

August  
2022

# समाचार पत्रों से चयित अंश Newspapers Clippings

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Technologies, Defence Technologies, Defence Policies,  
International Relations and Science & Technology

खंड : 47 अंक: 146 02 अगस्त 2022

Vol.: 47 Issue: 146 02 August 2022



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Mon, 01 Aug 2022

### **Coimbatore-Based Private Firm Working with DRDO on an Indigenous Engine for Tapas Drone**

DRDO scientists are working with a Coimbatore-based private firm (reportedly Tech Mahindra) on an indigenous engine for TAPAS. The drone is currently powered by the Austria-made Austro engine, which comes with twin turbochargers. As of now, close to 75 per cent of the drone is India-made. DRDO scientists claim that, once inducted, TAPAS would be almost eight times cheaper than imported drones. TAPAS-BH-201 (formerly referred to as RUSTOM-II), developed by the Bangalore-based Aeronautical Development Establishment (ADE), recently achieved an altitude of 28,000ft and 18 hours of endurance. The agency, under the DRDO, began developing the medium-altitude long-endurance (MALE) unmanned aerial vehicle a decade ago at a cost of Rs1,786 crore.



*TAPAS BH-201 is currently flying with an imported AUSTRO AE300 Diesel-Kerosene Engine*

TAPAS has a good structural design, It is pre-designed to carry certain weapons and can be converted into an armed platform. TAPAS has a range of sensors that make it capable for day and night missions, and it also has autonomous take-off and landing capabilities. TAPAS is equipped with enhanced aerodynamic configuration, digital flight control, navigation system, communication intelligence, medium and long-range electro-optic payloads and synthetic aperture radar that will enable it to see through the clouds. It is capable of carrying different combinations of payloads depending on the mission objectives including electronic intelligence systems and situational awareness systems. It has a satellite communication link to relay situation in the battle theatre on real time basis.

The drone can loiter autonomously at high altitudes performing real-time, high-resolution intelligence, surveillance and reconnaissance (ISR) with its SAR and EO sensors. When a target is identified, it will either illuminate the target with a laser designator for other strike aircraft, or descend to lower altitude and attack the target with its own air-to-surface missiles. In November 2021 the DRDO demonstrated TAPAS's ability to take off and land autonomously as well as its ability to utilise India's satellite-based navigation system – GPS-aided GEO augmented navigation (GAGAN) – that has been jointly built by the Indian Space Research Organisation (ISRO) and Airports Authority of India.

**TAPAS has a cruising speed of 135 kt carrying 350 kg of payload.**

The armed forces were especially impressed by the drone's advanced ground control system. During a recent test, two major requirements of India's armed forces—altitude at which the bird can fly and endurance (hours spent in sky). When it landed, TAPAS still had about eight hours of fuel left reported The Week. Hindustan Aeronautics Limited will produce the first five TAPAS drones. Bharat Electronics Limited is the primary partner for electronic systems, like on-board avionics. A total of 76 TAPAS drones will be inducted into the armed forces—the Army, 60; the Air Force, 12; and the Navy, four.

<http://www.indiandefensenews.in/2022/08/coimbatore-based-private-firm-working.html>

Defence News

Defence Strategic : National/International



सोमवार, 01 अगस्त 2022

## अडानी का 'गौरव बम' दुश्मनों को कैसे तबाह करेगा, इसका पूरा गणित जान लीजिए

भारतीय कारोबारी गौतम अडानी की कंपनी अडानी डिफेंस एंड एयरोस्पेस चर्चा में है. कंपनी ने भारतीय वायुसेना के लिए खास बम तैयार किए हैं. इनके नाम हैं गौरव लॉन्ग रेंज ग्लाइड बम और गौथम बम. गौरव लम्बी दूरी का ग्लाइड बम है. 10 हजार किलो भारी गौरव बम का परीक्षण पिछले साल किया गया

था, जो सफल रहा था. यह ग्लाइड करते हुए दुश्मनों और उनके ठिकानों को तबाह करता है. आसान भाषा में समझें तो यह हवा में उड़ते हुए हमला करता है.

### ऐसे बनाया गया

गौरव लॉन्ग रेंज ग्लाइड बम को अडानी डिफेंस एंड एयरोस्पेस ने भारतीय रक्षा अनुसंधान एवं विकास संगठन (DRDO) के साथ मिलकर तैयार किया गया है. DRDO के वैज्ञानिकों ने ऐसे 2 तरह बम की डिजाइन पर काम किया गया है. इन्हें डिजाइन करने के बाद उसे तैयार करने की जिम्मेदारी अडानी की कंपनी को दी गई. दोनों बमों को तैयार कर लिया गया. इन्हें विंग के जरिए ग्लाइड किया जाएगा. इस तरह ग्लाइड के जरिए हमला करने वाला पहला बम तैयार किया गया है.

### दो बम तैयार हुए

अडानी डिफेंस एंड एयरोस्पेस ने दो ऐसे बम तैयार किए हैं. पहला है- गौरव और दूसरे का नाम है गौथम. दोनों ही बम अपने आप में पावरफुल हैं. दोनों ही बमों का इस्तेमाल तब किया जा सकता है जब एयरक्राफ्ट की रेंज के दायरे से बाहर टारगेट को निशाना बनाना हो. दोनों की क्षमताएं और खूबियां अलग-अलग हैं.

<https://www.tv9hindi.com/knowledge/gaurav-gautham-long-range-glide-bomb-feature-how-adani-defence-aerospace-drdo-made-these-bomb-au256-1375134.html>



पत्र सूचना कार्यालय  
भारत सरकार

रक्षा मंत्रालय

सोमवार, 01 अगस्त 2022 11:55

## भारतीय और फ्रांसीसी नौसेना द्वारा अटलांटिक में सैन्याभ्यास

अपनी सुदूर क्षेत्रीय तैनाती के दौरान आईएनएस तरकश ने 29 और 30 जुलाई, 2022 को उत्तरी अटलांटिक महासागर में फ्रांस की नौसेना के साथ समुद्री साझेदारी सैन्याभ्यास (एमपीएक्स) किया। तरकश और फ्रांसीसी फ्लीट टैंकर एफएनएस सौम के बीच समुद्र में तेल की आपूर्ति का अभ्यास किया गया। इसके बाद समुद्री टोही हवाई जहाज फॉल्कन 50 के साथ संयुक्त वायु अभियान का अभ्यास किया गया। इस दौरान वायु रक्षा अभ्यास और कृत्रिम मिसाइलों से युद्धाभ्यास किया गया। सफल जमीनी और आसमानी अभ्यास दोनों देशों की नौसेनाओं के बीच मौजूद उच्चस्तरीय परिचालन, संचालन और पेशेवर कुशलता का परिचायक है।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1846921>

Mon, 01 Aug 2022

## **Make in India: Govt's Defence Purchases from Micro, Small Enterprises Hit Record High, Shows Govt Data**

*By Sandeep Soni*

### **Ease of Doing Business for MSMEs**

Defence procurement from micro and small enterprises (MSEs) hit a record high during the financial year 2021-22, showed government data. Purchase of general goods and services from MSEs including SC/ST and women-owned units during the year increased 33.8 per cent to Rs 5,760 crore from Rs 4,303 crore in FY21. In comparison to pre-Covid, FY22 procurement jumped 79.7 per cent from Rs 3,204 crore during FY20 amid the government's aim to enhance self-reliance in defence production by promoting local defence manufacturing units including MSEs. The total value of Indian defence exports during FY22 reached Rs 12,815 crore vis-a-vis Rs 8,435 crore in FY21 and Rs 9,116 crore in FY20.

Sharing data in the Rajya Sabha on Monday in a written reply to a question on defence purchases from MSMEs, Minister of State for Defence Ajay Bhatt said MSMEs are important partners in the Defence Research and Development Organisation's (DRDO) projects and DRDO transfers technologies to them. "DRDO through its scheme Technology Development Scheme (TDF) funds industries, especially startups and MSMEs up to an amount of Rs 10 crore for innovation, research and development of defence technologies in the field of defence and aerospace," said Bhatt. The defence procurement from MSEs in the current year, as of July 26, amounted to Rs 759 crore. Defence purchases via the government's business-to-government (B2G) portal Government eMarketplace (GEM) had also recorded a significant jump of over 250 per cent in FY22 from the previous year. According to a statement by the ministry in May this year, procurement orders through GeM had reached an all-time high of Rs 15,047.98 crore during FY22.

The number of MSME vendors supplying to the Defence Public Sector Units (DPSUs) has also increased. From 7,591 in FY18 and 8,643 in FY19, the number went up to 10,506 till Q2 FY20, former MSME Minister Nitin Gadkari informed Rajya Sabha in March 2020. By December 2021, the total MSME count in defence PSUs spiked to 12,000. "MSMEs started their journey with DPSUs as their supply chain partners but today, they have come up to a level where they are playing an important role in discharging offset obligations, revenue procurement, and also in designing, developing, and manufacturing complete defence systems by themselves," said Dr Mayank Dwivedi, Director, Industry Interface & Technology Management (DIITM), DRDO at an event organised by PHD Chamber of Commerce and Industry in March this year.

Importantly, the government had introduced 'MAKE Projects' in Defence Acquisition Procedure (DAP) 2020 to facilitate indigenous design and development of defence equipment both with government funding and industry funding.

<https://www.financialexpress.com/industry/sme/msme-eodb-make-in-india-govts-defence-purchases-from-micro-small-enterprises-hit-record-high-shows-govt-data/2613786/>



**Press Information Bureau  
Government of India**

**Ministry of Defence**

*Mon, 01 Aug 2022 2:22 PM*

## **Mandatory Procurement from MSMEs for Defence Establishments**

The Government has taken the following policy initiatives for promotion of Micro, Small & Medium enterprises (MSMEs) in defence sector:

- In the Defence Acquisition Procedure 2020, there are specific reservations on Orders up to Rs 100 crore/year for MSMEs.
- An innovation ecosystem for Defence titled Innovations for Defence Excellence (iDEX) has been launched in April 2018. iDEX is aimed at creation of an ecosystem to foster innovation and technology development in Defence and Aerospace by engaging Industries including MSMEs, Start-ups, Individual Innovators, R&D institutes and Academia and provide them grants/funding and support to carry out R&D which has potential for future adoption for Indian defence and aerospace needs.
- The Defence Offset guidelines have further paved the way for proactive participation of MSMEs of India by incorporating a scheme of multipliers of 1.5 for engaging MSME as Indian Offset Partners (IOP), which promotes their integration in global supply chain.
- MSMEs are important partners in DRDO projects and DRDO transfers technologies to them. They are important partners in industry ecosystem for the production of DRDO developed products. DRDO through its scheme Technology Development Scheme (TDF) funds industries, especially Start-ups and MSMEs up to an amount of Rs 10 crore, for innovation, research and development of Defence Technologies in the field of Defence and Aerospace.
- Public Procurement Policy for MSEs Order 2012, notified by Ministry of Micro, Small & Medium Enterprises has also been adopted by all Defence PSUs.
- Department of Defence Production(DDP) conducts outreach programs in various parts of the country to interact with Industry Associations, Industry, especially MSMEs and academia, to spread awareness about the potential export opportunities. A scheme aimed to promote MSMEs in defence is in place. Under this scheme, conclaves/seminars are being organized in Tier-II and Tier-III cities across the country having strong industrial MSMEs presence with the support of the DDP.
- Regular interactions are taking place to settle the grievance of vendors at DPSUs. Defence Investor Cell has been opened in DDP to address the issues being faced by vendors especially MSME vendors.

Further, 137 contracts have been signed for capital procurement of defence equipment with Indian vendors including MSMEs. No separate data for MSMEs is centrally maintained in this regard.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1846935>



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**Ministry of Defence**

*Mon, 01 Aug 2022 2:23 PM*

## **Self-Reliance in Defence Production**

The Government has taken several policy initiatives in the past few years and brought in reforms to encourage indigenous design, development and manufacture of defence equipment, thereby promoting self-reliance in defence manufacturing & technology in the country. These initiatives, inter-alia, include according priority to procurement of capital items from domestic sources under Defence Acquisition Procedure (DAP)-2020; Announcement of 18 major defence platforms for industry led design & development in March 2022; Notification of three 'Positive Indigenisation Lists' of total 310 items of Services and two 'Positive Indigenisation Lists' of total 2958 items of Defence Public Sector Undertakings (DPSUs), for which there would be an embargo on the import beyond the timelines indicated against them; Simplification of Industrial licensing process with longer validity period; Liberalization of Foreign Direct Investment (FDI) policy allowing 74% FDI under automatic route; Simplification of Make Procedure; Launch of Innovations for Defence Excellence (iDEX) scheme involving start-ups & Micro, Small and Medium Enterprises (MSMEs); Implementation of Public Procurement (Preference to Make in India) Order 2017; Launch of an indigenisation portal namely SRIJAN to facilitate indigenisation by Indian Industry, including MSMEs; Reforms in Offset policy with thrust on attracting investment and Transfer of Technology for Defence manufacturing by assigning higher multipliers; and Establishment of two Defence Industrial Corridors, one each in Uttar Pradesh and Tamil Nadu; Opening up of Defence Research & Development (R&D) for industry, start-ups and academia with 25 per cent of defence R&D budget; Progressive increase in allocation of Defence Budget of military modernization for procurement from domestic sources, etc.

Three Positive Indigenisation Lists comprising of 310 (101+108+101) items were promulgated by Department of Military Affairs (DMA), Ministry of Defence on 21<sup>st</sup> August 2020, 31<sup>st</sup> May 2021 & 7<sup>th</sup> April 2022 respectively. In addition, to minimise import by Defence Public Sector Undertakings (DPSUs), Department of Defence Production (DDP), MoD has notified two Positive Indigenisation Lists (PIL) of sub-systems/assemblies/sub-assemblies/ components on 27<sup>th</sup> December 2021 & 28<sup>th</sup> March 2022 respectively. The 1st list contains 2,851 items out of which 2,500 items have already been indigenised. The 2<sup>nd</sup> PIL consists of 107 strategic important Line Replacement Units/major sub-assemblies. All these lists have been placed in the public domain on the website of MoD/SRIJAN Defence portal of Ministry of Defence. These lists include wide range of defence products including Light Tanks, Helicopters, Unmanned Aerial Vehicles etc. for which there would be an embargo on the import beyond the timelines indicated

against them. This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri M Shanmugam in Rajya Sabha today.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1846936>



**Press Information Bureau**  
**Government of India**

**Ministry of Defence**

*Mon, 01 Aug 2022 2:24 PM*

## **Enhancement of Capabilities of AI Technology**

As per the recommendation of a task force set up by DDP under the Chairmanship of Shri N Chandrasekaran, Chairman Tata Sons, and in consultation with all stakeholders, Defence Artificial Intelligence Council (DAIC) has been set up under the Chairmanship of Raksha Mantri to provide necessary guidance and structural support. Further, Defence AI Project Agency (DAIPA) has been created under the Chairmanship of Secretary DDP for enabling AI based processes in defence Organisations. Artificial Intelligence framework and guidelines for projects and programmes in DRDO have been issued. All DRDO system laboratories have started AI technology groups to introduce AI features in all products.

Further, an AI roadmap has also been finalised for each DPSU under which 70 defence specific AI projects have been identified for development. Out of these projects, 40 projects have been completed by the DPSUs. Steps taken to train youth are as given below:

- DRDO has three dedicated laboratories, Centre for Artificial Intelligence and Robotics (CAIR), Bengaluru and DRDO Young Scientist Laboratory (DYSL)-AI and DYST-CT (Cognitive Technology) for application orientated research in AI in different domains.
- CAIR is nurturing start-ups & also conducting workshops for DRDO scientists to create skill sets on AI in Defence Systems.
- Defence Institute of Advanced Technology (DIAT) is conducting Certified courses in AI & Machine Learning and so far more than 1000 professionals have been trained in these domains.
- AI is also promoted in academia and industry through R&D projects under Defence Industry Academia Centre of Excellences, Extramural Research and Technology Development Fund schemes of DRDO.
- DDP has earmarked Rs 100 crore per year for AI projects for Armed Forces.
- IAF has established the Unit for Digitization Automation, AI an App Networking (UDAAN) which is in the process of developing many applications for Campaign Planning and Analysis System, e-Nirikshan etc.
- This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Sushil Kumar Gupta in Rajya Sabha today.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1846937>

## **Artificial Intelligence Roadmap for All Defence PSUs Put in Place: Govt**

A roadmap for application of Artificial Intelligence has been finalised for each of the defence public sector undertakings (PSUs), the government said in Rajya Sabha on Monday. Minister of State for Defence Ajay Bhatt, replying to a question, said 40 projects relating to Artificial Intelligence (AI) have already been completed by the defence PSUs. He said "Artificial Intelligence framework and guidelines for projects and programmes in the Defence Research and Development Organisation (DRDO)" have been issued. Bhatt said all the DRDO system laboratories have started AI technology groups to introduce such features in all products. "Further, an AI roadmap has also been finalized for each defence PSU under which 70 defence specific AI projects have been identified for development. Out of these projects, 40 projects have been completed," he said.

The government has already set up the Defence Artificial Intelligence Council (DAIC) under the chairmanship of Defence Minister Rajnath Singh to provide necessary guidance and structural support for application of AI for use by the military. The DAIC has been established as per the recommendation of a task force headed by N Chandrasekaran, Chairman of Tata Sons, and in consultation with all stakeholders. Separately, the Defence AI Project Agency has been created under the chairmanship of secretary, Department of Defence Production, for enabling AI-based processes in defence organisations.

<https://economictimes.indiatimes.com/news/defence/artificial-intelligence-roadmap-for-all-defence-psus-put-in-place-govt/articleshow/93278842.cms?from=mdr>



## **India Exported Military Hardware Worth Rs 42,499 Crore Since 2018-19: Government**

India exported military hardware worth Rs 42,499 crore since 2018-19, according to details provided by the government in Rajya Sabha on Monday. Minister of State for Defence Ajay Bhatt, replying to a question, said the total defence exports in 2021-22 stood at Rs 12,815 crore while it was Rs 1,387 crore in the first quarter of the current fiscal. In 2018-19, the defence exports were Rs 10,746 crore, and it went down to Rs 9,116 crore in 2019-20. The amount in 2020-21 was Rs 8,435 crore. To a specific question on defence exports in 2021-22, the minister said the military items were sent to about 61 countries. He, however, declined to name the countries, saying it cannot be divulged due to "strategic reasons".

In responding to a separate question, Bhatt said the government has taken a series of policy initiatives to promote micro, small & medium enterprises (MSMEs) in defence sector. "In the Defence Acquisition Procedure 2020, there are specific reservations on orders up to Rs 100 crore per year for MSMEs," he said. Bhatt said the defence offset guidelines have further paved the way for engaging the MSMEs and promote their integration in global supply chain.

Under India's offset policy, foreign defence entities, for all contracts worth Rs 2,000 crore or more, are mandated to spend at least 30 per cent of the total contract value in India through procurement of components, transfer of technologies or setting up of research and development activities. However, the offsets are not applicable to procurements under 'fast track procedure' and in 'option clause' cases if the same was not envisaged in the original contract. In the past few years, the government has taken a series of measures to boost domestic defence manufacturing. In May 2020, the government announced increasing the FDI limit from 49 per cent to 74 per cent under the automatic route in the defence sector.

<https://www.moneycontrol.com/news/india/india-exported-military-hardware-worth-rs-42499-crore-since-2018-19-government-8932831.html>



*Tue, 02 Aug 2022*

## **Finally, After 40 Years, Indian Military to Get New Light Utility Helicopters, Indigenous Combat Helios**

Hindustan Aeronautics Ltd. (HAL) has received the Letter of Intent from the Services for the manufacture of 12 Light Utility Helicopters (LUH), which have been designed and developed indigenously. At the same time, nine Light Combat Helicopters (LCH) have been manufactured against the sanction of 15 limited series production (LSP) variants and are in the process of being handed over to the Services. "Production work has begun. Two LUH are in an advanced stage of completion," a HAL source confirmed. In addition, the Request For Quotation (RFQ) for the larger order for LUH RFQ has also been issued, one source stated. HAL is in the process of responding to the RFQ and expects to conclude the related issues in one or two years, the source stated. Last November, the Defence Acquisition Council approved the procurement of an initial lot of 12 LUH, six each for the Army and the Air Force.

### **Light Combat Helicopters Induction**

In June, the Army raised its first LCH squadron in Bangalore which will move to the Line of Actual Control (LAC) in Eastern Command once complete next year. "Of the 15 LSP on order, nine LCH have been produced. They are in acceptance stage," HAL sources said. As of now the Army is looking at acquiring around 111 LUH and 95 LCH, officials stated. Army sources had said that seven LCH units are planned for combat role in the mountains, with each having 10 helicopters. The IAF is also scheduled to raise its first LCH squadron in the next few months.

## **More Helicopters**

The Army has three Aviation Brigades at Leh, Missamari and Jodhpur. It operates around 145 indigenous Advanced Light Helicopters (ALH), 75 of which are the Rudra-weaponised variants. Another 25 DHRUV MK-III are on order and scheduled to be inducted within two years. The Army operates around 190 Cheetah, Chetak and Cheetal helicopters and are in dire need of their replacement, while the IAF operates close to 140 of them. In another development, the Army is in negotiations for acquiring 11 more Apache AH-64E attack helicopters from the U.S. In all, the IAF operates a wide mix of around 500 rotary platforms which includes around 90 Mi-17s, over 130 Mi-17V5s, over 70 DHRUV, including the weaponised variants, 22 Apaches, one squadron of Mi-35 attack helicopters and 15 CH-47F Chinook heavy lift helicopters.

In the utility helicopter category, the Army and the IAF together have a requirement of more than 400 helicopters and are meant to replace the vintage Cheetah and Chetak helicopters in service. This requirement was to be met jointly by the LUH and the 200 Ka-226T utility helicopters to be built with technology transfer from Russia.

## **Dropping Russian Helicopter Deal**

However, the Indo-Russian Ka-226T deal has been delayed by several years over indigenisation issues and with the LUH now ready and the geopolitical situation due to the war in Ukraine, the deal is all set to be dropped, officials had stated. The LUH has come up well, but will take time for sufficient numbers to come in, Army sources had stated.

<http://www.indiandefensenews.in/2022/08/finally-after-40-years-indian-military.html?m=1>



*Mon, 01 Aug 2022*

## **Boeing to Establish R&D Facility on Sustainable Aviation Fuel**

Boeing Co said on Monday it plans to establish a research and development (R&D) facility in Japan to further development in sustainable aviation fuel (SAF) and to advance electric and hydrogen aircraft technology. The facility will also focus on robotics, digitalisation, automation and carbon fibre composite materials for the aviation industry, the U.S. aircraft manufacturer said in a news release. The global airline industry's target of net zero emissions by 2050 is heavily reliant on its ability to produce more SAF, though electric and hydrogen-powered planes could play a smaller part in emissions reductions. The industry requires huge investment in SAF, which uses feedstock such as animal fat and cooking oil and which is currently in short supply and far more expensive than conventional jet fuel. The industry aims for SAF production to account for 65% of fuel needs by 2050, up from less than 0.5% in 2021.

Japan lacks SAF production at present, though local airline operators ANA Holdings Inc (9202.T) and Japan Airlines Co Ltd (9201.T) have both committed to using SAF to meet 10% of their fuel needs by 2030 in line with a government target. In April, French oil and gas company

TotalEnergies SE (TTEF.PA) and Japanese peer ENEOS Holdings Inc (5020.T) announced a feasibility study to assess production of SAF at ENEOS's Negishi refinery in the eastern Japanese city of Yokohama. It could potentially begin production in 2025, targeting capacity of 300,000 tons a year. Boeing has committed to its planes being certified to fly on 100% SAF by 2030.

<https://www.indiatoday.in/science/story/boeing-to-establish-r-d-facility-on-sustainable-aviation-fuel-1982443-2022-08-01>



*Sun, 31 Jul 2022*

## **Romeo Joins Indian Navy, Know the Power of this Reliable Helicopter**

Two Romeo helicopters have joined the Indian Navy. Don't go by the name Romeo. Its real name is MH 60R Multi-Role Helicopter. The R in its name is the short form of Romeo. Now 21 more helicopters will come. It will take about three more years for them to come. This helicopter can also be deployed on the Indian Navy's indigenous aircraft carrier IAC Vikrant. The MH 60R Multi-Role Helicopter is manufactured by Skorsky Aircraft Company of America. There are a total of five variants of Romeo Helicopter. Apart from this, changes are made according to their export quality. They can be used for surveillance, espionage, VIP movement, attack, submarine search and destruction. It can be used for many types of work.

Dozens of types of sensors and radars are installed on the Romeo Helicopter, which give information about every attack of the enemy. It requires 3 to 4 crew members to fly it. Apart from these, 5 people can sit in it. Its maximum takeoff weight is 10,433 kg. That is, with full weapons, equipment and soldiers. Its length is 64.8 feet. The height is 17.23 feet. The MH 60R Multi-Role Helicopter is powered by two General Electric's turboshaft engines. Which generate power of 1410×2 kW at the time of takeoff. The diameter of its main fan is 53.8 feet. This helicopter can cover a distance of up to 830 km at a time. Can fly at a maximum altitude of 12 thousand feet. The upright speed is 1650 feet per minute. Romeo Helicopter can fly at a maximum speed of 270 kms. But if needed, the speed can be increased to 330 kilometers per hour. No more than this. Now let us tell you what kind of weapons can be installed on it. It can be fitted with two Mark 46 torpedoes or MK 50 or MK 54s torpedoes. Apart from this, 4 to 8 AGM-114 Hellfire missiles can be installed.

APKWS ie Advanced Precision Kill Weapon System can be installed on the MH 60R Multi-Role Helicopter. Apart from this, four types of heavy machine guns can be installed on this helicopter. Which makes it easy to shoot bullets at the enemy. Apart from this, Rapid Airborne Mine Clearance System (RAMICS) and 30 mm Mk 44 Mod 0 cannon can be installed. The MH 60R version of the Romeo helicopter is usually the anti-submarine version. The Indian Navy will use them to locate enemy submarines in the Indian Ocean region and destroy them if needed. The US

Navy, Australian Navy, Turkish Navy and Hellenic Navy are using this helicopter. Since 1979, 938 such helicopters have been made.

<https://defenceaviationpost.com/romeo-joins-indian-navy-know-the-power-of-this-reliable-helicopter/>

# अमर उजाला

सोमवार, 01 अगस्त 2022

## समुद्र की गहराइयों से भी अब मिसाइल हमला कर सकता है चीन, अमेरिका और भारत मुख्य निशाने पर

चीन गुपचुप तरीके से लंबी और कम दूरी की पारंपरिक मिसाइलों का जखीरा बढ़ाने में जुटा हुआ है। अमेरिकी विशेषज्ञों की एक रिपोर्ट के मुताबिक, चीनी पीपुल्स लिबरेशन आर्मी (पीएलए) अब जमीन और समुद्र के भीतर से मार करने वाली छोटी दूरी की मिसाइलों से लैस है। इनसे हिंद महासागर में अमेरिकी सैन्य मौजूदगी के लिए गंभीर खतरा उत्पन्न हो गया है। चीन पहले ही अपनी रॉकेट सेना तैयार कर चुका है। इस रिपोर्ट के मुताबिक, पूर्वी लद्दाख में जारी सैन्य गतिरोध के चलते भारत के लिए भी नई चीनी फौजी तैयारियों से खतरा बढ़ गया है।



*DF-5B Missile*

### 2000 हिंद-प्रशांत में तैनात

अमेरिकी रक्षा विभाग द्वारा जारी रिपोर्ट के मुताबिक, हिंद-प्रशांत इलाके के लिए चीन ने लगभग 2000 मिसाइलें तैनात कर दी हैं। ऐसी चार क्रूज मिसाइलों की अधिकतम मारक क्षमता 1800 किलोमीटर तक

है। अमेरिकी विशेषज्ञों का कहना है कि छोटी दूरी की यह मिसाइलें कहीं ज्यादा सटीक निशाना लगाती हैं। चीन के पास इस समय सबसे ताकतवर क्रूज मिसाइलें भी हैं।

### **नई मिसाइल संचालन प्रणाली**

इस रिपोर्ट का कहना है, पारंपरिक और परमाणु मिसाइलों के संचालन के लिए चीन ने नई मिसाइल संचालन प्रणाली तैयार की है। ऐसी नई प्रणाली के बारे में अब तक सोचा भी नहीं गया था।

### **15000 किमी तक मार**

अमेरिकी सीएसआईएस मिसाइल डिफेंस प्रोजेक्ट के मुताबिक, चीन के पास सबसे सक्रिय और सबसे नया मिसाइल विकास कार्यक्रम है। उसके पास 7,000 से 15,000 किमी तक मार करने वाली अंतरमहाद्वीपीय बैलिस्टिक मिसाइलें भी हो गई हैं। साफ है कि अब अमेरिकी मुख्य भूमि भी उसके निशाने की जद में है। वो अपनी अंतरमहाद्वीपीय बैलिस्टिक मिसाइलों को और आधुनिक बनाने में जुटा है।

- वाहन से दागी जाने वाली मिसाइलों के साथ इन्हें हाइपरसोनिक और ब्रूस्ट ग्लाइड व्हीकल्स भी बनाने में जुटा है।
- चीनी नौसेना पनडुब्बियों के बेड़े में एटमी बैलिस्टिक मिसाइल तैनात करने में जुटी है। इससे वह समुद्र के भीतर से भी बैलिस्टिक मिसाइलें दागने में सक्षम हो सकेगा।

<https://www.amarujala.com/world/us-experts-report-china-can-now-launch-missile-attack-from-the-depths-of-sea>



*Mon, 01 Aug 2022*

## **U.S. Experts Report China can now Launch Missile Attack from the Depths of Sea**

China is secretly engaged in increasing the stock of long- and short-range conventional missiles. According to a report by US experts, the Chinese People's Liberation Army (PLA) is now equipped with short-range missiles that can be fired from land and sea. These pose a serious threat to the US military presence in the Indian Ocean. China has already prepared its rocket army. According to this report, due to the ongoing military standoff in eastern Ladakh, the threat to India has also increased due to new Chinese military preparations.

### **2000 Deployed In The Indo-Pacific**

According to the report released by the US Department of Defence, China has deployed about 2000 missiles for the Indo-Pacific region. The maximum range of four such cruise missiles is up

to 1800 km. American experts say that these short-range missiles hit the target much more accurately. China also currently has the most powerful cruise missiles.

### **New Missile Steering System**

This report says, China has designed a new missile operation system for the operation of conventional and nuclear missiles. Such a new system had not even been thought of till now.

### **Kill Up To 15,000 km**

According to the US CSIS Missile Defence Project, China has the most active and newest missile development program. It also has intercontinental ballistic missiles with a range of 7,000 to 15,000 km. It is clear that now the American mainland is also under its target. It is engaged in further modernizing its intercontinental ballistic missiles. Along with vehicle-launched missiles, they are also engaged in making hypersonic and boost glide vehicles. The Chinese Navy is engaged in deploying nuclear ballistic missiles in its fleet of submarines. This will enable it to launch ballistic missiles from under the sea.

<http://www.indiandefensenews.in/2022/08/us-experts-report-china-can-now-launch.html>

## **Business Standard**

*Mon, 01 Aug 2022*

### **India, Vietnam to Hold 3rd Edition of Bilateral Army Exercise from Today**

The Third Edition of Vietnam-India Bilateral Army Exercise "Ex VINBAX 2022" is scheduled to be conducted at Chandimandir from August 1 to 20, 2022. The exercise is a sequel to previously conducted bilateral exercise in Vietnam in 2019 and a major milestone in strengthening the bilateral relations between India and Vietnam. India and Vietnam share a Comprehensive Strategic Partnership and defence cooperation is a key pillar of this partnership. Vietnam is an important partner in India's Act East policy and the Indo-Pacific vision. The theme of Ex VINBAX - 2022 is employment and deployment of an Engineer Company and a Medical Team as part of United Nations Contingent for Peace Keeping Operations, as per an official statement by the Defence Ministry.

India has a rich legacy of deployment of troops in United Nations missions and has some of the best capacities to impart United Nations peace operations training incorporating best practices and hands on training to prospective United Nations peacekeepers at tactical, operational & strategic levels. The conduct of Ex VINBAX - 2022 as a field training exercise with enhanced scope from previous editions of bilateral exercise will strengthen mutual confidence, interoperability and enable sharing of best practices between the Indian Army and Vietnam People's Army. The joint exercise will also provide an opportunity to the troops of both the Contingents to learn about the social and cultural heritage of each other. Indian Army is being represented by troops from the 105 Engineer Regiment.

A 48 hours Validation Exercise is part of the schedule to assess the standards achieved by both contingents while executing technical military operations under similar scenarios in UN missions. A Humanitarian Assistance and Disaster Relief demonstration and equipment display will showcase India's capacity to undertake rescue and relief operations during natural and manmade disasters utilising indigenous solutions.

India and Vietnam signed a "Joint Vision" document to "significantly enhance the scope and scale" of bilateral ties by 2030 during the recent Vietnam visit of Indian Defence Minister Rajnath Singh to Vietnam. The two countries have many things in common. Both of them are listed among the fastest-growing economies of Asia and both aim at enhancing peace and stability in the Indo-Pacific region through multi-faceted cooperation. India and Vietnam have a broad convergence of interest as the emerging economies and important countries with respect to creating alternative supply chains in Asia after global disillusionment with the China-centric supply chain during the Covid pandemic. Besides, the two countries are equally concerned about the aggressive and expansionist policies of China in the Indo-Pacific region. The two countries also share a Comprehensive Strategic Partnership since 2016 and defence cooperation is a key pillar of this partnership.

Bilateral defence engagements have expanded over a period of time to include wide-ranging contacts between the two countries, including Defense Policy Dialogue, military-to-military exchange, high-level visits, capacity building and training programmes. The two countries have also cooperated in UN peacekeeping, ship visits and bilateral exercises. The Indian Defence Minister, during his visit, had a wide-ranging discussion with his Vietnamese counterpart, General Phan Van Giang, at Hanoi to jointly pursue effective and practical initiatives to further expand bilateral engagements. The two countries signed an MoU on mutual logistics support, the first of its kind that Vietnam has signed with any country. India and Vietnam also agreed to the early finalization of the USD 500 million defence line of credit to Vietnam by India.

The Indo-Vietnam Cooperation assumes significance in view of the US and several world powers' efforts to ensure a free, open and thriving Indo-Pacific region, especially at a time when China has shown scant respect for international laws to resolve the territorial disputes in the South China Sea. China claims a major chunk of the disputed China Sea despite cross-claims by other countries in the neighbourhood including Taiwan, The Philippines, Brunei, Malaysia and Vietnam. One of the main concerns of India in the region is that it has exploration projects in the Vietnamese waters in the South China Sea. The two countries have boosted their maritime security cooperation in the last few years to protect common interests. The relations between the two countries were elevated to the level of "Strategic Partnership" in 2007 when Vietnam's then Prime Minister Nguyen Jan Dung visited India. The relations were further upgraded to

"Comprehensive Strategic Partnership" in 2016, as Vietnam serves as an important partner in India's "Act East" Policy and Indo-Pacific vision. The two countries signed a cultural agreement in 1976 and since then, it has led to the creation of many channels of cultural cooperation. A recent development in this regard is the establishment of the Swami Vivekananda Indian Cultural Centre in Hanoi in 2016. Earlier, the Institute of Indian and South-West Asian Studies under the aegis of the Vietnam Academy of Social Sciences was inaugurated in Hanoi in 2012.

Around 1,69,000 Indians visited Vietnam and 31,000 Vietnamese visited India before the outbreak of the Covid-19 pandemic. Vietnam is the 15th largest trade partner of India and India is its 10th largest partner with bilateral trade standing at USD 11.12 billion in 2020-21. There is an upswing in India-Vietnam relations and it is rising up to new heights.

[https://www.business-standard.com/article/current-affairs/india-vietnam-to-hold-3rd-edition-of-bilateral-army-exercise-from-today-122073100989\\_1.html#:~:text=%C2%ABBack-India%2C%20Vietnam%20to%20hold%203rd%20edition%20of%20bilateral%20army%20exercise,August%201%20to%2020%2C%202022.](https://www.business-standard.com/article/current-affairs/india-vietnam-to-hold-3rd-edition-of-bilateral-army-exercise-from-today-122073100989_1.html#:~:text=%C2%ABBack-India%2C%20Vietnam%20to%20hold%203rd%20edition%20of%20bilateral%20army%20exercise,August%201%20to%2020%2C%202022.)



*Tue, 02 Aug 2022*

## **U.N. Chief Warns World is One Step from ‘Nuclear Annihilation’**

The United Nations chief warned the world on August 1 that “humanity is just one misunderstanding, one miscalculation away from nuclear annihilation,” citing the war in Ukraine, nuclear threats in Asia and the Middle East and many other factors. Secretary-General Antonio Guterres gave the dire warning at the opening of the long-delayed high-level meeting to review the landmark 50-year-old treaty aimed at preventing the spread of nuclear weapons and eventually achieving a nuclear-free world. The danger of increasing nuclear threats and a nuclear catastrophe was also raised by the United States, Japan, Germany, the U.N. nuclear chief and many other opening speakers at the meeting to review progress and agree to future steps to implement the Nuclear Nonproliferation Treaty, known as the NPT.

U.S. Secretary of State Antony Blinken said North Korea is preparing to conduct its seventh nuclear test, Iran “has either been unwilling or unable” to accept a deal to return to the 2015 nuclear agreement aimed at reining in its nuclear programme, and Russia is “engaged in reckless, dangerous nuclear saber-rattling” in Ukraine. He cited Russian President Vladimir Putin’s warning after its February 24 invasion that any attempt to interfere would lead to “consequences you have never seen,” emphasising that his country is “one of the most potent nuclear powers.” This is contrary to assurances given to Ukraine of its sovereignty and independence when it gave up its Soviet-era nuclear weapons in 1994, Mr. Blinken said, and sends “the worst possible message” to any country thinking it needs nuclear weapons to defend itself and deter aggression.

Japan’s Prime Minister Fumio Kishida said divisions in the world since the last review conference in 2015, which ended without a consensus document, have become greater, stressing that Russia’s threat to use nuclear weapons in the Ukraine war has contributed “to worldwide concern that yet another catastrophe by nuclear weapon use is a real possibility.” Germany’s Foreign Minister Annalena Baerbock accused Russia of “brutally violating the assurances” it gave Ukraine in 1994 and said Moscow’s “reckless nuclear rhetoric” since its invasion of its smaller neighbour “is putting at risk everything the NPT has achieved in five decades.” Most recently, Mr. Blinken said Russia seized Europe’s largest nuclear power plant in Zaporizhzhya

and is using it as a military base to fire at Ukrainians, “knowing that they can't and won't shoot back because they might accidentally strike a nuclear reactor or highly radioactive waste in storage.”

He said this brings the notion of having “a human shield to an entirely different and horrific level.” International Atomic Energy Agency Director General Rafael Grossi said the Ukraine conflict is “so grave that the spectre of a potential nuclear confrontation, or accident, has raised its terrifying head again.” He warned that at the Zaporizhzhya nuclear plant “the situation is becoming more perilous by the day,” and he urged all countries to help make possible his visit to the plant with a team of IAEA safety and security experts, saying his efforts for the past two months have been unsuccessful. Mr. Guterres told many ministers, officials and diplomats gathered in the General Assembly Hall that the month-long review conference is taking place “at a time of nuclear danger not seen since the height of the Cold War.” The conference is “an opportunity to hammer out the measures that will help avoid certain disaster, and to put humanity on a new path towards a world free of nuclear weapons,” the secretary-general said.

But Mr. Guterres warned that “geopolitical weapons are reaching new highs,” almost 13,000 nuclear weapons are in arsenals around the world, and countries seeking “false security” are spending hundreds of billions of dollars on “doomsday weapons.” “All this at a time when the risks of proliferation are growing and guardrails to prevent escalation are weakening,” he said, “And when crises — with nuclear undertones — are festering from the Middle East and the Korean Peninsula to the invasion of Ukraine by Russia, and to many other factors around the world.” Mr. Guterres called on conference participants to take several actions: urgently reinforce and reaffirm “the 77-year-old norm against the use of nuclear weapons,” work relentlessly toward eliminating nuclear weapons with new commitments to reduce arsenals, address “the simmering tensions in the Middle East and Asia” and promote the peaceful use of nuclear technology.

“Future generations are counting on your commitment to step back from the abyss,” he implored the ministers and diplomats. “This is our moment to meet this fundamental test and lift the cloud of nuclear annihilation once and for all.” Japan's Kishida, recalling his home city of Hiroshima where the first atomic bomb was dropped in August 1945, echoed many of Mr. Guterres' points saying the path to a world without nuclear weapons has become harder but “giving up is not an option.” In force since 1970, the Nonproliferation Treaty known as the NPT has the widest adherence of any arms control agreement, with some 191 countries that are members. Under its provisions, the five original nuclear powers — the United States, China, Russia (then the Soviet Union), Britain and France — agreed to negotiate toward eliminating their arsenals someday and nations without nuclear weapons promised not to acquire them in exchange for a guarantee to be able to develop nuclear energy for peaceful purposes.

India and Pakistan, which didn't join the NPT, went on to get the bomb. So did North Korea, which ratified the pact but later announced it was withdrawing. Non-signatory Israel is believed to have a nuclear arsenal but neither confirms nor denies it. Nonetheless, the treaty has been credited with limiting the number of nuclear newcomers (U.S. President John F. Kennedy once foresaw as many as 20 nuclear-armed nations) as a framework for international cooperation on disarmament. The meeting, which ends on August 26, aims to generate a consensus on next steps, but expectations are low for a substantial — if any — agreement. There were 133 speakers

as of Monday, plus dozens of side events. The NPT's five-year review was supposed to take place in 2020, when the world already faced plenty of crisis, but was delayed because of the COVID-19 pandemic.

Patricia Lewis, former director of the U.N. Institute for Disarmament Research who is now in charge of international security programs at the international affairs think tank Chatham House in London, said “President Putin's threats to use nuclear weapons have shocked the international community.” Russia is not only an NPT signatory but a depository for treaty ratifications and in January it joined the four other nuclear powers in reiterating the statement by former U.S. President Ronald Reagan and former Soviet leader Mikhail Gorbachev that “a nuclear war can never be won and must never be fought,” she told AP. Ms. Lewis said countries participating in the review conference will have a difficult decision to make. To support the treaty and what it stands for, “governments will have to address Russia's behaviour and threats,” she said. “On the other hand, to do so risks dividing the treaty members — some of whom have been persuaded by Russia's propaganda or at least are not as concerned, for example, as the NATO states.” And “Russia no doubt will strenuously object to being named in statements and any outcome documents,” Ms. Lewis said.

<https://www.thehindu.com/news/international/un-chief-warns-world-is-one-step-from-nuclear-annihilation/article65713632.ece>

## Science & Technology News



**Press Information Bureau**  
**Government of India**

**Ministry of Science & Technology**

*Mon, 01 Aug 2022 12:59 PM*

### **New Low-Cost, Polymer-Based Electrode can Increase Electrochemical Performance of Supercapacitors in Wearable Integrated Devices**

A new low-cost, pristine, conducting polymer-based electrode/redox-active electrolyte combination can give enhanced electrochemical performance and cycling stability to supercapacitors, facilitating energy storage and powering in wearable integrated devices. With energy demands of the modern world growing, the quest for novel methods and materials for renewable energy harvesting and storage has become a hot area of research. Supercapacitors or ultracapacitors are one of the thrust areas in energy storage technology as they combine the characteristics of conventional capacitors and batteries to give a sudden kick-start to devices by providing a large amount of power and sustained energy release.

The electrode materials of supercapacitors play a vital role in determining the performance and stability of these energy devices. Conducting polymers, like polyaniline and polypyrrole, are excellent candidates for electrode materials owing to their flexibility, stability and tunable electrical and electrochemical properties. They are also inexpensive, lightweight and can be synthesized easily. However, supercapacitors fabricated using these electrodes fail to sustain the initial electrochemical capacitance after a few cycles of continuous operation. The poor energy density of these devices is another issue that limits the use of these devices in practical applications.

The Materials for Energy Storage and Optoelectronic Devices Group, headed by Dr Sreekanth J.Varma of the Physics Department of Sanatana Dharma College, Alappuzha, has found a strategy to improve the performance of polyaniline (PANI)-based supercapacitors and has achieved very high Specific Capacitance per unit of area or areal capacitance and prolonged cycle life. They found that electrodes made from pristine, porous, conducting and high molecular-weight PANI synthesized by self-stabilized polymerization (SSDP) when used with an electrolyte powered with an additive that boosts redox reactions (redox-additive) can drive these energy storage devices to deliver incredible performances.

The lightweight symmetric supercapacitors fabricated using these electrodes outperform many new electrode materials. The conducting polymer-based electrode is lightweight and highly stable. The supercapacitors' enhanced performance and long cycle life are attributed to the binder-free nature, porosity, high and homogeneous molecular weight and appreciable conductivity of the electrode material and the electrode/redox-activated electrolyte combination. The study published in the Journal 'Electrochimica Acta' recently, carried out using the instrumentation facility procured through the Fund for Improvement of S&T Infrastructure (FIST) programme of the Department of Science and Technology (DST) programme, will open new vistas for the development of energy sources for low-cost and lightweight wearable electronic devices.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1846909>

## जनसत्ता

मंगलवार, 02 अगस्त 2022

### अंतरिक्ष स्टेशन स्थापित करने की होड़

दुनिया के देशों के बीच स्पेस स्टेशन स्थापित करने की होड़ मची है। रूस अपने स्पेस स्टेशन का निर्माण कर रहा है। चीन भी इस काम में जुटा हुआ है। कई निजी कंपनियां भी स्पेस स्टेशन स्थापित करने की होड़ में शामिल हैं। नासा और इसके संचालकों ने अमेरिकी सरकार से वादा किया है कि 2030 तक आइएसएस काम करता रहेगा। नासा ने जनवरी महीने में एक रिपोर्ट प्रकाशित की थी। इसमें रूस को अभी भी आइएसएस के प्रमुख भागीदार के तौर पर बताया गया था। हालांकि, इस समय तक रूस ने यूक्रेन पर हमला नहीं किया था। वर्ष 2030 के बाद उन अंतरिक्ष कार्यक्रमों को निजी क्षेत्र के प्लेटफार्म पर संचालित किया जाएगा, जिन्हें आज के समय में आइएसएस की मदद से किया जाता है। ऐसी उम्मीद की जा रही है

कि स्पेस एक्स, एग्जिओम, ब्लू ओरिजिन, नैनोरैक्स और नार्थरोप गुमान जैसी कंपनियां नासा की मदद से तथाकथित व्यावसायिक लो अर्थ आर्बिट डेस्टिनेशंस का निर्माण करेंगी। नासा ने अपने एक बयान में कहा है कि एक या उससे ज्यादा व्यावसायिक स्वामित्व और संचालन वाले स्पेस स्टेशन आइएसएस की जगह ले सकते हैं।

इसके बाद 2031 में आइएसएस को नियंत्रित तरीके से पृथ्वी पर वापस लाया जाएगा और प्रशांत महासागर के एक निर्जन इलाके में उतारा जाएगा। इस इलाके को स्पेसक्राफ्ट सिमेट्री यानी स्पेसक्राफ्ट की कब्रगाह नाम दिया गया है। इसे प्वाइंट नीमो के नाम से भी जाना जाता है। यहां पहले भी कई अन्य स्पेस स्टेशन और राकेट गिराए गए हैं। यूक्रेन पर रूसी हमले के बाद गैस और अनाज के साथ-साथ इंटरनेशनल स्पेस स्टेशन (आइएसएस) को लेकर भी दुनिया भर में राजनीतिक बयानबाजी बढ़ गई है। फरवरी 2022 की शुरुआत में, रूस की स्पेस एजेंसी रोसकोसमोस के तत्कालीन निदेशक दिमित्री रोगोजिन ने अंतरिक्ष में अमेरिका और यूरोप के साथ सहयोग से जुड़े खतरों के अलावा अंतरराष्ट्रीय खेल और आर्थिक प्रतिबंधों का जवाब दिया था। एक के बाद एक ट्वीट करते हुए रोगोजिन ने कहा था कि यूरोप, एशिया और अमेरिका अंतरिक्ष में रूस के सहयोग के बिना नहीं टिक सकते।

उन्होंने कहा, अगर आप हमारी सहायता करना बंद कर देते हैं, तो आइएसएस को अनियंत्रित होने और उसे अमेरिका या यूरोप में गिरने से कौन बचाएगा? आइएसएस भारत या चीन में भी गिर सकता है। क्या आप इन संभावनाओं के आधार पर उन्हें डराना चाहते हैं? आइएसएस रूस के ऊपर से उड़ान नहीं भरता, इसलिए खतरा आपके ऊपर है। रोगोजिन ने एक बार नहीं, बल्कि कई बार यह बात दुहराई कि रूस अपनी मर्जी से अंतरिक्ष वाली साझेदारी से बाहर निकलेगा। जुलाई में रोगोजिन को उनके पद से हटा दिया गया। उन्हें पद से हटाने के कुछ घंटे बाद अमेरिका और रूस ने अंतरिक्ष यात्रियों को इंटरनेशनल स्पेस स्टेशन पर भेजने के लिए एक-दूसरे के ठिकानों का इस्तेमाल करने से जुड़े समझौते की घोषणा की थी। इसके बाद रूसी स्पेस एजेंसी के नए निदेशक यूरी बोरिसोव ने रोगोजिन की धमकियों को दोहराया। साथ ही, उन्होंने पुष्टि की कि रूस वास्तव में 2024 के बाद आइएसएस के साथ अपना सहयोग समाप्त कर देगा।

बोरिसोव की टिप्पणी हैरान करने वाली नहीं है। उन्होंने कहा कि फैसला लिया जा चुका है कि 2024 के बाद आइएसएस के साथ अपना सहयोग खत्म कर देंगे। उस समय तक हम रूसी आर्बिटिंग स्टेशन बनाना शुरू कर देंगे। रूस की स्पेस स्टेशन बनाने की योजना नई नहीं है। यह बात एक साल पहले ही सार्वजनिक तौर पर जाहिर की गई थी। अप्रैल 2021 में तत्कालीन उप-प्रधानमंत्री के तौर पर बोरिसोव ने दो दशक से कक्षा में मौजूद आइएसएस की स्थिति पर दुख जताते हुए स्पेस स्टेशन बनाने का विचार सामने रखा था। इसके बाद अप्रैल 2022 में रोगोजिन ने कहा था कि रूस के एनर्जिया स्पेस राकेट कारपोरेशन को पहला माड्यूल बनाने का काम सौंपा गया है। इसे 2025 तक लांच करने का लक्ष्य निर्धारित किया गया है।

वहीं, इन सब वजहों को देखते हुए चीन भी एक नया स्पेस स्टेशन बना रहा है। अमेरिकी कंपनी स्पेस एक्स चाहती है कि वह आइएसएस के भविष्य की रक्षा में अहम भूमिका निभाए। इस व्यावसायिक फर्म और नासा के बीच पहले ही समझौता हो चुका है। समझौते के मुताबिक, स्पेस एक्स आइएसएस के लिए जरूरी चीजों की आपूर्ति करने के साथ-साथ लोगों को भी वहां ले जाएगा। वहीं, एग्जिओम ने आइएसएस पर पहला प्राइवेट क्रू ले जाने के लिए समझौता किया था। अब एग्जिओम ने भी अपना खुद का स्पेस स्टेशन बनाने की बात कही है। साथ ही, यह अपनी परियोजना के लिए उड़ान भरने वाले प्लेटफार्म के तौर पर आइएसएस का इस्तेमाल करना चाहता है।

<https://www.jansatta.com/national/race-to-set-up-space-station/2305418/>



*Tue, 02 Aug 2022*

## **ISRO to Undertake Maiden Flight of SSLV on August 7**

The Indian Space Research Organisation (ISRO) will undertake the maiden flight of its newly developed Small Satellite Launch Vehicle (SSLV) on August 7, ahead of Independence Day celebration. “The launch of the SSLV-D1/EOS-02 Mission is scheduled for Sunday, August 7, 2022, at 9:18 am (IST) from Satish Dhawan Space Centre (SDSC), Sriharikota,” the space agency said on Twitter. This is significant given that India was set to celebrate 75th Independence Day with the first human spaceflight, as per the deadline set by Prime Minister Narendra Modi in his speech from the ramparts of the Red Fort on Independence day, 2018. The work on Gaganyaan mission, country’s first manned flight to space, was delayed due to the pandemic, with the first abort test scheduled for later this year, to demonstrate the crew escape system to be used in case of an emergency mid-flight.

The SSLV mission too was delayed by a couple of years due to the pandemic. Experts believed that this could hamper the economic prospects of the space agency in the global space market as the new launch vehicle has been designed keeping in mind commercial launches of small satellites with a quick turn-around time for the missions. On its first flight, the SSLV will carry one of India’s Earth Observation Satellites – EOS-2 – that will have applications in mapping and developing various GIS applications. It will carry a mid-wavelength infrared camera and a long-wavelength infrared camera with a resolution of 6 metres. The satellite, weighing 142 kg, will have a mission life of ten months.

“The SSLV launch was long overdue. It will shift the burden of commercial launches from Polar Satellite Launch Vehicles (PSLV). And, will likely offer cheap, quick launch for small satellites. ISRO should have the wherewithal to do that, especially now that space startups are being encouraged,” said Ajey Lele, senior fellow at Manohar Parrikar Institute for Defence Studies and Analyses. In its maiden flight itself, SSLV will also carry the AzadiSat, a satellite developed by

750 rural students from across the country coordinated by SpaceKidz India, a space start-up. The satellite was shipped to Sriharikota on Monday, ready for integration with the launch vehicle. Primarily designed as a commercial vehicle, the SSLV is likely to cost a fourth of the current PSLV. It can also be assembled by a team of six people within seven days in comparison to a team of 600 people who take a couple of months to assemble a PSLV.

<https://indianexpress.com/article/india/isro-to-undertake-maiden-flight-of-sslv-on-august-7-8064495/>

