military use

Backed by the ₹1-lakh crore corpus for promoting transformative potential research, announced in the interim Budget, the Defence and Research and Development Organisation (DRDO) is set to launch a first-of-its-kind initiative that will remodel its research programme towards emerging technologies for military usage.

India's premier government defence research agency is funding five high-value deep tech innovation projects, with each project having been allotted a maximum of ₹50 crore to promote indigenisation of defence products having long-term positive impact on national security.

Futuristic and disruptive tech

The primary focus of DRDO's programme is to propel research in futuristic and disruptive technologies in the sphere, including quantum, block chain and artificial intelligence. Futuristic and disruptive technologies are innovations that significantly alter or revolutionise existing industries, markets or societal norms by introducing new approaches, products or services.

There are global instances of such programmes being helmed by state defence research organisations like the US Defence Advanced Research Projects Agency (DARPA) on the lines of which the DRDO is trying to fashion its deep tech initiative.

Defence Minister Rajnath Singh has given his nod to the investment for the deep tech projects that would be undertaken through the DRDO's Technology Development Fund (TDF) which has been engaging the private industry, mainly MSMEs and start-ups, for the R&D in military hardware and software armed forces require, sources in the organisation told *businessline*.

Three broad contours have been identified for inviting proposals from the industry for deep tech projects in five areas. They are in the categories of indigenisation, futuristic and disruptive technology and cutting edge technology.

Reducing imports

While through indigenisation, the DRDO will seek to reduce dependence on imports of systems, sub-systems and components needed by the tri-services, by way of futuristic and disruptive technologies it will attempt at getting solutions to concepts that do not exist in India or even abroad, DRDO sources said.

Market inputs

The DRDO sought market inputs and had sessions with other stakeholders to decide on the five deep tech topics, informed sources. The details of projects, for which funding will be rolled out in

five tranches, will be published soon inviting interests from the industry. The successful bidder may get 90 per cent of the funding of the project cost.

Depending on the quality of response, the DRDO is open to giving chances to more than one successful participant, allowing them to come up with innovations that may require a long gestation period.

Though volume of funding would be project-specific, DRDO officials stated that normally a maximum of 20 per cent grant would be released in the first instalment and the remaining would follow on the basis of appraisals by an integrated team that will house, among others internal experts, outside experts, user experts, certifying agencies and qualifying experts.

<https://www.thehindubusinessline.com/news/national/drdo-to-fund-first-of-its-kind-5-deep-tech-research-for-military-use/article68686251.ece>

Defence News

Defence Strategic: National/International



Press Information Bureau
Government of India

Ministry of Defence

Thu, 26 Sep 2024

Adm Dinesh K Tripathi, Chief Of The Naval Staff On An Official Visit To Greece

Admiral Dinesh K Tripathi, Chief of the Naval Staff (CNS), is on a four day official visit to Greece from 26 to 29 Sep 24. This visit is part of ongoing efforts to further consolidate bilateral defence relations between India and Greece, with a focus on enhancing Naval Cooperation.

During the visit, the CNS will engage in bilateral discussions with senior Greek defence officials, including Mr Ioannis Kefalogiannis, Deputy Minister of Defence, Vice Admiral Dimitrios E Kataras, Chief of the Hellenic Navy General Staff (HGNS), Vice Admiral Christos Sasiakos, Deputy Chief of Hellenic National Defence General Staff.

The discussions are expected to cover a broad spectrum of defence cooperation areas, particularly maritime security, joint training initiatives, and exploring avenues for future operational collaboration between the two navies.

As part of his visit, Adm Dinesh K Tripathi shall be visiting the Salamis Bay, the base of the Hellenic Naval Fleet as well as the Hellenic Naval Academy. Through demonstrations and visits to Hellenic naval assets, the Hellenic Navy has planned to introduce Greece's naval capabilities and training methodologies to the CNS.

The Hellenic Navy Chief shall be hosting the Indian CNS onboard the renowned Georgios AVEROF, the Hellenic naval museum ship, offering him a glimpse into Greece's rich maritime history and naval heritage.

The visit underscores the strong naval relations between India and Greece, which include joint exercises, port visits, and capacity-building initiatives. Admiral Dinesh K Tripathi's engagements in Greece are expected to further strengthen the bonds of friendship and cooperation between the two navies, ensuring enhanced collaboration in areas of mutual interest.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2058940>

THE ECONOMIC TIMES

Thu, 26 Sep 2024

IAF will display its defence prowess, new aircraft over Marina sky on Oct 6: Official

The Indian Air Force will display its full defence prowess, especially air capability and also showcase its range of new aircraft including Rafale, in action at a breathtaking display over the Marina sky on October 6, as part of the 92nd IAF Day, Air Vice Marshal K Prem Kumar said here on Thursday.

Prem Kumar, who is the Chief Coordinating Officer of IAF Day parade Chennai 2024 to be held at Marina and Tambaram, said 72 aircraft will participate in the air display over Marina, which is open to the public.

"We have planned to create a unique record in the Limca Book of world records. We expect 15 lakh people for the event on October 6 from 11 am to 1 pm," he told reporters here. There would be a full dress rehearsal on October 4 in coordination with the IAF Tambaram, he added.

"We will display our defence prowess and our air capability in total and one can see our new aircraft including Rafale, Suryakiran which is a formation aerobatic team, and Sarang which is a helicopter aerobatic team, in air display. I want Chennaites to come and witness and see the power of the Indian Air Force," he urged. The last such spectacle was carried out over Sangam area in Prayagraj on October 8, 2023.

In addition to these acclaimed teams, IAF will be showcasing flypast and aerial displays by a wide range of aircraft from its inventory, including the indigenously manufactured state of the art Light Combat Aircraft Tejas, Light Combat Helicopter Prachand and Heritage aircraft like Dakota and Harvard are also likely to take part.

<https://economictimes.indiatimes.com/news/defence/iaf-will-display-its-defence-prowess-new-aircraft-over-marina-sky-on-oct-6-official/articleshow/113707815.cms>

THE ECONOMIC TIMES

Thu, 26 Sep 2024

More patrolling points in Ladakh; access tough due to buffer zone

The number of patrolling points in eastern Ladakh along the Line of Actual Control with China have been increased to 72 from 65 to bolster security, official sources told ET, citing the recent process of disengagement.

Patrolling at various locations has been enhanced, and despite the tough weather conditions and terrain, Indian security forces are ensuring area domination, they said. The new patrolling areas have been identified following disengagement between Indian and Chinese troops between PP-04 and PP-65. While access to these new patrolling points is difficult due to the presence of a buffer between both the countries, sources said routes have been carved out to ensure effective patrolling.

Skirmishes and standoffs between Indian and Chinese forces have risen since 2013-14. The standoff in 2020 at Ladakh led to violent clashes, resulting in the death of 20 Indian soldiers, including a colonel.

"The security forces since then have been better equipped with newer technology, drones, infrastructure, better coordination among forces and the recent Centre's initiative for development of border villages along the LAC using Vibrant Village Programme (VVP)," said a senior official. On Tuesday, addressing an event in New York, external affairs minister S Jaishankar noted that "the main issue (with China) is patrolling". "When I said 75% of it has been sorted out, I was asked in a way to quantify. It's only the disengagement," Jaishankar said.

Region on the Chinese side, while the eastern sector is between Arunachal, Sikkim and the Tibet Autonomous Region on the Chinese side. Ladakh shares a 1,597-km-long border with China, followed by Arunachal (1,126 km). Indian Army, along with Indo-Tibetan Border Police, is deployed along the LAC.

In a report published in ET last year, citing one of the papers presented at the annual Intelligence Bureau (IB)- DGP conference, it was argued that patrolling by Indian forces is restricted or there has been "no patrolling" in as many as 26 of the 65 points, starting from Karakoram Pass to Chumur.

The disengagement achieved at PP-15 and 16 has resulted in loss of pasture lands at Gogra hills and in north bank, Kakjungareas.

https://m.economictimes.com/news/defence/more-patrolling-points-in-ladakh-access-tough-due-to-buffer-zone/amp_articleshow/113713260.cms

नवभारत टाइम्स

Thu, 26 Sep 2024

समंदर में बढ़ेगी भारत की ताकत, अगले 3 महीनों में नेवी को 4 नई वॉरशिप और एक सबमरीन मिलेगी

इंडियन नेवी को अगले तीन महीनों में चार नई वॉरशिप और एक नई सबमरीन मिल जाएगी। इसके साथ ही नेवी को एक सर्वे वेसल भी मिलेगा और डाइविंग सपोर्ट वेसल भी। कुल मिलाकर इन 8 शिप और सबमरीन में से एक शिप रूस में बन रहा है और बाकी सभी भारत के शिपयार्ड में ही बने हैं और टेस्टिंग के अलग अलग स्टेज में हैं।

नवंबर तक नेवी में शामिल हो सकता है तलवार

रूस में बन रहा तलवार क्लास के तीसरे बैच का पहला गाइडेड मिसाइल फ्रिगेट नवंबर तक इंडियन नेवी में शामिल हो सकता है। यह 3600 टन से ज्यादा वजन का है। इसमें 180 नौसैनिक 9000 किलोमीटर तक की यात्रा कर सकते हैं। यह फ्रिगेट ब्रह्मोस मिसाइल से लैस है।

इसी साल मिलेगा गाइडेड मिसाइल डिस्ट्रॉयर

इस साल के अंत तक विशाखापट्टनम क्लास का चौथा और आखिरी गाइडेड मिसाइल डिस्ट्रॉयर इंडियन नेवी में कमिशन हो जाएगा। यह डिस्ट्रॉयर 7400 टन वजन का है और इसमें ब्रह्मोस मिसाइल लगी हैं, जो लंबी दूरी तक मार करने वाली मिसाइल है। इसमें 32 बराक मिसाइल भी हैं जो 100 किलोमीटर दूर तक मार कर सकती हैं। साथ ही दुश्मन की सबमरीन से निपटने के लिए रॉकेट और टारपीडो भी हैं।

फ्रिगेट नीलगिरी भी नेवी में होगा शामिल

इंडियन नेवी को इसी साल नीलगिरी क्लास का पहला गाइडेड मिसाइल फ्रिगेट नीलगिरी भी मिलेगा, जिसका वजन 6670 टन है और इसमें आठ ब्रह्मोस मिसाइल लगी हैं। इसमें भी बराक मिसाइल, रॉकेट और टारपीडो लगे हैं। दुश्मन की सबमरीन को निशाना बनाने के लिए माहे क्लास की एंटी सबमरीन वॉरशिप का यह पहली वॉरशिप है जो नवंबर में नेवी में कमिशन होगा। यह समुद्र तट के पास कम गहरे पानी में सबमरीन का पता लगाने और उसे नष्ट करने में सक्षम है। इसमें टारपीडो के साथ आधुनिक सोनार सिस्टम लगे हैं।

कलवारी क्लास की सबमरीन भी होगी शामिल

कलवारी क्लास की छठी और अंतिम सबमरीन नवंबर में नेवी में शामिल होगी, जिसमें 43 लोग रह सकते हैं और यह सबमरीन 50 दिनों तक पानी के अंदर रह सकती है। यह सबमरीन एक बार में 12000 किलोमीटर तक की यात्रा कर सकती है। इसके अलावा समंदर के अंदर रिसर्च करने वाले संध्यायक क्लास के बड़े सर्वे वेसल का दूसरा शिप इस साल के अंत तक नेवी में शामिल होगा। साथ ही समंदर में संकटग्रस्त सबमरीन की सहायता के लिए डाइविंग सपोर्ट वेसल और डाइविंग सपोर्ट क्राफ्ट भी इस साल के अंत तक नेवी में शामिल हो जाएंगे।

<https://navbharattimes.indiatimes.com/india/indian-navy-will-get-4-new-warships-and-a-submarine/articleshow/113692493.cms>

In historic defence deal, India's Small Arms Factory to export 2,000 machine guns to Europe

In what is being hailed as a "major leap for India's defence sector", Small Arms Factory (SAF) in Kanpur, a unit of the Ordnance Factory Organisation under the Department of Defence Production, Ministry of Defence, will export advanced modified medium machine guns (MMGs) to European countries. This is the first time such an order will be delivered by SAF.

According to a News18 report, SAF received a major order for 2,000 MMGs, which will be delivered in the next three years.

The order was reportedly received a few months ago.

"The gun is being customised in accordance with the requirement of the buyer and the agreement, which was signed in December last year," the report quoted a SAF official as saying.

Designed for sustained fire in military operations, MMGs can fire upto 1,000 rounds per minute. The guns typically fire 7.62mm or .50 caliber ammunition and could be used in various platforms like vehicles, tanks, and aircraft.

The guns deliver sustained high rate of fire in bursts and fires from an open breech, preventing the risk of cook-off after prolonged use, and can also be used on a bipod or handheld for shoulder and hip firing in emergency situations, said an official, according to News18.

Their ability to offer continuous fire over long periods makes them effective in both offensive and defensive operations.

<https://www.theweek.in/news/defence/2024/09/26/in-historic-defence-deal-indias-small-arms-factory-to-export-2000-machine-guns-to-europe.html>



President Murmu visits Siachen base camp, tells soldiers all citizens salute their bravery

President Droupadi Murmu on Thursday visited the Siachen base camp and told soldiers posted at the world's highest battlefield that all citizens salute their bravery.

Addressing the troops, she said in difficult situations like heavy snowfall and minus 50 degrees temperature, they present extraordinary examples of sacrifice and tolerance in protecting the motherland.

The President said that as the supreme commander of the armed forces, she felt very proud of them and that "all citizens salute their bravery".

"They face severe weather conditions. In difficult situations like heavy snowfall and minus 50 degrees temperature, they remain deployed at their front with full devotion and vigilance. They present extraordinary examples of sacrifice and tolerance in protecting the motherland," Murmu said.

She told soldiers that all Indians are aware of their sacrifice and bravery and "we respect them", according to a statement issued by the Rashtrapati Bhavan. Dressed in Indian military uniform, Murmu also paid tributes at the Siachen War Memorial.

The Memorial, she said, is a symbol of the sacrifice of soldiers and officers who have been martyred since the Indian Army began Operation Meghdoot on the Siachen Glacier on April 13, 1984.

Under Operation Meghdoot, the Indian Army established its full control over the glacier. The President said since the commencement of Operation Meghdoot, "the brave soldiers and officers of the Indian armed forces have ensured the security of this region".

Lt Governor of Ladakh Brigadier B D Mishra had received President Murmu on her arrival at Thoise airfield. Murmu is the country's third president to have visited Siachen base camp, located in the Union Territory of Ladakh, the others being A P J Abdul Kalam and Ram Nath Kovind.

While Kalam visited in April 2004, Kovind went to the base camp in May 2018. The Siachen glacier is at a height of around 20,000 feet in the Karakoram mountain range. It is known as the highest militarised zone in the world where soldiers have to battle extreme cold, high winds and frostbite among other severe weather conditions.

<https://www.deccanherald.com/india/ladakh/president-murmu-visits-siachen-base-camp-tells-soldiers-all-citizens-salute-their-bravery-3207963>

The Tribune

Thu, 26 Sep 2024

India, US discuss efforts to co-produce jet engines, land mobility systems, munitions

Senior officials from India and the US met on Wednesday to discuss crucial defence-related issues, including the procurement of military equipment, technology transfer, and cooperation in the Indo-Pacific.

Foreign Secretary Vikram Misri, who took over in August, had his first meeting with US Deputy Secretary of Defence Kathleen Hicks. Among the key topics discussed was the delayed delivery of engines for the Tejas fighter jet, which India has requested the US to expedite.

The Tejas jets, manufactured by Hindustan Aeronautics Limited (HAL), are powered by General Electric's F404 engines. Delays in engine deliveries have, in turn, delayed the jets' delivery to the Indian Air Force (IAF). The first jets were originally scheduled to be delivered in March this year, but none have been handed over yet. The Ministry of Defence has set a target of producing 16 jets by the end of this financial year.

Additionally, India and the US are in talks to co-produce the F414 engine in India, intended for the next generation of Tejas jets.

A statement from the US Department of Defence, quoting Pentagon spokesperson Eric Pahon, confirmed that Misri and Hicks discussed ongoing efforts to co-produce jet engines, land mobility systems, and munitions.

Sources indicated that India is also looking to source Javelin anti-tank missiles and co-produce the Stryker land-use vehicle. Additionally, India is negotiating a deal to purchase 31 armed drones from the US.

Hicks and Misri emphasised strengthening the US-India defence partnership, with a focus on defence industrial cooperation, technology innovation, and operational collaboration.

In a post on X, Hicks stated, "I met with Indian Foreign Secretary Misri to discuss the significant momentum in the US-India defence relationship and our increased cooperation to support a free and open Indo-Pacific."

The Indian Embassy in the US also shared on X, stating, "Accelerating the momentum in the India-US Defence Partnership. Both sides applauded the growing depth and scope of the bilateral defence partnership and agreed to intensify discussions going forward."

India and the US continue to deepen their defence ties, particularly in the Indo-Pacific region. The Indian Army and US Army recently concluded the Yudh Abhyas exercise in India, and both nations, along with Australia and Japan, will participate in the Malabar exercise starting on October 8 in the Bay of Bengal.

Foreign Secretary Misri also met with Principal Deputy NSA Jonathan Finer to discuss the expanding India-US strategic partnership, including the Initiative on Critical and Emerging Technology (iCET). The iCET, steered by the National Security Advisers of both countries, covers multiple technology sectors such as space, semiconductors, defence, and artificial intelligence.

<https://www.tribuneindia.com/news/india/india-us-discuss-efforts-to-co-produce-jet-engines-land-mobility-systems-munitions/>

Business Standard

Thu, 26 Sep 2024

IAF and US Air force complete 2 day group meeting for enhanced cooperation

The Indian Air Force (IAF) and the US Air Force on Thursday completed the two-day Executive Steering Group Meeting (ESG). In a post on X, the IAF announced the successful conclusion meeting.

"Towards enhancing cooperation with the USA, the IAF successfully conducted the 25th edition of Indian Air Force-United States Air Force from September 24 to Sep 26. The visit by the USAF delegation led by Deputy Commander, Pacific Air Forces and the subsequent talks highlighted the close ties between the two countries and close cooperation between the two services," the IAF said in its post on X.

Earlier on August 30, Pacific Air Force units of USAF participated in exercise Tarang Shakti at Jodhpur Air Force Station. The exercise, which was broken into two phases to allow for optimum participation from 10 nations and 18 observing nations, is the largest multinational exercise India has held.

With an array of participants, the Indian Air Force led exercise aimed to foster diverse ties that strengthen cooperation within a myriad of capabilities such as counter air, reconnaissance, airlift, air defense and close air support.

The U.S. Air Force units and aircraft participating included the 25th Fighter Squadron's A-10 Thunderbolt II, the 148th Fighter Wing's F-16C Fighting Falcon, the 909th Air Refueling Squadron's KC-135 Stratotanker and the 139th Air Wing's C-130H Hercules.

These air frames and units enable da combination of close air support, combat airlift, aerial refueling and multirole fighter capabilities that accoutrement the array of multinational fighters, reconnaissance, airlift and attack aircraft crews and personnel participating. In June, as part of its ongoing partnership with the USAF, the IAF also participated in Exercise Red Flag 2024 at Eielson Air Force Base in Alaska from June 4 to June 14, 2024.

This advanced aerial combat training exercise brought together several international forces, including the Republic of Singapore Air Force, the Royal Air Force of the United Kingdom, the Royal Netherlands Air Force, and the German Luftwaffe.

For the first time, the IAF's Rafale aircraft joined the exercise, marking a significant milestone in India's participation in multinational combat training.

The IAF contingent, comprising aircrew, technicians, engineers, and subject matter experts, was supported by IL-78 Air to Air Refuellers and C-17 Globemaster aircraft for personnel and equipment transport. Despite facing challenging weather conditions and sub-zero temperatures, the IAF maintenance crew ensured the serviceability of all aircraft, enabling over 100 sorties during the exercise.

Key insights gained from Red Flag included enhancing interoperability with international partners and understanding operational employment philosophies in a multinational setting. The experience of ferrying long distances with air-to-air refuelling added invaluable lessons for the younger crew members.

https://www.business-standard.com/external-affairs-defence-security/news/iaf-and-us-air-force-complete-2-day-group-meeting-for-enhanced-cooperation-124092700156_1.html



Thu, 26 Sep 2024

Zen Technologies Unveils Next-Generation Remote Weapon Systems for Indian and Global Defence

Zen Technologies, a prominent player in the defence industry, has unveiled a series of advanced remote-controlled weapon and surveillance systems aimed at enhancing India's defence capabilities.

These innovations, developed in collaboration with AI Turing Technologies, mark a significant step in modernizing India's defence sector, in line with the country's 'Aatmanirbhar Bharat' initiative for self-reliance.

RCWS – 7.62 x 51 MMG (Parashu): Designed for versatility, Parashu is a remote-controlled weapon system integrated with advanced thermal imaging and anti-drone features. It can be mounted on vehicles and ships, making it highly adaptable for various combat scenarios and counter-UAV operations.

Tank Mounted RCWS – 12.7 x 108 HMG (Fanish): Tailored for heavy-duty tanks such as the T-72 and T-90, Fanish is a remote-controlled weapon system that enhances firepower with its 12.7 mm heavy machine gun. Its thermal targeting capabilities ensure precise performance in all weather conditions.

Naval RCWS – 12.7 x 99 HMG (Sharur): Sharur is built to strengthen naval defence. With its robust design and stabilization technology, it can accurately target threats, both aerial and surface-based, up to 2 kilometers away, even in low-visibility environments.

Artillery Rugged Camera (Durgam): This rugged surveillance camera system is designed for extreme conditions. Equipped with day/night vision technology, Durgam offers real-time detection of potential threats, making it ideal for high-risk zones and armoured vehicles.

“These systems, tailored for use across land, sea, and air platforms, reflect Zen Technologies' commitment to indigenous defence solutions. The company's innovations are positioned to meet the evolving needs of modern warfare while reducing risks for personnel,” Ashok Atluri, Chairman and Managing Director of Zen Technologies said.

Further he highlighted that these advanced systems not only boost operational efficiency but also “equip armed forces with cutting-edge tools while ensuring soldiers’ safety.”

According to him, the company has a strong history of contributing to India’s defence modernization. Their previous systems, including the Hawkeye and Prahasta, have already proven successful. “This new range further cements Zen’s role as a key player in both Indian and global defence markets,” a senior executive.

The new systems are expected to address emerging security challenges, particularly in the increasingly complex global defence landscape. Zen Technologies’ research and development, carried out at its Ministry of Science and Technology-recognized facility in Hyderabad, is a testament to its focus on innovation.

Patents

The company has filed over 150 patents and deployed more than 1,000 systems globally.

Zen’s latest offerings come at a critical time when the demand for advanced, indigenous defence solutions is growing, not only in India but also on the global stage. With these innovations, the company aims to further its mission of enhancing national security and contributing to the international defence ecosystem.

<https://www.financialexpress.com/business/defence-zen-technologies-unveils-next-generation-remote-weapon-systems-for-indian-and-global-defence-3622769/>

THEWEEK

Thu, 26 Sep 2024

US moves to dominate Indo-Pacific region as USS Preble armed with laser tech leaves for Japan deployment

In what is being seen as a show of strength by the US and its allies amid increasing tensions in the Indo-Pacific region, the guided-missile destroyer USS Preble has departed for Yokosuka naval base in Japan.

While the deployment of the Arleigh Burke-class missile destroyer is part of a scheduled rotation as it will replace USS Benfold (DDG 65), the US Navy said the forward presence of Preble directly supports the commitment of the US to aid Japan while improving its ability to protect strategic interests.

USS Preble is equipped with a high-energy laser weapon that can be used to shoot down drones and missiles.

A few months ago, the US Navy, in an official statement, had said, “The Arleigh Burke-class guided-missile destroyer USS Preble (DDG 88) will move to Yokosuka, Japan, as part of a scheduled rotation of forces in the Pacific.”

On Wednesday, the US Navy said, “Preble will directly support the Defense Strategic Guidance to posture the most capable units forward in the Indo-Pacific Region.”

The US Navy said it values the contributions of Japan to the peace and stability of the Indo-Pacific and its long-term commitment and hospitality in hosting the US forces forward deployed there.

Although the development may be routine, it is indeed a major development in the Indo-Pacific region, as it could be seen as part of the attempts by the US to outpace and outwit an increasingly assertive China in the region.

The US Navy said this move allows it to have “ the greatest amount of striking power and operational capability” in the region.

“The security environment in the Indo-Pacific requires that the U.S. Navy positions the most capable ships forward. This posture allows the most rapid response times for maritime and joint forces and brings our most capable ships with the greatest amount of striking power and operational capability to bear in the timeliest manner,” the Navy said.

The deployment coincides with the release of 'Project 33', a strategic initiative by the US to boost the readiness and capabilities of its Navy to counter potential threats, especially those emanating from China. The project intends to end maintenance delays, scale up robotic and autonomous systems, create command centres, recruit and retain talent, and invest in watertight competency among others.

“It is obvious that the US is placing strong priority on the Indo-Pacific region and making sure that it has the best assets in the right areas for the contingencies it might face. Put simply, the US wants its best weapons systems right on the front line,” defence security expert Ryo Hinata-Yamaguchi has been quoted as saying.

<https://www.theweek.in/news/defence/2024/09/26/us-moves-to-dominate-indo-pacific-region-as-uss-preble-armed-with-laser-tech-leaves-for-japan-deployment.html>



Thu, 26 Sep 2024

Project 33: U.S. Navy Unveils New Plan To Counter China; Bets Big On Robotic & Autonomous Capabilities

The United States Navy has unveiled a new strategic document aimed at countering China’s growing military presence in the Indo-Pacific region. The document emphasizes the need to prepare for a potential conflict with China by 2027, citing PLA’s possible plans to invade Taiwan that year. On September 19, the U.S. Navy unveiled a new strategic document focused on countering communist China’s aggression in the Indo-Pacific.

“The Chairman of the People’s Republic of China (PRC) has directed his forces to be prepared for war by 2027—our readiness will surpass theirs,” the document asserts. The Navy’s navigation plan outlines two key objectives: preparing for potential conflict with China by 2027 and strengthening its long-term strategic advantage. To achieve these goals, the Navy aims to implement Project 33 and enhance its role within the Joint warfighting ecosystem.

Project 33: Strengthening Navy Capabilities

Central to the Navy’s strategy is “Project 33,” an initiative outlined in the 2024 Navigation Plan (NAVPLAN) for America’s Warfighting Navy. Chief of Naval Operations Adm. Lisa Franchetti describes this as “overarching strategic guidance to enhance our Navy’s readiness.”

The Navy aims to integrate proven robotic and autonomous capabilities by 2027, with a focus on their practical application in warfare scenarios. The focus areas begin with addressing maintenance delays for ships, submarines, and aircraft. The next priority is scaling robotic and autonomous systems to quickly integrate more platforms.

Earlier this year, the Navy established a new role for drones and robotic warfare and commissioned a unit for unmanned operations in the Middle East.

Additional key areas include establishing command centers for success on a distributed battlefield, recruiting and retaining top talent, delivering quality service, investing in warfighter competencies, and restoring critical infrastructure that supports and projects power from shore.

China’s Taiwan Ambitions

The strategic document comes amid escalating tensions between China and Taiwan. Despite Taiwan’s de facto independence since 1949, China continues to view it as part of its territory and insists on eventual reunification, potentially by force.

Since Tsai Ing-wen of the Democratic Progressive Party (DPP) became Taiwan’s president in 2016, China has intensified its diplomatic and military pressure on the island. Tsai, along with DPP presidential candidate Lai Ching-te, advocates for Taiwan’s status as an independent state and rejects China’s claims.

Chinese state television recently aired a documentary series titled Quenching, offering a dramatic portrayal of a potential amphibious assault by the People’s Liberation Army (PLA) on Taiwan.

One episode featured a nationalistic display of military power, including drone operations, missile drills, and electronic warfare exercises, simulating an attack on Taiwan’s defenses.

Retired Rear Adm. Mike Studeman, former head of U.S. Navy intelligence, has warned that Chinese military forces are preparing for a potential invasion or blockade of Taiwan, possibly within the next decade.

According to a report by The Washington Times in April 2024, during discussions with Taiwan’s President Tsai Ing-wen, Vice President-elect Hsiao Bi-khim, and senior national security leaders, they expressed concerns over a Chinese invasion and the fear that the U.S. might “isolate and withdraw” from the international arena.

In June 2024, U.S. President Joe Biden indicated that he does not rule out using military force to defend Taiwan in the event of a Chinese invasion, reaffirming U.S. support for Taiwan's defense capabilities.

Naval Power Dynamics

China's naval capabilities have grown significantly in recent years. The U.S. would need robust naval capabilities to support Taiwan in a potential conflict with China, but it faces significant limitations. On the other hand, China's naval strength continues to grow.

A 2024 report by the U.S. Congressional Research Service revealed that China's navy surpassed the U.S. in the number of battleforce ships between 2015 and 2020.

With over 370 platforms, including submarines, amphibious ships, and aircraft carriers, China's fleet is projected to expand to 395 ships by 2025 and 435 by 2030. China currently operates two aircraft carriers—the Liaoning and Shandong—and in May 2024, its third carrier, the Fujian, began sea trials.

In contrast, the U.S. Navy has approximately 292 active battleforce ships, with projections indicating a fleet of 290 ships by 2030. This disparity highlights the growing naval power gap between the two nations.

US Navy's Strategic Challenges

The US Navy's recent strategic document outlines key challenges it faces: "The Navy must address fundamental issues—ship, submarine, and aircraft construction, recruitment, munitions production, software acquisition, infrastructure, and maintenance—while continuing to outpace adaptive adversaries."

The document stresses the urgency of integrating robotic and autonomous systems: "Nearer-term operational challenges demand that we integrate proven robotic and autonomous capabilities as soon as possible. We must do so with a focus on how we will use these systems in war. By 2027, we will integrate proven robotic and autonomous systems for routine use by the commanders who will employ them".

It further emphasizes that meeting all objectives in the Navigation Plan is essential to fielding the people and capabilities required to win in 2027 and beyond. The Navigation Plan emphasizes the importance of collaboration with Congress to secure critical supply chains and envisions maritime operations centers at every fleet headquarters.

"By 2027, the Navy will be prepared for sustained combat as part of a Joint and Combined force, prioritizing the PRC as the primary challenge and focusing on empowering the joint warfighting framework," the document noted.

As global tensions continue to rise, the U.S. Navy's strategic preparations underscore the complex and evolving nature of international maritime security in the Indo-Pacific region.

<https://www.eurasiantimes.com/project-33-u-s-navy-unveils-new-plan-to/>

Challenger To B-21 Raider, China Says ‘New Warplanes’ To Be Unveiled At Zhuhai Air Show; H-20 Debut Likely?

China is preparing to unveil “new warplanes” at its highly anticipated annual air show, showcasing its growing military capabilities. This announcement follows an unusual Intercontinental Ballistic Missile (ICBM) test conducted on September 25, which sent shockwaves throughout the Indo-Pacific region and beyond.

The People’s Liberation Army Air Force (PLAAF) announced on September 25 that it will unveil some of its latest warplanes at the Zhuhai Air Show, which is scheduled to take place in Zhuhai, Guangdong Province, from November 12 to November 17.

As the biggest biennial air show in the country, the event draws massive crowds of spectators who witness the impressive display of China’s military and commercial aircraft. Speaking at a press conference on September 25, Lieutenant General Yu Qingjiang, the Vice Commander of the PLA Air Force, announced that the newly developed warplanes would debut publicly in a flight demonstration at the upcoming air show, state-owned publication Global Times reported.

Yu stated that the PLAAF would showcase its capabilities in air combat, air strikes, unmanned and counter-unmanned warfare, strategic delivery and airdropping, early warning, and air defense using new equipment publicly displayed for the first time.

“We want to display the PLA Air Force’s capabilities and confidence in firmly defending national sovereign unity and territorial integrity and positively convey its vision and voice of safeguarding peace, openness for cooperation, and equal communication,” he said.

Although the official did not name the aircraft that will take to the skies at the Zhuhai Airshow, the announcement has triggered speculation that the country could showcase its next-generation aircraft and aero-engines. Chinese military aviation specialist Fu Qianshao told the publication that although there was much conjecture that the H-20 next-generation bomber might be revealed shortly, the strategic aircraft is not yet ready for public demonstration.

The development comes months after the PLA Air Force deputy commander, Wang Wei, stated that the much-awaited H-20 would be unveiled “shortly” without offering a timeline. The H-20 is believed to be an answer to the US B-21 Raider bomber, which has already entered low-rate production.

Nonetheless, the Chinese aviation expert mentioned equipment that could be displayed at the airshow, including the Y-20 fitted with newly produced domestic engines and unmanned stealth drones. Moreover, the expert highlighted that a new special operations aircraft and a medium-sized stealth fighter jet based on the FC-31 could be among the new aircraft on display at the show. While this observation does not represent the official stance of the PLAAF, it is significant as

China is reportedly testing a new stealth carrier-based aircraft derived from its FC-31 fifth-generation stealth fighter.

Besides the People's Liberation Air Force, the People's Liberation Army Navy and the People's Liberation Army will also participate in the air show.

Earlier this month, a documentary aired on China's state-owned broadcaster, CCTV, revealed that an unknown carrier-based fighter jet was tested aboard the People's Liberation Army Navy's (PLAN) first aircraft carrier, Liaoning. While the details remain shrouded in secrecy, there are rumors that the aircraft in question was the J-35, the carrier-based variant of the FC-31.

Fu pointed out that the FC-31 was exhibited in its original configuration at previous iterations of the airshow. He said it would be interesting to see any updated models make their public debut. According to media reports, there could be multiple FC-31 variants, such as land-based and carrier-based versions.

As the biennial air show is still over a month away, China's hints about the military equipment it will showcase at the event seem to be another demonstration of its military prowess and muscle flexing. This is especially noteworthy as it comes right after Beijing tested a long-range ICBM in the Pacific, which has sent shockwaves throughout the region.

China Tested An ICBM After 4 Decades

As tensions escalate in the Indo-Pacific region, China's Ministry of Defense (MoD) announced that the People's Liberation Army conducted a test of an intercontinental ballistic missile (ICBM) on September 25 in the Pacific Ocean. This marked China's first recorded ICBM test in 44 years. The missile, codenamed DF-41, entered service in 2017. It has an operational range of up to 12,000-15,000 kilometers. The country's latest known ICBM is designed to carry nuclear weapons and has a range of more than 5,500 kilometers.

The Chinese MoD said the PLA's Rocket Force launched an ICBM with a simulated warhead that "accurately landed in the predetermined sea area" on the high seas. "This missile launch is a routine arrangement of the rocket force's annual military training. It effectively tests the performance of weapons and equipment and the level of troop training," the ministry said.

The announcement added that "[It] achieved the expected purpose. China notified relevant countries in advance." Nonetheless, countries like Japan voiced dissatisfaction about not being notified about the test in advance.

The test is believed to be a signal to China's regional rivals and the United States, especially after a four-decade lull. Some observers noted that the missile test was televised, a significant departure from China's typical approach.

The test coincides with escalating tensions in the South China Sea between China and the Philippines, and increased PLA military activity in the East China Sea and the Taiwan Strait. The ICBM was launched in a show of military power just hours after US President Joe Biden addressed the UN, highlighting responsibly managing competition with China.

<https://www.eurasiantimes.com/challenger-to-b-21-raider-china-says-new/>



Press Information Bureau
Government of India

Ministry of Science & Technology

Thu, 26 Sep 2024

Vice President of India inaugurates 83rd Foundation Day Celebrations of Council of Scientific and Industrial Research

The Council of Scientific and Industrial Research (CSIR) proudly celebrated its 83rd Foundation Day today. While addressing the event, the Vice President of India, Shri Jagdeep Dhankhar said, “It is CSIR’s Foundation Day, but it is integrally connected with the firm foundations of Bharat. You are firming up those foundations of the most vibrant and functional democracy on the planet. You are firming up the foundations of a nation that is on the rise as never before, and the rise is unstoppable”.

The Vice President of India, Shri Dhankhar also termed CSIR as “Catalyst for Scientifically Imaginative Rashtra”. He appealed for the establishment of Standard Operating Procedures (SOPs) to ensure that investments in human resources and institutions are directed towards authentic and impactful research.

The Union Minister of State (Independent Charge) for Science and Technology, Minister of State (Independent Charge) for Earth Sciences, MoS PMO, Department of Atomic Energy and Department of Space, MoS Personnel, Public Grievances and Pensions, Dr. Jitendra Singh, said, “CSIR plays a vital role in making India a global leader in science by promoting women in science, driving economic growth, and ensuring innovations benefit society. Through its initiatives, CSIR contributes to the Viksit Bharat @2027 vision by fostering indigenization.”

The Union Minister Dr. Jitendra Singh further added that CSIR is a National Treasure for all of us and true changemaker of our time. He congratulated CSIR on its 83rd Foundation Day and in making our country proud in various R&D breakthroughs like green hydrogen technology and agriculture-based start-ups that are changing the lives of farmers and common people. The lavender farming has transformed the landscape of Jammu and Kashmir, making it a hub for Agri-based entrepreneurship.

The Director General of CSIR, Dr. N. Kalaiselvi in her welcome address emphasized on the contributions and commitments of CSIR for the vision of making India a developed nation in 2047. She informed that CSIR has organized a leadership conclave to take up recommendations of the visionary leaders and make it our roadmap.

The Principal Scientific Adviser to the Government of India Prof. Ajay Kumar Sood quoted a valuable thought of India's former President late Dr. A.P.J. Abdul Kalam, "Economic Development is powered by competitiveness. The Competitiveness is powered by knowledge. Knowledge is powered by technology and innovation". He further added that technology and innovation are powered by fundamental science.

CSIR Foundation Day Lecture was delivered by Dr. K. Radhakrishnan, former Chairman, ISRO. He spoke on the topic of "Team excellence and Indian space odyssey". He explained how Indian space research grown with team excellence and perseverance for achieving success in all space missions of the country.

A book titled "Innovation Trailblazers: The leadership legacies of CSIR" was released at the 83rd Foundation Day. The winners of CSIR Energy saving campaign, were felicitated in which CSIR-CGRI secured first prize, CSIR-CECRI secured second prize while CSIR-CSMCRI secured third prize.

This year's celebration was particularly special, as the Vice President of India had inaugurated the "Thematic Exhibition on CSIR for Viksit Bharat @2027" at the National Agricultural Science Complex (NASC) in New Delhi. In the Thematic Exhibition on CSIR for Viksit Bharat @2027, several CSIR laboratories showcased their technologies on various themes aligned with the #OneWeekOneTheme Campaign. Dr. G. Mahesh, Chief Scientist and Coordinator of the CSIR Foundation Day Celebrations 2024, proposed the vote of thanks.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2059252>



Thu, 26 Sep 2024

Could rotating black holes be the wind turbines powering the distant future?

Black holes are mysterious objects – there's a lot we don't know about them. One longstanding question has been whether rotating black holes, which are so powerful they drag space-time along with them, could be used as an energy source.

The physicist Roger Penrose suggested that, if an object fell into a rotating black hole in such a way that it split – with one part escaping – the part that left should effectively gain energy from the black hole.

So if we sent objects or light towards a rotating black hole, we may be able to get energy back. It's difficult to directly prove all this, however. But we have recently published our second study, in Nature Communications, experimentally verifying a more general theory behind it. This theory concerns all rotating objects that can absorb matter or radiation, and a black hole is, in essence, just a very big and effective absorber.

The idea dates back to 1971 and the Soviet physicist Yakov Zel'dovich. Generalising Penrose's idea, he predicted something very simple. If you take a cylinder that absorbs energy from waves, and you spin it, then it should actually spend its own energy to amplify some waves (boosting their energy).

This would apply to waves that possessed their own inherent rotation (known as angular momentum) in the same direction as the cylinder and had a low enough frequency with respect to the cylinder's rotation rate. Zel'dovich's proposal in turn inspired Stephen Hawking's famous idea that black holes should slowly radiate their energy away by amplifying photons from the quantum vacuum.

Tricky experiment

Despite the simplicity of the Zel'dovich effect and its key relation to fundamental physics, this effect had not been directly tested until recently. Zel'dovich's condition for amplification was general, but his description of a hypothetical system that could show such an effect was quite specific.

It involved waves travelling in free space (at the speed of light) with a type of angular momentum known as OAM, short for orbital angular momentum, (meaning the light beams were twisted) and hitting a rapidly rotating cylinder.

But this suggested that the amplification effect would be tiny, because unless the cylinder could rotate at a speed comparable to that of light – a construction that would be mechanically impossible today – the OAM waves that could meet the condition would be spread over an area so large that the cylinder would be in (what Zel'dovich termed) a “non-wave zone” – it would barely interact with the waves at all. Due to this, it was wrongly thought to be basically unobservable in experiments.

Hard proof

That is until we realised that the effect should also occur in sound waves, which travel much slower than the speed of light. Using sound waves with orbital angular momentum, in 2020 we showed Zel'dovich amplification for the first time in an experiment. After showing the effect existed in one system, we thought an electromagnetic version might not be so hard after all.

We were able to remove the previous limitations by trapping the electromagnetic wave in a resonant circuit, rather than in free space. The oscillating waves in our single circuit didn't have orbital angular momentum, but contained another type of angular momentum, termed “spin”. With this circuit, we could funnel the oscillating magnetic part of the wave through a small area where we placed a rotating aluminium cylinder. We then measured how the power in the circuit changed with the cylinder rotation speed.

If the cylinder was absorbing the field, it acted as a normal positive resistance in the circuit, draining the power. If it was amplifying the field, it acted as a negative resistance – as a power source. We found that the amplification of the field by the cylinder was exactly as predicted by Zel'dovich's condition – meaning we had proven the effect in electromagnetic waves for the first time. In trying this experiment we also found something unexpected.

The way this cylinder creates a negative resistance and amplifies the surrounding circuit when it spins fast enough is very similar to the way that wind turbines generate energy. Inside a wind turbine is an induction generator, where an alternating current is sent in to create a rotating magnetic field around the rotor. And when the rotor blades spin faster than the surrounding rotating magnetic field, the current is amplified, and energy is generated.

While there is also other physics involved in modern induction generators, it is still astonishing that all the ingredients for proving the Zeldovich effect with electromagnetism were hiding in plain sight for so long. This link we discovered to induction generators will enable us to optimise these electromagnetic experiments to test the Zel'dovich effect further, leaning on the many years of engineering that have gone in to making motor and generator technology better. Perhaps the knowledge of this link to the Zel'dovich effect will also go the other way, providing engineers with a new physics perspective to harness for energy generation.

This experiment, showing the Zel'dovich effect is present in electromagnetism, also unlocks the potential to see the effect on a quantum level. Quantum theory tells us empty space is not empty – it has some fluctuations. Any amplification effect should also be able to amplify such energy fluctuations into real photons – creating matter out of a quantum field. This would mean that a rotating cylinder, even in the absence of all other forces, would gradually slow down due to this process.

As for black holes, the implications are exciting. Perhaps in the future, harnessing the rotation of black holes could be used to power technology or spaceships. Some have proposed conditions that would create a runaway energy generation effect termed a “black hole bomb”. With improvements to our experiment, we hope to also test this runaway amplification for the Zel'dovich effect.

<https://www.thehindu.com/sci-tech/science/could-rotating-black-holes-be-the-wind-turbines-powering-the-distant-future/article68684981.ece>

