

फरवरी

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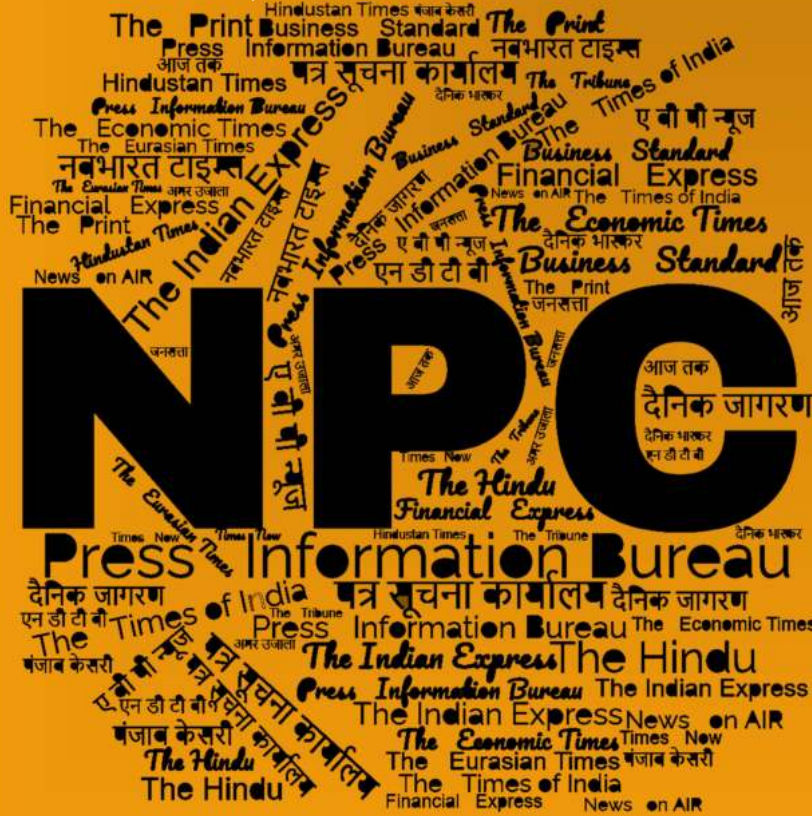
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समाचार पत्रों से चयित अंश Newspapers Clippings

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

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DRDO News

DRDO Technology News



Press Information Bureau
Government of India

Ministry of Defence

Tue, 14 Feb 2023

Indigenous Manufacturing of Aero-engines Need of the Hour for Aerospace Sector to Achieve Complete Self-reliance; MoD Working on the Details, says Raksha Mantri during DRDO Seminar at Aero India 2023

LCA Tejas is a game changer for aerospace industry: Shri Rajnath Singh Emphasises on indigenous design & development of essential weapon systems using niche technologies like Artificial Intelligence

Raksha Mantri hands over Health Usage & Monitoring System for MIG29K developed through Technology Development Fund to Indian Navy

DRDO hands over 18 ToT agreements to Industries for 12 technologies

Ministry of Defence is working on the details of indigenous manufacturing of aero-engines to provide a new fillip to the aerospace sector and achieve complete self-reliance. This was stated by Raksha Mantri Shri Rajnath Singh during his inaugural address at a seminar titled 'Indigenous Development of 'Futuristic Aerospace Technologies including Way Forward for Development of Indigenous Aero Engines', organised by Defence Research & Development Organisation (DRDO) as part of 14th Aero India in Bengaluru on February 14, 2023.

Shri Rajnath Singh stated that after completing 75 years of independence, India is entering 'Amrit Kaal' and it is time to ensure that Indian aircraft fly with indigenously-made engines. He stressed on the need to focus on indigenous design & development of essential weapon systems using niche technologies like Artificial Intelligence, drones, stealth, hypersonic and quantum computing. He exuded confidence that the DRDO, with its capability and dedication, will soon make quick progress in that direction and add to the list of its achievements that include 'Prithvi', 'Akash' and 'Agni' missiles. The Raksha Mantri also exhorted the DRDO to encourage start-ups and new R&D establishments to develop incremental innovations, minor sub-systems and their technologies through schemes like Technology Development Fund and Innovations for Defence Excellence (iDEX). "DRDO is no longer just a service provider for defence R&D. It is

now also a facilitator for in-house industrial R&D, start-ups and private sector labs. There is a need to take advantage of this synergy,” he said.

Shri Rajnath Singh urged the DRDO to set short-term, mid-term and long-term goals and work to build disruptive, cutting-edge or frontier technologies. While we are progressing towards becoming one of the strongest countries in the world, we should have strong support of next level Armed Forces capable of facing any new challenge, he said.

The Raksha Mantri highlighted the significant efforts being made towards the progress of defence R&D in the country, saying that the DRDO is the flag-bearer of that vision. He described the scientists, engineers and technicians of DRDO as behind-the-scenes heroes who design, develop and manufacture weapons & technologies and provide them to the soldiers posted at the borders.

Shri Rajnath Singh commended the DRDO for continuously making headways in defence and aerospace sector through research & innovation and strengthening national security through design & development of equipment ranging from ammunition to guns, radar systems and missiles. He enumerated some of the notable, including helicopters, weapon systems like TAPAS, Airborne Early Warning and Control (AEW&C) system, Medium Range Artillery Gun and radars. He stated the world is recognising these achievements, with many countries importing defence equipment from India and many more in the process of acquiring the weapon systems.

The Raksha Mantri termed Light Combat Aircraft (LCA) Tejas as a game changer for the aerospace industry. “A highly-capable aerial platform, LCA Tejas has a commendable record in flight safety which speaks volumes about its quality. Based on its success, the government has now approved LCA-Mk II for the Indian Air Force, while the Twin Engine Deck Based Fighter is under consideration for the Indian Navy. We have also started moving forward in the path of design and manufacturing of Advanced Medium Combat Aircraft in the form of 5th generation stealth aircraft. Whether it is water, land or sky, DRDO has always been at the forefront in strengthening the security infrastructure,” he said.

During the seminar, organised by DRDO’s Aeronautical Research and Development Board (AR&DB), the Raksha Mantri handed over the Health Usage & Monitoring System for MiG29K developed through Technology Development Fund (TDF) to Vice Chief of the Naval Staff Vice Admiral Satish Namdeo Ghormade. The DRDO in association with Smart Machines and Structures, Hyderabad under the TDF scheme has indigenously developed the Health Usage Monitoring System for the MiG29K with Technical handholding of DRDO and Users. This solution uses machine learning and data analytics on Flight Data Recorder data to help Indian Navy enhance the serviceability of the aircraft by predicting failure before they occur.

Shri Rajnath Singh also launched AR&DB web portal, www.samar.gov.in (System for Advance Manufacturing Assessment & Rating). SAMAR is the benchmark to measure the competency of defence manufacturing enterprises. SAMAR is an outcome of the collaboration between DRDO and Quality Council of India (QCI) to strengthen the manufacturing ecosystem in the country. The DRDO has equipped industries with the latest defence technologies by signing the Licensing Agreement for Transfer of Technology (ToT) of several critical systems. It handed over 18 ToT agreements to 18 Indian Industries for transfer of 12 technologies developed by 10 DRDO laboratories.

Secretary Department of Defence R&D and Chairman DRDO Dr Samir V Kamat handed over 12 technologies to Industries. The technologies handed over to Indian Industries pertain to Multi-Channel Laser DEW for 10kW/2km range Hard kill system, Active Electronically Scanned Array Radar (AESAR) – Uttam, Air Defence Fire Control Radar (ADFCR) – Atulya, NAYAN COMINT System, Unified Mission Computer, Software for outdoor Perimeter System (STOPS), LAND Inertial Navigation System (LAND-INS) for Land based Application, Ceramics Radomes Technology, Trawl Assembly for T-72/T-90 Tanks, Weapon Tracking System (WTS), Linear Thermal Detector and CBRN Water Purification System (WPS) Mk II. The ToT of these DRDO developed technologies will further strengthen the manufacturing eco-system in the country in the area of defence systems and platforms. So far, DRDO has entered into more than 1,500 ToT agreements with Indian Industries.

A DRDO Monograph titled Non-Destructive Evaluation of Solid Rockets and Missile System and AR&DB's magazine was also released. Handing Over of CEMILAC certificate for CVRDE developed aircraft bearings for Aircraft Mounted Accessories Gear Box (AMAGB) of Tejas was also carried out. Chief of Defence Staff General Anil Chauhan and Scientific Adviser to Raksha Mantri Dr G Satheesh Reddy were also present on the occasion.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1899167>

THE ECONOMIC TIMES

Wed, 15 Feb 2023

DRDO Developing Critical Defence Components Indigenously: DRDO Chief

The Defence Research and Development Organisation (DRDO) is working on developing a precision guidance kit, a seat ejection system for the pilots and pyrotechnic cartridges, DRDO Chairman Samir V Kamat said here on Tuesday. The DRDO is also coming up with an engine for its Unmanned Aerial Vehicle (UAV) Tapas. "We are working on the precision guidance kit. We have developed the seat ejection system, a life-saving product for the pilots and several pyrotechnic cartridges," Kamat told reporters at the Yelahanka Air Force Base, where the 14th edition of the biennial Aero India-2023 is underway. The premier defence organisation has also indigenously developed an engine with 180 HP capacity for the UAV Tapas. "This engine has been indigenously developed and very soon, maybe in two months, it will be a part of Tapas. It can go up to 17,000 ft altitude and it has worked satisfactorily," he said. The DRDO chief said the organisation has displayed 321 products at the Aero India show, including some critical components. "In the Aero India, we have showcased some of our air delivered bombs and many are on display," he added.

<https://economictimes.indiatimes.com/news/defence/drdo-developing-critical-defence-components-indigenously-drdo-chief/articleshow/97927841.cms>

Talks to Produce LCA Engines Indigenously Underway: DRDO Chairman

Defence Research and Development Organisation (DRDO) chairman Samir Kamat has said discussions are underway for an engine deal to enable co-development with manufacturers, adding that the same will help the manufacture of Light Combat Aircraft (LCA) indigenously. The DRDO chief's remark comes on the heels of Defence Minister Rajnath Singh's statement that India will soon produce indigenous Light Combat Aircraft (LCA) engines.

In an interview with ANI, the DRDO chairman said, "We have showcased the Tapas drones (at the ongoing Bengaluru air show), which soared to a height of 15,000 feet. We have also showcased our UAV Archer, which could also be weaponised. We have also developed a set of new missiles, including the Akash NG, VSHORADS, and MPATGM." "I can say that our weapon systems are on par with the best and indigenous," he added. He further informed that discussions are ongoing for the manufacture of engines for the Advanced Medium Combat Aircraft (AMCA) Mark 2 with three defence firms in three countries."

The LCA Mark2 should be ready for induction by 2028. The first flight of the AMCA Phase 1 may take seven years and the induction can take 10 years from now. We cannot predict the timeline of the AMCA Mark 2 with a new engine until we sign an engine deal for co-development with another OEM (Original Equipment Manufacturer). We have been holding discussions with Safran France, GE from the U.S., and Rolls Royce from the U.K.," the DRDO chief said. Mr. Kamat said, "The GE-414 engines are going to be used in the LCA Mark2. The discussions with GE are underway and they are keen on it. We are just awaiting clearance by the US government." He said the engines would be manufactured indigenously once the clearance comes through from the US government. "The matter was discussed during our NSA (Ajit Doval's) recent U.S. visit. The U.S. government said it was open to it (indigenous manufacture of engines). Hopefully, in the next 3-6 months, an announcement of the transfer of technology will happen and these engines would be made in the country itself," he said.

Mr. Kamat added, "The DRDO is going to develop the first tripod-fired very short-range air defence system. Another one, shoulder-fired version, has also been cleared for the Army."

<https://www.thehindu.com/news/national/talks-to-produce-lca-engines-indigenously-underway-drdo-chairman/article66507298.ece>

Bengaluru-Built Uttam Radar Ready for Export, says DRDO

Uttam, the state-of-the-art Active Electronically Scanned Array Radar (AESAR), developed by a Defence Research and Development Organisation (DRDO) lab in Bengaluru originally for Light Combat Aircraft (LCA) Tejas, is now ready for export.

Aside from this, DRDO is also working on other electronics that are export worthy, DRDO director-general (electronics & communication system) BK Das said. The development is in line with the Centre's push for not just self-reliance in defence but also enhancing exports. PM Modi on Monday said India's defence exports will top \$5 billion by 2024-25.

RAJNATH CALLS FOR GREATER COOPERATION

Pics: Chethan Shivakumar & K Sunil Prasad

Defence minister Rajnath Singh, while calling for greater cooperation to deal with fast-paced changes in an increasingly complex global security scenario, on Tuesday said India stands for rules-based international order.

"India stands for rules-based international order in which 'might being right' is replaced by fairness, cooperation and equality," a statement issued after Singh hosted the defence ministers' conclave on the sidelines of Aero India read.

"Collective security is sine qua non (an essential condition) for prosperity, we need to devise new strategies to counter threats like terrorism," the release read.

The conclave, with a broad theme of 'Shared Prosperity through Enhanced Engagements in Defence (SPEED)', saw defence and deputy defence ministers of 27 countries participating.

It sought to address aspects related to deepening cooperation for capacity building (through investments, R&D, joint ventures, co-development, co-production and provisioning of defence equipment), training, space, AI and maritime security to grow together.

Singh stated that the theme of the event characterises the present era wherein geopolitical and security realities are shifting at unwitnessed speed. He called for real-time collaboration to respond to such fast-paced changes. TNN



IAF's team Sarang displays precision skills

“Electronics developed in the country are ready to be exported. We're going ahead with electronic warfare systems and have various industries lined up for that. We are talking about an electro-optics payload that is ready

BK Das | DRDO DIRECTOR-GENERAL (ELECTRONICS & COMMUNICATION SYSTEM)



IN AWE: Love was literally in the air on Day 2 of Aero India with team Surya Kiran's heart formation; viewers had a gala time

According to DRDO, Uttam (in pic) can track multiple targets at a time and also take hi-resolution pictures of enemy targets to aid in reconnaissance missions. Uttam is a fully electronically scanned agile beam radar which uses a transmit-or-receive module and has features that allow the aircraft to boast of low probability of intercept and non-cooperative target recognition. It also provides better situational awareness of the modern battlefield scenario and is capable of tracking multiple targets with high accuracy suitable for firing missiles and has interleaved air-to-air, air-to-ground and air-to-sea modes for all terrain solution, according to Electronics & Radar Development Establishment, the Bengaluru-based lab which has developed the radar.

Sanctioned in 2012, the project team included people with the experience of making the main radar on the indigenous Airborne early Warning And Control System - Netra - and the Maritime Patrol radar. While stating that DRDO was in talks for export of Uttam, Das did not elaborate on the countries or customers that had shown interest.

<https://timesofindia.indiatimes.com/city/bengaluru/bengaluru-built-uttam-radar-ready-for-export-says-drdo/articleshow/97930824.cms>



Tue, 14 Feb 2023

ADA Eyes 2032 Flight for Twin-Engine Deck Based Naval Fighter

The Aeronautical Development Agency (ADA) eyes a 2032 take-off for an indigenous Twin Engine Deck Based Fighter (TEDBF) aircraft that the Indian Navy would be looking for if the Union government approve construction of more aircraft carriers in India to cater to the growing strategic needs of the Indo-Pacific, where China is flexing its muscles.

“A proposal to develop more than 100 TEDBF is before the Cabinet Committee on Security. Once approved, ADA aims to fly the TEDBF by 2032,” ADA Director-General Girish S Deodhare said at a press conference on the sidelines of Aero India on Tuesday.

The twin-engine single-seat carrier-borne fighter aircraft has been designed for operations on-board Indian Navy’s aircraft carriers and envisaged as a possible replacement for the Russian origin MiG-29K that takes off from the decks of INS Vikramaditya and INS Vikrant.

Deodhare said the TEDBF’s preliminary design was complete and work on the 26 tonnes naval fighter with a maximum speed of 1.8 Mach was set to accelerate.

Another proposal to make 140 (seven squadrons) Advanced Medium Combat Aircraft (AMCA) is also before the CCS. “It would take a minimum of 10 years for the AMCA to fly from the day of CCS approval,” Deodhare said. The fifth-generation indigenous stealth fighter will be a twin-engine one with a swing-role capability. On the LCA-Navy, he said trials were going on-board INS Vikrant, and the performance of the aircraft would be evaluated after the trials were over.

Uttam for LCA

The DRDO is looking at integrating its Active Electronically Scanned Array (AESA) Radar Uttam into the LCA platforms in two to two-and-a-half years. B K Das, DG, Electronics and Communications Systems, DRDO, said the transfer of technology has been completed and the production line was being firmed up by HAL and LRDE.

“We have developed, flown and tested Uttam in all classes of performances – including for weapon classification and tracking. It has been outperforming all contemporary radars,” he said.

Underlining DRDO’s work across domains including radars and electronic warfare applications, Das said India was establishing itself as a self-sufficient producer of these systems and was also ready to export its products.

M Z Siddique, DG (Naval Systems and Materials), DRDO, said the agency’s laboratories have fetched “very good results” with the stealth technologies that are set to be key drivers in India’s plans for its fifth-generation fighter aircraft. He said the results were significant in efforts to translate research on the four broad verticals – acoustic, visual, infrared and radar – into a product framework.

<https://www.deccanherald.com/national/ada-eyes-2032-flight-for-twin-engine-deck-based-naval-fighter-1191267.html>



Wed, 15 Feb 2023

BrahMos Missile Alone can take India’s Defence Exports to USD Billion by 2026

While Prime Minister Narendra Modi set an ambitious target of \$ 5 billion to be achieved for India’s defence exports by 2024-25 from the current \$ 1.5 billion, the BrahMos supersonic missile alone has the potential of achieving \$ 3 billion by 2026.

BrahMos Corporation, which specialises in supersonic cruise missiles, is all set to spearhead India’s export push as many countries especially those in South East Asia and the Middle-East have shown a keen interest in acquiring the made-in-India missiles designed and developed jointly with Russia.

The Indo-Russian Joint Venture which has significantly enhanced the war-fighting capabilities of the Indian armed forces, will start exporting the missiles to the Philippines by the end of 2023 and is confident of getting more export orders.

“Everyone is interested in BrahMos,” CEO and MD of BrahMos Aerospace, Atul D Rane told The New Indian Express on Tuesday. “The whole world looks at us, but we can only sell to countries agreeable to India and Russia. Whole of South East Asia is approaching us. The Philippines came on board first. Middle-East is very interested.”

Rane, who is also Outstanding Scientist, Director General (BrahMos), Defence Research & Development Organisation (DRDO), said that in some cases the talks are in advanced stages. He hopes to take it forward during his visit to IDEX (The International Defence Exhibition and conference) in the United Arab Emirates (UAE) next week.

The Corporation is bullish about the export potential of the missiles known for striking targets at supersonic speeds of up to 5-7 Mach (times the speed of sound) with precision. "BrahMos alone may be able to do around \$3 billion by 2026," said Rane.

"PM has set a tough target, but we are making it tougher for ourselves. Why not? Take it as a challenge," he said. BrahMos with a maximum range of 300 km is the export variant for land-, sea-, and air-based complexes.

<https://www.newindianexpress.com/states/karnataka/2023/feb/15/brahmos-missile-alone-can-take-indias-defence-exports-to-usd-billion-by-2026-2547519.html>



Tue, 14 Feb 2023

भारत जल्द ही स्वदेशी LCA इंजन का करेगा निर्माण, तीन देशों की कंपनियों से चल रही बातचीत: DRDO चीफ

रक्षा अनुसंधान एवं विकास संगठन (DRDO) के अध्यक्ष समीर कामत (Samir Kamat) ने कहा कि निर्माताओं के साथ इंजन के सह उत्पादन को लेकर बातचीत जारी है।

इससे स्वदेशी तौर पर लाइट कॉम्बैट एयरक्राफ्ट (LCA) बनाने में मदद मिलेगी। उनका यह बयान रक्षा मंत्री राजनाथ सिंह (Rajnath Singh) के उस बयान के बाद आया है जिसमें रक्षा मंत्री ने कहा था कि भारत जल्द ही स्वदेशी एलसीए इंजंस का निर्माण करने लगेगा।

'सबसे बेहतर स्थिति में हैं हम'- डीआरडीओ प्रमुख

एक साक्षात्कार में डीआरडीओ प्रमुख ने कहा कि हमने तापस ड्रोन का प्रदर्शन किया। जिसने 15 हजार फीट की ऊंचाई को छुआ। हमने अपने यूएवी आर्चर का प्रदर्शन भी किया जिसे हथियारबंद भी किया जा सकता है। हमने आकाश एनजी, वसहॉर्डर्स और एमपीएटीजीएम समेत नई मिसाइलों का विकास भी किया है। मैं कह सकता हूँ कि हमारी हथियार प्रणाली अब तक की सबसे बेहतर और स्वदेशी स्थिति में है।

तीन देशों की कंपनियों से चल रही है बातचीत

डीआरडीओ प्रमुख ने आगे बताया कि तीन देशों की तीन रक्षा कंपनियों के साथ एडवांस मीडियम कॉम्बैट एयरक्राफ्ट (एएमसीए) मार्क2 के लिए इंजन निर्माण को लेकर बातचीत जारी है। एलसीए मार्क2 का उत्पादन 2028 से शुरू हो जाएगा। उन्होंने बताया कि आज से जोड़े तो एएमसीए के पहले चरण की उड़ान में सात साल और उत्पादन में 10 साल का समय लगेगा। जब तक हम ओईएम (ओरिजनल इक्यूपमेंट मैन्यूफ्रेक्चर) के साथ इंजन के सह-उत्पादन के मसौदे पर हस्ताक्षर नहीं कर लेते, हमारे लिए यह कहना मुश्किल होगा की एएमसीए मार्क2 नए इंजन के

साथ कब उड़ान भरेगा। हम फ्रांस की सैफरन, यूएस की जीई और यूके की राल्स रायस के साथ बातचीत कर रहे हैं।

यूएस सरकार की अनुमति का इंतजार

कामत ने आगे बताया कि एलसीए मार्क2 के लिए जीई-414 इंजनों का इस्तेमाल किया जाएगा। जीई के साथ बातचीत जारी है और वह इसके लिए तैयार हो गई है। हम सिर्फ यूएस सरकार की ओर से अनुमति प्राप्त होने का इंतजार कर रहे हैं। एक बार अनुमति मिलने के बाद इंजन का उत्पादन स्वदेशी तौर पर शुरू कर दिया जाएगा। उन्होंने आगे बताया कि एनएसए (अजीत डोभाल) के हालिया अमेरिकी दौरे के दौरान इस पर चर्चा की गई। अमेरिकी सरकार का कहना है कि वह इसके लिए तैयार है। हमें उम्मीद है कि आने वाले 3 से 6 महीनों में तकनीक के हस्तांतरण की घोषणा कर दी जाएगी और ये इंजंस देश में ही निर्मित किए जाने लगेंगे। उन्होंने बताया कि डीआरडीओ अपनी तरह का पहला कम दूरी का एयर डिफेंस सिस्टम विकसित कर रही है जिसे ट्रायपॉड द्वारा फायर किया जा सकता है।

<https://www.jagran.com/news/national-drdo-chairman-samir-kamat-says-lca-engines-indigenously-underway-23329004.html>



Tue, 14 Feb 2023

DRDO TAPAS UAV: 15 हजार फीट की ऊंचाई पर तपस का 'जलवा', ट्रैक कर लिए सारे खतरनाक हथियार

भारत सरकार के रक्षा अनुसंधान और विकास संगठन (डीआरडीओ) ने एयरो इंडिया 2023 के दौरान तपस यूएवी द्वारा खींची गई हैरान कर देने वाली फुटेज ट्विटर पर शेयर की है। दो मिनट से ज्यादा के इस वीडियो में तपस 15 हजार फीट की ऊंचाई पर उड़ान भरते हुए हथियारों को ट्रैक करता दिख रहा है। इस वीडियो को ट्वीट करते हुए डीआरडीओ ने लिखा- "AeroIndia2023 के दौरान तपस यूएवी ने चित्रदुर्ग से उड़ान भरी जो येलहंका वायु सेना स्टेशन बेंगलूर से 180 किमी की हवाई दूरी पर स्थित है। इसने उद्घाटन समारोह के दौरान 15000 फीट की ऊंचाई से ग्राउंड और एयर डिस्प्ले का लाइव एरियल कवरेज रिकॉर्ड किया।"

तपस (TAPAS) का पूरा नाम टेक्टिकल एयरबॉर्न प्लेटफॉर्म फॉर एरियल सर्विलांस बेयॉन्ड होराइजन (Tactical Airborne Platform for Aerial Surveillance-Beyond Horizon) है। तपस अब तक का सबसे ताकतवर स्वदेशी ड्रोन है जो पल भर में दुश्मन का खात्मा कर सकता है इसकी निगरानी की क्षमता भी पहले से कई गुना ज्यादा है।

TAPAS ड्रोन केवल सीमाओं पर निगरानी रखने ही नहीं, बल्कि दुश्मनों पर हमला करने के लिए भी इस्तेमाल में लाया जा सकता है। 2016 से ही तपस का उत्पादन शुरू किया जा चुका है। माना जा रहा है कि जल्द ही तपस को भारतीय सेना अपनी संवेदनशील सीमाओं पर तैनात कर देगी। तपस ड्रोन 28 हजार फीट की ऊंचाई पर 18 घंटे से ज्यादा की उड़ान भर सकता है। इतने लंबे इंड्योरेंस वाला यह पहला स्वदेशी ड्रोन है। तपस एक मीडियम एल्टीट्यूट लॉन्ग-इंड्योरेंस (MALE) ड्रोन है, जो अमेरिका के MQ-1 प्रीडेटर ड्रोन जैसा ही है। तपस अपने आप ही टेकऑफ और लैंड करने की क्षमता रखने वाला ड्रोन है।

<https://www.timesnowhindi.com/india/aero-india-2023-drdo-tapas-uav-track-fighter-jet-and-chopper-from-altitude-of-15000ft-article-97924318>

नवभारत टाइम्स

Wed, 15 Feb 2023

ज़रूरत के वक्त हमलावर भी हो सकता है निगरानी ड्रोन तपस

Poonam.Pandey@timesgroup.com

■ **बेंगलुरु :** बेंगलुरु में चल रहे एयरो इंडिया में तपस ड्रोन ने पहली बार उड़ान भरी। डीआरडीओ का बनाया तपस ड्रोन न सिर्फ निगरानी कर सकता है, बल्कि इसे मॉडिफाई करके अनमैन्ड मिनी फाइटर की तरह भी इस्तेमाल किया जा सकता है।

डीआरडीओ के डीजी ईसीएस बी. के. दास ने बताया कि तपस अनमैन्ड एरियल वीइकल (UAV) है। यह 55 किलो का पेलोड कैरी कर सकता है, जो इसे खास बनाता है। इसमें हाई डेफिनिशन सेंसर लगे हैं जो जमीन की सारी इमेज ले सकते हैं। उन्होंने कहा कि जो हमने इलैक्ट्रॉनिक वॉरफेयर सिस्टम डिवेलप किया है, वह भी इसमें इंटीग्रेट हो जाता है। यह हो जाने पर यह एक अनमैन्ड मिनी फाइटर



DRDO ने एयरो इंडिया में पेश किया अपना नया UAV

की तरह काम करेगा। उन्होंने कहा कि इसकी पे लोड कैपिसिटी को देखते हुए आने वाले दिनों में यह हमारे देश के लिए आंख और कान का काम करेगा। एयरो इंडिया में जो एरियल कवरेज हुई, वो तपस से ही की गई। तपस हमें एक्सपोर्ट के मौके

भी देगा। यह करीब 6 घंटे लगातार फ्लाई कर सकता है और इसे बढ़ाया भी जा सकता है।

सभी फाइटर जेट में लगेगा उत्तम रेडार : डीआरडीओ ने उत्तम रेडार भी बनाया है। दास ने बताया कि इसे फाइटर एयरक्राफ्ट पर लगाया जा सकता है। इसे एयरक्राफ्ट की नोज स्ट्रिप पर लगाकर उड़ाते हैं। जो फाइटर हमारे पास पहले से हैं और जो भी नए फाइटर आएंगे, सभी में यह फिट हो सकता है। सारे कलपुर्जे भारत से ही लेते हुए इस रेडार को बनाया जा रहा है। आने वाले दिनों में सभी फाइटर में 'उत्तम' ही रहेगा।

DRDO on Twitter



DRDO ✓

@DRDO_India



[#DRDOUpdates](#) | In the august presence of Hon'ble Raksha Mantri Shri Rajnath Singh, DRDO today handed over 18 Licensing Agreements for Transfer of Technology to 18 industries for 12 technologies during DRDO seminar at [#AeroIndia2023](#)

[@DefenceMinIndia](#)

[@SpokespersonMoD](#)

DRDO hands over 18 ToT agreements to 18 Indian Industries for transfer of 12 technologies

Multi-Channel Laser DEW for 10kW/2km range Hard Kill System	Active Electronically Scanned Array Radar (AESAR) - Uttam	Air Defence Fire Control Radar (ADFCR) - Atulya
NAYAN COMINT System	Unified Mission Computer	Software for Outdoor Perimeter System (STOPS)
LAND Inertial Navigation System (LAND-INS) for Land Based Application	Ceramics Radomes Technology	Trawl Assembly for T-72/T-90 Tanks
Weapon Tracking System (WTS)	Linear Thermal Detector	CBRN Water Purification System (WPS) Mk II

DRDO_India | DRDO | drdo | DRDO_India | www.drdo.gov.in

10:46 PM · Feb 14, 2023 · 10.5K Views



DRDO  @DRDO_India · 12h



[#DRDOUpdates](#) | Hon'ble Raksha Mantri Shri Rajnath Singh today unveiled 'System for Advance Manufacturing Assessment and Rating (SAMAR)' a web portal developed by DQR&S, DRDO in collaboration with Quality Council of India during DRDO seminar in [#AeroIndia2023](#)
[@SpokespersonMoD](#)



रक्षा मंत्री कार्यालय/ RMO India



2



31



247



10.1K



DRDO  @DRDO_India



SAMAR is a benchmark to measure the competency of defence manufacturing enterprises. It is an IT enabled online model for digitized assessment with geo-tagging and time-stamping. SAMAR offers subsidized cost of certification for micro and small industry.

9:40 PM · Feb 14, 2023 · **4,979** Views



DRDO ✓
@DRDO_India



#TAPASUAV took off from Chitradurga with aerial distance of 180 km from Yelahanka Air Force Station Bangalore during #AeroIndia2023 . Live aerial coverage of Ground and Air displays from altitude of 15000ft for Inauguration function was recorded.

@PMOIndia

@DefenceMinIndia



3:06 PM · Feb 14, 2023 · **64.8K** Views



DRDO ✓
@DRDO_India



[#DRDOUpdates](#) | Secretary DDR&D and Chairman DRDO, Dr Samir V Kamat chaired a panel discussion organised by [@ISpA_India](#) on 'Strengthening Defence Space Military Industrial Complex: A way forward for India'.

[@DefenceMinIndia](#)
[@SpokespersonMoD](#)



7:44 AM · Feb 14, 2023 · 20.7K Views

46 Retweets 435 Likes



DRDO ✓ @DRDO_India · Feb 14



Replying to [@DRDO_India](#)

The panel discussion was part of a seminar on India's Defence Space Initiatives: Opportunities for Shaping Indian Private Space Ecosystem to lead Global Disruption. Eminent speakers from Indian Armed Forces, Government, DRDO, ISRO, Industry & Academia participated in the seminar.



DRDO ✓

@DRDO_India



#DRDOUpdates | #DRDO is showcasing its #futuristic flagship exhibits at the India Pavilion during #AeroIndia2023. The 05 exhibits being displayed are AEW&C Mk-II, AMCA, LCA Tejas Mk2, TEDBF and Archer (Image Intelligence with Weapon Payloads).

@DefenceMinIndia

@SpokespersonMoD



12:05 PM · Feb 14, 2023 · **32.6K** Views

Defence News

Defence Strategic : National/International

The Tribune

Wed, 15 Feb 2023

Defence Production

The theme of the 14th edition of Aero India, 'The runway to a billion opportunities', seeks to showcase India's growth in aerospace and defence capabilities. At the inauguration of Asia's biggest military airshow, Prime Minister Narendra Modi spoke about the quest for self-reliance. Once the biggest importer of weapons, the country now exports to 75 countries. The defence exports have increased six times in the last five years and crossed \$1.5 billion. His message to the private sector was to not miss the opportunity. The five-day event aims to promote the export of indigenous air platforms. Companies from 98 countries are taking part.

As the country scouts for military planes and helicopters, Defence Minister Rajnath Singh laid out the roadmap before the top honchos of aerospace majors. India does not want to remain an assembly workshop for military platforms, he conveyed; it wants to manufacture cutting-edge products. Pressing global manufacturers to produce more locally, he spoke of creating symbiotic relationships — 'we want to build with you, launch with you, create with you and develop with you.' He has already indicated bringing more weapons and systems under an import ban. During the last 30 months, the import of 411 military items has been barred to give a push to Make in India. The import substitution plans are laudable for the thrust on indigenisation, but there are concerns that these tend to sidestep the fact that enormous amounts of investment and years of research are needed for developing world-class weapon systems. Just recently, the Ministry of Defence came out with sobering information. As many as 23 of the 55 'mission mode' projects of the Defence Research and Development Organisation are running behind schedule. These high-priority programmes are based on the specific operational requirements put forth by the forces. Delays could affect their operational efficiency. Big ideas need well-thought-out plans.

<https://www.tribuneindia.com/news/editorials/defence-production-479755>

ThePrint

Tue, 14 Feb 2023

India Offers Enhanced Defence Partnership to Friendly Countries, says Defence Minister Rajnath Singh

Defence Minister Rajnath Singh hosted the Defence and Deputy Defence Ministers of 27 countries at the Defence Ministers' Conclave held on the sidelines of Aero India 2023 in Bengaluru on Tuesday, said a press release by Ministry of Defence.

The broad theme of the conclave was ‘Shared Prosperity through Enhanced Engagements in Defence’ (SPEED). It sought to address aspects related to deepening cooperation for capacity building (through investments, R&D, joint ventures, co-development, co-production and provisioning of defence equipment), training, space, AI and maritime security to grow together.

In his inaugural address, the Defence Minister highlighted the need for greater cooperation in an increasingly complex global security scenario.

He stated that the theme of the event ‘SPEED’ characterises the present era wherein geopolitical and security realities are shifting at hitherto unwitnessed speed. He called for real-time collaboration to respond to such fast-paced changes.

Singh was of the view that any major change in the domain of economy, security, health or climate has global reverberations and when peace and security of any region are threatened, the entire world feels its impact in multiple ways. He pointed out that in an interconnected and networked world, the rapid transmission of shocks and disturbances makes it impossible to insulate one’s own country from the issues of other countries.

He emphasised regular interactions during summits, conferences and conclaves to ensure that the concerns of all are suitably addressed for a common, secure and prosperous future.

The Raksha Mantri reaffirmed India’s stand for a rules-based international order, in which “the primordial instinct of the might being right is replaced by the civilisational concept of fairness, cooperation, respect and equality amongst all sovereign nations”. He asserted that untethered to any faction or alliance of one group of nations against another, India has worked ceaselessly for the upliftment of all nations, especially developing ones. “India has always been open to new ideas from across the world, Commingling and contest of various thoughts has made us a global ideation centre. Our ancient ethos guides us to work not only towards cooperation for mutual benefit but goes a welcome step further from a merely transactional approach to an edifying recognition of all humanity as one family,” Defence Minister said.

He referred to the global efforts to deal with COVID-19 and said the pandemic underscored the point that shared global prosperity requires greater coordination among all nations in diverse areas, of which defence and security is one of the most important.

The Raksha Mantri described collective security as sine qua non (essential condition) for development and prosperity. He emphasised that terrorism, illegal arms trade, drug smuggling, human trafficking, etc. pose significant security threats to the world.

He stressed on the need to devise new strategies to counter these threats. “India does not believe in dealing with such security issues in the old paternalistic or the neo-colonial paradigms. We consider all nations as equal partners. That is why we do not believe in imposing external or supra-national solutions to a country’s internal problems. We do not believe in giving sermons or cut-and-dried solutions, which do not respect the national values and constraints of the countries in need of assistance. Rather, we support the capacity building of our partner countries, so that they may chart out their own destiny, in accordance with their own genius,” he said.

Singh added that there are nations which are richer, militarily or technologically more advanced than others, but it does not give them the right to dictate their solutions to the nations in need of support. This top-down approach towards solving problems has never been sustainable in the long run and it often leads to a debt trap, reaction from the local population, conflict and so on, he said.

He emphasised that the focus should be on providing assistance, in terms of the building of institutions and capacities, so that bottom-up solutions can come up organically, in consonance with the ethos of the nations being assisted.

The Raksha Mantri informed the Defence Ministers that India is moving ahead to work with this principle by offering enhanced defence partnerships to its friendly countries. "We offer a partnership that is accommodative of the national priorities and capacities. We want to build with you, we want to launch with you, we want to create with you and we want to develop with you. We wish to create symbiotic relationships, where we can learn from each other, grow together and create a win-win situation for all," he said, reiterating the Government's endeavour to transcend the hierarchical relationship of buyer and seller to a codevelopment and co-production model. Singh exuded confidence that through Aero India, the Defence Ministers would have gained knowledge about the robust defence manufacturing ecosystem being created in India. He urged them to share their requirements and expectations through enquiries, comments & feedback, which will provide the industry with a significant learning opportunity.

Over 160 delegates from several countries, including Defence & Deputy Defence Ministers from 27 countries, 15 Defence and Service Chiefs and 12 Permanent Secretaries from 80 countries participated in the conclave attesting to India's tremendous growth and engagement in the defence and security sectors.

<https://theprint.in/india/india-offers-enhanced-defence-partnership-to-friendly-countries-says-defence-minister-rajnath-singh/1371161/>

Outlook

Tue, 14 Feb 2023

India does not Believe in Countering Security Challenges in Neo-Colonial Paradigms: Rajnath

India does not believe in giving "sermons or cut-and-dried" solutions to countries in need of assistance, Defence Minister Rajnath Singh said on Tuesday. In an address to his counterparts from various countries at Aero India here, Singh also called for united efforts to counter pressing security challenges, including the threat of terrorism.

The defence minister said India does not believe in dealing with such security issues in the "old paternalistic or the neo-colonial paradigms" and that it always preferred a collective approach to counter them.

"We consider all nations as equal partners. That is why, we do not believe in imposing external or supra national solutions to a country's internal problems," he said. "We do not believe in giving sermons or cut-and-dried solutions, which do not respect national values and constraints of the countries in need of assistance," he said.

Singh noted that India supports the capacity building of its partner countries so that they may chart their own destiny. "There are nations which are richer, militarily or technologically more advanced than others, but it does not give them the right to dictate their solutions to the nations in need of support," he said, in comments which are seen as an apparent reference to China.

The defence minister said this "top-down approach" towards solving problems has never been sustainable in the long run. "Often, it leads to debt trap, reaction from the local population, conflict and so on," he said. "That is why the focus should be on providing assistance, in terms of building of institutions and capacities, so that bottom-up solutions can come up organically, in consonance with the ethos of nations being assisted," he added.

Singh said India offers an enhanced defence partnership to friendly foreign nations. "We offer a partnership that is accommodative of national priorities and capacities," he said. "We want to build with you, we want to launch with you, we want to create with you and we want to develop with you," Singh said. "We wish to create symbiotic relationships, where we can learn from each other, grow together and create a win-win situation for one and all," he said. Aero India, Asia's biggest aerospace exhibition, was inaugurated on Monday by Prime Minister Narendra Modi.

<https://www.outlookindia.com/national/india-does-not-believe-in-countering-security-challenges-in-neo-colonial-paradigms-rajnath-news-262044/amp>



Wed, 15 Feb 2023

Rajnath Singh to Inaugurate Annual Defence Startup Event 'Manthan' Today

Defence Minister Rajnath Singh will inaugurate Wednesday Manthan 2023, the annual defence innovation event, at Chandan Singh Air Force Convention Centre in Yelahanka, Bengaluru. Manthan, organised on the sidelines of the Aero India show, will bring leading innovators, startups, micro-, small and medium-sized enterprises (MSME), incubators, academia and investors from the defence and aerospace ecosystem under one roof. On the occasion, Minister Rajnath Singh is expected to launch the next edition of Defence India Startup Challenges (DISC) on cybersecurity.

Meanwhile, in what looked like a veiled dig at China, the Defence Minister Tuesday said that India does not believe in giving "sermons" or "cut-and-dried" solutions to countries needing assistance and nations with superior military powers or better technological prowess do not have the right to dictate solutions to others. He made the comments at the Defence Ministers' Conclave. At the inaugural session of a seminar, he sought joint efforts to develop India as a Maintenance, Repair and Overhaul (MRO) hub and emphasised the need for MRO services to safeguard the defence equipment and systems India possesses and to protect the Indian defence forces. In other news, a sessions court in Tumkur district has rejected an anticipatory bail plea filed by a secretary of the Vishwa Hindu Parishad over an alleged hate speech delivered in Tumkur town last month. The VHP secretary, Sharan Pumpwell alias Sharan Kumar, claimed in a speech that the killings of Muslims in Gujarat in 2002 and the recent murder of a Hindu youth in Karnataka's Dakshina Kannada district on July 28 last year were demonstrations of Hindu power.

<https://indianexpress.com/article/cities/bangalore/bengaluru-karnataka-news-live-updates-aero-india-aerospace-exhibition-today-bommaibjp-8445678/>

Looking to Induct New Tech along LAC: Army Chief

India is looking at inducting several new technologies at the Line of Actual Control (LAC) with China, including a range of drones for intelligence, reconnaissance and surveillance purposes, loitering munitions, counter drones with varying soft and hard kill options as well as several Artificial Intelligence-based systems to interpret images better, detect intrusion and quantum computing, said Army Chief General Manoj Pande while speaking to a group of journalists on the sidelines of Aero India 2023, on Tuesday.

Responding to a question from The Indian Express, Gen Pande highlighted the significance of micro, mini and tactical-level drones and those with longer ranges which the Army purchased under emergency procurements. The focus has also been on counter-anti-drone technologies, including drone spoofers hand-held drone jammers, he added.

“We are looking at more soft-kill and hard-kill options for countering drones, and even swarm drones for that matter,” he said, adding that the Army is looking to find some good options among loitering munitions which it is seeking to procure.

“There are few projects currently underway wherein we are looking at AI for better interpretation of satellite images. “Getting information is no longer a challenge, it is about how you synthesise this information,” he said. The niche technologies, he said, can be inducted through various routes, including iDEX, and Make 2 projects.

Asked about China’s use of surveillance balloons in the US and Canada and the possibility of deploying such tactics against India, Gen Pande said India must constantly remain alert and “be current to what is happening around, and be ahead of the learning curve”.

Additionally, he said the Army is looking at inducting around 95 Light Combat Helicopters and 110 Light Utility Helicopters (LUH) in the future as part of enhancing its overall combat aviation profile and added that indigenisation of air defence guns is a priority for the Army.

He added that LCHs would be deployed in high-altitude areas with the helicopter being good manoeuvrability in the mountains.

The LUHs and LCHs are set to replace its ageing fleets of Cheetah and Chetak helicopters.

Gen Pande said one of the weapons systems to be integrated into the LCH Prachand would be Helina missiles, adding that their trials have been successful.

The Defence Acquisition Council has granted approval for the procurement of 40 Helina launchers and missiles.

“Its integration on aircraft is something we believe is important for us to maximise the potential of anti-tank guided missiles,” Gen Pande said. He said out of the initial five LCHs, the force has already received three, adding that the army is getting six limited series versions of the LUH initially.

“Our overall requirement in this class is about 250 helicopters,” he said, adding that the Hindustan Aeronautics Ltd (HAL) is working on capability enhancement of the platform, including the autopilot feature based on requirements projected by the Army.

He said that the Army is expected to receive all six American Apache attack helicopters by next year and trials are underway for the electronic warfare systems along the LAC.

<https://indianexpress.com/article/india/looking-to-induct-new-tech-along-lac-army-chief-general-manoj-pande-8445482/>

THE ECONOMIC TIMES

Tue, 14 Feb 2023

Looking to Replace Foreign Systems, says Army Chief Gen Manoj Pande

The Army is looking to replace foreign-origin weapon systems like medium-range air defence missiles and man-portable solutions with India-made products, Army Chief Gen Manoj Pande has said, also giving a vote of confidence for the indigenously-developed Light Combat Helicopter apt for high-altitude operations.

Speaking at the sidelines of AeroIndia, the Army chief said emergency procurements worth Rs 15,000 cr are currently underway, with 80-odd projects identified for immediate purchase from Indian vendors.

“We have a number of systems that are of foreign origin. We need to work on finding a replacement for these, either shoulder-fired MANPAS, short-range or medium-range surface to air systems. A number of forms have come up and I am hopeful that in the near future we will find a good replacement to meet our requirements,” Gen Pande said.

On the indigenous Light Combat Helicopter, the Army chief said it has proven to be a versatile machine that is best suited for mountain warfare as it can manoeuvre through narrow valleys. He added that the army is looking to induct 90-95 of the helicopters in future. However, to realise the full potential of the chopper, weapons integration needs to be done, the general emphasised.

<https://economictimes.indiatimes.com/news/defence/looking-to-replace-foreign-systems-says-army-chief-gen-manoj-pande/articleshow/97926879.cms>

THE HINDU

Tue, 14 Feb 2023

Army Set to Close around 80 Deals worth ₹15,000 Crore, says Army Chief Gen. Manoj Pande

The Army, which is currently executing the 4th tranche of Emergency Procurements, has identified around 80 deals, roughly valued at ₹15,000 crore, Army Chief Gen. Manoj Pande said on Tuesday. On the helicopter front, he said the indigenous Light Combat Helicopter (LCH),

which the Army just inducted, is more versatile in terms of its maneuverability and light weight and so is most suited for the mountains.

As reported by The Hindu earlier, the Army moved its first LCH squadron, 351 Army Aviation, to Missamari, Assam in the Eastern sector near the Line of Actual Control (LAC) last November. The LCH is the first dedicated attack helicopter operated by the Army. It currently has the Rudra weaponised Advanced Light Helicopter (ALH).

“In terms of the overall combat aviation profile, we are looking at 90-95 LCHs,” Gen. Pande said, speaking to the media on the sidelines of Aero India.

Army is also slated to receive the AH-64E Apache attack helicopter in February 2024 as reported by earlier.

However, the LCH is yet to get its anti-tank and air-to-air missiles. One of the weapon systems on the LCH and the Advanced Light Helicopter (ALH) is the HELINA, (Helicopter Mounted NAG) being developed by the Defence Research and Development Organisation (DRDO).

Gen. Pande said HELINA trials have been a success and they are looking at integration of HELINA on the platform. The Defence Acquisition Council has already approved the procurement of 40 launchers and 500 missiles. “Integration itself is important and it is work in progress,” the Army Chief stated.

The Army is also set to receive the indigenous Light Utility Helicopter (LUH), which Gen. Pande said falls in the category of recce and surveillance. It will replace the over 200 ageing Cheetah and Chetaks in service.

The Army sought some improvements from Hindustan Aeronautics Limited (HAL) on the LUH and they are working on it, Gen. Pande said, pointing out that auto pilot was one of the requirements.

“We are eventually looking at 110 LUH after the six Limited Series Production variants are inducted,” Gen. Pande said, adding that the Army has a total requirement of over 200 helicopters in this category.

Army Aviation has three Brigades at Leh, Missamari and Jodhpur operating around 145 indigenous Advanced Light Helicopters (ALH), 75 of which are the Rudra weaponised variants, and around 190 ageing Cheetah, Chetak and Cheetal helicopters. Another 25 ALH Mk-III are on order and will be inducted within two years.

The Army is inducting niche technology in a big way and at the same time also looking at right-sizing its manpower. On this, Gen. Pande said once new technology is inducted, it should optimise the manpower and referred to the induction of and the cut down on animal transport in high altitude areas. “By 2030 we will have brought down our animal transport by 50-60%,” he said in response to a question from The Hindu. They are also looking at optimising several other domains, he added.

<https://www.thehindu.com/news/national/army-set-to-close-around-80-deals-worth-15000-crore-says-army-chief-gen-manoj-pande/article66508949.ece>

Looking at Procuring Nearly 200 Combat & Utility Helicopters, says Army chief at Aero India

The Army is looking at procuring nearly 95 Prachand Light Combat Helicopters (LCH) for mountain warfare, as well as nearly 110 Light Utility Helicopters (LUH) to replace the ageing Cheetahs and Chetaks, Army chief Gen. Manoj Pande said Tuesday.

Speaking on the sidelines of the ongoing Aero India event in Bengaluru, he said that while the Army is getting an initial lot of six Advanced Light Helicopters (ALHs) from HAL, it has sought certain improvements such as autopilot capability.

In addition, the Army expects to get all six American Apache attack helicopters it has ordered in 2024, and any further additional orders will depend on how the Prachands shape up, Gen. Pande said in answer to ThePrint's question.

“We have the combat aviation arm, which is equipped with the weaponised Advanced Light Helicopters and is known as the ALH WSI. There are about 45 such helicopters. We currently have five LCHs, of which three have been delivered. We are looking at a total of about 90-95 LCHs,” he said while speaking to a group of reporters here.

The Army chief added that the LCH is very versatile in terms of manoeuvrability and has been found to be “better suited for high altitude”. The LCHs are largely for the mountains, he said.

ThePrint had reported that while both the 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. And while it is integrated with air-to-air missile launchers, the missile has not been ordered yet, sources in the defence and security establishment had told ThePrint.

<https://theprint.in/defence/looking-at-procuring-nearly-200-combat-utility-helicopters-says-army-chief-at-aero-india/1371081/>



Aero India 2023: Pinaka ER, DPICM Qualify for Induction

The extended-range (ER) and dual-purpose improved conventional munition (DPICM) warhead versions of the surface-to-surface Pinaka Multi-Barrel Rocket Launcher (MBRL) have qualified for induction into the Indian Army. An official from India's state-run Munitions India Limited (MIL) told Janes at the Aero India 2023 show, being held in Bangalore from 13 to 17 February, that the Pinaka Mark I (Mk 1) rocket, with a range of 38 km, was inducted into the Indian Army

in 1999. “The Pinaka Mk 1 ER and DPICM rocket versions have also cleared the trials, and the company now awaits the order from the army,” he added. The official said that the Pinaka guided rocket is also undergoing user trials with the Indian Army.

The Pinaka ER rocket has a range of 45 km, while the Pinaka DPICM warhead rocket has the same range as Pinaka Mk 1. The guided Pinaka rocket is capable of engaging with small-size enemy targets up to a range of 80 km.

MIL has also developed the Pinaka Mk 2 rocket to meet the army's requirements for a free-flight rocket with a range of 60 km. Pinaka Mk 2 has an increased motor length compared with Mk 1, and uses a high-energy propellant and case-bonded motor with finocyl grain design.

<https://www.janes.com/defence-news/news-detail/aero-india-2023-pinaka-er-dpicm-qualify-for-induction>



Tue, 14 Feb 2023

“We are still Pursuing...” Navy Vice Chief Talks About Integrating US Predator Drones

Speaking on the need for indigenisation in Predator drone acquisition project from US, Vice Chief of Indian Navy Vice Admiral SN Ghormade on February 14 said that Indian Navy is still pursuing the project to acquire Predator drones. He said, “Still pursuing that project (acquire Predator drones). We're seeing how it can be indigenised and whatever facilities can be built in India. It's a capability we require.”

<https://www.aninews.in/videos/national/we-are-still-pursuing-navy-vice-chief-talks-about-integrating-us-predator-drones/>

The Tribune

Tue, 14 Feb 2023

India Plans to Make 470 Jets, First to Roll Out in Feb Next Year

India is planning to manufacture 470 fighter jets, with the first one — Light Combat Aircraft (LCA) Tejas Mark-1A — to be rolled out in February next year. The massive project is already underway.

HAL eyes export market

Hindustan Aeronautics Limited (HAL) Chairman and Managing Director CB Ananthkrishnan said HAL was eyeing the export market and vying for orders of Tejas jets from Egypt and Argentina. “In Egypt, we have offered a kind of maintenance programme as well,” he added.

Of the 470 jets, 370 will be for the Indian Air Force while 100 twin-engine jets will be for the Navy. These 470 jets are separate from 114 jets the IAF wants to manufacture in collaboration with a foreign partner in India. Hindustan Aeronautics Limited (HAL) is producing 83 Tejas Mark-1A jets. CB Ananthkrishnan, HAL Chairman and Managing Director, said: “We are on schedule to deliver the first jet in February 2024. The manufacturing capacities have been augmented and the delivery of all 83 jets will be ahead of schedule.”

“Delays are a thing of the past. We have sufficient supply chain and delivery capacity,” he added. Apart from 83 Tejas Mark-1A jets, the project includes 108 Tejas Mark-2 jets, 126 jets of the advanced medium combat aircraft (AMCA) and 100 twin-engine deck-based fighters for the Navy. HAL estimates that the gap between manufacturing of Tejas Mark-1A and Tejas Mark-2 will be bridged by an additional order of the former. The numbers of additional Tejas Mark-1A jets could be about 50, said sources. The total of all this adds up to about 470.

All jets after Tejas Mark-1A will use the General Electric’s 414 engine producing 98 kilonewton of thrust. The indigenous programme is being helmed by the Aeronautics Development Agency (ADA), a lab of the Defence Research Development Organisation (DRDO).

Dr Girish S Deodhare, ADA Director General, said: “LCA Mark-2 development will be completed next year.”

The HAL expressed confidence that the LCA Mark-2 that will have more powerful engines and many upgrades over the existing Tejas, to be made as per schedule with first flight being in mid-2025. For the AMCA, the ADA DG laid out targets. “We are expecting sanction of the Cabinet Committee on Security. The design is in a critical phase,” he said.

<https://www.tribuneindia.com/news/nation/india-plans-to-make-470-jets-first-to-roll-out-in-feb-next-year-479803>



Tue, 14 Feb 2023

Aero India 2023: एयरो शो में स्पेशल है जेटपैक सूट, 50

KMPH की रफ्तार से हवा में उड़ सकेंगे जवान

बेंगलुरु में 5 दिवसीय एयरो इंडिया शो चल रहा है. एयरो इंडिया 2023 में तीनों सेनाओं के लिए नई तकनीक पर खास ज़ोर दिया जा रहा है. ऐसे में जेटपैक सूट आकर्षण का केंद्र बना हुआ है. इसकी खासियत है कि यह ऐसा सूट है जिसे पहनकर इंसान जेट बन जाता है. गैस टर्बाइन इंजन से चलने वाले इस सूट को पहनकर सैनिक 10 से 15 मीटर हवा में उड़ सकेंगे. इसके साथ ही किसी भी मौसम में यह सूट काम करेगा. जेटपैक सूट के माध्यम से फौरन भारतीय जवान उड़कर दुश्मन को मुंह तोड़ जवाब दे सकेंगे.

इस सूट का वजन 40 किलोग्राम तक होगा. इसमें सिस्टम कुछ इस तरह से होता है कि जवान जब चाहे उड़ सकते हैं और लैंड कर सकते हैं. जेटपैक सूट पहनकर 50 किमी प्रति घंटे की रफ्तार से जवान हवा में उड़ सकते हैं, वह भी आठ मिनट तक. किसी भी मौसम में यह सूट काम करता रहेगा. भारतीय सेना जेटपैक सूट खरीदने जा रही है. सिस्टम खरीदने की प्रक्रिया शुरू भी कर दी गई है. बेंगलुरु के राघव रेड्डी इस पर काम कर रहे हैं.

हाथों से होता है कंट्रोल

यह सूट गैस या तरल ईंधन से चलता है. इसमें बेसिकली टरबाइन इंजन लगा होता है. हाथों में ही कंट्रोल होता है इसका. इसे पहनकर जवान 10 से 15 मीटर की ऊंचाई तक हवा में उड़ सकते हैं. जेटपैक सूट के जरिए सीमाओं की निगरानी, पहाड़ों और जंगलों में सर्विलांस आसान हो जाएगा. इसे पहनकर जवान सिर्फ उड़ सकते हैं. क्योंकि इसे दोनों हाथों से कंट्रोल करना होता है. इससे उड़ते समय आप किसी तरह से हमला नहीं कर सकते. हालांकि भविष्य में इसमें बदलाव करके हमला करने लायक व्यवस्था भी की जा सकती है.

सेना ने त्रिशूल लिंक सिस्टम तैयार किया

एयरो शो में कर्नल कुमार धर्मवीर ने कहा कि युद्ध के हालात में जब सेना की ज़मीनी और हवाई एलिमेंट एक साथ काम करती हैं, तो ऐसे में तालमेल ज़रूरी होता है. इसके लिए सेना की मिलिट्री इंजीनियरिंग यूनिट ने खास त्रिशूल लिंक सिस्टम तैयार किया है. जिसके ज़रिए ज़मीन पर मौजूद सैनिकों और आसमान में हेलीकॉप्टर और ड्रोन के साथ तालमेल कायम किया जा सकता है.

सर्विलांस सॉफ्टवेयर अग्नि-डी भी रेडी

कैप्टन विकास त्रिपाठी ने कहा कि सरहद पर निगरानी और घुसपैठ को रोकने के लिए सेना ने सर्विलांस सॉफ्टवेयर अग्नि-डी तैयार किया है. ये सिस्टम सरहद पर लगे कैमरे और ड्रोन के साथ काम करता है. इसे आने वाले दिनों में लद्दाख सरहद पर तैनात किया जा सकता है.

तीनों सेनाओं का नई तकनीक पर जोर

वाइस एडमिरल एस एन घोरमडे ने बताया कि एयरो इंडिया 2023 में तीनों सेनाओं के लिए नई स्वदेशी तकनीक के लिए एक खास सेंटर भी बनाया गया है. नौसेना भी ड्रोन, पानी के अंदर सर्विलांस और सॉफ्टवेयर के क्षेत्र में नई तकनीक पर काफ़ी जोर दे रही है.

ये विमान ले रहे एयरो शो में हिस्सा

एयरो इंडिया में पहली बार TAPAS-BH उड़ान भरेगा. DRDO के मुताबिक, तीनों सेनाएं इसका इस्तेमाल कर सकेंगे. ये ड्रोन 28 हजार फीट की ऊंचाई तक 18 घंटे से ज्यादा लंबे समय तक

उड़ान भरने में सक्षम है. इतना ही नहीं, TAPAS-BH से एक बार में 350 किलोग्राम के पेलोड भी भेजा जा सकता है. इसके अलावा DRDO के पवेलियन में लड़ाकू विमान और यूएवी, मिसाइल सिस्टम, इंजन एंड प्रपल्शन सिस्टम, एयरबोर्न सर्विलांस सिस्टम, सेंसर इलेक्ट्रॉनिक वॉरफेयर एंड कम्युनिकेशन सिस्टम जैसे 330 से ज्यादा प्रोडक्ट्स को शोकेस किया जाएगा.

<https://www.aajtak.in/india/delhi/story/aero-india-jetpack-suit-special-aero-show-soldiers-able-fly-air-speed-50-kmph-ntc-1636412-2023-02-14>

Business Standard

Wed, 15 Feb 2023

Start of 'Atmanirbharta' as Country Explores Export of Tejas Mark 1 Fighter

By Ajai Shukla

The central theme of the ongoing Aero India 2023 air show in Bengaluru is “atmanirbharta” or self-reliance in building India’s requirement of military equipment. Emblemising atmanirbharta is the Tejas Mark 1 fighter, which has placed India on the map of countries that can design, develop and manufacture advanced fighter aircraft.

This is already yielding results. Hindustan Aeronautics Limited (HAL) CMD C B Ananthkrishnan revealed on Tuesday in Bengaluru that India is discussing the sale of 20 Tejas light combat aircraft (LCA) with Egypt and 15 Tejas fighters with Argentina.

But for the Defence Research and Development Organisation (DRDO), the real value of the Tejas Mark 1 is the role it will now play in the development of India’s next generation of fighter aircraft that will be more technologically advanced and lethal.

In the India Pavilion, dedicated to success stories in indigenisation, the Tejas Mark 1 fighter is lionised as the key stepping stone to the development of a range of fighters: Tejas Mark 2, the fifth-generation fighter eponymously called the Advanced Medium Combat Aircraft (AMCA) and the Twin Engine Deck Based Fighter (TEDBF) that is intended to fly missions from Indian Navy aircraft carriers. In addition, the LCA (Navy) is eulogised as an important platform for technology development that will power naval aircraft such as the TEDBF.

Business Standard spoke to Girish Deodhare, who heads the Aeronautical Development Agency (ADA) — the DRDO laboratory that oversees fighter aircraft development.

LCA (Navy)

“Trials of landing and taking off from a carrier’s deck are under way in INS Vikrant and we are successfully doing those with a prototype LCA (Navy),” said Deodhare.

The LCA Navy prototype is proving all the indigenous technologies coming out of our sister laboratories for future aircraft, said the ADA chief. These include the radar, the electronic warfare systems and weapons such as the Astra air-to-air missiles. Since all the avionics on the Astra are indigenous, this is easily done. Within months it can be made ready for testing and

qualifying. “Thanks to the LCA (Navy) prototype, we are understanding how to design carrier-based naval aircraft and are progressing very well,” said Deodhare.

The LCA (Navy) was sanctioned in 2003 and it first flew in 2012. It did the first ski-jump in 2014 and the first arrested landing in 2019. Two months later, it graduated to a carrier deck — such was the Navy’s confidence in the aircraft.

Tejas Mark 2

The LCA Mark 2 is going to be a 17.5-tonne fighter, with significantly more weapons load and fuel carriage than the 14-tonne Mark 1. The LCA Mark 2 will fly by 2024-25 and will be ready for production by 2027, said Deodhare. The drawings for the Mark 2 are ready and manufacturing will soon commence. The Indian Air Force (IAF) is looking at six squadrons of the fighter.

The LCA Mark 2 will be powered by the General Electric (GE) F414 engine, significantly more powerful than the current F404 engine. The F414 was selected in a global tender in 2012, in which it edged out the Eurojet EJ200 engine. The Mark 2 is designed around the F414 engine.

AMCA

“The design of the AMCA — a fifth-generation stealth fighter — is complete and it is at the stage of critical design review. We are at the preliminary design stage of the TEDBF and that should move along quickly now,” said Deodhare.

Aero India 23 has displayed an AMCA simulator with a state-of-the-art cockpit. The DRDO has also displayed advanced actuators that are now being made in India and available for indigenous use. “We have also developed the internal weapons bay for the AMCA and a working model of that is on display,” said Deodhare. “The AMCA is being allotted a budget of Rs 15,000-16,000 crore. The air force is looking at seven squadrons of AMCAs.”

ON THE RADAR

- Two B-1B Lancer supersonic heavy bomber jets of the US Air Force joined the American exhibits at the Aero India, reflecting deeper strategic ties between the two countries
- GE Marine and HAL on Tuesday said they had signed an MoU to explore the

expansion of HAL’s manufacturing capabilities

- HAL had an order book position of ₹84,000 cr and another ₹50,000 cr worth of orders were in the pipeline, its CMD C B Ananthakrishnan said, adding that Argentina and Egypt had evinced interest in buying HAL-built light combat aircraft Tejas **PTI**

TEDBF

Deodhare explained that the TEDBF is not a fourth-generation fighter, but a generation-five minus aircraft. Its basic de-sign has been completed and ADA is at the preliminary desi-gn stage. The fighter's all-up weight will be 25-26 tonnes and it will have twin F414 engines.

Inputs are being fed in from LCA (Navy) trials from Goa and from the INS Vikrant. The wing-folding mechanism has now been finalised. The fighter can carry weapons on its wingtips despite the wing-folding mechanism. Its armament load will be 17.5 tonnes.

“We are trying to take in-puts also from other program-mes. We are doing everything indigenously, not even thinking of imported radar. Once we develop basic technologies it is easy to upscale it for larger platforms,” said the ADA chief.

https://www.business-standard.com/article/current-affairs/the-start-of-atmanirbhar-the-tejas-mark-1-fighter-123021401929_1.html



Tue, 14 Feb 2023

‘Aatmanirbhar Bharat’ Needs Private Sector, not Bureaucracy, to Soar

By Shishir Gupta

Sixty years ago, replying to a debate in Lok Sabha on Chinese invasion in East Ladakh and Arunachal Pradesh on November 8, 1962, then Prime Minister Jawaharlal Nehru said: “ I hope this very crisis will make us always to be remembered that an army today, a modern army, fights with modern weapons which it has to manufacture itself in that country.”

Yet, decades later after this speech, India continues to be one of the largest importers of arms in the world with its foreign policy inadvertently getting skewed towards its main weapon suppliers like Russia, or for that matter US and France, due to the hardware leverage. The issue has got more complicated as India faces a rising global superpower to the north and its client failed state towards the west. There is a fully blown economic crisis in Sri Lanka, Maldives with Nepal hanging on a thread. Even Bangladesh has sought IMF loan to tide over economic situation.

Fact is that despite political leadership in the past laying emphasis on boosting up domestic hardware production at least in words, little was achieved till 2014 with India exporting ₹900 crore worth of arms and ammunition to other countries. It is due to serious perseverance of Prime Minister Narendra Modi that India has moved towards indigenization with exports now touching some ₹14000 crore and some 300 items put on no import list. At the inauguration of Aero India 2023, PM Modi talked about exports touch a figure of more than ₹25000 crore by 2025 with number touching ₹19000 crore this year. Why did it take so long?

The answer to this question is rather complicated as neither the defence research nor the defence public sector undertakings or the private sector lived up to their potential. Given an India-baiter on the western border and expansionist China on the north, the Indian armed forces also

preferred proven technologies from Russia and west due to capital expenditure and cost-benefit constraints rather than believe in indigenous design, development, and production. The idea of even opening the defence sector to private entities was seen some political parties as selling of family heirlooms so what if the defence PSUs were more focused on providing employment than churning out hardware platforms. The brutal fact is that the cost and man hours of Russian Su-30 MKI fighter produced by HAL is more than if it was directly imported from Russia before Ukraine war.

Even during the present Modi government, the in-house research and design has protected its fiefdom and tried its level best to stymie any private venture to produce high tech weapon such as shoulder fired anti- tank guided missile system or drones. The inhouse agencies used simple technique of writing a letter to the highest level of the government informing that they were on the verge of developing a similar system and thus there was no need to look at the private sector. That is a reason why countries like Turkey and Iran are exporting armed drones while India is still trying to catch up on this unmanned stand-off weapon technology. The indigenous hardware production has also been hit by tedious procurement procedures of the government including long delays in registering of patents as a result of which the private sector does not invest into research and development but only goes for proven technologies. Simply put, if the government is not going to buy from its own private sector then why should the world. Given the cost of production overheads (read bureaucratic corruption) in Indian states, the government should be grateful that the private sector is still invested in defence manufacturing in India.

While there is no doubt in PM Modi's commitment to "Aatmanirbhar Bharat", the path-breaking initiative can only become a success through participation of Indian private sector and not by placing hurdles by the vested military-civilian bureaucracy. Even basic amendments of allowing private sector a 51 per cent equity in a joint venture with Indian PSUs has been hanging fire for the past years as the fortress of defence PSUs will be breached by this one single move.

The Defence Research and Development Organization (DRDO) has done commendable work in development of strategic and convention missiles and has contributed a lot to India's strategic autonomy posture. But the problem is that the DRDO is sprawled all over Indian defence sector and wants to develop everything in the name of indigenization. It would be best if the Modi government did an audit of the DRDO so that the organization focuses only on identified core areas rather than setting up Covid hospitals in the past and preparing specialized meals for our soldiers posted in high altitudes. The non-core sectors should be opened to private sector and even core sectors should have time-lines or else private sector should be given a chance.

While it is true that countries into high tech arms exports are vary of sharing technology for tactical leverage and huge USD profits, the Indian private sector is now showing signs of pushing "Aatmanirbhar Bharat" to the next level with big arms majors in India tying up with friendly partners in west to manufacture aircraft engines, submarines and fighter planes. It should be a sobering thought for both China and India that no country can be called a superpower if it cannot design, develop, and produce fighter engines. Even today, majority fighters of China and to a large extent Indian fighters are powered by Russian engines. The diplomatic and political consequences of this gap can be seen in global arena. Modi's "Aatmanirbhar Bharat" is the sole key to India becoming a developed nation by 2047, provided the Indian bureaucracy allows it.

<https://www.hindustantimes.com/india-news/aatmanirbhar-bharat-needs-private-sector-not-bureaucracy-to-soar-101676363309914.html>

India Eyes Tejas Export to Argentina, Egypt but South Korea Frontrunner to Bag Malaysia Contract

India is in advanced talks with both Argentina and Egypt for the sale of at least 35 Tejas Mk-1A indigenous fighter aircraft, besides the sale of six Advanced Light Helicopters to the Philippines. The deal with Egypt will also include setting up a Maintenance, Repair and Overhaul (MRO) facility there.

Malaysia, which is looking to purchase 36 light combat aircraft (LCA), is also considering Tejas but the South Korean FA-50 manufactured by Korean Aerospace Industries seems to have an edge. “We have good leads for the LCA. In Malaysia, we are one of the shortlisted ones. We were hopeful because there was a slight setback. We have not been told anything yet but we are hearing that Koreans are likely to get the order. Notwithstanding that, we are still trying,” C.B. Ananthakrishnan, acting chairman of the Hindustan Aeronautics Limited (HAL) said here on the sidelines of the ongoing biennial aviation exhibition Aero India.

Besides the Tejas and the FA-50, other LCAs in the fray include the Sino-Pakistani JF-17, M-346 from Italy’s Leonardo, and the Russian Yak-130. The Tejas was the frontrunner since it comes with the most advanced features among the lot, said sources in the defence establishment.

Giving details of the other export deals, Anathakrishnan said Argentina has shown keen interest in the Tejas and its pilots even travelled to India to test the aircraft. Incidentally, Brigadier Xavier Isaac — chief of the Argentine Air Force – is attending Aero India and holding talks with top Indian Air Force (IAF) officers and HAL officials.

The HAL chairman said Argentina is looking to acquire at least 15 aircraft.

Egypt, on the other hand, is keen to acquire 20 Tejas in a deal that would also involve setting up an MRO facility there to aid the local defence ecosystem.

Meanwhile, Ananthakrishnan said the HAL is also in talks with the Philippines for the sale of six indigenous Advanced Light Helicopters. The Philippines has already signed a contract with India for the BrahMos supersonic cruise missiles.

Asked when the IAF will start getting the 83 LCA Mk-1A – a contract for which was signed during previous Aero India in 2021 — the HAL chief stated that the first aircraft will be delivered in February 2024 in line with the terms of the contract. The contract, he said, mentions 16 aircraft per year and the HAL is trying to deliver faster than that to ensure that it can execute additional possible orders for the same and for the Tejas Mk2.

<https://theprint.in/defence/india-eyes-tejas-export-to-argentina-egypt-but-south-korea-frontrunner-to-bag-malaysia-contract/1370636/>

Tue, 14 Feb 2023

U.S. Air Force's B-1B Lancer Lands at Aero India 2023

United States Air Force (USAF) has added two more aircraft to its fleet at Aero India 2023. The second day of Aero India saw the arrival of two supersonic heavy bombers — the B-1B Lancer.

B-1B Lancer, also known as 'Bone' (for B-one), carries the largest conventional payload of both guided and unguided weapons in the USAF, and is considered the backbone of America's long-range bomber force. The two B-1B Lancers arrived from Andersen Air Force Base, Guam. This is the second time that the long-range, supersonic, heavy bomber is participating in Aero India.

During the last edition in 2021, one B-1B Lancer did a fly-by over the Air Force Station at Yelahanka after a 28-hour flight from the Ellsworth Air Force Base in South Dakota.

The aircraft performed a fly-by on the inaugural day of Aero India 2021, escorted by an Indian Air Force Tejas fighter. The US Consulate General said that the return of the long-range, supersonic, heavy bomber to India to participate in Aero India 2023 underscores the importance the United States places on the growing strategic partnership with India.

"The B-1 offers flexible options to senior leaders and combatant commanders. Greater integration with our allies and partners throughout the region is a positive step towards greater interoperability," said Major General Julian C. Cheater, Assistant Deputy Under Secretary (International Affairs) of the US Air Force.

Rear Admiral Michael Baker, Senior Defense Official and Defense Attaché at the U.S. embassy in New Delhi, said, "The bombers made the journey from South Dakota to Guam, and then to India just to add another exciting dimension to Aero India 2023.

"It's a long mission to travel from the continental U.S. to the Indian Ocean, but it was worth being part of the biggest air show in the region, hosted by our major defense partner, India. The U.S. and India continue to deepen defense cooperation. We have two great militaries that are even better when we work together."

<https://www.thehindu.com/news/national/us-air-forces-bone-lands-at-aero-india-2023/article66507754.ece>



Tue, 14 Feb 2023

UK Sees Key India Role in Post-Ukraine Defence Supply Chains

The UK is looking at a prospective jet-engine technology deal with India as a lead-in to a longer relationship that supplements UK's efforts to build resilient defence supply chains. Alex Chalk,

Minister for Defence Procurement, said the UK saw India as a key partner in reinforcing ammunition reserves, a priority necessitated by the Ukraine war.

“If this collaboration on jet engine technology continues, we are very keen to look at how we can make our supply chain more resilient by using Indian industry which is growing so fast,” he said on the sidelines of Aero India 2023.

There is potential to bring businesses from India – “a friendly, resource-rich and technologically sophisticated nation” – to the UK’s supply chains, the minister said, underlining the need for the UK to build deeper ammunition reserves.

Speaking about the jet-engine technology being offered by Rolls-Royce, Chalk said the company was in a position to leverage its “massive” existing civil capability to help accelerate the progress on the military front.

The UK is committed to its biggest-ever capability transfer to India and the engines, produced according to Indian specifications, could also be exported on India’s terms.

British companies including Rolls Royce, BAE Systems, and Thales UK are participating in the five-day air show and exhibition.

During Aero India, the UK delegation will take discussions forward on key offers that also include a partnership in maritime electric propulsion technology.

The Royal Air Force is set to welcome the Indian Air Force to the UK for Exercise Cobra Warrior in March. This will be a first for the IAF in the 17-nation air combat exercise.

<https://www.deccanherald.com/city/uk-sees-key-india-role-in-post-ukraine-defence-supply-chains-1191221.html>



Tue, 14 Feb 2023

Guyana Looking to get Dornier from India in First such Major Defence Deal

Guyana's Chief of the Defence Staff, Brigadier Godfrey Bess, has said that the country is looking to purchase the Dornier aircraft from India in a bid to build its capacity in the area of troop movement and disaster-related activities. In an interview with our diplomatic correspondent Sidhant Sibal, Brigadier Bess said, "we looked at one of such aircraft, a Dornier, and it is actually suiting the capability we would like to have." He added that the initial focus of the defence cooperation between the two countries will be on air assets.

This announcement comes after Guyana's President, Dr Irfaan Ali, expressed his country's interest in buying Indian defence equipment during an interview with WION last month. The Chief of defence staff is currently in India to participate in Aero India in Bangalore and held talks with his Indian counterpart. In the interview, he also pointed to training being provided by India to the Guyanese military.

WION: What kind of cooperation is there between India and Guyana when it comes to the Defence relationship?

Brigadier Godfrey Bess: The government and people of Guyana are very thankful to India for the invitation to this conference. Since I have been here, we are enjoying the hospitality of the people of India and the conference has been an eye opener. I must say that Guyana and India have had a very long diplomatic relationship and as a result of that, we have been traditionally doing things together. Regarding defence, over the last two years, there has been a tremendous improvement in our relations, and presently we have been doing a lot of training, building human capacity, and collaborating with the military of India. We plan to increase that collaboration so that we can continue to prepare our defence force for greater things, particularly since Guyana has been known to be the fastest-growing economy. We have ensured there is a conducive environment for investors and the people of Guyana. We do recognize we need to build capacity and capabilities regarding defence and security and we do see India as a very strategic partner in this regard. We do recognise based on PM Modi's speech of India's need and willingness to collaborate with all countries to ensure that our defence structure is built stronger.

WION: What can you tell us about the training of your military by India?

Brigadier Godfrey Bess: Well, my military is very small, and needs capacity building. In the last two years, we have seen extensive training in the military, in information tech enhancement, and involved my commissioned and non-commissioned officers. We are taking Indian training and it has enhanced the capacity back home in Guyana. Training has done very well for us so far. We will continue to enjoy those training and we would like, open to inviting trainers to Guyana so that we can continue to build and share the experience we have in Guyana with India.

WION: Last month, your President spoke to WION and said that his country is keen to buy Indian defence equipment. Can you elaborate on that?

Brigadier Godfrey Bess: There is an MoU, meant to be signed by the two sides, indeed I do see our defence cooperation enlarged. Presently, we are looking at the proposal, as it relates to air assets and naval assets for our country and for sure, as we continue to collaborate having gone around the exhibition, over the last two days, there are a lot of other assets and capabilities that Guyana will be interested. I do feel a lot of positivity as it relates to growth in our defence areas.

WION: Are you looking at Including Dornier, fast patrol vessels? and so far, have you brought Indian defence equipment?

Brigadier Godfrey Bess: Yes, exactly those are some of the options we are actively looking at. Well, we have not bought defence equipment thus far; we have purchased other infrastructure equipment. Recently our government purchased a ferry from India, and in years gone by we have been very good customers for TATA. We purchased transportation equipment from the country. We have been collaborating on a country-to-country basis, mainly in the area of medical science and technology and other areas. Business with India is no strange activity with Guyana, we have lines of credit and there have also been agreements between my government and India Exim Bank.

WION: What kind of air assets are you looking for from India?

Brigadier Godfrey Bess: In the beginning, we are looking at air assets that would build our capacity in the area of moving our troops across the country and I would say disaster-related activities. We looked at one such aircraft, a Dornier, and it is actually suiting the capability we would like to have.

WION: So, you will be keen on a Dornier with India?

Brigadier Godfrey Bess: Yes, in the initial stage.

WION: What kind of conversation you had with your Indian counterpart?

Brigadier Godfrey Bess: I had conversations with some of the persons from the private sector and am looking at options. I had a conversation with the Indian chief of defence staff and spoke about increasing cooperation and working together as a partner, partners with similar challenges and interests which will improve our relationship.

<https://www.wionews.com/india-news/exclusive-guyana-looking-to-get-dornier-from-india-in-first-such-major-defence-deal-562037>



Wed, 15 Feb 2023

Britain and France Laud India's Aatmanirbhar Defence Pitch at Aero India 2023

At Aero India 2023, French envoy Emmanuel Lenain lauded India's Aatmanirbhar Bharat campaign and said France views India as a partner instead of being a market for the defence sector. Emmanuel Lenain is leading the French delegation which includes France-based companies like Dassault, Airbus and MBDA at the 14th edition of the aviation exhibition.

“The French industries have been committed, have been pioneering for decades now in the Make in India (Campaign),” the French envoy told reporters at Bengaluru’s Yelhanka Air Base. He stressed on co-development of weapons between French industries and Indian defence manufacturers for “weapons of the future.” He added the two nations should work together for strategic autonomy.

Meanwhile, British High Commissioner to India Alex Ellis exuded confidence in India’s defence sector stating that India-UK relations are already symbolised by trade, FTA and student numbers.

He further said the UK is already engaged with India in the enhancement of defence ties, particularly with the navy,” and added that Britain would now focus on boosting ties in the aviation sector. He said Aero India 2023 provides huge opportunities for the enhancement of the aerospace sector.

India’s aerial defence ties with UK, France

India and France have been working together to develop and produce advanced defence technologies, including combat aircraft and helicopters. One of the key collaborations between India and France is the Rafale fighter jet deal, under which France will supply 36 Rafale jets to the Indian Air Force.

The jets are expected to enhance India's air defence capabilities, providing it with advanced features such as electronic warfare, reconnaissance, and multi-role capabilities.

Another area of collaboration between India and France is the development of joint ventures in the aerospace and defence sectors. These ventures aim to establish a strong industrial base in India to support the production of advanced defence technologies, while also providing employment opportunities and boosting the country's economy. Additionally, India and France

regularly participate in joint military exercises and exchanges, which help deepen their defence relationship and enhance mutual understanding and cooperation. These exchanges also provide an opportunity for the two countries to share best practices, knowledge, and technology in the field of aerial defence.

Meanwhile, India and the United Kingdom share a long history of cooperation in the field of defence, including the aerial defence sector. Both countries have been working together to enhance their collaboration and build a strong defence partnership. The UK is one of the major suppliers of defence equipment to India.

Both nations have signed several agreements and MoUs in the defence sector to boost their cooperation and collaboration, including in the areas of military training, joint research and development, and the transfer of defence technologies. Further, a bi-annual joint military exercise called 'Shiva-Shakti' aims to enhance military cooperation and interoperability between the two nations.

<https://www.republicworld.com/india-news/general-news/britain-and-france-laud-indias-aatmanirbhar-defence-pitch-at-aero-india-2023-articleshow.html>



Tue, 14 Feb 2023

Germany to Produce Ammo for Air Defence Guns sent to Ukraine

Germany has signed a deal for new ammunition for self-propelled anti-aircraft guns it provided to Ukraine to be produced at home after it ran into difficulties securing supplies from elsewhere, the Defence Minister said on February 14.

Germany has supplied 32 of the Gepard anti-aircraft guns since it first agreed to send them to Ukraine in late April, and has pledged 37 in total. The German military hasn't used them since 2012, so they came from stocks held in reserve by the defence industry.

Securing more ammunition for the guns has been a challenge, a matter of mounting concern as defence against repeated barrages of Russian missile and drone strikes has become a top priority for Kyiv. Germany so far has been unsuccessful in months of efforts to persuade neutral Switzerland to approve exports to Ukraine of stockpiles in the Alpine country of Gepard ammunition, which was manufactured there by a subsidiary of German defence company Rheinmetall. There are also stocks of the ammunition in Brazil, but President Luiz Inacio Lula da Silva made clear when German Chancellor Olaf Scholz visited last month that his country wants no involvement of any kind in the war in Ukraine and wouldn't provide Germany with any. Defence Minister Boris Pistorius said as he arrived at a meeting with counterparts from other allies of Ukraine in Brussels on February 14 that contracts have now been signed to produce new ammunition in Germany.

"That means we will now start our own production of Gepard ammunition at Rheinmetall without delay," Mr. Pistorius told reporters. "I am very happy that this succeeded because it better secures our independence and faster delivery." The Minister said that "the negotiations

with Switzerland took time, and in the end we were of the opinion that it is better to go our own way faster so as not to be dependent on them.”

<https://www.thehindu.com/news/international/germany-to-produce-ammo-for-air-defence-guns-sent-to-ukraine/article66508074.ece>



Tue, 14 Feb 2023

Ukraine seeks Warplanes at NATO talks, Allies Fret Over Ammo

Ukraine on Tuesday renewed its appeal to Western countries for fighter jets to help frustrate Moscow's invasion, but the United States and its NATO allies and partners are more concerned about Kyiv's needs for large amounts of ammunition as the war with Russia is set to enter its second year.

Ahead of the meeting of the Ukraine contact group at NATO headquarters in Brussels, Ukraine made its requirements clear. Defense Minister Oleksiy Reznikov, when asked what military aid his country is seeking now, showed reporters an image of a fighter jet.

Ukraine President Volodymyr Zelenskyy pushed hard for combat planes last week when he visited London, Paris and Brussels on just his second foreign trip since Russia invaded on February 24, 2022. His plea came days after Western allies pledged to provide Kyiv with tanks.

The United States has said no to fighter jets for Ukraine. The United Kingdom is assessing the possibility. On Tuesday, Dutch Defense Minister Kajsa Ollongren said providing jets “has to be part of the consideration.”

What NATO allies have on their mind, though, is how to keep up a steady supply of ammunition to Ukraine without depleting their own stockpiles.

According to some estimates, Ukraine is firing up to 6,000-7,000 artillery shells each day, around a third of the daily amount that Russia is using.

NATO Secretary-General Jens Stoltenberg warned Monday that Ukraine is using up ammunition much faster than its allies can supply it.

Moscow's forces have been pressing in the east of Ukraine while bolstering their defensive lines in the south. The war has been largely static during the winter months, though both sides are expected to launch offensives when the weather improves.

Mr. Putin was hoping Western support for Kyiv would fizzle out, U.S. Defense Secretary Lloyd Austin told the meeting.

But he said the contact group would “help Ukraine hold an advance during the spring counteroffensive” and would keep planning for Kyiv’s long-term needs.

“Today’s meeting comes at a critical time,” Mr. Austin said. “The Kremlin is still betting that it can wait us out.”

The Russians appear short on resources for any major offensive at the moment, the U.K. Ministry of Defense said Tuesday. "Overall, the current operational picture suggests that Russian forces are being given orders to advance in most sectors, but that they have not massed sufficient offensive combat power on any one axis to achieve a decisive effect," it tweeted.

German Defense Minister Boris Pistorius said that finding ammunition and air defences is "much more important at the moment than the discussion about fighter jets." Mr. Pistorius told reporters that getting pilots up to speed on new aircraft and "training just to fly them takes several months, never mind teaching the abilities needed to deploy the weapons systems."

He said Ukraine's partners "should focus on what is now at centre stage, particularly in view of a Russian offensive that is apparently taking place."

He said Germany has signed a deal to produce ammunition for self-propelled, anti-aircraft guns it provided to Ukraine, after Kyiv ran into problems finding munitions elsewhere.

That ammunition is crucial for Kyiv to counter Russian attacks, especially on Ukraine's power infrastructure aimed at disrupting heating and drinking water supply.

Mr. Stoltenberg on Monday urged Ukraine's Western allies to step up their military support.

Asked when he expects Russia's so-called spring offensive to begin, Mr. Stoltenberg said that "the reality is that we have seen the start already."

"For me, this just highlights the importance of timing. It's urgent to provide Ukraine with more weapons," he told reporters in Brussels.

Mr. Stoltenberg said that NATO sees "no sign whatsoever that President Putin is preparing for peace" and that arming Ukraine more quickly could save lives by bringing a quicker end to the conflict.

In Ukraine, the country's presidential office said Tuesday Russian shelling killed at least three civilians and wounded another eight over the previous 24 hours as fighting continued in the south and east.

Russian forces shelled 17 towns and villages in the Donetsk region. Gov. Pavlo Kyrylenko said. "The Russians are destroying everything in their path," he said.

Ukraine officials also reported intense shelling and air strikes in Luhansk province, while in the south Russian forces shelled the city of Kherson 13 times over 24 hours, destroying a railway and residential buildings.

<https://www.thehindu.com/news/international/ukraine-seeks-warplanes-at-nato-talks-allies-fret-over-ammo/article66508609.ece>

ISRO Conducts Crew Module Recovery Trials for Gaganyaan Mission

ISRO has carried out initial recovery trials of the crew module for the Gaganyaan programme. The exercises were carried out in tandem with the Indian Navy, which is charged with leading other government agencies during recovery of crew capsules after a Gaganyaan mission ends with an ocean splashdown. The recovery trials were conducted in a closed pool, where different configurations of the module were tested along with various simulated ocean conditions. For the trials, a Crew Module Recovery Model (CMRM) was used that approximates the mass, centre of gravity, outer dimensions and external fixtures of the planned crew module.

The sequence of operations necessary for the recovery was carried out. The procedures are oriented towards ensuring that the crew is recovered as quickly as possible from the crew module, minimising the time spent in the capsule after the touchdown. This requires that the personnel are trained for recovery operations in a wide range of conditions, with a large number of trials necessary to train the team and finalise the standard operating procedure. ISRO intends to conduct recovery trials in the open sea as well. The trials were conducted at the Water Survival Test Facility of the Indian Navy in Kochi, which is used to provide training for aircrew to escape from ditched aircraft in various simulated conditions and crash scenarios.



The recovery capsule in a sea state simulation. (Image credit: ISRO).



The orange floats are used to keep the capsule oriented the right way in choppy seas. (Image credit: ISRO).

ISRO began training crew for the Gaganyaan mission in December 2021, with a curriculum formulated by the ISRO, DRDO and IAF. ISRO is conducted a series of tests to ensure the safety of the crew on the mission. The crew module releases a series of ten parachutes after re-entry and before splashdown, with the entire sequence being previously tested using airdrops and rocket sleds. ISRO Chairman S Somanath has indicated that the first crewed flight is unlikely to take place in 2023.

<https://www.news9live.com/science/isro-conducts-crew-module-recovery-trials-for-gaganyaan-mission-au941-2051660>

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