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# समाचार पत्रों से चयित अंश Newspapers Clippings

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*Tue, 21 Jun 2022*

### **DRDO to Develop New Infantry Combat Vehicle with Crewless Turret**

*By Adithya*

India's Defence Research and Development Organisation (DRDO) is proceeding to develop two Advanced Armoured Platform (Tracked) (AAP-Tr) vehicles. The project, spearheaded by DRDO laboratory Vehicles Research & Development Establishment (VRDE), is expected to produce a vehicle capable of meeting Indian Army's requirement for over 1,750 Futuristic Infantry Combat Vehicles (FICV). Two AAP-Tr technology demonstrators and four 30mm unmanned turrets will be developed by VRDE in association with an industry partner. The amphibious vehicle will be powered by an engine rated at 600-750hp with protection in the form of modular armour. The 25 ton vehicle will have provisions for integrating an Active Protection System (APS), loiter munitions and a mini UAV. These are required to meet specifications for FICV released by the Army in a 2021 RfI. The vehicle must be designed to mobility and dimensional specifications stated by VRDE and will have a crew of three.

The crewless turret for AAP-Tr will consist of a 30mm gun, 7.62mm coaxial machine gun, a 12.7mm remote controlled weapon station and ATGM launchers. Various sights and a fire control system will also be integrated. Four ATGMs are proposed to be housed in two twin launchers. The ATGM preferred is the Nag Mk2, which is under development. Indian Army's FICV RfI released in June 2021 outlined a need for about 1,750 FICVs. 55% of these would be a Gun version, 20% would be a Command version and the rest would be a Command and Surveillance version. All three versions would be armed with a main gun of at least 30mm calibre, along with secondary gun systems. The gun version would be armed with 6 ATGMs and a man portable ground launcher. The other two versions would be armed with 4 ATGMs and 2 loiter munitions. The surveillance version would also have a mini UAV.

Many private Indian firms such as Tata Motors, Larsen & Toubro, Mahindra, Bharat Forge and others are expected to be contenders for the VRDE AAP-Tr. Another DRDO laboratory Combat Vehicles Research & Development Establishment (CVRDE) has selected Ashok Leyland as the development and production partner for its 600hp engine designed to power vehicles such as FICVs. CVRDE is also developing a hard-kill APS which could be used in FICV and the New Generation Main Battle Tank (NGMBT) being developed by CVRDE.

<https://www.overtdefense.com/2022/06/21/drdo-to-develop-new-infantry-combat-vehicle-with-crewless-turret/>

## **The Desperate Need for High-Capability Flight Test Beds in India**

*By Girish Linganna*

The post Pokhran 2-1999 witnessed a global ban on India where the country was denied engines for space programmes and fighter aircrafts by the US and its allied nations. It was then the nation decided to develop its own Cryogenic engine. The indigenous engine Kaveri which was on a snail pace was put on a fast track. But whether the nation developed the engine or not is immaterial, but it exposed the lack of a major facility- the flight test bed. The situation continues even today. Necessity is the mother of invention goes the saying. Synonymous to it is the country's fighter aircraft programme and the Kaveri engine programme. But worse was the test bed facility, which probably was not given much thought about. The nation's struggle to develop an indigenous aircraft engine to power LCA Tejas as well as the Advanced Medium Combat Aircraft urgently needs to be complemented by an all weather testing facility or flight test bed.

A flight test bed (FTB) is an aircraft that is used to test the various equipment that will go on board an upcoming plane or on an upgraded platform. This is especially true of engines, which need to undergo thorough testing before being deployed on an aircraft, they must undergo testing. FTB can validate engine performance at 12,192 to 15,240 metres above the ground. It also underscores any serious problems with the program that needs to be fixed while maintaining the highest margin of safety. While some of this takes place on the ground, the engines must also be tested in flight. Flying engine test beds come into play here. As of 2015, media reports indicated that India had a few FTBs, operated by various defence research laboratories such as the Centre for Airborne Systems (CABS). They were usually flown by qualified Indian Air Force (IAF) test crews from the Aircraft and Systems Testing Establishment (ASTE) in Bangalore. The media had then reported that India had modified HS-748s, Dornier Do-228s and a single modified IL-76 as test beds. The IL-76 was and is still based at the Gromov Flight Research Institute in Moscow.

CABS has carried out most of the testing in India. The Centre's flight test facility caters to flight testing of system equipment under development, leading to the qualification of the items under flight environment and evaluation of their functionality and performance as airborne equipment. The team at CABS interacts with concerned laboratories for a multiplicity of things. For instance, to install test equipment, clear the installation for flight, for flight trial operations, to modify test equipment based on flight evaluation, further flight testing, etc. India's Test Beds The Hawker Siddeley HS- 748- a British-origin, twin-engine turboprop military transport and freighter has been used to test several indigenous systems like the Multi-Mode Radar (MMR) and Multi-Sensor Warning System (MSWS) for standalone testing and evaluation. The ground support equipment and an experienced maintenance crew support the

HS-748 -based light Test Facility. India also possesses Dornier Do-228s as test beds. These aircraft are manufactured by the Transport Aircraft Division of HAL, located at Kanpur. DRDO received the first modified Dornier in May 2014 and has been used for testing aerospace systems.

Electronics and Radar Development Establishment (LRDE), a premier DRDO lab specialising in design and development, also entered a contract to deliver Modified Dornier DO-228 aircraft in 2014 to test airborne radars and other systems. One HS-748 and a Dornier-228 aircraft were allotted to CABS to accommodate the development of several sub-systems of the Airborne Early Warning and Control (AEW&C) system. India has the IL-76 test bed based in Moscow. This is a modified version that the Gas Turbine Research Establishment (GTRE) uses as an FTB. The indigenous Kaveri engine was tested, with the engine running all the way from the take-off to landing. It flew for a period of over one hour, reaching altitudes of up to 6,000 metres. The engine allowed the IL-76 aircraft test bed to fly at speeds of 0.6 mach in its first flight and up to a maximum speed of 1 mach at its peak.

However, in a recent development, an Indian 5G test bed is to be established at the Military College of Telecommunication Engineering (MCTE), Mhow in collaboration with Indian Institute of Technology, Madras (IIT-M). A Memorandum of Understanding (MoU) to facilitate the same has been signed between MCTE & IIT-M. The test bed will facilitate Indian Army to utilise the 5G technology for its operational use, especially along its borders. The MoU signed will give an impetus to induction of systems, devices & equipment using niche technology and also use of AI based algorithms for enhancing capabilities of our Armed Forces.

### **Indigenous FTB**

The DRDO had hopes of reducing its dependency on foreign agencies to carry out necessary tests. With the increase in indigenous aeronautical activities within India, many industries and government firms have been looking for a suitable platform to undertake stand alone tests of critical components and systems. Initially, the plan was to find a foreign aircraft, later equipping it with Indian systems as necessary. Embraer was one of the candidates that was considered for this. However, since the test and design data of an imported aircraft are not shared owing to the proprietary clause, India would not have been able to fly our own FTB without knowing these details. The plan to import was dropped, and Do-228 became the automatic choice. However, India still lacks a high-altitude flight test facility with an FTB for its military afterburning turbofan projects. This has led to the country being dependent on France and Russia for testing experimental engine programs, rendering them vulnerable to external espionage. GTRE and DRDO have been insisting on acquiring a capable indigenous FTB.

This new FTB will significantly lower the development time of several programs. It will be helpful for all airborne system evaluations and will serve for at least a couple of decades. The issue in acquiring a new test bed seems to be one of intention. Procuring IL-76 or any other commercially available plane to be used as a Flying Test Bed (FTB) is not a very difficult task. The fact that the country still does not have it shows the lack of seriousness on the part of the Ministry of Defence (MoD). Over the last 30 years, the MoD has not even invested in fundamental testing facilities in the nation. With such support, the expectation from engineers and scientists to build a workable engine on a tight budget seems unrealistic. There still is a

future, though. The DRDO, which currently does not have a supersonic FTB, is aggressively following the project to acquire one. To look into the possibilities for obtaining the same, a committee has already been set up. The committee has representatives from the IAF and HAL, alongside members from DRDO. While Sukhoi is leading the fray, the committee is also considering the advantages of MiG 29.

<https://www.financialexpress.com/defence/the-desperate-need-for-high-capability-flight-test-beds-in-india/2567952/>



*Wed, 22 June 2022*

## **Tata Advanced Systems, Larsen and Toubro Deliver 100th Missile Launcher for IAF's Akash Project**

Tata Advanced Systems Limited (TASL) and Larsen and Toubro (L&T) on Tuesday jointly delivered the 100th Akash Air Force Launcher (AAFL) for the Indian Air Force, developed with the Defence Research and Development Organisation (DRDO). The event was flagged off by BHVS Narayana Murthy, the Director General, Missiles and Strategic Systems (DG-MSS) of the DRDO at TASL's Vemagal facility in Karnataka. The event was participated by Bharat Electronics Ltd, Missile Systems Quality Assurance Agency, L&T and multiple MSME partners in the programme. TASL has also supplied 49 Akash Launchers earlier to the Indian Army. Sukaran Singh, the managing director and Chief Executive Officer (CEO) of TASL said, "The successful delivery of the 100th AAFL is a major milestone for TASL and the Indian defence manufacturing sector. It marks the successful establishment of serial production after completing product development. The repeat order of AAFL being executed shows the user's continued satisfaction and confidence in the operational performance of the indigenously developed and produced AAFL system."

Jayant Patil, the Whole Time Director (Defence and Smart Technologies) at L&T said, "L&T has remained singularly focused on offering indigenously designed, developed and manufactured defence systems to our armed forces. Delivery of the 100th AAFL system, a major milestone toward the iconic Akash missile programme, epitomises the contribution made by the Indian industry toward the vision of an 'Aatmanirbhar Bharat'." He added that this milestone is a testimony to the core strengths and hard work by the Indian industry teaming up in a public-private partnership to deliver a force-multiplying Akash Air Defence system to the Indian Air Force. The AAFL is a multi-technology weapon launch platform for air defence missiles, jointly developed under the IGMDP Programme of the DRDO by TASL and L&T and produced collaboratively. It comprises a self-powered and fully-automated electro-mechanical launching system mounted on a trailer and towed by a prime-mover. It is a fully ruggedized all-weather day and night system capable of operating in harsh environmental and terrain conditions.

<https://www.indiatoday.in/india/story/iaf-akash-100th-missile-launcher-tata-system-larsen-toubro-1965221-2022-06-22>

# DRDO On Twitter

*Tue, 21 Jun 2022*

DRDO (@DRDO\_India)



#DRDOUpdate | On the Occasion of #InternationalYogaDay2022 special Yoga Oration by Swami Brahmanistananda ji Maharaj was organised at DRDO Bhawan today. Secretary DDR&D and Chairman DRDO delivered the opening remarks highlighting #YogaForHumanity @PMOIndia

Twitter · 22 hours ago



Tue, 21 Jun 2022

### **Agnipath Scheme: टीथ टु टेल रेशियो: यहां चीन-पाकिस्तान से कमजोर है भारतीय सेना लेकिन अग्निपथ देगी ताकत**

भारतीय सेना के तीनों अंगों- आर्मी, नेवी और एयफोर्स में भर्तियों के लिए लागू अग्निपथ स्कीम का एक बड़ा मकसद वेतन और पेंशन मद में कटौती का भी है ताकि रक्षा साजो-सामान पर खर्च बढ़ाया जा सके। इसकी जरूरत लंबे समय से महसूस की जा रही थी। विभिन्न समितियों ने भी अपनी-अपनी रिपोर्ट में सेना में 'टीथ और टेल रेशियो' घटाने पर जोर दिया है। टीथ और टेल रेशियो दरअसल युद्ध लड़ने वाले सैनिकों और उन्हें मदद पहुंचाने वाले सैनिकों का अनुपात होता है। आइए इसके बारे में विस्तार से समझते हैं! कब शुरू हुआ टीथ टु टेल रेशियो का फंडा, जानिए सबसे पहले 'टीथ टु टेल रेशियो' का कॉन्सेप्ट वर्ष 1929-30 के ग्रेट डिप्रेशन के बाद उद्योग जगत में आया। इसके जरिए बाजार की गलाकाट प्रतिस्पर्धा में किसी उत्पाद के टिक पाने की संभावना का आकलन किया जाता था।

इसके लिए प्रॉडक्शन कॉस्ट और ओवरहेड्स कॉस्ट (विज्ञापन, वितरण एवं ट्रांजैक्शन कॉस्ट) के बीच का औसत निकाला जाता था। चूंकि उत्पाद बनाने की लागत घटाने की गुंजाइश नहीं के बराबर होती थी, इसलिए विज्ञापन, वितरण, ट्रांजैक्शन कॉस्ट आदि में ही कटौती का रास्ता निकाला जाता था। इस कारण प्रॉडक्शन कॉस्ट को टीथ जबकि ओवरहेड्स कॉस्ट को टेल कहा गया। कुल मिलाकर जिसमें कटौती की गुंजाइश हो, उसे टेल और जिसकी लागत घटाई नहीं जा सकती है, उसे टीथ माना गया। धीरे-धीरे टीथ टु टेल रेशियो की अवधारणा का विस्तार हुआ और पूरी कंपनी के संचालन लागत को ही इसी पैमाने पर आंका जाने लगा। इसमें कंपनी की सांगठनिक और संचालन संबंधी कुशलता को आंका जाने लगा।

द्वितीय विश्वयुद्ध के दौरान सेना में आया यह कॉन्सेप्ट सेना में टीथ एंड टेल की अवधारणा पहली बार द्वितीय विश्वयुद्ध के दौरान अमेरिका सुरक्षा बलों ने लागू किया गया। तब युद्धरत सैनिकों को साजो-सामान पहुंचाने का भारी खर्च अमेरिकी सेना को चिंतित कर रहा था। उसी के बाद दुनियाभर के सैन्य विशेषज्ञों ने टीथ टु टेल रेशियो के कॉन्सेप्ट को लपक लिया और धीरे-धीरे यह हर देश की सेना की युद्धक क्षमता को परखने का पैमाना बनता चला गया। वैसे शुरूआती दौर में तो यह लागत तय करने के पैमाने ही

बना रहा था। अब सेना में टीथ उन टुकड़ियों को माना जाता है जो सीधे युद्ध लड़ती हैं जबकि टेल उन्हें हर प्रकार की सहायता पहुंचाने वाली टुकड़ियां कहलाती हैं। भारतीय सेना के कॉम्बेट आर्म्स (इन्फैंट्री और मेकनाइज्ड फोर्सेज) और सपोर्ट सर्विसेज (लॉजिस्टिक, मेंटनेंस, मेडिकल आदि) की संख्या के मामले में औसत को टीथ टु टेल रेशियो कहा जाता है।

कौन टीथ और कौन टेल, जानें कैसे होता है निर्धारण हालांकि, किसी सेना में कौन टीथ है और कौन टेल, यह सुनिश्चित करना आसान नहीं है। एक उदाहरण से समझने की कोशिश करते हैं। मान लीजिए दो लोगों के बीच लड़ाई हो गई। एक ने दूसरे को घूसा मारकर पस्त कर दिया। इसमें घूसे को टीथ मान लेना आसान है क्योंकि उसने ही दुश्मन को पस्त और परास्त किया। लेकिन पूरे हाथ का क्या जिसके बिना पूरे वेग से घूसा दुश्मन तक पहुंच नहीं सकता था? क्या वह टीथ नहीं? अगर हां तो फिर कंधा क्या है जिसने घूसे की ताकत पैदा की? क्या वह भी टीथ है? अगर हां तो फिर शरीर क्या है जिसने घूसा लगने के बाद विपरीत दिशा में पैदा हुए बल को रोका और घूसा मारने वाला अपनी जगह से डिगा नहीं। निश्चित रूप से उसे भी टीथ ही कहेंगे क्योंकि उसके बिना प्रभावी घूसा संभव नहीं था। लेकिन, सच्चे अर्थ में टीथ तो घूसा ही होगा जबकि हाथ, कंधा और पूरा शरीर टेल माना जाएगा। इस तरह कहें तो घूसा जड़ने में संलिप्त हुआ एक-एक अंग का समुचित और सम्मिलित प्रयास दुश्मन को परास्त करने के लिए जरूरी है।

भारतीय सेना का टीथ टु टेल रेशियो जानें खैर, अब आते हैं कि भारतीय सेना में टूथ एंड टेल का रेशियो पर। यह तय करने का एक फॉर्म्युला यह है कि सेना की कुल क्षमता को फाइटिंग डिविजनों में बांट दिया जाए, फिर हरेक डिविजन की औसत क्षमता को घटा दिया जाए। इस फॉर्म्युले के आधार पर भारतीय सेना के 41 डिविजनों की औसत क्षमता करीब 27 हजार सैनिकों की है। इनमें करीब 18,000 सैनिक युद्ध भूमि में दुश्मन से सीधा मुकाबले के लिए हैं जो टीथ हैं। इसका मतलब है कि करीब 9,000 हजार सैनिक योद्धाओं की मदद के लिए होते हैं। इन्हें टेल कहा जाए। इस तरह देखें तो एक भारतीय सेना के एक डिविजन में औसतन 9,000 सैनिक मददगार यानी टेल की भूमिका में हैं जबकि पाकिस्तान में यह आंकड़ा करीब 2,300 और चीन में करीब 1,200 है। इस तरह, भारतीय सेना में अपने उन दो पड़ोसी देशों की सेना के मुकाबले टीथ एंड टेल का औसत काफी ज्यादा है। यानी, भारतीय सेना के पास अपने टेल में कटौती करने की गुंजाइश है और उसे यह करना भी पड़ेगा ताकि वह दुनियाभर की सेना के मुकाबले प्रतिस्पर्धी बनी रहे।

कैसे सुधारा जा रहा है टीथ टु टेल रेशियो नरेंद्र मोदी सरकार ने 20 मई 2016 को लेफ्टिनेंट जनरल (रिटायर्ड) डीबी शेकटकर की अध्यक्षता में एक कमिटी गठित की थी। कमिटी ने दिसंबर 2016 में अपनी रिपोर्ट में भारतीय सेना की युद्धक क्षमता बढ़ाने और रक्षा खर्च को संतुलित करने के कुल 99 प्रस्ताव दिए थे। उनमें ब्रिटिश काल से लागू कई सिस्टम्स को खत्म करने या कुछ को मिलाकर एक करने का प्रस्ताव भी शामिल था। वर्ष 2019 में जब वित्त मंत्री अरुण जेटली के पास ही रक्षा मंत्रालय का भी प्रभार था तब उन्होंने शेटकर कमिटी की रिपोर्ट को लागू करने की दिशा में कदम बढ़ा दिया था। उसके तहत सिग्नल्स

एंड इंजीनियरिंग कॉर्सेस और ऑर्डनेंस यूनिट्स को रीऑर्गनाइज करने, कुछ यूनिट्स को मिलाने और मिलिट्री फार्मर्स को खत्म करने का फैसला लिया गया।

टीथ टु टेल रेशियो को सुधारने की दरकार ही क्यों, जानें केंद्र सरकार ने वित्त वर्ष 2022-23 में रक्षा क्षेत्र के लिए 5.25 लाख करोड़ रुपये का बजट दिया है जो पिछले बजट से 9.8 प्रतिशत ज्यादा है। इसमें आर्मी के हिस्से 51 प्रतिशत, नेवी के हिस्से 19 प्रतिशत और एयरफोर्स के लिए 23 प्रतिशत राशि आवंटित हुई। शेष राशि में 6 प्रतिशत रक्षा अनुसंधान एवं विकास संगठन (DRDO) जबकि बाकी दूसरे रक्षा संगठनों के लिए हैं। आर्मी अपनी आवंटित रकम का मात्र 16 प्रतिशत हिस्सा ही रक्षा साजो-सामान की खरीद पर कर पाएगी, शेष रकम वेतन एवं पेंशन मद में ही जाएगा। हालांकि, नेवी 65 प्रतिशत जबकि एयरफोर्स 63 प्रतिशत रकम कैपिटल एक्सपेंडिचर के रूप में खर्च कर सकेंगे।

<https://navbharattimes.indiatimes.com/india/keshav-baliram-hedgewar-death-anniversary-how-and-why-rss-founder-chose-ms-golwalkar-as-his-successor/articleshow/92350340.cms>

# ThePrint

Tue, 21 Jun 2022

## **Agniveers have Secure Future, Defence Training will Ensure High Stature in Society: NSA Doval**

New Delhi [India], June 21 (ANI): Training, discipline during four years of service and an Army career will result in Agniveers having high stature in the society, National Security Advisor Ajit Doval said on Tuesday and noted that government and several ministries have made announcements for the absorption of youth who will be discharged after service in the Agnipath recruitment scheme for defence forces. In an exclusive with ANI, Doval said Agniveers will have age as an asset, they have their future secured and do not need to worry about anything. He said there will be plethora of opportunities for Agniveers in a rapidly growing economy, including in higher education. “We must have a fit, agile, young and well trained Army. Those Agniveers who will be regularised will go through more training and become experienced over time. So Indian Army at any point of time will have large number of people who though recruited as Agniveers but are specially selected for their suitability, fitness, agility motivation and aptitude,” he said.

Doval said Agniveers will have discipline, team-work capability, skills, confidence, an all-India perspective and will be “much more equipped for society”. “Every recruit is fresh in Armed Forces. The biggest misunderstanding has been created deliberately. This maybe because of lack of full understanding. Say, an agniveer of 22-23 years old and has done a four-year service and now he is in the market. Compare him with any other 21-122 years old youth who is not an agniveer. This person is disciplined and has the capability to work as a team. He learned skills. He developed confidence and an all-India perspective. He is trainable. So he is much more equipped for society,” Doval said. He noted that no avenue is closed or debarred from Agniveers and they will have second career.

“Plus, Agniveers will have around Rs 11 lakh cash, they can join any course of their choice. They can go to University. They can acquire technical skills. So they will have a second career. Earlier people talk about one life and two careers. But now its one life and three careers,” he said. “After four years of service, the training, discipline, background and the Army career, they (Agniveers) will have high stature in the society. On top of it there are several announcements by the government and several ministries for the absorption of Agniveers,” he added. He said India’s economy is expanding rapidly and provide several opportunities after five years in the private sector. “The first Agiveer will retire after 5 years from today when India’s economy will be USD 5 trillion. Private sectors will grow at a new pace. Defence sector is also growing at rapid pace. The asset of the Agniveers will be their age. They have their future secured. They do not need to worry about anything,” he added.

The “transformative” Agnipath scheme, announced by Union Minister Rajanath Singh on June 14, in the presence of the three service chiefs provides for the recruitment of into the Armed services of youths between the age bracket of 17-and-a-half-years to 21 for only four years with a provision to retain 25 per cent of them for 15 more years. The Centre later extended the upper age limit to 23 years for recruitment in 2022. The Union Cabinet had also approved Agnipath scheme on June 14 and the youth selected under this scheme will be known as Agniveers. The government had announced that 46,000 Agniveers to be recruited this year. It had said that armed Forces will have “a younger, fitter, diverse profile” to face future challenges. The Indian Army issued its first notification on Monday for recruitment under Agnipath scheme.

<https://theprint.in/india/agniveers-have-secure-future-defence-training-will-ensure-high-stature-in-society-nsa-doval/1005848/>



Wed, 22 June 2022

## **Rajnath Singh to Hold Bilateral Talks with Australian Counterpart Today, Strengthening Defence Cooperation on Agenda**

Defence Minister Rajnath Singh will be holding bilateral talks with his Australian counterpart Richard Marles in New Delhi on Wednesday. During the talks with Marles, also the Deputy Prime Minister of Australia, Singh will discuss defence cooperation between the two countries and explore opportunities to strengthen the bilateral ties between India and Australia. Marles reached Goa on June 20 on the first leg of his four-day visit to India. "Arrived in India – a top-tier partner + close friend to Australia. I look forward to advancing our ongoing defence engagement as Comprehensive Strategic Partners and reiterate our commitment for closer cooperation in the Indo Pacific," he said ahead of the meeting. He visited Goa Shipyard Limited (GSL) and INS Hansa during his stay in Goa.

### **Marles takes part in Yoga Day celebrations**

He also participated in the Yoga Day celebrations and tweeted a photograph of him doing Yoga. "Glad to see the Deputy Prime Minister and the Defence Minister of Australia, @RichardMarlesMP doing Yoga on the #InternationalDayofYoga. His participation in the Yoga

Day programme makes these celebrations remarkable and special. Looking forward to meet him in New Delhi.” Rajnath Singh said in response to the tweet. India and Australia are members of a four-nation platform QUAD, which is viewed by the global community as an alliance to counter the rise of China in the Indian Ocean Region (IOR). Defence is one of the key areas of cooperation between India and Australia. The two countries have been sharing a strategic partnership since June 2020. Both the nations have been battling for a free, and open Indo-Pacific, especially against the backdrop of increased Chinese dominance in the Indian Ocean Region. Marles will also be meeting External Affairs Minister S Jaishankar.

<https://www.timesnownews.com/india/rajnath-singh-to-hold-bilateral-talks-with-australian-counterpart-today-strengthening-defence-cooperation-on-agenda-article-92369665>

## **Business Standard**

*Tue, 21 Jun 2022*

### **India-Australia to Explore New Initiatives to Expand Bilateral Defence Ties**

Defence Minister Rajnath Singh and his visiting Australian counterpart Richard Marles will explore new initiatives to further expand bilateral defence engagements in their talks on Wednesday. The defence ministry said the two ministers will also exchange views on regional and global issues of shared interest. It said the India-Australia comprehensive strategic partnership is based on a shared vision of "free, open, inclusive and prosperous" Indo-Pacific region. The visit by Marles is the first high-level trip to India from Australia after Prime Minister Anthony Albanese's centre-left Labor Party came to power last month defeating predecessor Scott Morrison's conservative coalition in the parliamentary elections. Marles, who is also deputy prime minister of Australia, began his four-day visit to India on Monday. "The two ministers will review the defence cooperation between the two countries and explore new initiatives to further strengthen bilateral engagements. They will also exchange views on regional and global issues of shared interest," the defence ministry in a statement.

#### **Marles visited Goa Shipyard Ltd in Goa.**

"India and Australia share a comprehensive strategic partnership since June 2020 and defence is a key pillar of this partnership. The partnership is based on a shared vision of free, open, inclusive and prosperous Indo-Pacific region," the defence ministry said. "The two democracies have a common interest in peace and prosperity of the entire region," it said in a statement. The deputy prime minister also participated in a Yoga session on the occasion of International Yoga Day. "An early morning start with some yoga, ahead of a busy couple of days here in India. Looking forward to a packed couple of days, meeting my counterparts and seeing firsthand our close partnership," he tweeted. In his response on Twitter, Singh said: "Glad to see the Deputy Prime Minister and the Defence Minister of Australia, @RichardMarlesMP doing Yoga on the #InternationalDayofYoga." "His participation in the Yoga Day programme makes these celebrations remarkable and special. Looking forward to meet him in New Delhi," Singh added.

On Monday, Marles described India as one of Australia's "closest" security partners and said Canberra is keen to work closely with it for an open and inclusive Indo-Pacific. The ties between India and Australia have been on an upswing in the last few years. In April, the two countries inked a trade pact to diversify bilateral trade. In June 2020, India and Australia elevated their ties to a comprehensive strategic partnership and signed a landmark deal for reciprocal access to military bases for logistics support. The Mutual Logistics Support Agreement (MLSA) allows the militaries of the two countries to use each other's bases for repair and replenishment of supplies, besides facilitating scaling up of overall defence cooperation. The Australian Navy was part of the Malabar naval exercise hosted by India in November 2020 as well as last year.

[https://www.business-standard.com/article/current-affairs/india-australia-to-explore-new-initiatives-to-expand-bilateral-defence-ties-122062100625\\_1.html](https://www.business-standard.com/article/current-affairs/india-australia-to-explore-new-initiatives-to-expand-bilateral-defence-ties-122062100625_1.html)



*Wed, 22 June 2022*

## **Philippines Sends 1st Batch of Soldiers to India to Receive Training on Brahmos Missiles**

The Philippines on Wednesday held the send-off ceremony for its first batch of military personnel who would be training on the BrahMos missiles in India. The Philippines on Wednesday held the send-off ceremony for its first batch of military personnel who would get training on the BrahMos supersonic cruise missile systems in India, said Government officials, according to ANI. Just earlier this year, the Philippines had accepted BrahMos Aerospace's export-order proposal to provide supersonic cruise missiles for its navy. The major deal worth \$374.9 million was communicated to India through a Notice of Award by the Philippines Department of National Defence, signed by Secretary Delfinn Lorenzana. The order directed BrahMos Aerospace to provide the supply of the Shore-based Anti-ship Missile System within ten calendar days of receiving the order.

The deal is said to be PM Modi government's major step forward to push defence exports. As per ANI, for the past few months, DRDO and BrahMos Aerospace have been jointly pushing hard for the export deal to friendly foreign nations. It is to mention that the BrahMos supersonic missile is produced by an Indo-Russian joint venture and can be launched from submarines, ships, aircraft or land.

### **Indian navy successfully tested BrahMos missile**

On January 11, the Indian Navy along with Defence Research and Development Organisation (DRDO) successfully test-fired the BrahMos Supersonic Cruise missile from INS Visakhapatnam. The warship is a recent induction in the Indian Navy. A powerful and main weapon of combat, the BrahMos missile has been deployed on almost all surface platforms of the Indian Navy. The BrahMos supersonic cruise missile can cover a range of 290 km reaching the Mach 2.8 to 3 Mach speed. Meanwhile, the BrahMos- II Hypersonic cruise missile can be deployed to hit the target within a range of 450 – 600 km at Mach 7 velocity. The missile is

currently under joint development by the DRDO and Russia's NPO Mashinostroyeniya. It is to mention that the current deal with the Philippines comes under India's 'made-in-India' initiative for defence weapons. The said order would be the biggest for the country in the field after DRDO bagged orders from the Armenian government for weapons locating radars.

<https://www.republicworld.com/world-news/rest-of-the-world-news/philippines-sends-1st-batch-of-soldiers-to-india-to-receive-training-on-brahmos-missiles-articleshow.html>

## PRAGATIVADI

*Wed, 22 Jun 2022*

### **Ministry of Defence Celebrates 8th International Day of Yoga**

On the occasion of the 8th International Day of Yoga, the Ministry of Defence organized a simultaneous mass demonstration of Yoga at the Defence Accounts Department Headquarters in New Delhi on June 21, 2022, along with the Prime Minister's Yoga Programme in Mysuru, Karnataka. The event was attended by Raksha Rajya Mantri Ajay Bhatt, Defence Secretary Dr Ajay Kumar, Controller General of Defence Accounts Rajnish Kumar, Secretary Department of Ex-Servicemen Welfare Shri B Anand, senior officers and staff from the Ministry of Defence and Defence Accounts Department. In his address, Bhatt hailed the vision of the Prime Minister in bringing Yoga to the forefront of public discourse and encouraged everyone to adopt the practice of Yoga as a way of life. Senior officers and staff of MoD performed Yoga adhering to the Common Yoga Protocol of Ministry of Ayush and under the guidance of instructors from Morarji Desai National Institute of Yoga. The theme of the IDY is "Yoga for Humanity".

Integrating the Azadi Ka Amrit Mahotsav with celebrations of 8th IDY, Mass Yoga demonstrations are being organised at 75 iconic locations across the country under the leadership of 75 Union Ministers, along with the Yoga Demonstration by the Prime Minister. The Yoga demonstrations are also being held by various educational, social, political, cultural, religious, corporate and other civil society organizations, attended by large number of people across the country. The Prime Minister's Yoga programme at Mysuru and aligned events by various Central Government Ministries as part of the novel programme 'Guardian Yoga Ring' which is a collaborative exercise between 79 countries and United Nations organisations along with Indian Missions abroad to illustrate Yoga's unifying power that surpasses national boundaries.

<https://pragativadi.com/ministry-of-defence-celebrates-8th-international-day-of-yoga/>

## The Statesman

*Wed, 22 Jun 2022*

### **Sniffer Dogs of Army in J&K Also Practice Yoga**

In a unique observance of the International Yoga Day, "Silent Warriors" (sniffer dogs) of Indian Army on Tuesday participated in Yoga session along the Line of Control (LOC) in Poonch. These Silent Warriors remain operationally ready to respond to any contingency and are always

relied upon by soldiers during sensitive missions. These brave, reliable and indispensable force multipliers along with their handlers have thus earned a mark of respect and garnered a lot of appreciation in the Armed Forces. Yoga was practiced across the union territories of Jammu and Kashmir and Ladakh. Indian Army troops, ITBP, CRPF, SSB and police jawans participated in the event by practicing yoga at the Siachen Glacier and down in the plains of Jammu.

Lt. Governor Manoj Sinha along with Kapil Patil, union minister of state, practiced yoga at the Dal Lake in Srinagar. Large number of people and government officials participated in the event. In Ladakh, Lt. Governor RK Mathur led the celebrations wherein more than 2000 participants including guests from all over the nation, government officials and students performed yogasanas at the Football Stadium in Leh. Union Minister Dr. Jitendra Singh along with large number of people and BSF personnel practiced yoga at the International Border (IB) post at Suchetgarh in Jammu district. Army, ITBP and BSF units along the International Border (IB), Line of Control (LOC) and Line of Actual Control (LAC) also practiced yoga. NCC cadets also practiced yoga at various places. Officials of government offices and organisations also participated in the event.

<https://www.thestatesman.com/india/sniffer-dogs-army-jk-also-practice-yoga-1503082951.html>

**Investing.com**

*Wed, 22 Jun 2022*

## **Asean Defence Ministers' Meeting Kicks off in Cambodia**

The 16th ASEAN Defence Ministers' Meeting (ADMM) kicked off here on Wednesday, with discussions focusing on key challenges and security in the region. Chaired by Cambodian Deputy Prime Minister and Defence Minister Tea Banh, the meeting brought together defence ministers or representatives from all ASEAN (the Association of Southeast Asian Nations) member states, Xinhua news agency reported. Speaking in his opening speech, Banh said it was the first in-person meeting in over two years following the Covid-19 pandemic. "Our presence today underlines our commitment with high responsibilities to maintain ASEAN's centrality, unity and cooperation for peace and security in the region," he said.

He said the meeting is convened at a time when the whole region is facing pressures arising from cross-border crime, terrorism, climate change, disasters and pandemics, among others. "Our joint commitment (to address these issues) will lead our region towards sustainable peace, security and prosperity," he added. ASEAN groups Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.

<https://in.investing.com/news/asean-defence-ministers-meeting-kicks-off-in-cambodia-3248630>

*Tue, 21 Jun 2022*

### **South Korea's Second Space Rocket Launch Successfully Puts Satellites in Orbit**

South Korea's second test launch of its domestically produced Nuri rocket successfully placed several satellites in orbit on Tuesday, officials said, taking a major step in efforts to jumpstart its space programme after a first test failed last year. The rocket lifted off from Naro Space Center on the southern coast of South Korea at 4 p.m. (0700 GMT). A 162.5-kg (358 lb) satellite designed to verify the rocket's performance successfully made contact with a base station in Antarctica after entering orbit, officials said. The rocket also successfully placed a 1.3-ton dummy satellite and four small cube satellites developed by universities for research, into orbit.

"The sky of the Korean universe is now wide open," Science and ICT Minister Lee Jong-ho told a briefing. "Our science and technology has made great strides." The three-stage KSLV-II Nuri rocket, designed by the Korea Aerospace Research Institute (KARI) to eventually put 1.5-ton payloads into orbit 600 to 800 km (370 to 500 miles) above the Earth, is a cornerstone of the country's ambitious goals for 6G networks, spy satellites, and even lunar probes. It uses only Korean rocket technologies, and is the country's first domestically built space launch vehicle. South Korea's last booster, launched in 2013 after multiple delays and several failed tests, was jointly developed with Russia. President Yoon Suk-yeol watched the launch from his office and thanked everyone involved as he was briefed by Lee and others about the success, vowing to keep an election pledge to create a new agency to take charge of space affairs, according to a statement by his office.

"Now the road to space from our land has been opened," Yoon said. "It was the product of 30 years of daunting challenges. From now on, the dreams and hopes of our people and our youth will extend into space." In Nuri's first test in October, the rocket completed its flight sequences but failed to put the test payload into orbit after its third-stage engine burned out earlier than planned. Engineers adjusted the helium tank inside Nuri's third-stage oxidizer tank to address that problem, Yonhap news agency reported. KARI has said it plans at least four more test launches by 2027. Nuri is key to South Korean plans to eventually build a Korean satellite-based navigation system and a 6G communications network. The country also plans to launch a range of military satellites, but officials deny the Nuri has any use as a weapon.

South Korea is also working with the United States on a lunar orbiter, and hopes to land a probe on the moon by 2030. After Tuesday's successful launch, the U.S. Embassy in Seoul said on Twitter it is looking forward to U.S.-South Korea cooperation in space. Space launches have long been a sensitive issue on the Korean peninsula, where North Korea faces sanctions over its nuclear-armed ballistic missile programme. In March, South Korea's military separately oversaw what it said was its first successful launch of a solid-fuel space-launch rocket, another part of its plans to launch spy satellites. In recent years, South Korea and the United States agreed to scrap

bilateral limits on Seoul's missile and rocket development, clearing the way for new civilian and military launches.

<https://www.hindustantimes.com/science/south-korea-s-second-space-rocket-launch-successfully-puts-satellites-in-orbit-101655819637051.html>



*Tue, 21 Jun 2022*

## **A Neural Autoencoder to Enhance Sensory Neuroprostheses**

New technologies have the potential to greatly simplify the lives of humans, including those of blind individuals. One of the most promising types of tools designed to assist the blind are visual prostheses. Visual prostheses are medical devices that can be implanted in the brain. These devices could help to restore vision in people affected by different types of blindness. Despite their huge potential, most existing visual prostheses achieved unimpressive results, as the vision they can produce is extremely rudimentary. A team of researchers at a University of California, Santa Barbara recently developed a machine learning model that could significantly enhance the performance of visual prostheses, as well as other sensory neuroprostheses (i.e., devices aimed at restoring lost sensory functions or augmenting human abilities). The model they developed, presented in a paper pre-published on *arXiv*, is based on the use of a neural autoencoder, a brain-inspired architecture that can discover specific patterns in data and create representations of them.

"We started working on this project in an attempt to solve the long-standing problem of stimulus optimization in visual prostheses," Jacob Granley, one of the researchers who carried out the study, told TechXplore. "One of the likely causes for the poor results achieved by visual prostheses is the naive stimulus encoding strategy that devices conventionally use. Previous works have suggested encoding strategies, but many are unrealistic, and none have given a general solution that could work across implants and patients." The main objective of the recent work by Granley and his colleagues was to devise a simple and effective solution that could help to improve the encoding strategies of sensory neuroprostheses. They wanted this strategy to attain good results with different types of sensory data, as this would make it easy to implement across a variety of neuroprosthetic devices.

"Our main idea was to utilize a sensory model, which describes the perceptions or neural responses resulting from stimulation, in-the-loop within a deep neural network," Granley explained. "The neural network was trained to output stimuli that, when fed through the sensory model, achieve the desired target response. Thus, the system is a hybrid autoencoder, where the encoder is a learned neural network, and the decoder is the fixed sensory model." So far, the researchers evaluated the performance of their neural autoencoder-based approach in the context of visual neuroprostheses. They found that it achieved remarkable results, consistently leading to higher-quality visual perceptions across a wide range of virtual patients, which is a significant step forward in the path towards attaining reliable bionic vision.

The neural encoder created by the Granley and his colleagues generated far more convincing visual stimuli than other conventional encoding strategies, using the same training datasets. Notably, it could also easily be applied to other neuroprostheses that can be described using a

sensory model, including those designed to enhance the senses of hearing and touch. "I'm excited about the potential broader impact of our framework," Granley said. "We were able to demonstrate the benefit gained by 'closing the loop on perception,' or in other words, including in-the-loop a model of the effects of stimulation on the patient's perception. This could be useful for a variety of prostheses. For example, cochlear implants could use this framework to improve auditory perceptions."

The model introduced by this team of researchers could eventually be used by developers to improve the quality of the vision enabled by visual neuroprosthetic devices. In addition, it could be applied to existing prosthetic limbs to produce more convincing feelings of cutaneous touch in patients who are missing specific limbs or have undergone amputations. "In this project, we only used virtual, simulated patients," Granley added. "In the future, I would like to test our encoder on human patients with implanted visual prostheses. If we could attain the same improvement on real patients, then this would mark a huge step towards restoring vision to millions of people suffering from blindness."

<https://techxplore.com/news/2022-06-neural-autoencoder-sensory-neuroprostheses.html>

THE  HINDU

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## **Nasa Fuels Moon Rocket for First Time in Countdown Rehearsal**

NASA fueled its huge moon rocket for the first time Monday and went ahead with a critical countdown test despite a fuel line leak. This was NASA's fourth crack at the all-important dress rehearsal, the last major milestone before the moon rocket's long-awaited launch debut. The previous attempts in April were thwarted by a fuel leak, as well as stuck valves and other technical issues. Another leak — this time in an external fuel line — almost curtailed Monday's test at Kennedy Space Center. But NASA managers decided to do the countdown test anyway. Launch director Charlie Blackwell-Thompson said they pushed ahead to see "how the team performed, how the hardware performed, and they both performed very well." Engineers wanted to get all the way down to the 9-second mark — just short of engine firing — to validate all the systems and procedures. But it cut off at 29 seconds. NASA spokesman Derrol Nail said it wasn't immediately known why the countdown stopped.

Earlier, nearly 1 million gallons of super-cold liquid hydrogen and oxygen were loaded into the 322-foot (98-meter) rocket known as the Space Launch System, or SLS. The testing delays have pushed the actual launch — with an empty Orion capsule flying around the moon and back — to the end of August at the earliest. This test flight is crucial before astronauts climb aboard. Blackwell-Thompson said it was too early to say what NASA's next step might be. The second SLS flight, planned for 2024, would send a crew around the moon and back. The third mission — no earlier than 2025 — would have astronauts actually landing on the moon. Astronauts last walked on the moon in 1972 during NASA's Apollo program. The new program is named Artemis, Apollo's twin sister in Greek mythology.

<https://www.thehindu.com/sci-tech/nasa-fuels-moon-rocket-for-first-time-in-countdown-rehearsal/article65548155.ece>

