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समाचार पत्रों से चयित अंश Newspapers Clippings

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पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Tue, 22 Mar 2022 4:36PM

उज्बेकिस्तान सेना के साथ संयुक्त अभ्यास के लिए भारतीय सेना का दल उज्बेकिस्तान के यांगियारिक के लिए रवाना

भारतीय और उज्बेकिस्तान सेनाओं के बीच संयुक्त प्रशिक्षण अभ्यास का तीसरा संस्करण, ईएक्स-डीयूएसटीएलआईके 22 से 31 मार्च 2022 तक यांगियारिक, उज्बेकिस्तान में आयोजित किया जा रहा है। भारतीय दल के रूप में ग्रेनेडियर्स रेजिमेंट का एक सैन्य दल, 22 मार्च 2022 को नॉर्थ वेस्टर्न मिलिट्री डिस्ट्रिक्ट के सैनिकों द्वारा प्रतिनिधित्व दल उज्बेकिस्तान सैन्य दस्ते के साथ अभ्यास में शामिल होने के लिए इस क्षेत्र के लिए रवाना हुआ। डीयूएसटीएलआईके का अंतिम संस्करण मार्च 2021 में रानीखेत (उत्तराखंड) में आयोजित किया गया था।

संयुक्त राष्ट्र के जनादेश के तहत यह संयुक्त अभ्यास अर्ध-शहरी इलाके में आतंकवाद विरोधी अभियानों पर केन्द्रित होगा। प्रशिक्षण कार्यक्रम मुख्य रूप से सामरिक स्तर के अभ्यासों को साझा करने और एक-दूसरे की सर्वोत्तम प्रणालियों को सीखने पर केंद्रित होगा। अभ्यास का उद्देश्य दोनों सेनाओं के बीच समझ, सहयोग और पारस्परिक समन्वय को बढ़ाना है। यह अभ्यास 24 घंटे तक चलेगा जो दोनों सेनाओं के सैनिकों के लिए एक चुनौतीपूर्ण स्थिति होगी। अभ्यास के दौरान दोनों सेनाएं संघर्ष के दौरान बनने वाली स्थिति से निपटने के लिए अपनाई जाने वाली चुनौतियों का सामना करेंगी। इस अभ्यास के लिए नामांकित ग्रेनेडियर्स बटालियन भारतीय सेना की अत्यधिक सुशोभित बटालियनों में से एक है और इसे स्वतंत्रता के लगभग सभी पूर्व और पश्चात के अभियानों में भाग लेने का अनूठा गौरव प्राप्त है। यूनिट को आठ स्वतंत्रता-पूर्व युद्ध सम्मानों से सम्मानित किया गया है। स्वतंत्रता के बाद, यूनिट ने 1965 के युद्ध में थिएटर सम्मान 'राजस्थान' और 1971 के युद्ध में युद्ध सम्मान 'जेएआरपीएल' अर्जित किया है।

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1808281>



Press Information Bureau
Government of India

Ministry of Defence

Tue, 22 Mar 2022 4:36PM

Indian army contingent for joint exercise with Uzbekistan army departs for Yangiariq in Uzbekistan

The 3rd edition of joint training exercise between Indian and Uzbekistan armies, EX-DUSTLIK is being conducted at Yangiariq, Uzbekistan from 22 to 31 March 2022. The Indian contingent which comprises of a platoon strength of Grenadiers Regiment departed for the exercise area on 22 March 2022 to join the Uzbekistan Army contingent represented by troops of the North Western Military District. The last edition of DUSTLIK was conducted in Ranikhet (Uttarakhand) in March 2021.

The joint exercise would focus on Counter Terrorism operations in semi-urban terrain under a United Nations Mandate. The training schedule will focus primarily on sharing of tactical level drills and learning of best practices from each other. The exercise aims at enhancing understanding, cooperation and interoperability between two armies. The exercise will culminate in a 24 hour long validation exercise which will be a test bed for the soldiers of both armies as they would be undergoing the challenges of simulated operations in such scenarios.

The Grenadiers battalion nominated for the exercise is one of the highly decorated battalions of Indian Army and has the unique distinction of participating in almost all the Pre and Post Independence Operations. The unit has been awarded eight Pre-Independence Battle Honours. Post Independence, it has earned theatre honour 'RAJASTHAN' in 1965 war and battle honour 'JARPAL' in 1971 war.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1808215>



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Tue, 22 Mar 2022 5:04PM

संयुक्त अरब अमीरात (यूएई) सेना का प्रतिनिधिमंडल दोनों देशों के सैन्य अधिकारियों के बीच बातचीत (एएएसटी) के लिए भारत पहुंचा

संयुक्त अरब अमीरात (यूएई) सेना का एक प्रतिनिधिमंडल 21 से 26 मार्च 2022 तक भारत की छह दिवसीय यात्रा पर है। प्रतिनिधिमंडल भारतीय सेना के प्रशिक्षण संस्थानों का दौरा कर रहा है और दोनों

देशों के सैन्य अधिकारियों के बीच सीधी बातचीत (एएएसटी) में भाग ले रहा है। इस यात्रा का उद्देश्य दोनों देशों की सेनाओं के बीच रक्षा सहयोग एवं संबंधों को और बढ़ाना है।

संयुक्त अरब अमीरात सेना का प्रतिनिधिमंडल वर्तमान में महाराष्ट्र के स्कूल ऑफ आर्टिलरी, आर्मर्ड कॉर्प्स सेंटर एंड स्कूल, मैकेनाइज्ड इन्फैंट्री सेंटर एंड स्कूल, नेशनल डिफेंस एकेडमी, दक्षिणी कमान के कमांड हॉस्पिटल, आर्मी इंस्टीट्यूट ऑफ फिजिकल ट्रेनिंग, मिलिट्री इंटेलिजेंस स्कूल एंड डिपो और बॉम्बे इंजीनियर्स ग्रुप एंड सेंटर जैसे सैन्य प्रतिष्ठानों का दौरा कर रहा है। प्रतिनिधिमंडल का पुणे में लार्सन एंड टुब्रो लिमिटेड और टाटा मोटर्स लिमिटेड के प्रतिष्ठानों में भी जाने का कार्यक्रम है।

25 और 26 मार्च 2022 को कॉलेज ऑफ मिलिट्री इंजीनियरिंग में आयोजित होने वाली उद्घाटन एएएसटी की अधिकारी स्तर की वार्ता के एजेंडे में सैन्य प्रशिक्षण, भारतीय सेना संस्थानों में पाठ्यक्रम सदस्यता में वृद्धि, द्विपक्षीय अभ्यास का संचालन तथा रक्षा तकनीकी सहयोग बढ़ाने से संबंधित मुद्दे शामिल हैं।

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1808400>



Press Information Bureau
Government of India

Ministry of Defence

Tue, 22 Mar 2022 5:04PM

United Arab Emirates (UAE) army delegation arrives in India for army to army staff talks (AAST)

A delegation of United Arab Emirates (UAE) Army is on a six day visit to India from 21 to 26 Mar 2022. The delegation is visiting Indian Army training establishments and then attends the Inaugural Army to Army Staff Talks (AAST). The aim of the visit is to enhance defence cooperation engagements between the two armies.

The UAE Army delegation is currently visiting Army establishments in Maharashtra to include School of Artillery, Armoured Corps Centre & School, Mechanised Infantry Centre & School, National Defence Academy, Command Hospital of Southern Command, Army Institute of Physical Training, Military Intelligence School & Depot and Bombay Engineers Group & Centre. The delegation will also be visiting Larsen & Tubro Limited and Tata Motors Limited at Pune.

The agenda for staff talks of inaugural AAST to be organised at College of Military Engineering on 25 and 26 March 2022, include issues related to military training, increase in course subscription in Indian Army establishments, conduct of bilateral exercises and enhancing defence technical cooperation.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1808254>



Press Information Bureau
Government of India

Ministry of Defence

Tue, 22 Mar 2022 8:32PM

Defence acquisition council clears procurement of 14 items worth over Rs. 380 crore from iDEX startups/MSMEs for armed forces

Approves new simplified procedure to fast-track procurement from iDEX Startups/MSMEs

Simplified procedure for Make-II category projects also gets nod to bring down time taken from prototype development to contract signing

In a path-breaking initiative, Defence Acquisition Council (DAC), chaired by Raksha Mantri Shri Rajnath Singh, on March 22, 2022, cleared the procurement of 14 items worth Rs 380.43 crore from the Innovations for Defence Excellence (iDEX) startups/MSMEs. These items will be procured by the Indian Army, Navy and Air Force. The DAC also approved the new simplified procedure for procurement from iDEXstartups/MSMEs. This would fast-track the procurement from the startups/MSMEs. The procurement cycle from the AON to contract signing will be around 22 weeks as per the new procedure. Suitable incorporation will be made in the Defence Acquisition Procedure 2022. The DAC also approved the simplified procedure for Make-II category projects on similar lines of iDEX procedure and would considerably bring down the time taken from prototype development to Contract signing in Make-II projects.

The iDEX, a game changer in the Defence eco-system, was launched by Prime Minister Shri Narendra Modi in 2018 with the objective of fostering innovation and incorporating cutting-edge and disruptive technologies in the Armed Forces in a quick time-frame. The iDEX scheme, since its initiative in 2018, has now gathered momentum, and it is expected that around 25-40 items after the successful prototyping by the iDEXstartups/MSMEs, will be ready for procurement by this year end.

The iDEX scheme has been instituted under the over-arching mission of the MoD to achieve self-reliance and indigenisation. The iDEX is catalysing the vibrant energy of our startup eco-system and is today steering trans-disciplinary innovations/projects. An enterprising network of experts from the Services, DPSUs, Industry, Academia, iDEX officials and the startups/MSMEs are involved in the process of co-creation and co-innovation. The aim is to provide atleast 50 world class solutions to the Armed Forces and the defence industry in the near future.

The five editions of DISC and the various Open Challenges have been a huge success and have witnessed tremendous interest and participation from the startups/MSMEs. The iDEX is scaling up at a breakneck pace to support more and more innovators and startups. The iDEXstartups/MSMEs are now entering the next phase, *i.e.*, productionisation and commercialisation. This will indeed lead to the broad-basing of the defence industrial base.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1808408>



Press Information Bureau
Government of India

Ministry of Defence

Tue, 22 Mar 2022 8:25PM

Defence acquisition council accords acceptance of necessity for capital acquisition proposals of armed forces amounting to rs 8,357 crore

In major boost to ‘Aatmanirbhar Bharat’, all proposals approved under ‘Buy (Indian IDDM)’ category

All modernisation requirements of defence forces to be indigenously sourced

The Defence Acquisition Council (DAC), in its meeting of 22nd March 2022 held under the Chairmanship of Raksha Mantri Shri Rajnath Singh, accorded Acceptance of Necessity (AoN) for Capital Acquisition proposals of Armed Forces amounting to Rs 8,357 crore. As an impetus to ‘Aatmanirbhar Bharat’, all of these proposals have been approved under ‘Buy (Indian IDDM)’ category with focus on indigenous design & development and manufacturing in India.

AoNs accorded by DAC include procurement of Night Sight (Image Intensifier), Light Vehicles GS 4X4, Air Defence Fire Control Radar (Light) and GSAT 7B Satellite. Acquisition of these equipment and systems will enhance operational preparedness of Armed Forces by providing better visibility, enhanced mobility, improved communication and increased capability of detecting enemy aircraft.

In a path-breaking initiative to encourage innovation, the DAC also accorded consolidated AoN for procurements amounting to Rs 380.43 crore from the iDEXstartups and MSMEs. To accelerate the pace of indigenisation, achieve self-reliance in defence and to facilitate Ease of Doing Business for defence industry, DAC approved effecting the following policy initiatives in the DAP-2020:

- All modernisation requirements of defence forces to be indigenously sourced and import to be resorted to only as exception.
- To reduce financial burden on defence industry, requirement of IPBG is to be dispensed with and Earnest Money Deposit (EMD) to be introduced as bid security and PCIP cover upto contract stage. EMD will be applicable only for proposals of Rs 100 Cr and above and MSMEs & Startups will be exempted from EMD.
- Vendors whose products are successfully trial evaluated will be provided a certificate to that effect.
- iDEX and Make II procedures have been simplified thereby compressing timelines and ensuring early placement of contracts on successful iDEX and Make II vendors.

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1808403>

Tue, 22 Mar 2022

Light Tanks: a shot in the arm for the Indian army

The Modi government on 3 March 2022 announced the development of light tanks for the Indian Army (IA). This decision was taken under the Make-I category of the 2020 Defence Procurement Procedure (DPP) and comes against the backdrop of India's conversion of the K-9 Vajra mobile howitzer into a light tank. A regiment of the K9-Vajra, which is a tracked 155mm/2 self-propelled howitzer capable of striking targets 50 kilometres away is now deployed in Ladakh in the ongoing stand-off with the Chinese. Further, deployments of the Vajra are likely in other parts of the Sino-Indian boundary. The K9-Vajra, however, was never going to be sufficient or a credible substitute for a dedicated light tank, which the government has now given an in-principle approval. The decision to deploy the Vajra was largely to meet the immediate military contingency facing India on its border with China and service some part of the firepower requirements of the IA. In terms of weight, the K9-Vajra is a 50-tonne tracked vehicle slightly exceeding the weight class of actual tanks such as the T-90 and T-72 Main Battle Tanks (MBTs), which are also deployed in Ladakh. T-90s combat weight is 48 tonnes and the older T-72s weigh 46 tonnes. Both Russian-built MBTs are equipped with 125mm guns.

The decision to deploy the Vajra was largely to meet the immediate military contingency facing India on its border with China and service some part of the firepower requirements of the IA. Notwithstanding their current deployment, the weight of the K9-Vajras, the T-90s, and T-72s make them much too heavy for effective combat at high altitudes along the Sino-Indian boundary. In any case, even if they were effective, their deployment imposes logistical burden on the IA, which the service for several years now has been trying to reduce. The Directorate General of Mechanised Forces has been working intensively to reduce the weight of weapons systems and platforms. Apart from that, the Chinese have designed and developed a dedicated light tank called the Type-15 and deploy them due to their suitability for high altitude warfare against India. The Type-15 weighs 35 tonnes with a 105 mm gun making it significantly lighter than the IA's T-90, T-72, and K9-Vajras. It is one of the few light tanks built in the last three decades. It is widely recognised to be a capable armoured platform, despite its smaller gun size compared to its Indian counterparts. The Chinese built the Type-15 light tanks, because they anticipated the need for low-weight armoured platforms for high altitude warfare and specifically for the kind of military contingency confronting the Peoples Liberation Army (PLA) presently against the IA along the contested boundary between India and China.

How The IA Got Here And Challenges Ahead

Against this backdrop, India had considered acquiring the Russian light tank the Sprut SDM1 following the outbreak of the current Sino-Indian boundary in May 2020. In April 2021, the Directorate General of Mechanised Forces issued a Request for Information (RFI) under the Ministry of Defence (MoD) for 350 light tanks in the weight class of 25 tonnes. Notwithstanding Russia's offer, India has now turned to native development of a light tank rather than import them. This development should be applauded, but without obscuring the problems plaguing force planning for India's armoured corps. The public writ large should be aware that India's pressing need and quest for light tanks only emerged in the wake of the

current Sino-Indian boundary crisis. In India, a crisis invariably tends to tip the scales lending urgency to decisions on new developmental initiatives—the government’s decision on the indigenous development of light tanks is no exception. It is also the product of the IA’s constricted vision in meeting the capability and operational challenges facing India against its primary foe—the Peoples Republic of China (PRC). Generally, the service has privileged medium to heavy weight armour over light armour. Pakistan has tended to disproportionately preoccupy the mind space of the IA’s planners. Consequently, the development of light tanks has not gained traction until the eruption of the present boundary stand-off with the PRC.

Irrespective of the merits of native development of light tanks, India’s decision-makers have to recognise that there could potentially be a minimum five-year lag before the country witnesses the emergence of the initial variant of a homemade light tank. Unless the Defence Research and Development Organisation (DRDO), the Combat Vehicles Research and Development Establishment (CVRDE), the Heavy Vehicles Factory (HVF) Limited and presumably some private sector company—the entities most likely spearheading the incipient light tank project achieve a miraculous breakthrough in less than five years.

A crisis invariably tends to tip the scales lending urgency to decisions on new developmental initiatives—the government’s decision on the indigenous development of light tanks is no exception.

Regardless of the duration of the development cycle, which hopefully will not be too long, the IA must be clear right at the outset about the technical specifications which meet its combat performance and deployment requirements for a light tank to obviate needless delays. Otherwise, it will leave tank designers at the DRDO and its subsidiaries in the “dark”. The light tank project cannot be hobbled by past native development of armoured platforms such as the nearly 70 tonne—Arjun MBT. Shifting performance benchmarks by the IA has a precedent in the Arjun MBT, which the IA has inducted with some reluctance and under the government’s directives. Despite significant improvements in the MK-1A variant, it is an overweight tank and can only be deployed in “pockets” such as the desert areas along the India-Pakistan border. The Arjun has also experienced considerable cost overruns. The delayed and lukewarm integration of both variants—MK-1 and MK-1A of the Arjun MBTs by the IA also serves as a reminder of how not to proceed with the development of an indigenous light tank, because it could compel the IA and the government importing light tanks at the cost of an indigenous capability. A heavily-sanctioned Russia in the coming months and years will be a highly risky source of supply. If India turns to an alternative source, it still condemns the country to importing hardware, grating against the current and any future government’s intent to acquire military capabilities from India’s domestic defence industry. Finally, Indian decision-makers must ensure sustained funding, despite a turnover in government at the national level and closely monitor the Research and Development (R&D) and eventual production that involves all stakeholders in realising a credible light tank capability.

<http://www.indiandefensenews.in/2022/03/light-tanks-shot-in-arm-for-indian-army.html>

Tue, 22 Mar 2022

India tackling Narco-Terror nexus on western front: MOS Defence

The security situation along the western borders remains largely stable but there are indications of an emerging narco-terror nexus sponsored by inimical elements across the border aimed at causing instability, Minister of State for Defence Ajay Bhatt told Rajya Sabha on Monday. The minister also told the House in a written reply that the situation along the Line of Control (LoC) remains stable post the understanding of February 2021 reached between DGMOs (Director General Military Operations) of India and Pakistan.

Making a veiled reference to Pakistan in the context of narco-terror nexus, he said India's defence forces along the borders are adequately poised to respond to any challenge. "Security situation along Western Borders (IB Sector) remains largely stable. However, there are indications of an emerging narco-terror nexus sponsored by inimical elements across the border aimed at causing instability, especially along border areas. Our forces along Western borders are adequately poised to respond to any challenge posed by adversary across entire conflict spectrum," he said.

Referring to the Line of Control, he said both the armies have exercised restraint in the interest of maintaining peace. "The situation along Line of Control remains stable post the Directorate General of Military Operations (DGsMO) Understanding of February 2021. Both the Armies have exercised restraint in the interest of maintaining peace along the LC. However, the situation is being closely monitored and Indian Army remains prepared to thwart any threat from inimical elements as also to respond in case of any escalation along the Line of Control," Bhatt said.

<http://www.indiandefensenews.in/2022/03/india-tackling-narco-terror-nexus-on.html>

Tue, 22 Mar 2022

Boeing to offer F-15EX 'Eagle-II' combat jets to Indian Air Force

American aerospace giant Boeing plans to submit its F-15EX Eagle-II fighter aircraft for the Indian Air Force's Multi-Role Combat Aircraft (MRCA) competition. Established in 2018, the MRCA competition was set up to procure 114 fighter aircraft from defence companies that meet Indian armed forces requirements. According to a company official, offering the F-15EX fighter means the firm would pull its Super Hornet bid from the contest. "India needs to relook at their force structure in the light of Rafale and Tejas orders," the official said, "If the gap is at the high-performance end, the F-15EX could be a fit. But these are early days."

Since the MRCA tender is yet to be released, Boeing is unclear whether the Eagle-II (F-15EX) or the Super Hornet would be a right match for the IAF. "India needs to relook at their

force structure in the light of Rafale and TEJAS orders. If the gap is at the high-performance end, the F-15EX could be a fit. But these are early days,” says the Boeing official. Pratyush Kumar, who was previously the head of Boeing’s Indian operations, is now the program manager for the F-15 Eagle-II in the United States. Kumar describes the F-15 Eagle-II as “the ideal high-end fighter for the high-end fight.” This latest version of the F-15 is meant to counter one of the world’s most dangerous aviation threats – China. Hypersonic, re-targetable long-range missiles, as well as sophisticated “early warning and control” (AW&C) aircraft that can observe low-flying fighters at extended ranges, are among these threats, the report said.

To counter these threats, Boeing is arming the Eagle-II with longer-range missiles, quicker radar processors, improved data-link capabilities, and the ability to carry more weapons into battle. The F-15EX will be upgraded on a routine basis, according to Kumar, because it has enough physical space, computational infrastructure, structural strength, and engine power. The US government authorized the Illinois-based firm to sell F-15 jets to India. If its submission is accepted, Boeing will be up against SAAB’s Gripen, Russia’s MiG-35 and Su-35, France’s Dassault Rafale, Lockheed’s F-21, and the Eurofighter Typhoon.

The F-15EX

A replacement for the F-15C, Boeing’s F-15EX “Eagle-II” is equipped with next-generation technologies to improve survivability. The company said that its new fighter features enhanced manoeuvrability, acceleration, durability, computing power, and weapons carriage for better deterrence. The Eagle-II includes digital fly-by-wire flight controls, a large area display glass-cockpit, and an APG-82 AESA radar. It also incorporates open mission system software to allow rapid upgrades and capability enhancement. The aircraft is designed to counter China’s hypersonic, long-range missiles and sophisticated early warning and control aircraft. The Eagle-II is the world’s fastest (Mach 2.5, or 3,100 kph) and most heavily equipped fighter (payload of 13.6 tons, or 30,000 pounds), with the greatest strike range of 1,200 nautical miles or 2,222 kilometers. Boeing is reportedly arming the Eagle-II with longer-range missiles, quicker radar processors, improved data-link capabilities, and the ability to carry more weapons to counter advanced threats.

<http://www.indiandefensenews.in/2022/03/boeing-to-offer-f-15ex-eagle-ii-combat.html>



Tue, 23 Mar 2022

India could become 4th country with stealth jet; how will indigenous AMCA gain air edge on China’s j-20?

The Chinese PLA Air Force’s fifth-generation J-20 ‘Mighty Dragon’ is a valuable possession. Will the Chinese stealth fighters have a possible adversary right over the border now that India’s prototype of AMCA has gone into production? The Chengdu J-20 is a single-seat, multi-role stealth fighter that has been featured extensively in military parades and air shows across China as a sign of China’s expanding air might.

The J-20 reportedly went into general production last year when a domestically developed WS-10 engine replaced the Russian AL-31F Turbofan engine. The present WS-10C engine will be phased out in favour of the more modern WS-15, according to Chinese plans.

Russian-made engines have typically fuelled Chinese planes. China has long tried to create its own engine in order to acquire maximum flexibility and independence from Russian engines. The successful integration of the WS-15 on J-20s could be China's next major step toward self-sufficiency. The WS-15, China's next-generation turbofan engine, has finished extensive testing and will significantly improve the performance of the J-20 stealth fighter jet.

According to China Central Television (CCTV), the WS-15 engine has completed multiple testing since the WS-10, China's first independently produced high performance, high thrust turbofan engine with afterburner, was installed on fighter jets such the J-10, J-11, and J-20 in 2016. According to CCTV, the WS-15 has a low bypass ratio and is capable of thrust vector control. It was designed for fifth-generation fighter jets, both heavy and medium. The J-20s were planned to be merged with the WS-15, but China elected to stick with the WS-10C due to test problems.

The Chinese military now has about 50 J-20s in its force. According to a report in the South China Morning Post, new J-20s would be equipped with the WS-15 engine. China has been working tirelessly to reduce the gap with the US Air Force, and the modifications to the WS-10 engines are designed to compete with the US F-22 Raptors. China will begin updating the J-20 engines this year to include thrust vectoring technology, bringing them closer to the performance of the American F-22 Raptor. The J-20 has also been compared to the F-35, another fifth-generation fighter aircraft in the United States' arsenal. China is allegedly on track to enhance J-20 aircraft manufacturing. This could be in response to the United States' plan to field more than 2,000 F-35 stealth fighter jets across its three armed forces, in addition to Japan's multibillion-dollar F-35 purchase.

Following a violent confrontation with Indian forces at Galwan in eastern Ladakh in June 2020, China moved J-20s to air facilities in Xinjiang.

India's AMCA Stealth Fighter

Based on the design by ADA & DRDO, the fabrication of Leading edge of AMCA initiated at HAL with special material for 5th gen design. The unit will undergo structural & other testing before putting it on the first prototype. An imp milestone for AMCA. [@PMOIndia](#) [@DefenceMinIndia](#)

The first prototype of India's next-generation fighter jet, the Advanced Medium Combat Aircraft, was recently "metal cut" by the country's Defence Research and Development Organization (DRDO). The AMCA's first flight is planned for 2024-25, with serial manufacturing starting in 2030. The Indian Air Force has committed to 40 AMCA MK-1 fighters, as well as at least 100 Mk-2 variants and unmanned aircraft, according to reports. The stealthy AMCA, like the Chinese J-20, will have 'super cruise' capabilities. With AMCA, India will join a select group of nations that have fifth-generation stealth aero planes. Such fighters have been built by the United States (F-35 and F-22 Raptors), Russia (Su-57), and China (J-20).

Although it is unclear how the AMCA, which has yet to be produced, would compare to the Chinese J-20, The AMCA will be available in stealth and non-stealth variants, according to Aeronautical Development Agency chief Girish Deodhare, and will be built in two stages: an AMCA -with an existing GE414 afterburning turbofan engine that powers the LCA Tejas, and an AMCA MK-2 with a new, more powerful engine that will be developed in collaboration with a foreign player. According to reports, India and France are nearing an agreement on the cooperative development of a 125KN engine that will power the AMCA. The agreement is anticipated to be finalized soon.

The Indian Air Force's futuristic aircraft AMCA, according to some experts, could be modelled after the American F-35. If true, this might result in better interoperability between the Indian and US Air Forces, as well as causing major headaches for the PLAAF.

AMCA will be a single-seat stealth fighter jet with twin turbofan engines that can fly in all weather conditions. It will be capable of air superiority, ground strikes, enemy air defence suppression, and electronic warfare, among other things. China is apparently developing a two-seat J-20 version.

AMCA is built for super-cruise and has a smaller radar cross-section. Both of these qualities are already present in the J-20 Mighty Dragon, which the AMCA strives to include. Furthermore, the J-20 made its first flight a decade ago and was inducted into the Hall of Fame in 2017, whilst the AMCA is yet to fly.

In stealth mode, the 20-ton AMCA fighter could carry one-and-a-half tons of ordnance in internal weapon bays. On external pylons under the wings and fuselage, the non-stealth model would carry weaponry, targeting and observation pods, as well as fuel tanks. The AMCA, like the indigenous TEJAS, may be equipped with Python missiles, Astra BVRAAM, Vypel R-77 and R-73 air-to-air missiles, the Kh-59ME TV guided stand-off missile, and the Kh-59MK laser-guided stand-off missile. Advanced missiles could be acquired for the AMCA, much as India sought HAMMER missiles for the TEJAS.

According to reports, the AMCA could be armed with Directed Energy Weapons (DEWs), similar to what China's J-20 is expected to receive, according to a Global Times storey. Modern radars and electronic warfare capabilities with "sixth-generation characteristics" will be included of the AMCA's avionics suite. For enhanced stealth, the jet will have a low radar cross-section, as well as AI-based technology and an upgraded cockpit display with a touch screen interface. All of these specifications should put the plane on pace with the J-20. The AMCA is expected to include thrust-vectoring engines, according to reports. The J-20 is planning to equip its WS-10 engines with thrust vectoring technology, while the WS-15 already has this capability for improved maneuverability.

Air superiority is a main goal for both the Chinese J-20 and the Indian AMCA. While the Chinese Air Force produced its fifth-generation fighter years ago, the inclusion of a similar aircraft to the IAF's arsenal could create a power balance between the two rivals who have been embroiled in a border standoff for a long time.

<http://www.indiandefensenews.in/2022/03/india-could-become-4th-country-with.html?m=1>



Tue, 22 Mar 2022

Indian spy plane deployment in Australia latest move to bolster defence ties

The upcoming deployment of an Indian spy plane to Australia to conduct maritime surveillance in the Indian Ocean is the first step for both countries to more regularly host visiting forces, with one analyst saying it sets military ties on the same pathway that has led

to deepened defence co-operation between Canberra and Tokyo. The leaders' communique following Prime Minister Scott Morrison's virtual summit with Indian counterpart Narendra Modi – released almost 24 hours after it concluded – flagged the prospect of Australia and India striking reciprocal access arrangements that would make it easier for military exchanges. Such agreements can cover access to bases, ammunition and fuel stores in foreign countries for visiting forces. The communique said agreements between Australia and India were important for “facilitating deeper operational defence co-operation and its contribution towards free and open critical regional maritime corridors”. “Leaders reaffirmed following up on opportunities for further defence co-operation in areas of mutual interest,” the communique said. Further details about the Indian spy plane deployment were not available, but Australian Strategic Policy Institute head Peter Jennings said the P-8 Poseidon aircraft were one of the few western military systems India operated, and Australia would help India maximise its use. “The types of exercises we’ve done with the Indians in the past have been pretty light on, but this would be a step-up in terms of complexity,” he said. “This is where we were 15 years ago with Japan: fairly uncomplicated maritime surveillance, then it becomes co-ordinating ships and aircraft at sea. Exercises are ladder of complexity and this is the first step being climbed.” Mr Jennings said while the Indian Ocean was not as contested as the Pacific Ocean, South China Sea and East China Sea, China was building its presence, funding commercial ports in Sri Lanka and Pakistan that could also be used by the Chinese navy. Chinese submarines have also been operating in the Indian Ocean, which would be worrying to India. And with expectations US or UK nuclear-powered submarines will operate out of Perth ahead of Australia's acquisition of new submarines, China's interest in the stretch of water along the WA coast would intensify, Mr Jennings said. Amid criticism of India's failure to condemn Russia over its invasion of Ukraine, the communique did state that leaders expressed “their serious concern about the ongoing conflict and humanitarian crisis in Ukraine”. “They reiterated the need for an immediate cessation of hostilities,” the communique said.

Mr Morrison did raise the “unlawful invasion” of Ukraine and the need to hold Russia to account but did not press Mr Modi. Mr Modi made no mention of the invasion in his opening remarks. Meanwhile, business groups hailed an announcement to establish a taskforce looking at mutual recognition of qualifications in Australia and India. Australia India Chamber of Commerce chief executive Harish Rao said mutual recognition would make it easier for skilled workers and university students to work and study in each other's country. Mr Rao said some professions, such as doctors, had to undertake Australian exams before being allowed to practise here, while a lack of recognition for studying at Indian universities deterred many students from undertaking exchange years. “More of this mutual recognition would be of benefit because there are skills shortages in Australia,” Mr Rao said. Trade Minister Dan Tehan said he hoped to finalise an interim free trade agreement with India by the end of this week or early next week, after the deadline was pushed back from last year.

<https://idrw.org/indian-spy-plane-deployment-in-australia-latest-move-to-bolster-defence-ties/>



स्वदेश में विकसित प्लेटिनम-आधारित इलेक्ट्रोकेटलिस्ट कम लागत वाली टिकाऊ फ्यूल सेल के लिए मार्ग प्रशस्त कर सकता है

भारतीय वैज्ञानिकों ने एक कुशल प्रक्रिया से फ्यूल सेल में उपयोग के लिए प्लैटिनम आधारित इलेक्ट्रोकेटलिस्ट स्वदेश में विकसित किया है। इस इलेक्ट्रोकेटलिस्ट ने व्यावसायिक रूप से उपलब्ध इलेक्ट्रोकेटलिस्ट को तुलनीय गुण का मार्ग दिखाया और यह फ्यूल सेल के ढेर के शीघ्रता के साथ ठीक-ठाक काम करने की क्षमता को बढ़ा सकता है। अगस्त 2021 में हाइड्रोजन मिशन के शुभारंभ ने हाइड्रोजन फ्यूल सेल के क्षेत्र में स्वदेशी अनुसंधान और विकास के लिए एक बड़ा रास्ता खोल दिया है। फ्यूल सेल ऊर्जा रूपांतरण विधि है जो पानी के साथ हाइड्रोजन से गौण उत्पाद के रूप में डीसी बिजली तैयार करती है।

हालांकि इस टेक्नोलॉजी की हरित ऊर्जा उत्पादन में अनेक विशेषताएं हैं, लेकिन मुख्य कमी उपकरण का निर्माण करने के लिए कलपुर्जों के आयात पर होने वाला भारी खर्च है। खासतौर से प्लैटिनम आधारित इलेक्ट्रोकेटलिस्ट, जिसे उनके निर्माण के लिए उपयुक्त स्वदेशी प्रौद्योगिकियों की कमी के कारण आयात किया जाता है, टिकाऊपन बढ़ाने और फ्यूल सेल की लागत को कम करने में महत्वपूर्ण भूमिका निभाता है।

विज्ञान और प्रौद्योगिकी विभाग, भारत सरकार के स्वायत्तशासी अनुसंधान और विकास केन्द्र इंटरनेशनल एडवांस्ड रिसर्च सेंटर फॉर पाउडर मेटलर्जी एंड न्यू मैटीरियल्स (एआरसीआई) के वैज्ञानिकों ने एक कुशल प्रक्रिया का उपयोग करके प्लैटिनम आधारित इलेक्ट्रोकेटलिस्ट को विभिन्न वस्तुओं को मिलाकर तैयार किया है। साधारण सामग्री की प्रतिक्रिया से रासायनिक यौगिक तैयार करने का महत्वपूर्ण कदम मजबूत धातु सबस्ट्रेट परस्पर क्रिया (एसएमएसआई) के रूप में मशहूर कार्बन से लेकर प्लैटिनम तक परस्पर क्रिया को बढ़ाना है जिससे इलेक्ट्रोकेटलिस्ट के टिकाऊपन में वृद्धि होती है।

इस इलेक्ट्रोकेटलिस्ट ने फ्यूल सेल में अपने प्रदर्शन और बेहतर विनाशन प्रतिरोध और टिकाऊपन के संदर्भ में व्यावसायिक रूप से उपलब्ध इलेक्ट्रोकेटलिस्ट के तुलनीय गुण दिखाए। इसने 20 प्रतिशत से कम दिखाया, जो उत्प्रेरक (40 प्रतिशत) के सक्रिय सतह क्षेत्र में नुकसान की स्वीकार्य सीमा से कम है।

यह फ्यूल सेल स्टैक प्रदर्शन के जीवनकाल को बढ़ा सकता है। इसे 'इंटरनेशनल जर्नल ऑफ हाइड्रोजन एनर्जी' में प्रकाशित किया गया है, और एक पेटेंट दायर किया गया है (पेटेंट संख्या: 202011035825)।

रसायन, फार्मास्यूटिकल्स और संबद्ध उद्योगों के लिए संयंत्रों के डिजाइन और निर्माण में लगी मुंबई की एक कंपनी लास इंजीनियर्स एंड कंसल्टेंट्स प्राइवेट लिमिटेड (एलईसीपीएल), इस इलेक्ट्रोकेटलिस्ट के निर्माण के लिए एआरसीआई की जानकारी हासिल करने की प्रक्रिया में है। एआरसीआई के निदेशक (अतिरिक्त प्रभार) डॉ टाटा नरसिंग राव के अनुसार, स्वदेशी इलेक्ट्रोकेटलिस्ट का यह व्यावसायीकरण भारत में हरित हाइड्रोजन टेक्नोलॉजी को आगे बढ़ाता है।

एआरसीआई-चेन्नई के क्षेत्रीय निदेशक डॉ. आर. गोपालन का मानना है कि स्वदेशी उत्प्रेरक आयातित इलेक्ट्रोकेटलिस्ट्स पर निर्भरता को कम कर सकते हैं और आत्मनिर्भर भारत का मार्ग प्रशस्त करेंगे।

सेंटर फॉर फ्यूल सेल टेक्नोलॉजी, एआरसीआई-चेन्नई में इस प्रकार की टेक्नोलॉजी के एक अविष्कारक डॉ रमन वेदराजन का मानना है कि भारत में निर्मित टिकाऊ पॉलीमर इलेक्ट्रोलाइट मेम्ब्रेन फ्यूल सेल स्टैक सुनिश्चित करने के लिए इसे विकसित करना महत्व रखता है। एलईसीपीएल के निदेशक श्री संतोष तिवारी ने कहा, "हमें फ्यूल सेल घटक निर्माण के लिए एआरसीआई का औद्योगिक भागीदार होने पर गर्व है।

हम हाइड्रोजन पर आधारित स्वच्छ ऊर्जा के साझा लक्ष्यों को साझा करते हैं, और "मेक इन इंडिया" पहल इस क्षेत्र में एक सफलता है। एआरसीआई तकनीकी जानकारी का व्यावसायीकरण अगली तिमाही में शुरू होने की उम्मीद है। प्लेटिनम-आधारित इलेक्ट्रोकेटलिस्ट के लिए अन्य एप्लीकेशन्स के लिए भी जोखिम उठाया जा रहा है।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1808442>



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Ministry of Science & Technology

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Indigenously developed platinum-based electro-catalyst could pave way for low-cost, durable fuel cells

Indian Scientists have indigenously developed platinum-based electro catalyst for use in fuel cells through an efficient procedure. This electro catalyst showed comparable properties to the commercially available electro catalyst and could enhance the lifetime of the fuel cell stack performance. The launch of the Hydrogen Mission in August 2021 has opened up a huge avenue for indigenous research and development in the area of Hydrogen Fuel Cells.

Fuel cells are energy conversion devices that produce DC electricity from hydrogen with water as a by-product.

Although this technology has a lot of merits in green energy production, the main drawback comes from the huge cost incurred from importing the components for fabricating the device. In particular, the platinum-based electro catalyst, imported because of the lack of suitable indigenous technologies for their manufacture, plays an important role in increasing durability and decreasing fuel cell costs.

Scientists at the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), an autonomous R&D Centre of the Department of Science and Technology, Govt. of India, have synthesized platinum-based electro catalyst using an efficient procedure. The key step in the synthesis lies in functionalization of carbon to enhance the carbon to platinum interaction known as strong metal substrate interaction (SMSI), thereby increasing the durability of the electro catalyst.

This electro catalyst showed comparable properties to the commercially available electro catalyst in terms of its performance in fuel cells and superior corrosion resistance and durability. It showed less than 20 percent loss, which is less than the acceptable limits of loss in active surface area of the catalyst (40%). This could enhance the lifetime of the fuel cell stack performance. The work has been published in the '*International Journal Of Hydrogen Energy*', and a patent has been filed (patent no:202011035825).

Las Engineers and Consultants Pvt. Ltd (LECPL), a Mumbai-based company engaged in designing and building plants for the chemical, pharmaceuticals, and allied industries, are in the process of acquiring ARCI know-how for manufacturing this electro catalyst. According to Dr Tata Narasinga Rao, Director (Additional Charge), ARCI, this commercialization of indigenous electrocatalyst makes green hydrogen technology take off in India.

Dr R. Gopalan, Regional Director, ARCI-Chennai, feels that indigenous catalysts could reduce the dependence on imported electrocatalysts and would pave the way for *Atma Nirbhar Bharat*.

Dr Raman Vedarajan, one of the inventors of the technology at the Centre for Fuel Cell Technology, ARCI-Chennai, feels that this development is vital for ensuring made in India durable polymer electrolyte membrane fuel cell stacks. Mr Santosh Tawari, Director of LECPL, said, "We are proud to be the industrial partner of ARCI for fuel cell component manufacturing.

We share common goals of cleaner energy based on hydrogen, and the "Make in India" initiative is a success in this field. Commercialization of ARCI know-how is expected to begin in the next quarter. Other applications for the platinum-based electrocatalyst are also being ventured.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1808266>



Tue, 22 Mar 2022

Cosmic Milestone: NASA confirms 5,000 exoplanets – “it is inevitable that we’ll find some kind of life somewhere”

The count of confirmed exoplanets just ticked past the 5,000 mark, representing a 30-year journey of discovery led by NASA space telescopes. Not so long ago, we lived in a universe with only a small number of known planets, all of them orbiting our Sun. But a new raft of discoveries marks a scientific high point: More than 5,000 planets are now confirmed to exist beyond our solar system.

The planetary odometer turned on March 21, with the latest batch of 65 exoplanets – planets outside our immediate solar family – added to the NASA Exoplanet Archive. The archive records exoplanet discoveries that appear in peer-reviewed, scientific papers, and that have been confirmed using multiple detection methods or by analytical techniques. The 5,000-plus planets found so far include small, rocky worlds like Earth, gas giants many times larger than Jupiter, and “hot Jupiters” in scorchingly close orbits around their stars. There are “super-Earths,” which are possible rocky worlds bigger than our own, and “mini-Neptunes,” smaller versions of our system’s Neptune. Add to the mix planets orbiting two stars at once and planets stubbornly orbiting the collapsed remnants of dead stars.

“It’s not just a number,” said Jessie Christiansen, science lead for the archive and a research scientist with the NASA Exoplanet Science Institute at Caltech in Pasadena. “Each one of them is a new world, a brand-new planet. I get excited about every one because we don’t know anything about them.” We do know this: Our galaxy likely holds hundreds of billions of such planets. The steady drumbeat of discovery began in 1992 with strange new worlds orbiting an even stranger star. It was a type of neutron star known as a pulsar, a rapidly spinning stellar corpse that pulses with millisecond bursts of searing radiation. Measuring slight changes in the timing of the pulses allowed scientists to reveal planets in orbit around the pulsar.

Finding just three planets around this spinning star essentially opened the floodgates, said Alexander Wolszczan, the lead author on the paper that, 30 years ago, unveiled the first planets to be confirmed outside our solar system. “If you can find planets around a neutron star, planets have to be basically everywhere,” Wolszczan said. “The planet production process has to be very robust.”

Wolszczan, who still searches for exoplanets as a professor at Penn State, says we’re opening an era of discovery that will go beyond simply adding new planets to the list. The Transiting Exoplanet Survey Satellite (TESS), launched in 2018, continues to make new exoplanet discoveries. But soon powerful next-generation telescopes and their highly sensitive instruments, starting with the recently launched James Webb Space Telescope, will capture light from the atmospheres of exoplanets, reading which gases are present to potentially identify tell-tale signs of habitable conditions.

The Nancy Grace Roman Space Telescope, expected to launch in 2027, will make new exoplanet discoveries using a variety of methods. The ESA (European Space Agency) mission ARIEL, launching in 2029, will observe exoplanet atmospheres; a piece of NASA technology aboard, called CASE, will help zero in on exoplanet clouds and hazes. “To my

thinking, it is inevitable that we'll find some kind of life somewhere – most likely of some primitive kind,” Wolszczan said. The close connection between the chemistry of life on Earth and chemistry found throughout the universe, as well as the detection of widespread organic molecules, suggests detection of life itself is only a matter of time, he added.

How to Find Other Worlds

The picture didn't always look so bright. The first planet detected around a Sun-like star, in 1995, turned out to be a hot Jupiter: a gas giant about half the mass of our own Jupiter in an extremely close, four-day orbit around its star. A year on this planet, in other words, lasts only four days. More such planets appeared in the data from ground-based telescopes once astronomers learned to recognize them – first dozens, then hundreds. They were found using the “wobble” method: tracking slight back-and-forth motions of a star, caused by gravitational tugs from orbiting planets. But still, nothing looked likely to be habitable.

Finding small, rocky worlds more like our own required the next big leap in exoplanet-hunting technology: the “transit” method. Astronomer William Borucki came up with the idea of attaching extremely sensitive light detectors to a telescope, then launching it into space. The telescope would stare for years at a field of more than 170,000 stars, searching for tiny dips in starlight when a planet crossed a star's face. That idea was realized in the Kepler Space Telescope. Borucki, principal investigator of the now-retired Kepler mission, says its launch in 2009 opened a new window on the universe. “I get a real feeling of satisfaction, and really of awe at what's out there,” he said. “None of us expected this enormous variety of planetary systems and stars. It's just amazing.

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