

फरवरी

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2023

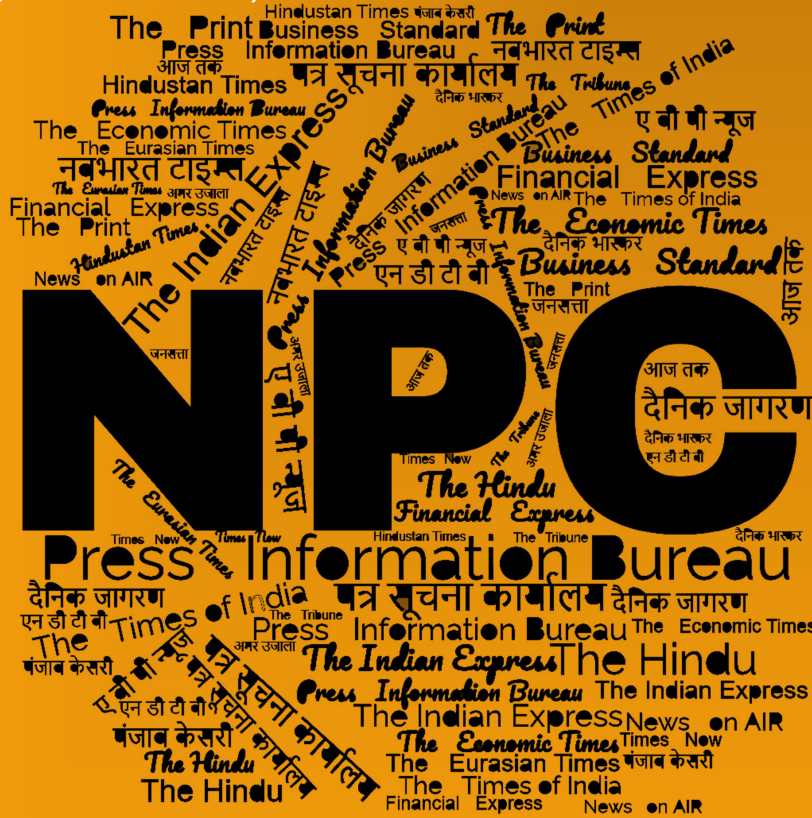
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समाचार पत्रों से चयित अंश Newspapers Clippings

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

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DRDO News

DRDO Technology News

 **The Indian EXPRESS**

Wed, 15 Feb 2023

AMCA Project Reaches Critical Design Review, DRDO Seeks Sanctioning of the Project

Defence Research Development Organisation (DRDO) has finished the design of the fifth generation Advanced Medium Combat Aircraft (AMCA) and will proceed to the next step of Critical Design Review (CDR). A CDR is a technical review to ensure that the system of an aircraft can proceed into fabrication, demonstration and test and can meet performance requirements.

Speaking on the sidelines of Aero India with The Indian Express, a senior DRDO official working on the AMCA project said, “CDR is a step to see if metal cutting, an initial step in the start of the production of an aircraft, can take place. The designing phase of the AMCA is completed and the CDR will be done soon. Once the Cabinet Committee on Security (CCS) sanctions the AMCA project, we will go ahead to produce five prototypes of the aircraft.”

“Bharat Electronics Limited (BEL) is our hardware partner in the AMCA project. Digital Flight Control Computers (DFCC) will not be given to us by any country and this is being worked on by them,” the official said. The project cost of AMCA is Rs 15,000 crore.

Last year, a new Flight Control System (FCS) integration facility, constructed at Aeronautical Development Establishment (ADE), Bengaluru, which is supporting the Research & Development (R&D) activities for developing Avionics for AMCA was inaugurated.

Hindustan Aeronautics Limited (HAL) is the design partner of DRDO in the AMCA project. It is the indigenous fifth generation, twin engine fighter aircraft and the specifications are in line with the Fifth Generation aircraft technology with features like stealth, internal weapons, super cruise, serpentine air intake etc. The aircraft has capability to carry air-to-air and air-to-ground weapons.

The internal weapons bay of AMCA was also unveiled at the Aero show. Internal weapons bay is a compartment in an aircraft to carry bombs. The HAL’s HLFT-42 trainer aircraft whose scaled model was unveiled at Aero India is said to train the fighter pilots for AMCA.

<https://indianexpress.com/article/cities/bangalore/amca-project-reaches-critical-design-review-drdo-seeks-sanctioning-of-the-project-8447312/>

DRDO asked to Indigenise Parts of Surveillance Aircraft for Indian Coast Guard

The Defence Acquisition Council has asked the Defence Research Development Organisation (DRDO) to use indigenous parts in the multi-mode maritime aircraft (MMMA), which the latter's Centre for Airborne Systems laboratory will make by modifying the C-295 aircraft.

The DRDO has placed a scaled model of the MMMA at Aero India 2023. The Indian Coast Guard has placed a request for six MMMA. The primary roles of the aircraft are maritime surveillance, pollution surveillance and search and rescue.

“The DAC has asked us to indigenise more contents being placed in the aircraft. I cannot reveal much details but would say that one of the changes being asked is to indigenise the sensors. We received the directive from the DAC in December 2022. However, we have the capabilities to make the changes. Six aircraft have been requested by the ICG. We have also taken the ICG's inputs to meet their requirements,” a DRDO official told indianexpress.com.

The MMMA will be equipped with an electro optical or infrared (EO/IR) system, which has nine cameras that could identify ships. “One of the roles for the MMMA is pollution surveillance. Oil spills are one of the major pollutants in the oceans. So EO/IR would detect ships responsible for the oil spills as it has artificial intelligence-enabled object detection and tracking. The EO/IR is equipped with a laser illuminator that could help in reading the names of the ships and it also has a laser-range finder that could be used to find the range of the target. Short-wave infrared cameras with EO/IR would also penetrate fog and haze. Moreover, this aircraft can also be used for cargo and personnel transportation and as air ambulances,” the official said.

The DRDO is also working on a medium-range maritime reconnaissance aircraft for the Navy. Nine C-295 aircraft will be modified to meet the naval requirements. India has a coastline of 7,516 km, which includes islands of strategic importance. With piracy, smuggling and other unlawful activities growing, the DRDO claims the MMMA will meet the ICG requirements.

<https://indianexpress.com/article/cities/bangalore/drdo-asked-to-indigenise-parts-of-surveillance-aircraft-for-indian-coast-guard-8447209/>

DRDO Transfers AI Project to Navy to Increase Operational Availability of MiG-29K Fighters

The Technology Development Fund of DRDO has handed over to the Indian Navy a project to use AI in Health and Usage Monitoring Systems (HUMS) to increase the operational availability of MiG-29K fighters. The project, which is being executed by Smart Machines, Hyderabad, is

aimed at achieving a high level of serviceability and combat readiness of the platform at all times through the use of trending and predictive maintenance. The results obtained will be used by the Indian Navy for analysis and decision-making on engine and airframe maintenance issues, according to a press release shared by the PIB.

Preliminary trials and validation of the project have been successfully completed. The project was formally handed over to the Indian Navy as part of the 'Launch of New Technology' event by DRDO on Monday as part of Aero India 2023.

During the MANTHAN event, the Indian Army released a 'Compendium of 110 Problem Statements' for the indigenous defence research, design, development and manufacturing ecosystem.

The statements highlight the Indian Army's technological challenges and requirements in various areas ranging from armour, surveillance and fire control systems to niche domains such as artificial intelligence, blockchain, metaverse, robotics, quantum technology, cyber, ammunition and more. Further, the problem statements involve the induction of new technologies, upgrade of existing systems, and indigenisation of critical components.

<https://www.thehindubusinessline.com/news/drdo-transfers-ai-project-to-navy-to-increase-operational-availability-of-mig-29k-fighters/article66512195.ece>



Wed, 15 Feb 2023

दुश्मन को ढूँढकर मारेगा 'उत्तम', जानिए कैसे तेजस की ताकत बढ़ाएगा DRDO का रडार

अब फाइटर जेट और ताकतवर होंगे. इसमें स्वदेशी रडार लगाए जाएंगे. इसकी मदद से दुश्मन के विमानों को टारगेट किया जा सकेगा. डिफेंस रिसर्च एंड डेवलपमेंट ऑर्गेनाइजेशन (DRDO) ने बेंगलुरु की लैब में नया रडार विकसित किया है. इस रडार का नाम है उत्तम, जिसे लाइट कॉम्बेट एयरक्राफ्ट (LCA) तेजस के लिए तैयार किया गया है. यह एक्टिव इलेक्ट्रॉनिकली स्कैन्ड ऐरे रडार (AESAR) है.

स्वदेशी रडार के जरिए लाइट कॉम्बेट एयरक्राफ्ट और पावरफुल होंगे. इस नए रडार के कारण इजरायली रडार का आयात घटेगा और अब भारत रक्षा के क्षेत्र में ऐसे रडार को एक्सपोर्ट करने की तैयारी कर रहा है.

कैसे काम करेगा?

उत्तम रडार से जुड़े प्रोजेक्ट के डायरेक्टर शशागिरी पी. का कहना है, उत्तम रडार को दो लाइट कॉम्बेट एयरक्राफ्ट (LCA) तेजस और एकजीक्यूटिव जेट पर लगाकर ट्रायल किया गया. जो सफल रहा. इस रडार की मदद से उस रेंज तक हथियार दागे जा सकते हैं जहां पर जहां तक आंखें नहीं देख सकतीं. आसान भाषा में समझें तो र दुश्मन नहीं दिख रहा, लेकिन रडार के दायरे में हैं तो इसकी मदद से छोड़ी गई मिसाइल उसे बर्बाद कर देगी.



ऐसा दिखता है DRDO का उत्तम रडार.

एक साथ 100 टारगेट पर नजर

डीआरडीओ के मुताबिक, यह जंग के आधुनिक हथियारों का हिस्सा है जो एक साथ कई निशाना साधने में सक्षम है. इतना ही नहीं, यह दुश्मन के टारगेट की हाई रेजोल्यूशन तस्वीरें कैप्चर करके भेजता है और जंग की चुनौतियों को आसान बनाता है. इसकी मदद से एक साथ दुश्मन के 100 टारगेट पर एक साथ नजर रखी जा सकती है.

यह स्वदेशी रडार मिसाइल को सटीक निशाना लगाने में मदद करता है. इसके जरिए हवा से हवा, हवा से जमीन और हवा से समुद्र में सभी इलाकों के निशाना लगाया जा सकता है. 2012 में इस प्रोजेक्ट को अप्रूवल मिला था. इस प्रोजेक्ट में शामिल टीम ने देश के एक अन्य स्वदेशी रडार नेत्र को भी विकसित किया था. जिसका इस्तेमाल समुद्र की निगरानी के लिए किया गया था. अब इस स्वदेशी इन्क्विपमेंट के निर्यात को बढ़ावा दिया जाने की तैयारी है. कई देशों ने इसे खरीदने की इच्छा जाहिर की है.

नहीं खरीदने पड़ेंगे इजरायली रडार

अब तक भारतीय वायुसेना के मल्टीरोल कॉम्बैट के हल्के फाइटर जेट तेजस में इजरायली रडार का इस्तेमाल होता रहा है. अब इसे हटाकर स्वदेशी रडार उत्तम का इस्तेमाल किया जाएगा. देश के लड़ाकू विमानों को अपग्रेड किया जाएगा. भारतीय वायुसेना में शामिल होने वाले 123 तेजस फाइटर जेट्स में से 51 फीसदी में विमानों में उत्तम एक्टिव इलेक्ट्रॉनिकली स्कैन्ड ऐरे रडार को लगाया जाएगा.

DRDO के डायरेक्टर-जनरल बीके दास का कहना है, उत्तर रडार के अलावा संस्थान कई दूसरे इलेक्ट्रॉनिक इक्विपमेंट बनाने की तैयारी कर रहा है. केंद्र रक्षा के क्षेत्र में एक्सपोर्ट को बढ़ाने के लिए तेजी से कदम बढ़ा रहा है. पीएम मोदी ने सोमवार को कहा था, 2024-25 तक भारत का डिफेंस एक्सपोर्ट कारोबार बढ़कर 5 बिलियन डॉलर तक पहुंचने की संभावना है.

<https://www.tv9hindi.com/knowledge/uttam-radar-ready-for-tejas-know-how-drdo-bengaluru-lab-developed-radar-will-work-au256-1718849.html>



Wed, 15 Feb 2023

Aero India 2023: DRDO details Pralay Missile

India's Defence Research and Development Organisation (DRDO) has provided details of its tactical, short-range surface-to-surface ballistic missile known as Pralay at the Aero India 2023 show being held in Bangalore from 13 to 17 February.

A DRDO official told Janes that the missile can carry three different types of warheads and is capable of striking targets between 150 and 400 km.

According to the DRDO, the missile has a circular error probability (CEP) of less than 10 m, allowing accurate targeting of command, control, communications, computers, and intelligence (C4I) and radar installations; airfields; oil refineries; ammunition dumps; and so on.

The DRDO said that the Pralay missiles are canisterised and can be made vertical for launching the missile from an autonomous launcher. A 12×12 launcher equips two Pralay missiles and an 8×8 launcher has one missile with Battery Command Centre (BCC) vehicle as communication centre. Each missile from the 12×12 launcher can be launched independently against the same or different targets. The missile has a rings 16 navigation system and a millimeter wave (MMW) seeker for terminal homing. The missiles are controlled and guided from lift-off phase to impact point. The reaction time of the missile from mission command to launch is one minute. In addition, the launcher with the missile can be brought into launch condition within 10 minutes. Pralay is an all-weather weapon system with day and night launch capability, DRDO added.

<https://www.janes.com/defence-news/news-detail/aero-india-2023-drdo-details-pralay-missile>



Wed, 15 Feb 2023

Aero India 2023: DRDO Completes Development of VSHORADS

India's Defence Research and Development Organisation (DRDO) has completed development of its very short-range air-defence system (VSHORADS) missiles, the organisation told Janes at the Aero India 2023 show being held in Bangalore from 13 to 17 February.

A DRDO official told Janes that the development of VSHORADS is completed and the trials of the missile have started. VSHORADS is a manportable air-defence system (MANPADS) designed and developed by the DRDO. The production partner for VSHORADS is Adani Defence and Aerospace (ADA). A spokesperson for ADA told Janes that VSHORADS will undergo "10 more trials in upcoming months". In January, India's Defence Acquisition Council (DAC), chaired by Defence Minister Rajnath Singh, approved the procurement of VSHORADS missiles for the Indian Army.

According to the DRDO, VSHORADS is a fourth-generation weapon system equipped with a dual-thrust rocket propulsion system and an imaging infrared seeker-based system. The missile has a length of 2 m, a diameter of 0.09 m, and a weight of 21 kg.

VSHORADS can strike a target within a range of 6 km in about 15–20 seconds. The missile can carry a pre-fragmentation warhead of up to 2 kg and has a speed of Mach 1.5. It can be launched up to an altitude of 3.5 km and is equipped with a digitally controlled electromechanical actuator.

VSHORADS is a tripod-launched missile system used to destroy moving aerial targets such as unmanned aerial vehicles (UAVs), helicopters, and fighter aircraft. The missile has a high latex capability and intercepts 9 G manoeuvring fighter targets with single-shot kill probability.

<https://www.janes.com/defence-news/news-detail/aero-india-2023-drdo-completes-development-of-vshorads>



Wed, 15 Feb 2023

Aero India 2023: Nag ATGM set for Indian Army Induction

The Nag anti-tank guided missile (ATGM) has cleared the trials required for induction into the Indian Army, the Defence Research and Development Organisation (DRDO) told Janes at the Aero India 2023 show being held in Bangalore from 13 to 17 February.

A DRDO official told Janes that the Nag ATGM is ready for induction into the Indian Army after completing all required flight and user trials. "We [DRDO] are now awaiting an order from the Indian Army," the official said. According to the DRDO, the Nag missile is a fire-and-forget,

third-generation ATGM. The missile is equipped with an imaging infrared (IIR) seeker to engage with static and moving targets. The IIR seeker is capable of operating during day and night.

The operational range of the Nag is up to 4 km and it is equipped with a tandem high-explosive anti-tank (HEAT) warhead. The Nag features top-attack capability. In the land-based role, the missile is mounted to the Nag Missile Carrier (NAMICA) armoured vehicle, which is a variant of the BMP-2 Sarath produced by India. The missile has a length of 1.834 m, a diameter of 0.158 m, and a weight of 44 kg. The Nag ATGM has also been mounted to helicopters. In this configuration, the ATGM system is known as Helina.

<https://www.janes.com/defence-news/news-detail/aero-india-2023-nag-atgm-set-for-indian-army-induction>

DRDO on Twitter

DRDO Retweeted

 **SpokespersonNavy** 
@indiannavy

[#ArtificialIntelligence](#) in Health & Usage Monitoring Systems (HUMS) for MiG-29K, a critical project pursued by [#IndianNavy](#) through [#DRDO's](#) Technology Development Fund was formally handed over to [#IndianNavy](#) at [#AeroIndia2023](#).

[#AatmaNirbharBharat](#)
[#FutureProofForce](#)

[@DRDO_India](#)



 A. Bharat Bhushan Babu and 9 others

1:28 PM · Feb 15, 2023 · **13.5K** Views

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#DRDOUpdates | Visit of scientific community stalwarts and former DRDO Chairmen to DRDO Pavilion at Hall 'D', Yelahanka Air Force Station
#AeroIndia2023
@DefenceMinIndia
@SpokespersonMoD



2:57 PM · Feb 15, 2023 · 14.5K Views

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@DRDO_India

#DRDOUpdates | #DRDO showcasing indigenously developed technologies across 12 zones in Hall D, Yelahanka Air Force Station
#AeroIndia2023
@DefenceMinIndia
@SpokespersonMoD



2:22 PM · Feb 15, 2023 · 27.2K Views

Defence News

Defence Strategic : National/International

United News of India
India's Multi Lingual News Agency

Thu, 16 Feb 2023

Record Rs 1 Lakh Cr Capex Allocated for FY 2023-24: Rajnath

An approximate record amount of Rs 1 lakh crore, which is 75 percent of the defence capital procurement budget has been earmarked for domestic industry in FY 2023-24, up from 68 per cent in 2022-23. This was announced by Raksha Mantri Rajnath Singh during the Bandhan ceremony of 14th Aero India in Bengaluru on February 15.

In FY 2023-24, the Ministry of Defence (MoD) has been allocated a total Budget of Rs 5.94 lakh crore, which is 13.18 per cent of the total budget (Rs 45.03 lakh crore).

Capital outlay pertaining to modernisation and infrastructure development has been increased to Rs 1.63 lakh crore.

Rajnath termed the decision as an unprecedented step taken by the government at the outset of 'Amrit Kaal' to further strengthen the defence sector and minimise import dependency.

"If you take one step, the government promises to take ten steps forward. You spoke of land to run on the path of development. We are providing you full sky. Earmarking three-fourth of the capital procurement budget for the local industry is a step in that direction," he said.

The Raksha Mantri exuded confidence that with this step, the Indian industry will come forward with more enthusiasm and contribute in making the defence sector more powerful and prosperous. He was of the view that a strong and self-reliant defence industry not only strengthens the security system of the country, but also bolsters the economy.

He highlighted that, in the last few years, a domestic industry-friendly environment has been created in the country provides a runway for the local companies to grow and ensure holistic development of the nation while catering to the security needs of the friendly countries, in line with Prime Minister Narendra Modi's vision of 'Make in India, Make for the World'.

The Bandhan ceremony also witnessed the forging of 266 partnerships including 201 MoUs, 53 major announcements, nine product launches and three Transfers of Technology, worth around Rs 80,000 crore. Rajnath stated that the MoUs and ToTs completed during Bandhan will pave the way for enhanced FDI in defence and take the manufacturing in the sector to greater heights.

He defined Bandhan as not just an agreement between two sides limited to economic benefit, but a new resolution to bolster the nation in the defence domain.

He also emphasised that the partnerships forged with friendly countries will take their bilateral collaboration with India to the next level.

The Raksha Mantri stated that Aero India showcased to the world the 'New Defence Sector' of 'New India', which has not only grown in the last few years, but is now fully ready to walk alongside the defence sectors of leading countries.

He expressed satisfaction that the event paved the way to strengthen the Indian defence industry, terming it as the beginning of a new era of 'Aatmanirbharta'.

He exuded confidence that the sector will move forward strongly on the path of progress with new energy and determination. Rajnath described Karnataka as one of those historical states which has been consistently contributing to the country's economic progress.

He stated that there could not be a better place than Karnataka to organise Aero India as the state has attracted local as well as international industries with its robust R&D manufacturing ecosystem. Karnataka Chief Minister Shri Basavaraj Bommai, Chief of Defence Staff General Anil Chauhan, Chief of the Air Staff Air Chief Marshal VR Chaudhari, Chief of the Naval Staff Admiral R Hari Kumar, and Chief of the Army Staff General Manoj Pande, were present at the occasion. Defence Secretary Giridhar Aramane, Secretary, Department of Defence R&D and Chairman DRDO Shri Samir V Kamat, Chief Secretary, Government of Karnataka Smt Vandita Sharma and other senior officials of Ministry of Defence & state government were present during the ceremony.

<https://www.uniindia.com/record-rs-1-lakh-cr-capex-allocated-for-fy-2023-24-rajnath/south/news/2917320.html>

Business Standard

Wed, 15 Feb 2023

75% of Defence Capital Budget is for Domestic Procurement, says Rajnath

Describing the Aero India Show 2023 as a great success, Defence Minister Rajnath Singh announced on Wednesday that to provide impetus to the Indian defence industry, 75 per cent procurement for the armed forces will be made from indigenous defence companies. Addressing a gathering at the valedictory ceremony of Aero India Show here, Singh said that in the last few years, the respect for the Indian defence industry is increasing.

"The good will is so much that the cap of reservation of 68 per cent for FY 2022-23 for Indian defence vendors will be increased to 75 per cent in FY 2023-24. I repeat, three-fourth procurement will be from Indian defence vendors. It will amount to Rs 1 lakh crore," Singh said.

"If you take one step towards strengthening the security of the country, the government's promise is that it will come forward to take 10 steps. The industry has asked for land, we have given the vast sky with full confidence," he said.

In the initial years, the defence industry was given 58 per cent procurement in the Budget. But, exceeding the limit, the procurement reached 64 per cent in 2021-22. The government had faced flak and criticism for this. In 2022-23, the share was increased to 68 per cent," he explained.

Singh also said the Aero India Show will go a long way in strengthening the Indian defence industry. "This is a new beginning. It has showcased that the Indian defence industry is ready to collaborate with other countries of the world. As many as 1,500 MoUs have been signed in the show, DRDO technology transfer agreements have been made, important decisions have been taken regarding manufacturing in private and public sector industries. The show has given a push to the defence industry at the global level," the minister said.

https://www.business-standard.com/article/current-affairs/75-of-defence-capital-budget-is-for-domestic-procurement-says-rajnath-123021501973_1.html

THE TIMES OF INDIA

Thu, 16 Feb 2023

Rs 200 Crore Pledged for Defence Investor Hub, says Rajnath Singh

Defence minister Rajnath Singh, who launched the ninth edition of the Defence India Startup Challenges (DISC 9) on cybersecurity with 28 problem statements, and the Innovations For Defence Excellence (iDEX) Investor Hub (iIH), said Indian investors have pledged over Rs 200 crore.

Singh said iDEX has enabled talent from across the country to come forward.

The iIH aims to accelerate investment in the defence sector and give investors a unified view of opportunities and innovations, the MoD stated on Wednesday, adding the Defence Innovation Organisation (DIO) also signed MoUs with investors at Startup Manthan at Aero India.

Another MoU was signed with Axis Bank. DIO has signed MoUs with Isro, IN-SPACe, and ISpA. An MoU was signed with the Border Roads Organisation to potentially launch startup challenges in the future. The fourth edition of Innovate4Defence internship (i4D) was also launched, inviting applications from students all over India.

Singh, while equating startups with new energy, new commitment and new enthusiasm, said they're more open to adopting new technology architecture, making them essential to India's progress. He said the services, DPSUs, Coast Guard as well as organisations under the home ministry are giving problem statements to the youth, who are rising to the challenge every time. "India is supporting its youth to innovate, thereby empowering them to become job creators and manufacture indigenous defence products and reduce our dependence on imports," he said.

DISC 9 is the first collaboration of iDEX with the Indian Cyber Crime Coordination Centre (i4C) division of the ministry of home affairs.

The iDEX-DIO also signed its 200th contract with a winner of the Indian Navy Prime Challenge launched under the SPRINT initiative.

<https://timesofindia.indiatimes.com/india/rs-200-crore-pledged-for-defence-investor-hub-says-rajnath-singh/articleshow/97960072.cms>

Modi Steps up Ladakh Defence, Clears Shinkun La Tunnel

In a significant step that will steel defence of Ladakh, Prime Minister Narendra Modi today cleared a 4.1 kilometer tunnel under Shinkun La on Manali-Darcha-Padam-Nimu axis to allow all weather connectivity to the Union Territory and cater to continuous supply of troops and equipment in the worst case scenario with either of the two adversaries. The Border Roads Organization had made a black top road on Darcha-Padam-Nimu axis in 2019 but the road could not be used in winter months due to heavy snow on 16703 feet high Shinkun La. The road is critical to the defence of Ladakh as it is sheltered from both Pakistani and Chinese long range artillery or missile firing unlike the exposed Srinagar-Drass-Kaksar-Kargil highway near LoC and the Manali-Upshi-Leh highway near the LAC respectively. It was the Darcha-Padam-Nimu route which was used by the Indian Army to send arms and ammunition supplies to East Ladakh after Chinese PLA belligerence on the LAC in May 2020.

The decision to clear the tunnel under Shinkun La makes strategic sense as to achieve all weather connectivity on Manali-Upshi-Leh highway, the government would have to construct some 38 kilometers of tunnels under Baralacha La, Lachulung La and Taglang La, all passes touching heights of over 16000 feet which remained snowed in for at least five months a year.

Although the Defence Ministry gave the proposal to build a tunnel under Shinkun La to the Ministry of Highways and Road Transport in 2017 itself, the department was in favour of a 13 kilometer tunnel under Shinkun La, which would link it with the existing Darcha-Upshi-Leh highway. Given the terrain and the inclement sub-arctic temperatures the proposal hung fire till it was handed over to BRO in 2020 after the Chinese transgressions.

Today, Prime Minister Narendra Modi cleared the tunnel and the approach roads on both sides at the Cabinet meeting. The total cost of the project will be ₹1681.51 crore and will be completed by December 2025. Since the BRO has already done road cutting and black topping of the approaches on both sides to Shinkun La, the government will now only have to complete the 4.1 km underground pass. The step is very significant as Nimu in Ladakh is close to Kargil as well as Leh, the headquarters of the UT. This means that the Indian Army can do faster deployment of forces and equipment if a situation flares up in Kargil-Siachen sector or in East Ladakh sector all along the 1597 km LAC in the UT.

<https://www.hindustantimes.com/india-news/modi-steps-up-ladakh-defence-clears-shinkun-la-tunnel-101676462642262.html>



Army Chief says LCH Good for High Altitude; Army to Procure 95 of them

The Indian Army is eyeing the acquisition of 95 'Prachand' Light Combat Helicopters (LCH) for mountain warfare, as well as 110 Light Utility Helicopters (LUH) to replace its aging Cheetahs and Chetak. In an interaction with a select group of journalists on the sidelines of the ongoing

Aero-India 2023, Chief of the Indian Army Gen Manoj Pande also confirmed that the Army would receive an initial lot of six Advanced Light Helicopters (ALHs) from Hindustan Aeronautics Limited (HAL), but has requested certain improvements, including autopilot capability. He said that the Army is currently in the process of executing the 4th tranche of Emergency Procurements and it has identified around 80 projects which amounts to roughly Rs 15000 crore. According to the chief in terms of the overall combat aviation profile, the Army is looking at 90-95 LCHs.

To a question about the delivery of the expected delivery timeline of AH-64E Apache attack helicopters, the chief said that the Army expects to receive all the six it has ordered by 2024 from the US. The first of the six is arriving in the first half of 2024. The sale of these six is also through government to government and Foreign Military Sales (FMS). If any follow-on order – the chief indicated that any additional orders will all depend on how the Prachand shapes up.

The chief said that the LCH is very versatile in terms of manoeuvrability and has been found to be better suited for high altitude. While both the Indian Air Force (IAF) and the Army have raised their first squadron of LCHs, the helicopter lacks its main arsenal and protection suites for now and will take time to be fully operational.

The LCH helicopter, also known as the tank buster, will get its anti-tank guided missile (ATGM) only by mid-2023. The anti-tank missile selected for the LCHs was the indigenous Helina (Helicopter Mounted NAG), developed by the Defence Research and Development Organisation (DRDO) which has cleared trials. Financial Express Online has reported earlier that the Defence Acquisition Council has already given its approval for the procurement of 500 missiles and 40 launchers. According to the chief, “Integration itself is important and it is a work in progress.” Responding to a question about the indigenous LUHs, the Army chief said that they fall in the category of recce and observation. The Army has around 250 Cheetahs and Chetak, which will be replaced by the LUHs, Gen Pande said.

He also spoke on the relevance of helicopters in warfare, noting that the new helicopters would have a number of suites to operate in contested environments. He added that indigenisation of air defence guns was a priority for the force and that integrated electronic warfare systems are being tested along the Line of Actual Control (LAC). Despite concerns over the use of attack helicopters in the ongoing Russia-Ukraine conflict, the army chief argued that helicopters would continue to have relevance in warfare, just as tanks and anti-tank systems do.

The Army had moved its first LCH squadron, 351 Army Aviation, to Missamari, Assam in November 2022 in the Eastern sector located near the Line of Actual Control (LAC). This is also the first dedicated attack helicopter which is being operated by the Army. It has the Rudra weaponised Advanced Light Helicopter (ALH). So far the Army Aviation has three Brigades which are positioned at Leh, Missamari and Jodhpur and around 145 indigenous Advanced Light Helicopters (ALH) out of which 75 are Rudra and also 190 ageing Cheetah, Chetal and Chetak helicopters are deployed. Along with these another 25 ALH Mk-III are on order which are expected to be inducted within two years.

Niche Technology

He said that the Army is adopting niche technology in a big way and is also looking at right sizing its manpower. The chief further stated that with the new technology inducted it would help to optimise the manpower and he also referred to cutting down on animal transport in high

altitude terrains. In response to a question he said that by 2030 the Army will have brought down our animal transport in high altitude areas by 50-60 percent.

<https://www.financialexpress.com/defence/army-chief-says-lch-good-for-high-altitude-army-to-procure-95-of-them/2982095/>



Wed, 15 Feb 2023

Aero India 2023: India's C295 Maritime Patrol Aircraft Faces Delays

India's planned development of a maritime patrol variant of the Airbus C295 transport aircraft has been delayed after the Defence Acquisition Council (DAC), which is chaired by Defence Minister Rajnath Singh, raised questions about the project. The Indian Coast Guard has outlined a requirement for six of the proposed maritime patrol aircraft (MPA) while the Indian Navy has issued a requirement for nine, K Rajalakshmi Menon, programme director of the Defence Research and Development Organisation's (DRDO's) Centre for Air Borne Systems (CABS), told Janes at the Aero India 2023 show, which is being held in Bangalore.

However, Janes understands that the DAC has requested clarifications about the project and that development has been halted until clarifications are sent to the DAC and assessed. Speaking at Aero India 2023, DRDO project leaders declined to elaborate at the time of publication.

However, Janes understands that the government is assessing the project's electronic intelligence (ELINT) capability and the potential integration into the proposed C295 MPA of advanced sensors such as the active electronically scanned array (AESA) radar. The AESA radar planned for the aircraft is a version of the S-band (2–4 GHz) primary surveillance radar (PSR) integrated with the Embraer EMB-145 Netra airborne early warning and control (AEW&C) aircraft. The radar will be optimised for air-to-sea surface monitoring.

The project aims to deliver a variant of the patrol aircraft known as the Multi-Mode Maritime Aircraft (MMMA) to the Indian Coast Guard. Another variant, called the Medium Range Maritime Reconnaissance (MRMR), is being developed for the Indian Navy.

<https://www.janes.com/defence-news/defence/latest/aero-india-2023-indias-c295-maritime-patrol-aircraft-faces-delays>



Wed, 15 Feb 2023

Aero India 2023: Indian Army Orders QRSAM Weapon Systems

The Indian Army has ordered five Quick Reaction Surface-to-Air Missile (QRSAM) weapon systems, manufacturer Bharat Electronics Limited (BEL) told Janes at the Aero India 2023 show

in Bangalore. A BEL official told Janes that the company will deliver all five weapon systems to the Indian Army by 2024. “A QRSAM weapon system comprises one Regiment Command Post Vehicle (RCPV), which acts as the mind of the system,” he said. “One RCPV is connected with three battery units. A battery unit consists of a Battery Command Post Vehicle (BCPV) and a Battery Surveillance Radar Vehicle (BSRV). Further, one battery unit is connected with four combat groups (CGs),” the official added.

A CG comprises a multifunctional radar unit that can engage with 10 targets and a multilaunch rocket vehicle that equips six QRSAM rockets, the official said. “So, one QRSAM weapon system consists of 72 QRSAM rockets. Apart from all of this, a system also has one logistic vehicle for carrying rockets.”

India's Defence Research and Development Organisation (DRDO) is developing the QRSAM for the Indian Army in tandem with public sector companies Bharat Dynamics Limited (BDL) and BEL. A DRDO official told Janes that the first phase of user trials of QRSAM rockets was held in September 2022. “The first phase established pinpoint accuracy of the rockets and the system was ready for induction in the Indian Army,” he added.

<https://www.janes.com/defence-news/news-detail/aero-india-2023-indian-army-orders-qrsam-weapon-systems>



Thu, 16 Feb 2023

Indian Navy Sailing Towards Full Self-Reliance by 2047

Laying emphasis on fostering self-reliance in the defence arena, the Indian Navy is on the path to emerge as a ‘fully-Atmanirbhar’ force in the next two decades. Addressing a seminar on the theme ‘Atmanirbharta in Aero Armament Sustenance’ at Aero India 2023, Chief of the Naval Staff, Admiral R Hari Kumar, said: “The Indian Navy has made an unequivocal commitment and steadfast resolve... that we will be a fully-Atmanirbhar force by 2047.”

However, the current volatility globally demands a more rapid shift in that direction. “In terms of national security, the contemporary security canvas is characterised by increasing uncertainty, complexity, disruption of supply chain, and ambiguity among nations. In overcoming these challenges, among the instruments of national power, a well-equipped, technologically-enabled and efficiently supported modern military will remain critical,” the Admiral explained.

Citing disruptions caused to the supply chain from the pandemic and the conflict in Europe, he said that there is a need to overcome dependency on others for the country’s defence and security requirements. “In this regard, achieving self-reliance or Atmanirbharta is no longer just an economic imperative, but a strategic necessity,” he added.

The Navy has been at the forefront of adopting self-reliance and indigenisation from as early as the 1960s. This drive not only bolstered the force’s strength, but also created a thriving multi-dimensional ecosystem over the years.

“The Indian Navy’s quest for self-reliance and indigenisation in ship-building has resulted in a thriving and highly matured industry, which has the capacity and capability to construct complex and advanced platforms ranging from aircraft carriers, destroyers, submarines, and specialised diving support vehicles, and so on. However, the transition from a buyer’s Navy to a builder’s Navy has helped us not only support the Indian defence industry, but also spurred economic growth and stimulated industrial skilling,” the Admiral elaborated.

Quoting the Economic Survey 2022-23, he cited the example of how indigenous aircraft carrier INS Vikrant alone engaged about 500 MSMEs and created employment for nearly 12,000 people in various sectors. “While we are justifiably proud of these achievements, to be a true capable maritime power, we need to strive for complete self-reliance across the three important components - to float, move and fight... In this context, the defence manufacturing ecosystem in India plays a pivotal role,” he added.

Meanwhile, commending the response of the Armed Forces to Aatmanirbhar Bharat, Defence Minister of State Ajay Bhatt expressed satisfaction over the fact that many indigenous projects in the defence sector are being taken forward by DRDO, DPSUs and the private sector. He stated that looking at the overwhelming response of the private players, the Defence Ministry has come out with several policy decisions to encourage their participation.

Important MoUs signed

BEL & Aeronautical Development Agency on IWBC and other LRUs for Advanced Medium Combat Aircraft (AMCA)

Collaboration of Sagar Defence Engineering Private Limited (SDEPL) & Israel Aerospace Industries (IAI) for IDEX Challenge ‘Autonomous Weaponized Boat Swarm’ for Indian Navy

HAL & Elta Systems Limited, Israel, for cooperation on future business in Maritime Patrol Radar (MPR) for Indian platforms

GRSE and Rolls-Royce Solutions GmbH (MTU) for license production with localisation of the MTU 16V4000M73L engine to support the indigenous content for the Next Generation Fast Attack Craft vessel for Indian Navy

ToT of Shakti EW System from DLRL DRDO to BEL Hyderabad Unit for all system units, bill of material, test procedures, integration & offering methodology

BEML enters into licence agreement for Transfer of Technology (ToT) with R&DEE, DRDO for development and supply of TRAWL Assembly for T-72/T-90 tanks

A few products launched

Vertically Launch Short Range Surface-to-Air Missile

Developed by Bharat Dynamics Ltd, VLSRSAM is a next-generation, ship-based, all-weather, air defence weapon which can be used by Navy as a quick reaction point defence against supersonic sea skimming targets like aircraft and UAVs

Semi-active laser seeker based Anti-Tank Guided Missile for BMP-II:

Developed by Bharat Dynamics Ltd, SAL Seeker ATGM for BMP-II is a subsonic missile with a range of 4,000 m and flight time of 25 seconds. The missile weighs 23 kg

Jishnu: Developed by Bharat Dynamics Ltd, Jishnu, a Drone Delivered Missile, is light weight and miniaturised missile targeted for soft-skinned targets. It has a range of 1.5 km with a flight time of 9 seconds

<https://www.newindianexpress.com/states/karnataka/2023/feb/16/indian-navy-sailing-towards-full-self-reliance-by-2047-2547840.html>



Wed, 15 Feb 2023

Indigenous Carrier INS Vikrant will be fully Operational by Year-end: Navy Chief

The country's first indigenous aircraft carrier INS Vikrant, which is currently undergoing aviation trials, will be fully operational by year-end.

All-out efforts are on to make it fully operational by the end of 2023, Navy Chief Admiral R. Hari Kumar said on Wednesday. The indigenous Light Combat Aircraft (LCA-Navy) and Mig-29K carried out their maiden landings on the carrier earlier this month.

“We see another two months of trials in which, in addition to the instrumented aircraft, other aircraft will start landing... MF-STAR [multi-functional digital active electronically scanned array radar] fitment will commence from May onwards and should take 3-4 months time. During that time, she will also undergo some guarantee refit activity. Thereafter, once the monsoon gets over, she will be operationally ready,” Admiral Kumar said, in response to a question from The Hindu at Aero India. He added that it was an accomplishment that the LCA-Navy landed on the INS Vikrant within six months of its commissioning, also expressing satisfaction with the overall performance of the ship.

INS Vikrant, displacing 42,800 tonnes, was commissioned into the Navy last September.

Need for new jet

In January 2020, Defence Research and Development Organisation (DRDO) had successfully demonstrated an arrested landing of LCA-Navy on INS Vikramaditya. However, the Navy had projected a requirement for a twin engine aircraft with reasonable combat payload and range to operate from the carriers. So the Aeronautical Development Agency (ADA) under DRDO embarked on developing a Twin Engine Deck-Based Fighter (TEDBF) with a weight of 26 tonnes and wing folding, based on the experience of the LCA-Navy.

On this, Admiral Kumar said that in their discussions with the ADA, DRDO and Hindustan Aeronautics Ltd, they were quite confident that by 2026, they should be able to develop the prototype and keep doing the trials and bring it to production levelst by 2031-32. “We may be able to get 45 aircraft by 2040. That is as far as indigenous aircraft are concerned,” he said, stating that this would still leave a gap as the existing carrier compatible MIG-29K jets may not last till then.

That is why we are looking at the acquisition of multi-role carrier-based aircraft, Mr. Singh said, adding that the Boeing F/A-18 E/F Super Hornet and Dassault Aviation Rafale-M were also evaluated. Stating that the evaluation report took sometime and both the aircraft were very close

in performance, Adm Kumar said the final selection, for 26 jets, is a Government decision and the deal would probably be through a Government-to-Government agreement.

The TEDBF project is expected to get approval from the Cabinet Committee on Security shortly, along with the AMCA (Advanced Medium Combat Aircraft) project for the development of a 5th generation fighter jet.

‘Self-reliant by 2047’

On the ongoing indigenisation effort in the Navy, Admiral Kumar said that ship building can be categorised into three components: float, love and fight. Currently, they are at float 95%, move 65% and fight between 50-55%, he said, adding, “We have promised the political leadership that the Indian Navy will be fully self-reliant by 2047.” Installation of the Long Range Surface to Air Missile (LR-SAM) system and the MF-STAR radar are pending, as the carrier has to be taken into the dry-dock, as reported earlier.

The LR-SAM is a joint development by DRDO and Israel Aerospace Industries (IAI), and is manufactured by Bharat Dynamics Limited (BDL). MF-STAR is manufactured by IAI and is also in service on other frontline warships on the Indian Navy.

The 262 m long and 62 m wide INS Vikrant is powered by four General Electric LM2500 engines, which give it a maximum speed of 28 Knots and an endurance of 7500 nautical miles.

<https://www.thehindu.com/news/national/indigenous-carrier-ins-vikrant-will-be-fully-operational-by-year-end-navy-chief/article66514066.ece>



Thu, 16 Feb 2023

Ordnance Clothing Factory to Venture into Global Defence Gear Market

Ordnance Clothing Factory (OCF), which has been manufacturing gear for the Indian armed forces for the past 200 years, is now planning to make it big in the global market. With Prime Minister Narendra Modi setting a target of USD 5 billion in defence exports, the unit of Troop Comforts Limited is gearing up to meet expectations.

Speaking to TNIE, Joint General Manager of OCF, Avadi, Chennai, Senthil Kumar P said the PSU is participating in the global tender through consultants. “Though we were announced as a PSU in 2021, exports are in the pipeline. We have already given samples of our products such as bullet-resistant helmets and combat uniforms to neighbouring countries like Sri Lanka and Nepal. We are also in talks with Bangladesh, while the Maldives has expressed keen interest in our products,” he said. Elaborating on participation in global tenders, Kumar said the factory has appointed consultants to reach out to foreign countries, while High Commissions are also trying to boost partnerships. “We have plans to cater to the needs of defence forces in countries in Europe, Africa and South America. All our products meet the military standards of European and South American countries, and our products have the requisite global certifications, a pre-requisite to attend global tenders,” he added.

Sharing details of the products OCF Avadi plans to export, Senthil Kumar said its bullet-resistant jackets and vests are designed to meet even the highest level of threat, like taking a sniper bullet, while flying boots meant for fighter pilots are also of global standards. “We are indigenising anti-g-suits, which were being mostly imported from Europe and Russia, and we are set to release the prototype shortly,” he said, adding that the OCF is also partnering with leading defence manufacturers abroad for certain products.

Further, he said they are re-engineering body armour by embedding biosystems so that the vital parameters of soldiers in operations could be monitored remotely by commanders. “We have tied up with IIT-Madras for this and the first prototype is expected by June.”

<https://www.newindianexpress.com/states/karnataka/2023/feb/16/ordnance-clothing-factoryto-venture-into-global-defence-gear-market-2547839.html>



Wed, 15 Feb 2023

HAL to Provide MRO for MQ-9B Drone Engines in India

As India looks to purchase armed Predator Remotely Piloted Aircraft Systems (RPAS) from the U.S., Hindustan Aeronautics Limited (HAL) and General Atomics announced at Aero India that the turbo-propeller engines which power the MQ-9B Guardian High Altitude Long Endurance (HALE) RPAS will be supported by HAL engine division for the Indian market. The companies are looking to formulate a comprehensive engine Maintenance, Repair and Overhaul (MRO) programme for upcoming HALE RPAS projects, a joint statement said.

In another announcement, Germany based HENSOLDT and HAL announced a collaboration agreement covering design/IPR Transfer for design and manufacturing of Obstacle Avoidance System (OAS) for Indian helicopters primarily the Advanced Light Helicopter (ALH) and potential future exports which an official said will result in 100% technology transfer.

“HAL has been manufacturing and providing MRO support for TPE 331-5 engines for the last 40 years. We are also establishing facilities for manufacturing TPE 331-12B engines for HTT-40 project. The engine used on the MQ-9B RPAS belongs to the same family of engines with upgraded configuration to adapt to the RPAS technology. I am glad, that HAL Engine Division, Bengaluru would be providing MRO support to the engine for MQ-9B RPAS, one of the most sophisticated equipment in the world” said C.B. Ananthkrishnan, Chairman and Managing Director, HAL. The Expression of Interest was exchanged at the ongoing expo on February 14.

Though the turboprop engine fitted onboard the MQ-9B HALE RPAS looks similar to other commercial engines in its category, it is unique in its configuration and operation, requiring special training and equipment for MRO, said Dr. Vivek Lall, Chief Executive of General Atomics Global Corporation. Indian Navy operates two MQ-9B Sea Guardians taken on lease in 2020. A larger deal for 30 armed MQ-9Bs, 10 for each Service, is pending. Last year, the Defence Ministry has ordered a reassessment of the requirements of the deal estimated at around \$3bn.

Threat to helicopters

On the OAS, a statement from HENSOLDT noted that helicopter accidents during low level flights have been a matter of concern for both civil and military helicopters and pilot assistance through enhanced situational awareness is required for quick reaction. “Obstacles in the flight path or close to it often pose a threat to helicopters. Such obstacles may be power lines, aerial cableways, pylons and towers. The probability of occurrence of such threats increases during low-level flight manoeuvres,” it stated.

The OAS system provides smart visual cues to pilots to reduce their workload and thereby increasing flight safety and the certainty of mission effectiveness, particularly in crucial mission phases under adverse visual conditions, the statement said.

According to the statement, the system is LiDAR based sensor with synthetic vision and 3D conformal symbology to detect the objects and terrain and provide assistance to the pilot through safety lines and 3D conformal symbology based synthetic vision thereby enhancing situational awareness to increase flight safety.

“This collaboration between HAL Korwa and HENSOLDT is first of its kind in Indian Defence Industry with intention of transferring of critical key technology from Germany to India... The finalisation of the ToT including IPR for the equipment is primarily proposed for ALH helicopter and expected to be a major equipment fit in all future upgrade/new helicopter programme with enhanced features with suitable improvement and customization by HAL Korwa.” said Apurba Roy, Executive Director, HAL Korwa.

<https://www.thehindu.com/news/national/hal-to-provide-mro-for-mq-9b-drone-engines-in-india/article66511720.ece>

United News of India
India's Multi Lingual News Agency

Wed, 15 Feb 2023

Garuda Aerospace's Solar-Powered Drone Unveiled at Aero India

Garuda Aerospace unveiled its latest technological marvel- SURAJ, a solar-powered unmanned reconnaissance aerial J-Glider at the Aero India 2023 show on Wednesday.

Dr Sathesh Reddy, former DRDO chairman and current principal scientific advisor to the defence minister unveiled the drone.

SURAJ is an ISR high-altitude drone designed specifically for surveillance operations, providing real-time information to the high command and protecting jawans on the ground.

The drone's unique J-shaped wings are equipped with solar-powered cells that serve as its primary fuel source, while an auxiliary battery provides additional propulsion or decreased speed as required.

The drone will carry a versatile payload of high-resolution zoom cameras with thermal imagery and foliage-penetrating lidar sensors with a maximum capacity of 10 kg. This cutting-edge technology will capture, process, and transmit photos and videos in real-time, ensuring that the

headquarters and base have access to vital information before planning strategic operations and terms.

It has an endurance of 12 hours and can fly at an altitude of 3000 ft. The drone is all set to support various Indian and Global giants namely the Indian Army, Navy, Airforce, BSF, CRPF, CISF, ITBP, DRDO, MOD, and MHA.

Recently, Garuda Aerospace created history by raising \$22 million, the largest-ever Series A funding in the drone sector. The funds will, therefore, help in the development of a 1:1 prototype of SURAJ which will be ready to fly by August 2023.

Reddy said, "Garuda Aerospace is one of the upcoming digital technology companies in the drone sector that are developing many technological solutions for various sectors like Defence, Agriculture and Industrial Automation. We are trying to work closely with Garuda Aerospace and It's an honour for me to unveil their solar-powered unmanned reconnaissance aerial J-Glider SURAJ drone. My heartiest congratulations to the entire team of Garuda Aerospace."

Garuda Aerospace Founder and CEO Agnishwar Jayaprakash said, "At Garuda Aerospace, we believe in the power of technology to transform the sector better. Garuda Aerospace's SURAJ drone, will help in providing military and security support with edge-cutting solutions like real-time monitoring. "Garuda Aerospace is also being guided by NAL, DRDO and several other scientists on the development of the SURAJ drone. We are so honored to unveil the SURAJ drone at Aero India 2023 and look forward to more success for Garuda Aerospace."

Garuda Aerospace is committed to providing innovative solutions to meet the evolving needs of our military and security forces. We are confident that the SURAJ drone will play a vital role in safeguarding the security of our nation and the people. Suraj will have ISR capability and will be equipped with AI, ML and Bionic Chip for advanced real-time processing."

Prime Minister Narendra Modi simultaneously flagged 100 kisan drones in 100 villages across India with live tracking, data collection, and processing. Garuda Aerospace has been the preferred drone partner for NDRF since the pandemic. Equipped with 400 drones and over 500 pilots across 84 cities, Garuda Aerospace is equipped to support different emergencies.

Former captain of India's national cricket team Mahendra Singh Dhoni unveiled a camera drone called Droni at The Global Drone Expo in Chennai and became the firm's Brand Ambassador as well.

<https://www.uniindia.com/garuda-aerospace-s-solar-powered-drone-unveiled-at-aero-india/south/news/2916794.html>

The Tribune

Wed, 15 Feb 2023

Rs 80K Cr Pacts Inked

In all, 266 partnerships were signed at Aero India on Wednesday. These included 201 MoUs, 53 major announcements, nine product launches and three transfers of technology agreements. The collective worth of these is around Rs 80,000 crore, the Ministry of Defence said. The

agreements include new technology and products that the DRDO has developed and handed over to private industry to make. HAL and Safran Helicopter Engines, France, signed a pact for a joint venture for design development of helicopter engines.

<https://www.tribuneindia.com/news/nation/80k-cr-pacts-inked-480167>

ThePrint

Wed, 15 Feb 2023

Gets Orders for 10 Lakh Multi-mode Grenades for Indian Armed Forces: Munitions India

Munitions India on Wednesday said the company received orders for more than 10 lakh multi-mode grenades for Indian Armed Forces and over Rs 3,000 crore of orders for exports.

Ravikant, Chairman and Managing Director, Munitions India, said, “We have got orders for more than 10 lakh multi-mode grenades for Indian Armed Forces and over Rs 3,000 crore of orders for exports.” The company told ANI during the Aero India, where various domestic firms and entrepreneurs visited the event on Wednesday.

The five-day Aero India show began at the Air Force Station in Yelahanka, Bengaluru on February 13. Today at the event, Chief of Defence Staff General Anil Chauhan visited the pavilions of domestic defence firms and interacted with entrepreneurs. He urged them to focus on cutting-edge research to meet the need for niche technologies and high-end manufacturing as per international standards. Union Defence Minister Rajnath Singh on Tuesday held a bilateral meeting with Zambian counterpart Ambrosia Lufuma on the sidelines of Aero India 2023 in Bengaluru.

Rajnath Singh also met with Italian Minister of State for Defence Matteo Perego Di Cremona in Bengaluru. He tweeted, “Glad to interact with the Italian Minister of State for Defence, Matteo Perego Di Cremona in Bengaluru.”

<https://theprint.in/economy/gets-orders-for-10-lakh-multi-mode-grenades-for-indian-armed-forces-munitions-india/1373496/>

THE ECONOMIC TIMES

Wed, 15 Feb 2023

HAL, German Firm HENSOLDT to Jointly Produce Obstacle Avoidance System for Indian Helicopters

German defence firm HENSOLDT is set to share full range of critical technologies with state-run aerospace major Hindustan Aeronautics Ltd (HAL) for manufacturing of Obstacle Avoidance System (OAS) for Indian helicopters. The OAS is a key equipment that helps in improving situational awareness of pilots and thereby reduces the possibility of accidents, besides enhancing mission accomplishments, according to aviation experts. The HAL is looking at production of OAS for the Advanced Light Helicopters (ALH), officials said. The

indigenously designed and developed ALH is a twin engine, multi-role, multi-mission new generation helicopter in the 5.5 tonne weight class.

The HENSOLDT and HAL made the announcement on the collaboration covering design and IPR (Intellectual property Rights) for manufacturing of the Obstacle Avoidance System for Indian helicopters and for potential future exports on the sidelines of Aero India 2023, the German company said. HAL and HENSOLDT also announced a collaboration for joint production of multi-sensor airborne electro-optic gimbals for Indian rotary and unmanned platforms.

Officials said HENSOLDT will transfer to HAL 100 per cent critical technologies for the OAS.

Helicopter accidents during low level flights have been a matter of concern for both civil and military choppers and pilot assistance through enhanced situational awareness is required for quick reaction, the company said. Obstacles in the flight path or close to it often pose a threat to helicopters. Such obstacles may be power lines, aerial cableways, pylons and towers. The probability of occurrence of such threats increases during low-level flight manoeuvres.

HENSOLDT said its system provides smart visual cues to pilots to reduce their workload and thereby increasing flight safety and the certainty of mission effectiveness, particularly in crucial mission phases under adverse visual conditions.

Where human eyesight alone is not enough, powerful software processes and combines information from sensors and databases and presents it in visual format, it said.

"This collaboration between HAL Korwa and HENSOLDT is first of its kind in Indian Defence Industry with intention of transferring of critical key technology from Germany to India giving boost to 'Atma Nirbhar Bharat' (self-reliant India) in the Indian defence sector," said Apurba Roy, Executive Director of HAL (Korwa facility).

"The finalisation of the transfer of technologies including IPR for the equipment is primarily proposed for Advanced Light Helicopters (ALH) and expected to be a major equipment fit in all future upgrade/new helicopter programmes with enhanced features with suitable improvement customisation by HAL Korwa," he said. Andleeb Shadman, MD, HENSOLDT India, said the company is optimistic and dedicated to supporting India's initiative on becoming self-reliant in defence manufacturing. "Our business plans are built on transfer of technology, local production and joint development based industrial collaborations. We believe that our collaboration with HAL for OAS is going to be the pioneering milestone," he said.

<https://economictimes.indiatimes.com/news/defence/hal-german-firm-hensoldt-to-jointly-produce-obstacle-avoidance-system-for-indian-helicopters/articleshow/97939018.cms?from=mdr>

ThePrint

Wed, 15 Feb 2023

HAL, Safran Move Forward in Partnership for IMRH Engine

Safran Helicopter Engines and Hindustan Aeronautics Limited (HAL) on Wednesday signed a workshare agreement for the joint development of the engine intended for the future 13-tonne

IMRH (Indian Multi-Role Helicopter) and its naval version DBMRH (Deck Based Multi-Role Helicopter).

This agreement follows the MoU (Memorandum of Understanding) signed on July 8, 2022 and stipulates the sharing of activities within the joint venture.

This workshare agreement was signed by Florent Chauvancy, Safran Helicopter Engines, EVP Sales and Marketing; and K Ramesh, General Manager, HAL Aero Engine Research and Design Centre, in presence of C B Ananthakrishnan, CMD, HAL and Franck Saudo, CEO, Safran Helicopter Engines.

The development of IMRH continues, and a 1/3 scale model was displayed by HAL at Aero India-2023. Discussions are also continuing with the Indian armed forces on the operational requirements for this new helicopter, HAL said in a release.

Availability of an indigenous engine will enhance the self-reliance content on the platform and demonstrates the commitment of both Safran Helicopter Engines and HAL to the Government of India's vision of 'Atmanirbhar Bharat' (self-reliance), particularly in defence technologies, it said.

Ananthakrishnan said: "The joint development of the high power engine is a new milestone in HAL's ever-growing capabilities in the sector with a competent partner like Safran Helicopter Engines. We are confident of making the engine meet the highly stringent and demanding requirements of Indian defence customers." Franck Saudo, CEO, Safran Helicopter Engines said: "We are very proud to be associated with such an important programme of HAL and very happy to once again support HAL, our partner for decades. While this programme will bring many advanced technologies to the Indian aerospace ecosystem and to HAL, it will also provide the Indian armed forces with state-of-the-art solutions." Safran and HAL will continue to work on the development of this joint venture in the coming months, which is intended not only to develop an engine for the IMRH, but also for other helicopters.

Safran and HAL have also agreed on the condition for the transfer right to HAL for manufacturing of seven critical forging and casting raw parts, for further enhancement of indigenous content in Shakti Engine of ALH/LCH.

<https://theprint.in/india/hal-safran-move-forward-in-partnership-for-imrh-engine/1374558/>

The Tribune

Wed, 15 Feb 2023

Russia Offers New Engine for Sukhoi Jets

Two of the world's biggest exporters of weapons — the US and Russia — are looking to expand their ambit in the Indian defence equipment market. The move includes joint ventures and offers of "cutting-edge" technology.

Amid the excitement of the US-made F-35 jets and B1-B bomber arriving at the Aero India here, the Russian side on Wednesday made a significant statement on upgrading the Indian Air Force (IAF) fleet of 270 Sukhoi-30 MKI fighter jets.

Yury Slyusar, General Director, United Aircraft Corporation (UAC), said: “We have defined the phases and the upgrade will take place in India. Our proposals will meet requirements of the IAF.” As part of the plan, the Russians have to integrate India-made weapon systems onto Sukhoi. “We started ‘make in India’ long ago and have localisation of 60 per cent,” said Slyusar.

When asked whether or not IAF’s Sukhoi fleet would get a new engine, he did not specify what sort of power the new engine could provide. “We have offered more variants of engines for Sukhoi,” he noted.

To a query on Russia offering its fifth-generation fighter jet Sukhoi-57 to India, he said: “As the Russian federation, we are interested in foreign partners such as India for the jet.”

The UAC has also met with officials of HAL. “We spoke about the joint development of medium transport aircraft,” said Slyusar.

India is looking at a new transport plane and has asked global manufacturers to send offers. The UAC has offered a new plane with a carrying capacity of 20 tonnes and a range of 5,000 km.

<https://www.tribuneindia.com/news/nation/russia-offers-new-engine-for-sukhoi-jets-480145>



Wed, 15 Feb 2023

Challenges Aplenty in India’s Defence-Drone Space

By Lavpreet Kaur

If you thought India’s goal of becoming a global drone hub was easy to achieve, think again.

The dearth of investment, lack of relevant technology, insufficient research and development, and communication gaps between lawmakers and drone makers have made it harder for India to make better defence-grade drones locally, according to industry insiders, drone experts and armed force representatives at Aero India 2023. The comments came less than a year after Prime Minister Narendra Modi promised the country would become a drone hub by 2030.

“India needs an ecosystem for indigenisation of defence drones,” Ajay Bhatt, Minister of State for Defence, acknowledged on Wednesday, highlighting the need for more local manufacturing and better collaboration among stakeholders.

Others such as Ankit Mehta, the co-chair of the FICCI committee on drones and the co-founder of IdeaForge Technology, said India should not rely on neighbours for critical systems. He urged the government to address the gaps in technology and improve the Request for Information (RFI) and Request for Proposal (RFP) processes that are riddled with flaws.

While some experts stressed on the need for more local investment in defence-drone startups, others worried more about the lack of research in the critical sector.

“R&D is the missing pillar of civil aviation and drone tech,” said R K Narang, a former Indian Air Force officer who is also a drone policy analyst.

Some others pointed out how grants given for academic research in the field don't get translated into actual products due to low technology-readiness levels. The government should offer incentives linked to design and products, establish intellectual property rights to protect the differentiation of products, and promote faster adoption of the latest technology breakthroughs in the sector, the industry veterans suggested.

<https://www.deccanherald.com/business/business-news/challenges-aplenty-in-india-s-defence-drone-space-1191603.html>

Business Standard

Wed, 15 Feb 2023

Stealthy, Speedy, Precise: What are Fifth-Generation Fighter Jets?

The spectators at the Aero India 2023 in Bengaluru were surprised when two US Air Force F-35 fighter jets landed at the Yelahanka air force base. Developed by Lockheed Martin F-35 Lightning II is arguably the most advanced fifth-generation fighter jet today. The other jet was the F-35A Joint Strike Fighter.

Being seen as a gesture of support from the US military, the F35s are expected to demonstrate their capabilities at Aero India. The Assistant Deputy Under Secretary of the US Air Force International Affairs, Major General Julian Cheater, said that Aero India was an "ideal forum" to showcase the capabilities of these fifth-generation jets.

While much has been said about how fighter jets are marvels of engineering, it is imperative to understand what the fifth-generation jets are and how they are the most advanced fighters in the world yet.

The inception of fighter jets

Although the development of jets started during the first World War, it was the second World War that truly highlighted how important it was for a country to have air dominance and the capability to control its airspace. The destruction caused by Germany's Luftwaffe was a case in point. By the end of the 1940s, several countries had developed what is now called their "first-generation jets". These included F-86, MiG-15 and MiG-17.

Gradually, improvements and updates were made, and the countries introduced second-gen, third-gen and finally, fourth-gen fighters. Every jet of a particular "generation" had significant technological advancement compared to the previous "generation". Better design, easier handling and more precision were the cornerstones of these advancements.

Development of "generations" of jets

First-generation fighter jets

These had primitive avionic systems without radars or self-defence measures. They were armed with unguided bombs, machine guns and rockets. Moreover, these flew subsonically. Soviet MiG-15 and the American F-86 Sabres were examples of first-generation fighter jets.

Second-generation fighter jets

These jets introduced air-to-air radar and infrared and semi-active guided missiles. The engine design was improved, and these could achieve supersonic speed. The introduction of radar-guided missiles improved engagement distance. The Soviet MiG-21, French Mirage III, and the American F-104 were examples of second-generation fighter jets.

Third-generation fighter jets

These were assisted with Doppler radar, which allowed the aircraft to "look down" and "shoot down". Now, aerial confrontations could be done beyond visible range with the help of guided radio frequency missiles. This generation included fighter jets such as the MiG-23, Sukhoi Su-17, and the F-4 Phantom.

Fourth-generation fighter jets

These aircraft were superior to the previous jets due to a better aerodynamic design and were "fly-by-wire" fighters. The manual control was replaced with an electronic interface. Moreover, these were lighter than previous jets, improving fuel efficiency and design flexibility. The American F16, Soviet Su-27, and Swedish Saab-37 are examples of fourth-gen fighter jets.

Fifth-generation fighter jets

In the case of fifth-generation fighters, one word that describes as well as differentiates it from the previous jets is "stealth". Special radars are developed for these jets since the enemies can detect the aircraft's radar emissions. Features like infrared sensors and visual tools for self-protection and radar jamming make it difficult for enemy systems to detect, track, and engage these aircraft.

These jets can also "supercruise", maintaining speeds above Mach 1 without using the afterburner.

The surface of these jets has been kept plain to reduce the radar bounce-off. Also, specially shaped-exhaust nozzles have been put in place to reduce infrared radiation. The engines of these jets are located in the body of the plane to hide as much of the heat signature as possible.

In 2005, with Lockheed Martin's F-22 Raptor, the USA became the first country to field an operational fifth-generation fighter. Currently, only the USA with the F22, and F35, Russia with the Su-57, and China with the J-20 have fifth-gen fighters in service.

India, Turkey, Sweden, and Japan have programmes to develop their own fifth-gen fighter planes.

Fifth-generation jets and India

In 2010, India launched the Advanced Medium Combat Aircraft (AMCA) programme to develop its own single-seat, twin-engine fifth-gen fighter jet for the Airforce and the Navy. The design is being developed by the Aeronautical Development Agency (ADA) of the Defence Research and Development Organisation (DRDO). The jet is expected to be produced by DRDO with Hindustan Aeronautics Limited (HAL) and a private company.

On February 11, DRDO issued a notification asking private companies to participate in the AMCA program. The development cost of AMCA is estimated to be around Rs 15,000 crore, and the first such jet is expected to take flight by 2025.

According to experts, the display of F-35s at Aero India 2023 signals that the US wants to win an ongoing Indian Airforce tender of 114 multi-role fighter jets. Under the tender, out of 114 jets, 96 would be made in India, and 18 will be imported. Reports suggest that the USA might replace the F-21, which they are currently offering, with F-35s.

https://www.business-standard.com/article/current-affairs/stealthy-speedy-precise-what-are-fifth-generation-fighter-jets-123021501065_1.html



Wed, 15 Feb 2023

Aero India 2023: UK Govt Asserts Commitment to Atmanirbhar Bharat

The United Kingdom (UK) has expressed its commitment to the ‘Atmanirbhar Bharat’ initiative of the Indian government led by PM Narendra Modi.

The UK government said its defence sector was deployed in force at Aero India 2023, India’s premier air show being held in Bengaluru, with an ambition to not only “Make in India,” but also “Create in India”.

Prime Minister Narendra Modi inaugurated the 14th edition of Aero India at the Yelahanka Air Force station complex on the outskirts of Bengaluru on Monday.

The five-day exhibition is being participated by over 700 defence companies and delegates from 98 countries, officials said.

This edition of Aero India is showcasing the country as an emerging hub for manufacturing military aircraft, helicopters, military equipment and new-age avionics. In a demonstration of the strong intent to accelerate collaboration with India across research, development and training, the British delegation is poised to take discussions forward on key offers that are being explored for collaboration, such as a strategic partnership for a jet engine development programme and maritime electric propulsion technology.

“Over the course of the week, the delegation will engage in a range of Indian stakeholders to reiterate the UK’s ambition to not only ‘Make in India’ but also to ‘Create in India’,” a British High Commission statement said.

Led by Minister for Defence Procurement Alex Chalk, the UK team comprises representatives from government, military, and the defence industry.

“As we continue to build the UK-India Comprehensive Strategic Partnership, I’m hugely excited to attend Aero India – another key opportunity to demonstrate the UK’s commitment to developing strong bilateral relations and deliver on the 2030 Roadmap,” Chalk said.

“Recent collaborations on exercise with the Indian Navy, Army and Air Force underpin the strength of our two nations’ commitment to working together to promote a free, open and secure Indo-Pacific region,” he added.

The delegation travelled to Bengaluru following their participation at the UP Global Investors Summit, of which the UK was a country partner, to “unlock investment potential” in India’s northern defence corridor.

Alex Ellis, the British High Commissioner to India, said: “I heard today Prime Minister Modi’s vision to build India’s indigenous defence capabilities; the UK is the right partner to realise that ambition – through sharing knowledge, increasing interoperability, more training and exercising – and through increased industrial collaboration, including through design and make in India.

“The UK is committed to partner with India in its journey towards becoming atmanirbhar in its defence and security needs,” Ellis said.

The UK team at Aero India 2023 includes Air Vice-Marshal Richard Maddison of the Royal Air Force (RAF) and British manufacturing giants such as Rolls Royce, BAE Systems, MBDA UK, Thales UK, Collins Aerospace and Leonardo.

It comes as the RAF said it looks forward to welcoming the Indian Air Force (IAF) to the UK for the Cobra Warrior exercise next month.

This will be the first time that the IAF will be participating in the multilateral air combat exercise, which will see the participation of air forces from 17 nations.

It will follow the RAF conducting a subject matter expertise exchange with the Defence Research and Development Organisation (DRDO) during the visit of Eurofighter Typhoon, Voyager and A400 in New Delhi in September last year, which also involved some joint RAF-IAF flying exercises.

The British government said the UK-India Defence Industry Joint Working Group, which held its inaugural meeting at the Defence Expo in Gandhinagar last year, is helping accelerate collaboration between the countries, including through the integration of Indian defence suppliers by UK industry into their global supply chain.

<https://www.firstpost.com/world/aero-india-2023-uk-govt-asserts-commitment-to-atmanirbhar-bharat-12159232.html>



Wed, 15 Feb 2023

Eye on Indian Defence Market, How US is Making its Presence Felt at Aero India 2023

By Pradip R. Sagar

With Russia engaged in war with Ukraine for almost a year now, the United States may well be aggressively eyeing opportunities to break Moscow’s dominance in the Indian defence market. About 70 per cent of the Indian military’s weaponry is Russian and while the US has gradually increased its presence here over the past decade, Washington understands that there is room to make further inroads.

The US push to tap the Indian defence market can also be gauged by its presence at the ongoing Aero India 2023 in Bengaluru. This is the largest-ever US delegation to participate in Asia's biggest military aviation exhibition, which concludes on February 17.

The US Air Force's F-35 stealth fighter jet has already stolen the show with its maiden presence in India. The debut was first reported by INDIA TODAY last week. The US Air Force's latest fifth-generation fighters—the stealth, supersonic, multirole F-35A Lightning II and F-35A Joint Strike Fighter—made their first appearance at Aero India. After a journey from the Hill Air Force Base in Utah, United States, the F-35A Lightning II demonstration team impressed military aviation enthusiasts with a demo of the jet's aerial capabilities.

The F-35's engine produces 43,000 pounds of thrust and consists of a three-stage fan, a six-stage compressor, an annular combustor, a single-stage high-pressure turbine, and a two-stage low-pressure turbine. Interestingly, the fighter jet is being closely guarded by US Air Force personnel at Aero India, with nobody, including top Indian defence officials, allowed to come in close proximity. The F-35s are parked at distance from other aircraft.

Besides the F-35, an F-16 Fighting Falcon duo has been conducting daily aerial demonstrations over the Bengaluru sky, showcasing the capabilities of one of the US Air Force's frontline fighter jets. On static display are the F/A-18E and F/A-18F Super Hornet, both multirole fighters.

“The F-35 represents the leading edge in US fighter jet technology. Aero India is an ideal forum to showcase the most advanced, capable, lethal and interoperable weapons systems that the US has to offer. These are designed to penetrate and defeat advanced adversary air defences,” said Major General Julian C. Cheater, assistant deputy under secretary of the air force, international affairs, department of air force, Pentagon. While the US is silent about whether it has offered New Delhi the F-35, India is developing its own stealth fighter jet, the Advanced Medium Combat Aircraft (AMCA), after the failure of its programme with Russia to develop a fifth-generation fighter jet.

Day two (February 14) of Aero India 2023, being held at the Yelahanka Air Force Base, saw the US spring another surprise with the arrival of two B-1B Lancers. The planes had made a journey from their temporary duty location at Andersen Air Force Base, Guam. The B-1B Lancer, a supersonic heavy-bomber, is capable of carrying out missions worldwide from its bases in the US as well as from forward deployed locations. It carries the largest conventional payload of both guided and unguided weapons in the US Air Force and is considered the backbone of America's long-range bomber force.

At the last edition of Aero India in February 2021, the B-1B had landed in India for the first time and conducted a flyby on the inaugural day of the show, escorted by an Indian Air Force Tejas fighter. The return of the long-range, supersonic, heavy-bomber to India to participate in Aero India 2023 underscores the importance the US gives to its growing strategic partnership with India. “The United States and India continue to deepen defence cooperation. We have two great militaries that are even better when we work together,” said Rear Admiral Michael Baker, senior defence official and defence attache at the US Embassy in New Delhi.

Besides aircraft from the US Air Force, the major US defence companies participating in Aero India are Aero Metals Alliance, Astronautics Corporation of America, Boeing, GE Aerospace, General Atomics Aeronautical Systems, Lockheed Martin, Pratt & Whitney, and TW Metals.

Amit Pathak, regional director with the US-based Collins Aerospace, said the company had engaged with the Indian aerospace industry for 25 years and plans to invest over \$200 million (Rs 1,657 crore) in engineering and manufacturing capabilities in India. “India is strategic to our global growth and investment strategy,” Pathak said.

<https://www.indiatoday.in/amp/india-today-insight/story/eye-on-indian-defence-market-how-us-is-making-its-presence-felt-at-aero-india-2023-2335004-2023-02-15>



Wed, 15 Feb 2023

Challenger 3 Critical Design Review Approved

The UK Ministry of Defence has selected Rafael Advanced Defense Systems' Trophy active protection system (APS) for the next phase of detailed assessment of and integration into the British Army's Challenger 3 main battle tank, the ministry and company announced on 24 June 2021.

The UK Ministry of Defence's Equipment & Support (DE&S) organisation and the British Army announced on their websites on 9 February that the critical design review (CDR) for the Challenger 3 main battle tank had been approved ahead of schedule and within budget. The CDR follows the initial design review in March 2022. The originally planned date for the CDR was 31 March 2023.

Rheinmetall BAE Systems Land (RBSL) was awarded a GBP800 million (nearly USD973 million) contract for 148 Challenger 3s in May 2021. Janes has learned production of Challenger 3 prototypes has begun, with a total of eight planned to be manufactured.

The next formal milestone is the systems qualification review planned for 2025, which will mark the end of the demonstration and trials phase, allowing manufacture to begin.

<https://www.janes.com/defence-news/land-forces/latest/challenger-3-critical-design-review-approved>

THE ECONOMIC TIMES

Thu, 16 Feb 2023

China says U.S. Balloons Flew Over Xinjiang, Tibet, Warns of Countermeasures

Diplomatic friction festered between the United States and China on Wednesday as Beijing charged that U.S. high altitude balloons flew over its Xinjiang and Tibet regions and said it would take measures against U.S. entities that undermine Chinese sovereignty.

Washington and Beijing are locked in a tussle over flying objects after the U.S. military this month shot down what it called a Chinese spy balloon over the coast of South Carolina. Beijing

says its balloon was a civilian research vessel mistakenly blown off course, and that Washington overreacted. This week, China countered that U.S. balloons had flown over its airspace without permission more than 10 times on round-the-world flights since May 2022. "Without the approval of relevant Chinese authorities, it has illegally flown at least 10 times over China's territorial airspace, including over Xinjiang, Tibet and other provinces," Chinese Foreign Ministry spokesperson Wang Wenbin told a regular daily briefing on Wednesday.

The White House has disputed China's allegations.

Washington has added six Chinese entities connected to Beijing's suspected surveillance balloon program to an export blacklist.

"The U.S. has abused force, overreacted, escalated the situation, and used this as a pretext to illegally sanction Chinese companies and institutions," Wang said.

"China is firmly opposed to this and will take countermeasures against relevant U.S. entities that undermine China's sovereignty and security in accordance with the law," Wang said, without specifying the measures.

The balloon dispute has delayed efforts by both sides to try to patch up frayed relations, although U.S. President Joe Biden has also said that he does not believe ties between the two countries were weakened by the incident.

U.S. Secretary of State Antony Blinken, who postponed a planned trip to Beijing over the balloon, is considering meeting China's top diplomat, Wang Yi, in Munich this week, sources have said. U.S. Deputy Secretary of State Wendy Sherman said later on Wednesday that communication with China had not stopped, but gave no details about any future high-level meetings. "We hope when conditions make sense that we will be seeing each other face-to-face again. No announcements today," she said

Sherman reiterated that China's claims about U.S. balloons were false.

"They have now said that there have been a gazillion balloons by the U.S. over China. That is absolutely not true. There are no U.S. government balloons over China," she told an event at the Brookings Institution in Washington.

<https://economictimes.indiatimes.com/news/international/world-news/china-says-u-s-balloons-flew-over-xinjiang-tibet-warns-of-countermeasures/articleshow/97966404.cms>

Science & Technology News



Wed, 15 Feb 2023

CSIR-DG Kalaiselvi to Participate in UoH Symposium

CSIR director general N. Kalaiselvi, Scientific Adviser to Defence Minister G. Satheesh Reddy and other eminent scientists from various scientific institutions and universities are to participate

in the two-day symposium on “Electronics for Self-Reliance” on February 16 and 7 at Dr. Zakir Hussain lecture hall complex, University of Hyderabad.

The event is being organised by the Centre for Advanced Studies in Electronics Science & Technology (CASEST) under School of Physics, UoH, in collaboration with National Academy of Sciences, India (NASI) Hyderabad chapter and Academy for Science, Technology and Communication (ASTC).

Director-General, Electronics & Communication Systems (ECS), DRDO, B. K. Das will be inaugurating and delivering the ASTC- A. S. Rao memorial lecture on ”Leveraging defence R&D for Atmanirbhar Bharat”, while former IIT-Delhi Director V. Ramgopal Rao Pillay will deliver the key note address on “ India Semiconductor Mission: How can academia leverage this opportunity?” said a press release.

<https://www.thehindu.com/news/national/telangana/csir-dg-kalaiselvi-to-participate-in-uoh-symposium/article66513585.ece>

THE ECONOMIC TIMES

Wed, 15 Feb 2023

Indian Space Association Pitches for Incubation Centres in Space Technology Parks, Flags Challenges Faced by Startups

The Indian Space Association (ISpA) has suggested setting up incubation centres, in a plan outlining its recommendations for setting up Space Technology Parks (STP).

ISpA, a non-profit, released a set of recommendations here at Aero India 2023.

The cost of technical infrastructure needed for design, development and testing is very high. Further, the space domain by itself is characterized by high investments and long gestation periods for return on investment, one of the three authors of the concept paper, ISpA director Wing Commander Satyam Kushwaha (rtd) has said.

For the reasons stated above as well as due to the government’s control over the space domain earlier, the bulk of such technical infrastructure for testing, calibration and validation is held by the government agencies like the Indian Space Research Organization (ISRO), Defence Research and Development Organisation (DRDO) and other government-assisted labs.

While in recent times, the government has shown the inclination to give access to some of its infrastructure to the private industry, "there still exist challenges to their access and affordability on various counts which are impacting the pace of progress of our young startups, which operate under very thin budgets, the tight investor is driven milestones and very limited human resources," Kushwaha said in his paper.

Given the above scenario, India must urgently invest in new-generation technical infrastructure as part of the STP to provide single-window affordable access to entrepreneurs for technology/product design, development, testing, validation and simulations, he suggested.

The key inputs for creating a comprehensive STP incentivization policy include administrative aspects, a single-window mechanism, financial enablement, a legal and policy framework, and skill and capacity development.

The government framework required to enable STP development includes the adoption of a national geospatial policy and international cooperation and harmonization. The framework for STPs includes centres of excellence, ground infrastructure and facilities, testing facilities and services, a regulatory sandbox, and legal/intellectual property rights support.

The present status of STPs in India includes the Space Manufacturing Park and the Kerala Space Park, both of which are initiatives of the government and ISRO. The STPs will act as a comprehensive facility & state-of-the-art accelerator that provides support and resources to space-related startups, entrepreneurs, and businesses.

The infrastructure of the park would include state-of-the-art laboratory space, office facilities, and meeting rooms, as well as access to high-speed internet, advanced computing resources, and other essential tools and equipment.

Aashish Kumar and Abhinav Dubey, research assistants at ISpA co-authored the paper. Lieutenant General AK Bhatt (retired), Director General, ISpA, said, "The development of STP is a critical step in the advancement of the country's space industry and will have far reaching impacts on the economy, infrastructure, and quality of life in the years to come."

<https://economictimes.indiatimes.com/tech/startups/indian-space-association-pitches-for-incubation-centres-in-space-technology-parks-flags-challenges-faced-by-startups/articleshow/97953502.cms&>

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