

मार्च

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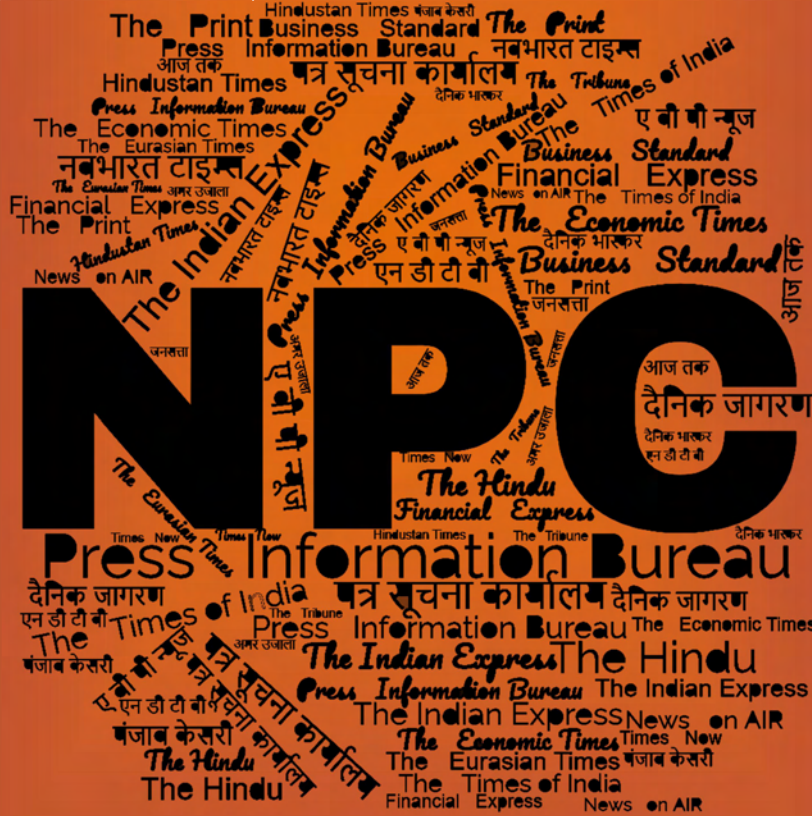
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समाचार पत्रों से चयित अंश Newspapers Clippings

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

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology



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DRDO News

DRDO Technology News



Press Information Bureau
Government of India

Ministry of Defence

Thu, 16 Mar 2023

Two-day Workshop on ‘Human Factors Engineering in Military Platforms’ Organised by DRDO Concludes in New Delhi

The two-day workshop on ‘Human Factors Engineering in Military Platforms’, organised by Defence Research & Development Organisation (DRDO) in New Delhi, concluded on March 16, 2023. The workshop was organised by Defence Institute of Physiology and Allied Sciences, a DRDO laboratory, to address the need and future roadmap for implementation of Human Factor Engineering in product life cycle of indigenous products.

At the end of two days of deliberations by stakeholders from Armed Forces, CAPF, Industry and DRDO, a panel discussion was chaired by Scientific Advisor to Raksha Mantri Dr G Satheesh Reddy. Secretary Department of Defence R&D and Chairman DRDO Dr Samir V Kamat; DG Armoured Corps Lt Gen Karanbir Singh Brar; DG ITBP Shri Anish Dayal; ADG Infantry; ADG, Army Design Bureau; ADG, Warship Design Bureau; Director Generals of DRDO and senior officials from Tata Advanced Systems Limited (TASL), Larsen & Toubro (L&T), MKU, Hindustan Aeronautics Limited (HAL), Mazagon Dock Shipbuilders Limited and Hindustan Shipyard Limited (HSL) were also present.

Recommendations related to inclusion of chapter on Human Factors Engineering (HFE) in design document for all indigenous products and formulation of policy with the involvement of users were made. Generation of Anthropometry database of Indian soldiers and creation of Indian Standards were emphasised by all the panel members.

The Scientific Advisor to Raksha Mantri suggested inclusion of Human Factors Engineering (HFE), as desirable parameters in Preliminary Services Qualitative Requirements (PSQRs). DIPAS has been entrusted with the responsibility to drive implementation of HFE through interaction with stakeholders and formulation of required policies and standards. The DRDO Chairman emphasised that inclusion of HFE in design and development of indigenous products will be a leap forward towards realising the vision of ‘Aatmanirbharta’ in Defence.

<https://pib.gov.in/PressReleaseDetailm.aspx?PRID=1907743>

India's High-speed Expendable Aerial Target Abhyas to soon have only One Rocket Booster: DRDO

Soon, there will be only one rocket booster on the indigenously developed High-speed Expendable Aerial Target (HEAT), Abhyas, officials from Defence Research Development Organisation (DRDO) confirmed on Thursday.

Rocket boosters provide the additional thrust needed for the aircraft to launch.

The aerial target aircraft, Abhyas, is presently launched using twin boosters which provide the initial acceleration to the air vehicle. The aircraft is indigenously developed by DRDO's Bengaluru-based laboratory, Aeronautical Development Establishment (ADE). Abhyas offers a realistic threat scenario for practice of different weapon and missile systems used by the armed forces. It is designed to meet the Army and the Air Force requirements of artillery practice, air to air combat and battleship target practice.

"Presently, Abhyas is using two 68 mm rocket boosters. Based on the request from the user agencies in the Army and the Air Force, we are working to come up with one rocket booster for better efficiency. There will be other small changes which will be made to Abhyas which are confidential. Abhyas can be used as a decoy during operational missions. It can simulate a range of aircraft and missiles or other visual threats which the Army and the Air Force can use for target practice," a source in DRDO told indianexpress.com.

The source added, "Abhyas is indigenously developed by ADE. While one system of Abhyas costs around Rs 40-50 lakh, the imported ones which India gets cost Rs 1 crore. The demand for aerial targets is huge in the international market and India spends a lot on importing aerial target drones/aircraft. Once this is inducted, we will save a lot."

Abhyas was successfully flight-tested from the Integrated Test Range (ITR), Chandipur off the coast of Odisha on June 29, 2022. In 2021, Hindustan Aeronautics Limited had secured an order for manufacturing, assembly, integration, testing and supply of Abhyas.

<https://indianexpress.com/article/cities/bangalore/india-high-speed-expendable-aerial-target-abhyas-rocket-booster-drdo-8501687/>



Ramjet Technology: India's Impressive Progress and the Future of Aerospace

India's quest to become self-reliant or Atmanirbhar has seen the country make significant strides in the development of cutting-edge aerospace technology. One area of particular focus has been ramjet engines, which have the potential to revolutionize the aerospace industry.

About Ramjet Engines

Ramjet engines are a type of jet engine that differs from traditional engines in that they use the forward motion of a vehicle to compress incoming air, which is then burned with fuel in the compressed air without the need for rotating compressor blades. They operate only when the vehicle is travelling at high speeds, typically supersonic speeds, and are suitable for use in applications that require high speeds, such as missiles and some experimental aircraft. However, their efficiency is limited to high speeds, and they require additional systems to start and sustain combustion.

Despite their limitations at lower speeds, ramjet engines are simple in design and have no moving parts, making them lightweight and easy to maintain. They have the potential to be used in a wide range of applications, including hypersonic weapons, air-breathing propulsion systems, and space vehicles.

India's own Ramjet Engine

India's progress in ramjet engine development is impressive, with the country successfully testing a solid fuel ducted ramjet (SFDR) engine in 2021. The C is designed to be used in missiles and can reach speeds of up to Mach 3.5, demonstrating India's commitment to developing cutting-edge aerospace technology. However, this is one of the 55 high priority projects under Defence Research and Development Organisation (DRDO) which have failed to meet the project deadline.

In March 2021, India successfully conducted a flight demonstration utilising the Solid Fuel Ducted Ramjet (SFDR) technology at a defence facility located near the Odisha coast. During the test, a prototype of an air-to-air missile, which utilizes the SFDR technology, was launched from the Integrated Test Range (ITR) to assess the system's performance. Following this, the nozzle-less booster was ignited, which increased acceleration to reach the required Mach number for ramjet operation.

The development of the engine, which is still in the early stages has the potential to revolutionise the aerospace industry, but there is still much work to be done. India will need to continue investing in research and development to make this technology a reality.

Update

In a written reply to a question in the Rajya Sabha earlier this week minister of state for defence Ajay Bhatt had said that nine of the 23 projects of DRDO have undergone cost overruns. According to him "not all cost overruns were necessitated due to time overruns."

Adding that DRDO's 55 high-priority projects could not meet the deadlines, and these include solid fuel ducted ramjet technology, surface-to-air missiles, anti-ship missiles, long-range radars, combat vehicles, anti-air field weapons, combat suits for submarines, high endurance autonomous underwater vehicles, and submarine periscopes, etc.

<https://www.financialexpress.com/defence/ramjet-technology-indias-impressive-progress-and-the-future-of-aerospace/3011785/>

Defence News

Defence Strategic : National/International



Press Information Bureau
Government of India

Ministry of Defence

Thu, 16 Mar 2023

Seminar on Emerging Disruptive and Futuristic Technologies

In keeping with the requirement of staying ahead of the curve in the field of military technology, Base Repair Depot (BRD), Palam organized a seminar on ‘Emerging Disruptive and futuristic Technology and their Application in Military Domains’ on 16 Mar 23 at New Delhi. Held under the aegis of Maintenance Command of the Indian Air Force, the chief Guest of the event was Air Marshal Vibhas Pande AVSM VSM, AOC-in-C, Maintenance Command. The event was also graced by Director Gen (Aircraft), Assistant Chief of Air Staff Engineering (A), Assistant Chief of Air staff (MP) from Air Headquarters and many other eminent and distinguished guests from not only the IAF but also from sister services, academia/DPSUs and civil agencies. After the Welcome address Air Cmde SS Rehal, AOC BRD, Palam, Air Marshal Vibhas Pande AVSM VSM inaugurated the seminar and delivered the key note address. He said “Digitization is the most disruptive technology that has happened to this world”, and, “For all the disruptive and futuristic technologies, interconnection is of utmost importance to use them effectively for our military applications”.

The first session of the seminar, with the theme “Interconnection and Decentralized Decisions” was chaired by AVM PS Sarin, Assistant Chief of Air Staff Engineering (A). This session was aimed at understanding the nature of emerging, disruptive and future technologies and their application in the Armed Forces. Gp Capt Vikas Dhankar was the first speaker who spoke on “Understanding Emerging Disruptive Technologies for Utilization in Future Warfare”. Prof Jaijit Bhattacharya, President of Center for Digital Economy Policy Research thereafter spelt out the “Strategic Options for Indian Defence Forces in the Emerging Futuristic Technologies and Autonomous Systems”. The topic of “Leveraging IoT/IoP within the Constraints of IW/Cyber Requirements in the IAF” was covered by AVM (Dr) D Vatsa (Retd) who is the Advisor of Cyber Security and Critical Technologies, Data Security Council of India, NASSCOM. Ms Shimona Mohan, Research Assistant in the Center for Security, Strategy and Technology at the Observer research Foundation thereafter dwelled on “Effective and Ethical Military AI and Challenges in Maintenance of AI Weapon Systems”.

The second session of the seminar themed “Technology Assistance and Common Consciousness” chaired by AVM SK Jain, Assistant Chief of Air staff (MP) sought to bring the

requirements of the Armed Forces and the capabilities of the defense manufacturing ecosystem into unison. Mr Yogesh J Inamdar, Associate Vice President and Head of IoT and Automation, Digital Manufacturing, Bharat Forge Ltd set the ball rolling by elucidating on “Industry 4.0 – How it can Revolutionize Manufacturing and Product Distribution in the Defense Sector”. Thereafter, Smt Hemavathy M, Principal Scientist, Central Research Laboratory, BEL spelt out “BEL’s Vision for Indian Defence Forces in general and IAF in Particular with Focus on Block Chain Technology”. Gp Capt Manish Chand from the IAF’s Unit for Digitisation, Automation, Artificial Intelligence and Application Networking thereafter spoke on the IAF’s experiences with “Operational Decision Support System using Intelligent Automation”.

The seminar thus focused on bringing experts of various varied technological fields under one platform with the aim of looking at ways on usage of technology as a force multiplier for the Indian Armed Forces. The colloquium holds significance since it was a unique effort on looking at the ways to revolutionize the Indian Armed Forces war waging capabilities and operational readiness with the support and involvement of our indigenous Defence Manufacturing ecosystem in keeping with the clarion call of “Atma Nirbar Bharat”.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1907707>



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Ministry of Defence

Thu, 16 Mar 2023

Exercise La Perouse – 2023

Indian Navy’s indigenously built guided missile frigate, INS Sahyadri and fleet tanker, INS Jyoti participated in the third edition of the multilateral exercise La Perouse conducted from 13 - 14 March 2023. The exercise was conducted in the Indian Ocean Region, and was aimed at enhancing maritime domain awareness and optimising maritime coordination amongst the participating navies in the Indo-Pacific Region.

In addition to Indian Naval ships, the exercise witnessed participation of HMAS Perth from the Royal Australian Navy, FS Dixmude and FS La Fayette from the French Navy, JMSDF ship Suzutsuki from Japanese Maritime Self Defence Force along with Type SH 60 J Helicopter, HMS Tamar from the Royal Navy and USS Charleston the the United States Navy. The two day exercise provided all the participating navies an opportunity to undertake complex and advanced naval operations involving replenishment at sea, surface warfare drills, anti-air and air-defence exercises, cross deck helicopter operations and tactical manoeuvres in a joint manner suitable for seamless maritime operations.

INS Sahyadri, is an indigenously designed and built guided missile stealth frigate fitted with state-of –the art weapons and sensors, which makes her capable of detecting and neutralising air, surface and sub-surface threats. INS Jyoti is a fleet tanker capable of providing prolonged sustenance at sea to the fleet. Both the ships are a part of Indian Navy’s Eastern Fleet based at

Visakhapatnam and function under the operational command of the Flag Officer Commanding-in-Chief, Eastern Naval Command.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1907594>



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Ministry of Defence

Thu, 16 Mar 2023

Exercise Sea Dragon 23

A P8I aircraft of the Indian Navy arrived at Guam, USA on 14 Mar 23 to participate in 'Exercise Sea Dragon 23', the third edition of the coordinated multi-lateral ASW exercise for Long Range MR ASW aircraft, conducted by the US Navy.

The exercise scheduled from 15-30 Mar 23, would stress on coordinated anti-submarine warfare amongst the participating countries. The complexity and scope of these exercises has increased steadily over the past years to include advanced ASW drills.

Ex Sea Dragon 23 will test the capabilities of participating aircraft in tracking simulated and live underwater targets, whilst also sharing mutual expertise. The Exercise would witness representation by an Indian Navy P8I, along with P8A of the US Navy, P1 from the Japanese Maritime Self Defence Force, CP 140 from the Royal Canadian Air Force and P3C from the RoKN.

The Exercise aims to achieve high levels of synergy and coordination between the friendly navies, which is based on their shared values and commitment to an open, inclusive Indo-Pacific.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1907414>



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Thu, 16 Mar 2023

रक्षा अधिग्रहण परिषद ने सशस्त्र बलों और भारतीय तटरक्षक के लिए खरीदें (भारतीय-आईडीडीएम) श्रेणी के तहत 70,500 करोड़ रुपये के प्रस्तावों को मंजूरी दी

भारतीय नौसेना के लिए ब्रह्मोस मिसाइल, शक्ति ईडब्ल्यू सिस्टम और यूटिलिटी हेलीकॉप्टर-समुद्री से संबंधित 56,000 करोड़ रुपये के प्रस्तावों को मंजूरी दी गई

भारतीय वायु सेना के लिए लॉन्ग रेंज स्टैंड-ऑफ वेपन को मंजूरी मिली, इसे एसयू-30 एमकेआई विमान पर एकीकृत किया जाएगा

भारतीय सेना के लिए उच्च गतिशीलता और गन टोइंग वाहनों के साथ 155 मिलीमीटर/52 कैलिबर एटीएजीएस की खरीद की जाएगी

भारतीय तटरक्षक को एचएएल से उन्नत हल्के हेलीकॉप्टर एमके-III प्राप्त होगा

वित्तीय वर्ष 2022-23 में 2.71 लाख करोड़ रुपये से अधिक की खरीद को मंजूरी दी गई, इसमें 99 फीसदी भारतीय उद्योगों से प्राप्त किया जाना है

रक्षा मंत्री श्री राजनाथ सिंह की अध्यक्षता में 16 मार्च, 2023 को रक्षा अधिग्रहण परिषद (डीएसी) की बैठक आयोजित हुई। इस बैठक में खरीदें- भारतीय आईडीडीएम (स्वदेशी रूप से डिजाइन, विकसित और निर्मित) के तहत 70,500 करोड़ रुपये से अधिक की पूंजी अधिग्रहण के लिए आवश्यकता की स्वीकृति (एओएन) को मंजूरी प्रदान की है। इन कुल प्रस्तावों में से भारतीय नौसेना के लिए 56,000 करोड़ रुपये से अधिक के प्रस्ताव हैं। इनमें बड़े पैमाने पर स्वदेशी ब्रह्मोस मिसाइल, शक्ति इलेक्ट्रॉनिक वारफेयर (ईडब्ल्यू) प्रणाली, यूटिलिटी हेलीकॉप्टर-मैरीटाइम आदि शामिल हैं।

ब्रह्मोस मिसाइल प्रणाली की यह अतिरिक्त खरीद समुद्री हमले की क्षमताओं और एंटी-सरफेस वारफेयर ऑपरेशन को आगे बढ़ाएगी। वहीं, अतिरिक्त यूटिलिटी हेलीकॉप्टर खोज व बचाव कार्यों, घायलों को बाहर निकालने, मानवीय सहायता आपदा राहत (एचएडीआर) आदि के क्षेत्र में भारतीय नौसेना की परिचालन तत्परता में बढ़ोतरी करेगा। इसी तरह, शक्ति ईडब्ल्यू प्रणाली दुश्मनों के किसी भी ऑपरेशनों से निपटने में नौसेना के अग्रिम पंक्ति के पोतों को सक्षम और आधुनिक बनाएगी।

मेक-1 श्रेणी के तहत मध्यम गति समुद्री डीजल इंजन के लिए एओएन की मंजूरी एक महत्वपूर्ण कदम है, क्योंकि पहली बार भारत 'आत्मनिर्भर भारत' के लक्ष्य की दिशा में आत्मनिर्भरता प्राप्त करने और उद्योगों की क्षमताओं का लाभ उठाने के लिए स्वदेशी रूप से ऐसे इंजनों के विकास और निर्माण का उद्यम कर रहा है। सरकार ने उभरती प्रौद्योगिकियों के साथ समन्वय रखने और पश्चिमी व उत्तरी मोर्चे पर दुश्मनों का मुकाबला करने के लिए नए हथियारों की जरूरत और वितरण मंचों के साथ इसके एकीकरण की जरूरत महसूस की। इन उद्देश्यों को प्राप्त करने के लिए डीएसी ने लॉन्ग रेंज स्टैंड-ऑफ वेपन (एलआरएसओडब्ल्यू), जिसे एसयू-30 एमकेआई विमान पर स्वदेशी रूप से डिजाइन, विकसित और एकीकृत किया जाएगा, के लिए भारतीय वायु सेना के प्रस्ताव को स्वीकृति दी है।

डीएसी ने भारतीय सेना के लिए तोपखाना (आर्टिलरी) आधुनिकीकरण को लेकर मौजूदा धनुष गन प्रणाली और के-9 वज्र-टी गन प्रणाली के अलावा 155मिलीमीटर/52 कैलिबर एडवांस्ड टोपड आर्टिलरी गन प्रणाली (एटीएजीएस) के साथ-साथ हाई मोबिलिटी व्हीकल (एचएमवी) और गन टोइंग वाहनों (जीटीवी) की खरीद के लिए एओएन को मंजूरी प्रदान की है। इसके अलावा परिषद ने भारतीय तटरक्षक के लिए हिंदुस्तान एयरोनॉटिक्स लिमिटेड (एचएएल) से उन्नत हल्के हेलीकॉप्टर (एएलएच) एमके-III की खरीद के लिए भी एओएन को मंजूरी दी है। यह हेलीकॉप्टर निगरानी सेंसरों के एक समूह को ले जाने में सक्षम होगा, जो निगरानी क्षमताओं में बढ़ोतरी करेगा। इसके अलावा यह भारतीय तटरक्षक के ऑपरेशनों के लिए पूरी रात की क्षमता और साधन उड़ान नियम (आईएफआर) क्षमता भी प्रदान करेगा। आज के प्रस्तावों सहित वित्तीय वर्ष 2022-23 में पूंजीगत अधिग्रहण के लिए स्वीकृत कुल एओएन 2.71 लाख करोड़ रुपये से अधिक के हैं, जिसमें से 99 फीसदी खरीद भारतीय उद्योगों से की जाएगी। इतनी बड़ी मात्रा में स्वदेशी खरीद भारतीय उद्योगों को 'आत्मनिर्भर भारत' के लक्ष्य को प्राप्त करने की दिशा में प्रेरित करेगी।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1907838>

ThePrint

Thu, 16 Mar 2023

Made-in-India ATAGS, BrahMos, Choppers: Modi Govt Clears Defence Acquisitions worth Rs 70,500 cr

The Ministry of Defence (MoD) Thursday gave initial clearance to key acquisition projects worth Rs 70,500 crore, including the much-awaited procurement of 307 Advanced Towed Artillery Gun Systems (ATAGS) and 60 indigenous marine utility helicopters.

The Defence Acquisition Council (DAC), that met under the chairmanship of Defence Minister Rajnath Singh, accorded Acceptance of Necessity (AoN) for capital acquisition amounting to over Rs 70,500 crore under Buy Indian-IDD (Indigenously Designed, Developed and Manufactured) — a new category of procurement.

A statement by the defence ministry said that out of the total proposals, Indian Navy proposals constitute more than Rs 56,000 crore, largely including indigenous BrahMos missiles, Shakti electronic warfare systems, utility helicopters for maritime operations, among others.

The BrahMos missiles being acquired are the extended range ones, sources in defence establishment said. However, the most significant clearance is that of the utility helicopters, which the defence ministry said will multiply the Navy's operational readiness in the domain of search & rescue operations, casualty evacuation, humanitarian assistance disaster relief, among others.

This effectively means that the Navy’s plan to acquire 111 naval utility helicopters (NUH) under the strategic partnership route, which will allow a selected foreign original equipment manufacturer (OEM) to partner with a nominated Indian company to manufacture the choppers domestically, goes for a toss.

Defence sources explained that the parameters of the helicopter to be supplied by Hindustan Aeronautics Limited (HAL) do not meet the criteria of the NUH programme fully and only half of the required strength is being procured.

“It is hoped that the HAL helicopter will eventually meet the NUH criteria in future. If not, then the Navy will pursue the original programme,” a source said.

ThePrint was the first to report way back in 2019 that the NUH programme had flown into rough weather with the HAL stepping in with its offer of an indigenous helicopter which did not meet the basic criteria of folding blades back then. The Navy and the private industry had objected to the HAL’s bid. The frontrunner in the NUH programme was the Airbus, which was offering the AS565 chopper back then.

ThePrint had also reported last year that the government would allow the HAL bid and the state-run entity was likely to get the order.

<https://theprint.in/defence/made-in-india-atags-brahmos-choppers-modi-govt-clears-defence-acquisitions-worth-rs-70500-cr/1447634/>



Thu, 16 Mar 2023

Droupadi Murmu Presents President’s Colour to INS Dronacharya

President Droupadi Murmu presented the President’s Colour on Thursday to INS Dronacharya, Indian Navy’s gunnery school at Fort Kochi.

Speaking on the occasion, she said that maritime strength remained critical to India’s strategic, military, economic and commercial interests. “For a nation like India, the fifth largest economy in the world, with a long coastline, island territories and substantial seafaring population, a strong and modern Navy is very important. A combat-ready, multi-dimensional and versatile Indian Navy has not only deterred our adversaries and safeguarded our maritime interests, but also enabled creation of a peaceful periphery to facilitate socio-economic growth, during the past 75 years.”

“The nation is proud of the Navy’s commitment in protecting the country’s maritime borders, securing trade routes and rendering assistance during calamities. Over the years, the Navy has developed significant capabilities to be a mission-deployed and response-ready force across the Indian Ocean Region, and be the ‘first responder’ to any contingency, in our maritime neighbourhood,” Ms. Murmu added.

She exhorted Navy personnel to keep themselves updated with the latest technological advancements and changing operational dynamics in the maritime domain.

Referring to her visit to INS Vikrant, the indigenous aircraft carrier, just before the President's Colour presentation function, she said it was a shining example of Atmanirbhar Bharat. She appreciated personnel of the Navy, Cochin Shipyard Limited, and others associated with the endeavour.

Apart from Indian Navy personnel, INS Dronacharya, a centre for excellence in gunnery and missile warfare, has trained Coast Guard, paramilitary and police forces, apart from naval personnel from friendly countries.

The President's Colour or the Nisham is considered the highest honour that the President bestows on a unit for exceptional service to the nation. INS Dronacharya is also the nodal centre for training Sagar Prahari Bal and the Navy's centre for training several Indian Ocean Region (IOR) nations in constabulary operations.

Governor Arif Mohammed Khan, Chief Minister Pinarayi Vijayan, and Chief of Naval Staff Admiral R. Hari Kumar were present on the occasion.

<https://www.thehindu.com/news/national/murmu-presents-presidents-colour-to-ins-dronacharya/article66627853.ece>



Fri, 17 Mar 2023

Modern Navy Key for India Security: President Murmu

President Droupadi Murmu on Thursday presented the President's Colour to INS Dronacharya, the gunnery school of the Indian Navy in Kochi. The President's Colour is bestowed upon a military unit in recognition of exceptional service rendered to the nation, both in peace and in war.

Speaking on the occasion, the President said maritime strength remains crucial to India's strategic, military, economic and commercial interests. "For a nation like India, the fifth largest economy in the world, with a long coastline, island territories and substantial seafaring population, having a strong and modern Navy is of very high importance," said the President.

She said for the last 75 years, a combat-ready, multi-dimensional and versatile Indian Navy has not only deterred our adversaries and safeguarded our maritime interests, but also enabled creation of a peaceful periphery to facilitate socio-economic growth. "The nation is proud of the Indian Navy's commitment to protecting our maritime borders." Murmu said.

The President said over the years, the Navy has developed significant capabilities to be a mission-deployed and response-ready force across the Indian Ocean Region.

"The country looks up to the Navy to protect our maritime interests. Our 'women and men in whites' would need to keep themselves updated with the latest technology advancements as well as changing operational dynamics in the maritime domain," she said.

<https://indianexpress.com/article/cities/thiruvananthapuram/ins-dronacharya-gets-presidents-colour-modern-navy-key-for-india-security-president-murmu-8502132/>

Two Pilots Killed after Army's Cheetah Helicopter Crashes near Arunachal's Bomdila; Probe Ordered

Two pilots were killed after an Army Aviation Cheetah helicopter, flying an operational sortie near Bomdila in Arunachal Pradesh, crashed on Thursday.

An investigation is being ordered to ascertain the cause of the accident, officials said.

Lt Col VVB Reddy and Major Jayanth A — pilot and co-pilot in the helicopter — were killed in the accident.

Lt Col Reddy, 37, is survived by his wife, a dental officer in the Army, and two daughters, aged four and six.

Major Jayanth, 35, is survived by his wife, who is based in Missamari, Assam, where he was posted. According to the Army, the helicopter is reported to have lost contact with the ATC around 9.15 am, and five search parties of the Army, SSB and ITBP were immediately launched. The wreckage of the aircraft was found near Banglajaap village, in Mandala.

A Court of Inquiry has been ordered to ascertain the cause of the accident, the Army said in a statement.

A Defence Ministry official told The Indian Express that the helicopter had taken off from Missamari and had picked up a senior Army officer near Bomdila. It was scheduled to travel close to forward areas near Tawang for a recce sortie. "However, as weather conditions deteriorated, the flight was cut short and the officer was dropped at Senge. The helicopter was returning to base when the mishap took place," an official said.

Another official said the chopper was flying downwards when it crashed. "While Cheetahs are ageing, they undergo routine maintenance. Only the inquiry would be able to ascertain the exact cause of the crash," the official said.

The region is characterised by difficult mountainous terrain, and the weather is often unpredictable, leading to helicopter-flying operations getting called off at times at the last moment due to poor visibility.

The Chetak and Cheetah helicopters in service with the forces form the lifeline in sea and extreme high-altitude areas — they play key roles of observation, surveillance, logistics support and rescue operations, and the IAF also uses them to train pilots in its flying schools.

Hindustan Aeronautics Limited has produced more than 275 Cheetahs and 350 Chetaks.

However, the single-engine helicopters outlived their lives over a decade ago and have been facing serviceability issues ever since.

Problems include obsolete avionics and navigation systems, which increases chances of mishandling of controls in case of disorientation in turbulent weather, which often is unpredictable in the hills.

The Army and the IAF have been flying the Chetak and Cheetah helicopters, which have been in dire need of replacement, as they form the lifeline of the forces in high-altitude areas. There are around 200 Cheetah and Chetak helicopters in service at present with the Army, and around 120 with the IAF.

Nearly 10 Chetak and Cheetah helicopters of the Army, Navy and the IAF have crashed between 2017 and 2022.

In March 2022, the government told Parliament that 42 Indian armed forces personnel have been killed in the last five years in 45 aircraft and helicopter crashes.

While the Armed Forces have been demanding modern helicopters to replace the Chetak and Cheetah fleet, the progress on their procurement has been extremely slow.

<https://indianexpress.com/article/india/cheetah-helicopter-army-crash-arunachal-pradesh-search-ops-underway-8501053/>

The Tribune

Fri, 17 Mar 2023

No Room for Grey Areas in Defence Allocations

Gp Capt Murli Menon (Retd)

The latest Stockholm International Peace Research Institute (SIPRI) report lists India as the world's top arms importer, accounting for 11 per cent of all such international imports between 2018 and 2022.

Saudi Arabia, China, Qatar and Australia are the other four main importers, followed by the US, Pakistan, Egypt, South Korea and Japan. This report, by itself, may not portray a holistic picture of the place defence occupies in the budgetary priorities of these nations or the efforts they are making to reduce their import bill.

President Joe Biden recently unveiled the breakdown of the US defence budget, pegged at around \$842 billion, and in a few years it is expected to touch \$1,000 billion. While the American security interests encompass heavy allocations for research and development, new areas of interest such as the Indo-Pacific Command and new ventures in space and nuclear technologies, India has its own requirements to meet the security challenges, situated as we are in a strategically volatile region, with neighbours none too friendly and just awaiting opportune moments to breach our security over land, sea and air.

The defence budget allocation for 2023-24 is Rs 5.94 lakh crore (just \$72.73 billion). The Chinese defence spending for the year is expected to be around \$225 billion, which gives us a comparative mosaic of the world's three leading strategic players.

Coming to Indian security imperatives, the need for substantial funding for defence procurements and servicing is reinforced by our overall security scenario. It used to be the opinion of the strategic community that our defence budget should be at least 3 per cent of our GDP. But the global and regional developments of late may call for an upward revision of this

ballpark, mainly as shown by the Ukraine war on one hand and China's attempts to unilaterally alter the Line of Actual Control (LAC) on the other.

Pakistan being in a deleterious economic predicament as of now, Indian defence planning has to be remodelled much more on the global scenario and India's strategic aspirations in the emerging order. Increased allocations for pay and allowances and pensions are inescapable. Even the Americans have made a 5 per cent raise in pay in this year's defence budget. India's peculiarities in security management include the low-intensity conflict requirements necessitated by the prevailing counter-insurgency situation, specifically in the North-East and against Maoist elements elsewhere.

These are contingencies which other countries may or may not have to factor in. The need for careful dovetailing of our paramilitary budgeting and defence budgeting cannot be overemphasised. While some aspects such as air power, electronic combat, search & rescue and air defence have to cater to multi-agency environments, the enlarged threat spectrum puts an additional burden on the national exchequer. Another important aspect in defence budgeting is the provision for non-defence expenses accrued by various headquarters. The US defence budget this year has kept \$44 billion for such expenditure. While our defence budget does have separate allocations for capital outlay, revenue, pensions and defence civilians, the allocations for R&D and other innovative measures need to be increased considerably. The US defence R&D allocation this year is \$145 billion, with \$170 billion separately earmarked for procurements. Besides, another \$60 billion is earmarked for aircraft development. They have a separate head for air power procurements, unlike in India where aircraft procurements fall under the capital budgets of the three services. Proper code heading of various aspects of budgeting is the key to proper defence management and prioritisation.

The US defence budget has separate allocations for new weapon technologies and new bases coming up in the Philippines and its Pacific posturing against China. The Indian defence budget has several aspects linked to the increased Chinese threat, but we stop short of mentioning this categorically, perhaps for fear of antagonising China. There is also a lack of clarity in our defence allocations for our strategic missile programmes. Calling out such allocations clearly would also have payoffs in terms of psychological operations and cyber war. So, perhaps there is a case for clarity in nominating budgetary heads, such as separate allocations in the US budget for hypersonic weapons and cyber warfare.

Comparisons with the US defence budget may not be wholly valid in all respects, but the clarity in nominating allocations for innovative and modern projects is something we could emulate. Also, the presidential system of government in that country may be amenable to such a proactive approach to budgeting, which our traditional parliamentary democratic setup may not be comfortable with. For example, this year the US has gone in for a pay hike for their servicemen, whereas we in India are still agonising over One Rank, One Pension and modalities for its disbursement.

Assessing India's defence requirements vis-à-vis its development priorities in terms of budgeting is the key challenge for our financial planners. Innovative measures to find the monies for meeting defence requirements, more so in the backdrop of Atmanirbharta, should be the order of the day. Also needed are appropriate constitutional reforms to meet the funding challenges, be it for new projects such as Agnipath/MMRCA (Medium Multi-Role Combat Aircraft) or for finding the monies through suitable private-public partnerships.

The rapid degree of obsolescence in defence technology would necessitate timely adaptation and import of technology till our indigenous capabilities in manpower, training, manufacturing and public-private partnership reach global standards in cutting-edge fields.

<https://www.tribuneindia.com/news/comment/no-room-for-grey-areas-in-defence-allocations-488672>



Thu, 16 Mar 2023

Indo-Pacific, QUAD and More on the Agenda of Talks when Kishida Meets Modi Next Week

Ahead of the QUAD summit and G7 summit in May, Prime Minister of Japan Kishida Fumio is coming on a two day visit to India from March 20-21.

On the agenda of talks with Prime Minister Narendra Modi will be issues related to the Russia-Ukraine war, Indo-Pacific Region, Defence and Security, Space Cooperation as well as Trade and economic issues.

According to the Ministry of External Affairs (MEA) Prime Minister Narendra Modi and his Japanese counterpart will also discuss their priorities for their respective presidencies – Japan is holding the presidency of G7 and India is holding the G20 presidency.

The Japanese leader is keen on boosting ties with Global South countries ahead of the G7 in person summit in the month of May. While the G7 member countries are pushing for economic sanction on Russia, India has kept away from implementing any punitive measures. And has maintained that “this is not an era of war. And both Russia and Ukraine should resolve the issues through diplomacy and dialogue.

India under its G20 Presidency has been pushing for Global South – this term refers to countries not only in Asia but also in Africa and Latin America.

The G7 summit is scheduled to take place in the city of Hiroshima in the month of May where the two leaders will meet again, as PM Kishida is expected to invite PM Modi when they meet in New Delhi next week.

Member nations of G7

The US, Canada, Italy, France, Germany, Japan and the European Union, and the G20 has Brazil, China, Australia, Argentina, Indonesia, Mexico, Russia, Saudi Arabia, Turkey, South Korea and South Africa.

Japan Foreign Minister Yoshimasa Hayashi earlier this month had not come for the two days G20 Foreign Ministers Meeting in New Delhi; however he came a day later for the QUAD Foreign Ministers meeting.

India-Japan Military Ties

Earlier this year, Japan unveiled its new national security plan signaling his country's biggest military build-up since WWII. Besides doubling up its defence budget it has also highlighted its plans to boost military ties with India at bilateral as well as multilateral level. The report has also talked about promoting defence equipment and technology as well as more exercises and training with the armed forces of India.

And has talked about further promoting free, open Indo-Pacific by deepening cooperation with like minded countries through QUAD, Japan-US Alliance.

According to industry sources Japan-based Kawasaki Heavy Industries (KHI)'s C-2 Transport Aircraft has been developed and manufactured locally, and is one of the contenders for the Medium Transport Aircraft requirement of the Indian Air Force. This transport aircraft has been deployed by the Japan Air Self-Defense Force (JASDF) since March 2017.

<https://www.financialexpress.com/defence/indo-pacific-quad-and-more-on-the-agenda-of-talks-when-kishida-meets-modi-next-week/3012283/>

THE ECONOMIC TIMES

Thu, 16 Mar 2023

US Releases Video of Russian Jet Dumping Fuel on its Drone

The Pentagon on Thursday released footage of what it said was a Russian aircraft pouring fuel on a U.S. Air Force surveillance drone and clipping the drone's propeller in international airspace over the Black Sea. The 42-second video shows a Russian Su-27 approaching the back of the MQ-9 drone and beginning to release fuel as it passes, the Pentagon said. Dumping the fuel appeared to be aimed at blinding its optical instruments and driving it out of the area'

On a second approach, either the same jet or another Russian fighter that had been shadowing the MQ-9 struck the drone's propeller, damaging one blade, according to the U.S. military.

The U.S. military said it ditched the MQ-9 Reaper in the sea after what it described as the Russian fighter making an unsafe intercept of the unmanned aerial vehicle.

The video excerpt released by the Pentagon does not show events before or after the apparent fuel-dumping confrontation.

Defense Secretary Lloyd Austin and Joint Chiefs of Staff Chairman Gen. Mark Milley have spoken to their Russian counterparts about the destruction of the U.S. drone following the encounter with Russian fighter jets.

The calls with Russian Defense Minister Sergei Shoigu and Chief of Russian General Staff Gen. Valery Gerasimov on Wednesday were the first since October.

While intercept attempts are not uncommon, the incident amid the war in Ukraine has raised concerns it could bring the United States and Russia closer to direct conflict.

That the two countries' top defense and military leaders were talking so soon after the encounter over the Black Sea underscored its seriousness.

The Russian Defense Ministry said in its report of the call with Austin that Shoigu accused the U.S. of provoking the incident by ignoring flight restrictions the Kremlin had imposed because of its military operations in Ukraine.

Russia also blamed "the intensification of intelligence activities against the interests of the Russian Federation."

Such U.S. actions "are fraught with escalation of the situation in the Black Sea area," the Russian Defense Ministry said, warning that Moscow "will respond in kind to all provocations." The MQ-9, which has a 66-foot (20-meter) wingspan, includes a ground control station and satellite equipment. It is capable of carrying munitions, but Air Force Brig. Gen. Pat Ryder, a Pentagon spokesperson, would not say whether the ditched drone had been armed.

Air Force Brig. Gen. Pat Ryder, a Pentagon spokesperson, said the incident occurred at 7:03 a.m. Central European time (0603 GMT; 2:03 a.m. EST) over international waters, and well clear of Ukraine, after the Russian jets had flown in the vicinity of the drone for 30 to 40 minutes. There did not appear to be any communications between the aircraft before the collision, Ryder added.

The U.S. has not recovered the crashed drone, U.S. Air Forces-Europe said in a statement, and neither has Russia, Ryder said. Russian officials said Wednesday that they would try to salvage fragments of the MQ-9 from the Black Sea.

U.S. officials have left open the possibility of trying to recover portions of the downed \$32 million drone, which they said crashed into waters that were 4,000 to 5,000 feet (1,200 to 1,500 meters) deep. Other U.S. officials said the U.S. does not have military ships in the region, and won't likely seek to recover wreckage.

However, they expressed confidence that there would be nothing left of military value on the drone if Russia manages to retrieve the wreckage.

<https://economictimes.indiatimes.com/news/defence/us-releases-video-of-russian-jet-dumping-fuel-on-its-drone/articleshow/98697855.cms>

Science & Technology News

The Statesman

Thu, 16 Mar 2023

Chandrayaan-3 Passes ISRO's Vibration Tests

Indian space agency on Thursday said it had successfully completed the tests to check Chandrayaan-3 — moon spacecraft — to withstand the harsh vibration and acoustic environment that the spacecraft would face during its launch.

According to the Indian Space Research Organisation (ISRO), the tests were conducted during the first week of March 2023 at the test facilities located at the UR Rao Satellite Centre in Bengaluru.

These tests are an essential part of the qualification and acceptance process for any spacecraft.

These tests were particularly challenging, considering the fact that the Chandrayaan-3 spacecraft is a composite of three modules viz. Propulsion Module, Lander Module and the Rover module.

The vibration and acoustic tests carried out on the integrated spacecraft have provided sufficient confidence on the structural integrity and survivability in the launch environment, ISRO said.

<https://www.thestatesman.com/technology/chandrayaan-3-passes-isros-vibration-tests-1503163049.html>



Thu, 16 Mar 2023

Bharti Backed OneWeb to Launch 36 Satellites with ISRO for Low-orbit Connectivity

OneWeb, the Low Earth orbit (LEO) satellite communications company, will launch 36 satellites with ISRO on 26 March 2023.

The launch, scheduled to take place from the Satish Dhawan Space Centre in Sriharikota, India, will be the final launch that aims at completing the first-generation LEO constellation and enabling the initiation of global coverage in 2023.

This launch will be one of the most significant milestones in OneWeb's history so far, with the launch adding an additional 36 satellites to the OneWeb fleet, the first ever completed global LEO constellation, OneWeb said in a release.

The mission marks OneWeb's second satellite deployment from India, highlighting the collaboration between the UK and Indian space industries. And, is touted to bring high-speed, low-latency secured solutions to enterprises along with towns, villages, municipalities and schools, including the hardest-to-reach areas across the country.

OneWeb currently has connectivity solutions active today in key geographies across the globe and is bringing new areas online by partnering with leading providers including VEON, Orange, Galaxy Broadband, Paratus, Telespazio, and more.

The launch scheduled to take place no earlier than 26 March 2023 will be live-streamed on YouTube and other social media channels. | Photo Credit: Special Arrangement

Low-earth orbit (LEO) satellites are being looked at as a way to connect the unconnected and bridge the digital divide by bringing internet access to remote and rural communities.

The launch is scheduled to take place no earlier than 26 March 2023 at 11:30 pm EST / 3:30 am GMT / 9:00 am IST and will be live-streamed on YouTube and other social media channels.

<https://www.thehindu.com/sci-tech/technology/bharti-backed-oneweb-to-launch-36-satellites-with-isro-for-low-orbit-connectivity/article66626049.ece>

