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# समाचार पत्रों से चयित अंश Newspapers Clippings

A Daily service to keep DRDO Fraternity abreast with DRDO  
Technologies, Defence Technologies, Defence Policies,  
International Relations and Science & Technology

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# DRDO News

## DRDO on Twitter

 **DRDO** ✓  
@DRDO\_India

[#DRDOUpdates](#) | As a part of [#NavyDay2022](#) celebrations, Hon'ble President of India, Smt Droupadi Murmu virtually inaugurated National Open Air Range (NOAR) facility on 4th Dec from Vishakhapatnam. The facility is established by [#DRDO](#) at Kurnool.

[@rashtrapatibhvn](#)  
[@SpokespersonMoD](#)



रक्षा मंत्री कार्यालय/ RMO India

12:54 PM · Dec 6, 2022

### Business Standard

*Tue, 06 Dec 2022*

#### **PTCIL to Develop Critical Components for DRDO-GTRE's Combat Aircraft Engine Development Program**

PTC Industries has taken up a developmental contract for critical components for DRDO - GTRE's Combat Aircraft Engine development program. Considering the Government of India's directives on 'Aatmanirbhar Bharat' and prevailing geo-political situation, the Ministry of Defence's initiative to design, develop and manufacture its own fighter aircraft platforms will result in a greater potential for indigenously developed engines to be used in these platforms.

PTC's expertise is being developed in manufacturing critical components for Aero Engines /Aircraft made of Titanium Alloys using innovative Investment Casting - Hot Isostatic Pressing (IC - HIP) technology along with GTRE - DRDO. This will enhance the overall ecosystem of the country's indigenous defence capabilities. One such critical component, the Engine Bevel Pinion Housing prototype has already been developed in a very short period in collaboration with GTRE and was displayed in the recently concluded DefExpo 2022 in Gandhinagar, Gujarat.

[https://wap.business-standard.com/article-amp/news-cm/ptcil-to-develop-critical-components-for-drdo-gtre-s-combat-aircraft-engine-development-program-122120600438\\_1.html](https://wap.business-standard.com/article-amp/news-cm/ptcil-to-develop-critical-components-for-drdo-gtre-s-combat-aircraft-engine-development-program-122120600438_1.html)

### Business Standard

*Tue, 06 Dec 2022*

#### **PTC Inds Enters into Contract with DRDO**

PTC Industries said that it has taken up a developmental contract for critical components for Defence Research and Development Organisation (DRDO) - Gas Turbine Research Establishment (GTRE)'s Combat Aircraft Engine development program. PTC's expertise is being developed in manufacturing critical components for aero engines /aircraft made of titanium alloys using innovative investment casting - hot isostatic pressing (IC - HIP) technology along with GTRE - DRDO, this will enhance the overall ecosystem of the country's indigenous defence capabilities. Sachin Agarwal, chairman, and managing director, PTC Industries said, Based on this contract and the developmental initiatives taken up with GTRE-DRDO, PTC's capabilities

will be matched with a strong foundation for the development of more innovative, complex and reliable components for next-generation aero-engines.

PTC has undertaken focused investments in technology for the manufacture of advanced aero-engine components and is adding world-class facilities for the manufacture of Titanium production with a large capacity. PTC Industries Limited is a manufacturer of high-quality engineering components for various critical and super-critical applications. PTC manufactures products for a wide spectrum of industrial applications including that for Oil and Gas and Liquefied Natural Gas (LNG), Offshore and Marine, Valves and Flow Control, Power Plants and turbines, Pulp and Paper Machinery, and Mining and other Engineering and Capital Goods Industries. The company reported consolidated net profit of Rs 7.64 crore in Q2 FY23, steeply higher than Rs 1.80 crore in Q2 FY22. Net sales surged 41.1% year on year to Rs 54.04 crore in Q2 FY23.

[https://www.business-standard.com/article/news-cm/ptc-inds-enters-into-contract-with-drdo-122120600611\\_1.html](https://www.business-standard.com/article/news-cm/ptc-inds-enters-into-contract-with-drdo-122120600611_1.html)

## The Tribune

*Tue, 06 Dec 2022*

### **Indian Military Equipment-Making Companies HAL and BEL Improve their Rankings in Top 100 Arms Makers in World**

Two Indian military equipment-making companies have made it to the list of top 100 global companies making arms, weapons, military planes and equipment. The details were released on Monday by Swedish think-tank Stockholm International Peace Research Institute (SIPRI) in its report 'Top 100 arms-producing and military services companies, 2021'. The arms sales of Hindustan Aeronautics (ranked 42nd) and Bharat Electronics (ranked 63th) increased by 6.7 per cent and 20 per cent, respectively, over the last year. The two companies -- Defence Ministry-owned Public Sector Undertakings -- have improved their rankings. While HAL was at 43rd position, BEL was at 69th position in last year's rankings.

"The total arms sales of the two Indian companies in the top 100 were \$5.1 billion (approximately Rs 40,000 crore) in 2021," the SIPRI report said. Both companies have benefited from major orders placed by the Indian armed forces in recent years, it said, adding, "Indian Ordnance Factories, which appeared in the 2020 edition of the Top 100, was restructured into seven smaller companies in October 2021 and thus dropped out of the rankings." In 2020, the Indian government announced a phased ban on imports of more than a hundred different types of military equipment. Overall globally, the sales of arms and military services by the 100 largest companies reached \$592 billion in 2021, a 1.9 per cent increase. China, for the second successive year has been placed at second spot behind the US in making arms, weapons and military equipment. The combined arms sales of the eight Chinese companies included in the ranking amounted to \$109 billion, a 6.3 per cent increase over last year.

The growth in arms sales reflects the scale of China's military equipment modernisation and its objective to become self-reliant in the production of all categories of major arms. Four Chinese companies have been ranked in the top 10, the SIPRI said. All Chinese companies in the list are state-owned enterprises producing both military and civilian products. The 40 US companies in the listing totalled \$299 billion in sales during 2021. Seven of the eight Chinese companies increased their arms sales in 2021. NORINCO, a land systems specialist, clocked sales of \$21.6 billion in 2021. AVIC (ranked 8th), CASC (ranked 9th) and CASIC (ranked 11th) are the three main Chinese arms companies that operate in the military aerospace sector. Of these three, CASIC's arms sales grew the most, and were \$14.5 billion in 2021.

<https://www.tribuneindia.com/news/nation/indian-military-equipment-making-companies-hal-and-bel-improve-their-rankings-in-top-100-arms-makers-worldwide-458266>

# THE ECONOMIC TIMES

*Tue, 06 Dec 2022*

## **Armed Forces Flag Day 2022: Know History, Significance, and a Lot More About this Special Day**

Every year on December 7, India commemorates Armed Forces Flag Day in order to raise donations for the welfare of the Armed Forces Staff. This day is observed to honour Indian soldiers, sailors, and pilots. The day also pays tribute to hundreds of thousands of men who have died protecting the country.

### **Armed Forces Flag Day 2022: History**

The Defense Minister's Committee on August 28, 1949, created the Armed Forces Flag Day Fund. In 1993, the Defense Ministry of India amalgamated all relevant welfare funds, including funds for war victims, the Kendriya Sainik Board Fund, the ex-welfare servicemen's fund, and other units, to establish the Armed Forces Flag Day fund.

### **Armed Forces Flag Day 2022: Significance**

This day is observed to encourage public engagement and support across the country for the following goals:

- To provide rehabilitative assistance to the relatives of war victims.
- To take initiatives to safeguard the well-being of service members and their families.
- To assist former service veterans and their families with their welfare and resettlement.

Throughout India, volunteers and members of the general public generate funds by selling coupon flags, stickers, and other goods during the commemoration of this anniversary. This helps to increase the amount of money raised from regular folks in numerous ways.

### **Armed Forces Flag Day 2022: Celebration**

On this day, the Indian Armed Units, comprising the Indian Army, Indian Air Force, and Indian Navy, organise a variety of activities to highlight the achievements of our army forces and personnel. The general public participates in the day's celebrations by signing up as volunteers and assisting with the collection of cash, stickers, and other goods. Many patriotic activities are

planned to promote public involvement and to recognise the contributions of the country's armed services. The money collection is managed by the local branches of the Kendriya Sainik Board in India, which is a subsidiary of the Ministry of Defense. It is overseen by the governing committee, and both official and unauthorised voluntary organisations keep a watch on it.

<https://economictimes.indiatimes.com/news/new-updates/armed-forces-flag-day-2022-know-history-significance-and-a-lot-more-about-this-special-day/articleshow/96036978.cms>



*Tue, 06 Dec 2022*

## **Indian Army: Cultivating Peacetime Habits for War**

*By Ruchin Sodhani*

There seems to be a broad agreement among stakeholders that the Indian Army is ripe for a technology-driven transformation, given the country's ambitions and compulsions. Most of the discourse centres upon warfighting; after all, that is what an army is for. But wars are rare. Armies spend far longer in peace than in war (not counting low-intensity wars, which are demanding but not in the same way as a full-spectrum war). Since the same peacetime army also fights wars, it follows that its peacetime processes, preoccupations and attitudes are at least as important as its weapons of war. That is where change needs to be rooted for it to bear fruit in the battlefield. It would make for a long and disparate wish list to spell out things that need to change, so it will help to group them under the rubric of the organisation's mental model. Mental models come from our understanding of how the world works and they determine how we find our way through it.

One striking attribute of the Army's collective mental model is the way it approaches information, analysis and decision-making. Its practices are at least forty years past their prime, when all the organisation's information lived in sheafs of typewritten paper, and a set of human eyes and brains were all that could be brought to its analysis. The silo-bound, seat-of-the-pants style of decision making of that setup is still the norm in the Army. Computers are commonplace, but they are used almost entirely as word processors. For a complex, massively asset-rich organisation, its implications for both efficiency and effectiveness should be staggering.

The next attribute is the Army's sense of separateness from the larger world. It has remained a professional and cultural island amid profound changes wrought everywhere by technology. Learning, teaching, analysis, decision making, process – everything has undergone rapid development towards greater effectiveness in the last few decades. Even the supposedly hidebound government bodies of the country have had to change in varying degrees. While armies everywhere have markers and norms that stand out from the rest, the degree to which the Indian Army has stayed aloof is remarkable. Of course, it is nobody's case that change must be adopted for its own sake, but to believe that your way is and will remain the best, impervious to time or tide, cannot be anybody's case either.

The Army's aversion to objective measures and numbers is its third mental attribute relevant to this piece. It leads to misdiagnosis of the causes of issues that arise from time to time, and to policies that might not just be misconceived but even motivated. Intuition and opinion are inseparable from military (or any other) decision making, but relying entirely on them certainly leads to bad outcomes. It also stifles reason. Lest it should all start to look uniformly grey, here is the good news. These professional anomalies are relatively easy to remedy. The Indian Army possesses in ample measure the hardest attributes for any army to acquire – professional pride, a culture of excellence, commitment to mission, steadfast discipline and time-tested organisational structures. An injection of process, technology, targeted incentives and disincentives is now called for. It takes only years, not decades or centuries.

A good starting point on the road to change would be a technology backbone to execute processes like inventory and personnel management, administrative routines, procedures and the like. In business parlance, it is often called an ERP (enterprise resource planning) system. It will not only usher in efficiency, but also alter the old, “manual” mindset that relies on assistants to handle communications and information systems. The system will generate copious data that will enable better analyses, decisions and the foundations upon which to build future technologies. Much of this data will also feed into any battlefield management system that might come into being. The next useful step will be to introduce objective measures of performance not only for individual and team appraisals, but also for asset utilisation, financial management and other aspects of effectiveness. The aforesaid ERP-like system will enable such objective measures. Also, it will solve the issues currently faced by the Army like inflated grading of officers and the convenient twisting of organisational values (“loyalty”, for instance) to suit narrow interests.

Another fundamental change that the Army needs in order to boost its human capital is in the field of training and development. The current pedagogy relies largely on mechanical, rote learning and teaching. Its prevalence can be gauged from the entrance examination to the Staff College, where mid-level officers destined for bigger roles go after rigorous filtration. The tests demand prescribed, pre-formatted answers even to questions that ostensibly challenge candidates' critical faculties. Would it then be incorrect to infer that the organisation nurtures a conformist, uncritical outlook? Opening up the Army to external inputs would be indispensable to the transformation process. Without extensive collaborations and knowledge interchange with other domain professionals, it will be hard for the Army to leapfrog the gaps. This might entail a system of selection and deputations that ensures continuity in long-term projects while protecting the career interests of individuals involved.

The failure to change peacetime practices of the army will have direct consequences for how it performs in war. This is a truism that no one in the Army disagrees with. And yet, there seems to be no impulse within the establishment to take a step in that direction. That might be the trickiest part of the exercise: building an internal constituency in the Army to initiate and sustain change. No less than an Army Chief – General K Sunderji in 1986 – failed to find an audience receptive to his call for change. Perhaps it is comforting to believe that you are safe in your splendid isolation. But it is also dangerous, because you do not see the world moving on while your erstwhile ivory tower gets reduced to a professional ghetto. Author is a supply chain professional who works at the intersection of operations and technology in the ecommerce industry. He served in the Army for twenty years before this.

<https://www.financialexpress.com/defence/indian-army-cultivating-peacetime-habits-for-war/2902713/>



*Tue, 06 Dec 2022*

## **Defence Ministers from India, China Attempt to Resume Talks on Resolving Friction Points along LAC at Eastern Ladakh**

Rajnath Singh had raised the issue with his Chinese counterpart Wei Fenghe on the sidelines of the 9th ASEAN Defence Ministers' Meeting Plus, say top ministry sources. Months after India and China agreed to withdraw troops from PP15 in Gogra Hot Springs on September 12, both countries are attempting to carry it forward with talks for disengagement at the remaining stand-off points at Depsang and Demchok areas of eastern Ladakh at the Line of Actual Control (LAC). Defence Minister Rajnath Singh and his Chinese counterpart Wei Fenghe broached the issue on the sidelines of the 9th ASEAN Defence Ministers' Meeting Plus in Siem Reap, Cambodia, on November 23, with Singh taking a position to roll out the process of opening the communication at the military Commanders level, top Defence Ministry sources told businessline.

Fenghe even suggested talks at a higher level, between the two governments, ministry sources said. Singh also recommended disengagement and de-escalation for restoring complete normalcy at the LAC. The Chinese side may get back later after deliberations, said the ministry sources. Both the neighbours have expressed willingness to take up the other two friction points at Depsang and Demchok areas but the structured dialogue is yet to begin. After settling the PP15, China had said the situation at the border was overall stable after "the phase of emergency response" since the May 2020 Galwan Valley face off. Negotiating on the two friction points would be a tough call, believe government sources, due to the fact that China has so far stood its ground in not accepting India's stand to restore the status quo prior to PLA's transgressions. Beijing had counter-alleged that India illegally crossed the LAC.

India, however, is not lowering its guard given that Beijing has not shown any intent to cut back its military presence at the LAC. The government is also improving its border infrastructure and has tried to match heavily armed deployment even as the harsh winter sets in at the high altitude of eastern Ladakh. Besides that, India is closely monitoring the PLA's dominating naval presence in the Indian Ocean Region. Highest-level engagements between India and China have not happened since the relationship got strained post-Galwan face off except for Prime Minister Narendra Modi shaking hands with Chinese Premier Xi Jinping at an event on the sidelines of the G20 Summit in Bali on November 15.

<https://www.thehindubusinessline.com/news/defence-ministers-from-india-china-attempt-to-resume-talks-on-resolving-friction-points-along-lac-at-eastern-ladakh/article66230688.ece/amp/>



*Tue, 06 Dec 2022*

## **India to Test Agni-V off Odisha Coast amid China's Spy Ship 'Movement' in IOR**

India recently issued a NOTAM notice declaring the Bay of Bengal a no-fly zone ahead of another Agni-V ballistic missile test scheduled for December 15-16 from Abdul Kalam Island off the coast of Odisha. The development comes amid the reported movement of a Chinese research vessel in the Indian Ocean Region (IOR). According to data collected by the Norwegian company Maritime Optima, as reported by ThePrint, Yuan Wang 5 re-entered the Indian Ocean region earlier Monday. The report stated that the Yuan Wang 5 was currently southbound in the Indian Ocean off the coast of the Indonesian island of Java.

The news comes just a week after India issued a NOTAM (Notice to Airmen/Notice to Air Missions) about a missile test in the Andaman and Nicobar region, and just a few days after the Yuan Wang 5 appeared to reverse course in response to India's NOTAM, the report further said, adding that on 2 December, open source geospatial intelligence analyst Damien Symon speculated on the return of the Chinese vessel to the Indian Ocean region. Amid the developments, News18 explains the Agni V missile, China's interest in the Indian Ocean Region and why it's an issue.

### **About the Agni V Missile**

Agni V is India's long-range surface-to-surface ballistic missile, capable of hitting a target 5,000 kilometres away with pinpoint accuracy. This range puts almost the entire country of China within the missile's range. Though an ICBM requires a missile with a range of at least 5,500 km, India's closest contender for an ICBM is the Agni 5, which can reach countries on other continents, including parts of Africa and Europe, a report by Indian Express explains. Though the government claims that it has a maximum range of around 5,000 kilometres, several reports indicate that it can hit targets as far away as 8,000 kilometres, according to the report. The nuclear-capable missile can carry a warhead weighing around 1,500 kg and has a launch weight of 50,000 kg, making it one of the country's most powerful missiles.

In 1989, India began testing the Agni missile series, with the first test for Agni I, an Intermediate Range Ballistic Missile with a range of around 1,000 kilometres. At the time, only the United States, the former Soviet Union, China, France, and Israel possessed IRBM technology. Since then, DRDO labs have continued to work on it, bringing the latest available Agni V to its current capability. In addition to the IRBM-capable nations, only North Korea and the United Kingdom currently have ICBM technology.

### **China in Indian Ocean Region**

The spy research ship is one of four active ships in the Yuan Wang-class, which is in charge of tracking and supporting satellites as well as Intercontinental Ballistic Missiles (ICBMs). The Agni-V has a declared range of 5,000 kilometres, allowing it to strike deep into China, which is

why this ballistic missile has caused such consternation in China, a report by Firstpost explained. It remains to be seen whether the missile will be tested on time or if the timing will be altered.

The time was changed last month when the Agni-III missile with a range of 3,000 km was tested, a report by Firstpost said. All countries are permitted to navigate their ships in international waters. That is why India cannot stop the Chinese spy ship, which is part of the PLA's Strategic Support Force and its primary mission is to track and support satellites and ballistic missiles. Chinese ships frequently visit the Indian Ocean to gather data and create oceanographic maps.

### **China's Interest in IOR**

China recently conducted a "China-Indian Ocean Region Forum" on November 21 in Kunming. The China International Development Cooperation Agency (CIDCA) meeting is the latest Chinese initiative focusing on the Indian Ocean Region (IOR), highlighting Beijing's growing strategic interests in a region where its economic footprint is expanding, a report by The Hindu explained. According to the CIDCA, China's new development aid agency, which is currently led by former Vice Foreign Minister Luo Zhaohui, the forum was "the first high-level official development cooperation forum jointly held by China and countries in the Indian Ocean Region," with "over 100 participants, including senior officials from 19 countries bordering the Indian Ocean.

"The forum issued a "Joint Press Statement" in which it stated that China "proposed to establish a marine disaster prevention and mitigation cooperation mechanism between China and countries in the Indian Ocean region" and "all parties agreed" to "strengthen policy coordination, deepen development cooperation, increase resilience to shocks and disasters, and enhance relevant countries' capacity to obtain economic benefits through use of marine resources such as fisheries, renewable energy, tourism, and shipping in a sustainable way," the report said. The report explained that the forum has highlighted China's increased interest in the IOR, where it is already a major trading partner for the majority of countries and where sea routes are critical to China's economic interests. The CIDCA forum is the latest initiative to reflect Beijing's view that it has a clear stake in the region, with more to come. Earlier this year, during a visit to Sri Lanka, China's Foreign Minister Wang Yi proposed establishing a forum "on the development of Indian Ocean island countries" to "build consensus and synergy, and promote common development."

He urged Sri Lanka to "play a significant role" in this initiative. The increased regional diplomacy comes as China establishes a more frequent military presence in IOR waters. Beijing established its first overseas military base in Djibouti, near the Horn of Africa. Chinese military ships, tracking vessels, and submarines have become more frequent visitors to the region's ports. With at least 355 warships, China's PLA Navy (PLAN) is the world's largest naval force. Aside from that, it has established logistics bases in Cambodia, Seychelles, and Mauritius, as well as in East African countries.

<https://www.news18.com/news/explainers/india-set-to-test-agni-v-off-odisha-coast-amid-chinas-spy-ship-movement-in-ior-charting-the-issue-6550327.html>

# Business Standard

*Tue, 06 Dec 2022*

## **India-Central Asia Meet of NSAs Calls for Action to Deal with Terrorism**

The NSAs of India and Central Asian countries on Tuesday called for collective action to combat challenges like terror financing, radicalisation and use of terrorist proxies for cross-border terrorism, while asserting that Afghanistan must not become a safe haven for terrorist activities. The meeting hosted by NSA Ajit Doval also emphasised the need for respecting Afghanistan's sovereignty, unity and territorial integrity and urged non-interference in its internal affairs. A joint communique said the officials agreed that the expansion of terrorist propaganda, recruitment and fund-raising efforts have serious security implications for the region, and therefore, a collective and coordinated response is essential. "The misuse of new and emerging technologies, arms and drugs trafficking, using terrorist proxies for cross-border terrorism, abuse of cyber space to spread disinformation and unmanned aerial systems present new challenges in counterterrorism efforts and call for collective action," it said.

The mentioning of cross-border terrorism is seen as a reference to Pakistan's support to various terror groups which have been targeting India. The meeting also strongly called for an early adoption of the UN Comprehensive Convention on International Terrorism to effectively deal with the menace. It also reiterated that greater connectivity could be a force multiplier for enhancing trade and commerce as well as for ensuring closer interactions between India and Central Asian countries. "They agreed that connectivity initiatives should be based on the principles of transparency, broad participation, local priorities, financial sustainability and respect for sovereignty and territorial integrity of all countries," it said in remarks seen as an oblique reference to China's Belt and Road Initiative.

In his inaugural address, Doval said financial support is the "lifeblood" of terrorism and greater priority should be accorded to counter terror financing. Describing Central Asia as India's "extended neighbourhood", Doval said New Delhi accords "highest priority" to this region, adding Afghanistan is an important issue "concerning all of us". Doval hosted the conclave with a focus on evolving a common framework to deal with challenges of terrorism in the region including Afghanistan and ways to bolster overall security cooperation in sync with a decision taken at the first India-Central Asia summit in January. In his brief address, Doval largely focused on the challenge of terrorism, the situation in Afghanistan and the importance of regional connectivity projects. "Financing of terrorism is its lifeblood and countering terror financing should be an equal priority for all of us," he said, amid India's growing concern over use of Afghan soil for terrorist activities including by Pakistan-origin terror groups like Jaish-e-Mohammed and Lashkar-e-Taiba. The NSAs of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan are attending the conclave while Turkmenistan is being represented by its ambassador to India.

[https://www.business-standard.com/article/current-affairs/india-central-asia-meet-of-nas-calls-for-action-to-deal-with-terrorism-122120600645\\_1.html](https://www.business-standard.com/article/current-affairs/india-central-asia-meet-of-nas-calls-for-action-to-deal-with-terrorism-122120600645_1.html)

## Chinese Surveillance Vessel ‘Yuan Wang 5’ Re-Enters Indian Ocean

Chinese surveillance vessel ‘Yuan Wang 5’ has re-entered the Indian Ocean in what coincides with a planned Indian long-range missile test, between December 15-16. In a similar incident last month, another vessel ‘Yuan Wang 6’ had entered the Indian Ocean Region (IOR) coinciding with a planned Indian missile launch, but the launch was then deferred. According to the maritime vessel-tracking portal marinetraffic.com, the ‘Yuan Wang 5’ had entered the IOR through Sunda strait, off Indonesia late evening, on December 4. The vessel was in the IOR last month. As per the open-source intelligence handle on Twitter@detresfa, India had issued a notification NOTAM (Notice to Airmen), for a no-fly zone over the Bay of Bengal for a possible missile launch with a window between December 15-16, for a maximum distance of 5400 km. Given the range, it is likely to be the test of the Agni 5 Intermediate-Range Ballistic Missile.

While research activities were allowed in international waters as per international regulations, the data generated had a dual nature including military and on many occasions, the motive of the Chinese vessels seemed doubtful, defence officials had stated. In August, the docking of ‘Yuan Wang 5’ at Hambantota in Sri Lanka had created a major diplomatic showdown between India and Sri Lanka. Last week, Navy Chief Admiral R. Hari Kumar said that there were a lot of Chinese ships which operated in the region. He added that there were about 4-6 Navy ships, research vessels and fishing vessels apart from 60 odd ships of extra-regional forces, and as a resident power they kept track and ensured that “they do not undertake any inimical activities.”

As reported by The Hindu earlier, there had been a steady rise in the deployment of Chinese research vessels in the IOR, and the general area of deployment observed was around ninety-degree east ridge and southwest Indian ridge. The research or survey vessels have powerful equipment for snooping and gathering a range of data. The Chinese presence in the Indian Ocean began in 2008 under the garb of anti-piracy operations in the Gulf of Aden and have since maintained continuous presence in the region, even deploying nuclear attack submarines (SSN), on occasions. China had since set up a military base in Djibouti and developed several dual-use ports in the IOR in Sri Lanka, Myanmar, Pakistan, among other countries.

<https://www.thehindu.com/news/national/chinese-spy-ship-yuan-wang-5-re-enters-indian-ocean/article66231546.ece>

## The Tribune

## China’s Naval Overreach

CHINA has numerically the largest navy in the world with an overall battle force of around 355 ships and submarines, according to a recent report of the Pentagon. This numero uno status is

inextricably linked with Beijing's expansionist moves in the maritime domain. Having established its first overseas military base at Djibouti (Africa) in 2017, China is looking to set up a base in Cambodia in the Indo-Pacific. It is also zeroing in on other countries in Asia and Africa as locations for military logistics facilities of the People's Liberation Army (PLA). The Pentagon document states that China and Iran — along with Russia — have been conducting joint naval exercises in the Indian Ocean since 2019. China's double standards are evident from its objection to such exercises conducted by other groups of nations. In August last year, China had held naval drills in the South China Sea ahead of an exercise involving the navies of the four Quad members — the US, India, Japan and Australia. In a veiled warning, Beijing had hoped that 'the warships of the relevant countries will abide by international law... and avoid harming regional peace and stability.'

India can't let its guard down in the high seas for another reason: Chinese spy vessel Yuan Wang 5 has reportedly re-entered the Indian Ocean Region, months after it docked at the Chinese-owned port of Hambantota in Sri Lanka despite New Delhi's protestations. The 'research ship' poses a threat to India's strategic security as it is capable of tracking satellites and intercontinental ballistic missiles. It's also a cause for concern that the PLA owns and operates about half of the world's intelligence, surveillance and reconnaissance (ISR) systems, which allow it to monitor potential regional flashpoints such as Taiwan, the Indian Ocean and the South China Sea. Closer maritime cooperation with the US and its allies is a must for India, which should also augment its naval firepower. Navy Chief Admiral R Hari Kumar said last week that India is keeping a close watch on Chinese ships present in the region. There is a need for heightened vigil to deter the Chinese navy from indulging in any misadventure.

<https://www.tribuneindia.com/news/editorials/chinas-naval-overreach-458399>

## The Tribune

Wed, 07 Dec 2022

### Dragon Throws its Weight Around in the Sea

NOT too long ago, when the Communist Party of China (CPC) and the People's Liberation Army (PLA) thundered that "the Indian Ocean isn't India's backyard", the West maintained a stoic silence. Again, when the USA followed suit and said that "the Indian Ocean isn't India's Ocean", the West kept mum. Today, the West and its spearhead, the USA, have woken up to realise their folly as China is spreading its wings simultaneously in the Indian Ocean Region and the Indo-Pacific waterfront, from Djibouti to Cambodia, thereby signalling the helplessness and decline of the US-led West in the sea. China is determined to extract its geostrategic pound of flesh from all through the sea. Did India ever provoke China or the USA in the Indian Ocean? Never. It's always been the other way around. From 1971 to the present times. First came the western naval bully, the fleet which chased and chastised distraught Delhi even as America's own Vietnam War had not yet ceased. And today, virtually every South Asian shoreline is dotted with Chinese-made warships as Beijing's men, machines, management and money are causing a stir in India's neighbourhood.

The initial altruistic façade of defence and development didn't take long to drop off and turn into a debt trap, sounding the death knell for territorial sovereignty. India has never expressed any wish to make the Indian Ocean her 'backyard'. In contrast, the CPC-PLA duo claims monopoly

and irreversible ownership of the choppy South China Sea where 'nine points' have been earmarked, as if those are nine sentry posts, dug deep into a land border. In the Dragon's dream, the high seas can be 'fenced'! Thus, the explicit Indo-phobic utterances of China and America notwithstanding, Delhi deserved appreciation for its remarkable foresight to establish the Indian Ocean Rim Association (IORA) with the participation and membership of 23 states in 1997. It was a well-intentioned plan of action for the forum: maritime security, trade investment and facilitation, fisheries' management, disaster risk reduction, academic and scientific cooperation, tourism promotion and cultural exchanges. The Indian initiative had a positive impact.

The IORA looked impressive as member countries genuinely brought together the Indian Ocean states for common cause and linking them to the vast waterfront. All 23 states were sea states, and none was remote or unconnected from or to the sea. Apart from the bigger Indian Ocean littoral states, important island states of Comoros, Seychelles, the Maldives and Mauritius made the quorum lively. Sea bound were the participants' common interests, where none was a bully. Thus, what India thought of doing 25 years ago to make the Indian Ocean a zone of peace and economic development for the littoral states, the USA came up with the Pacific Ocean-specific military Quad in the second decade of the 21st century and, thereafter, arrived in 2018 the CPC-PLA-masterminded China International Development Cooperation Agency (CIDCA) as a supplementary military and imperialistic expansion scheme of the BRI, piercing through the Indian Ocean littorals, copying Captain Basil Liddell Hart's 'strategic indirect approach'. Money thrown in the front; the naval gun positioned in the rear. Suave diplomacy was the prologue, debt burden the epilogue.

Nevertheless, without inviting India to the recent CIDCA meet, the CPC-PLA slyly managed to lure some Indian traders who seem beholden to China for allowing them to make money. As if India's development and prosperity solely depended on the shoulders of a few traders, even at the cost of territorial integrity, sovereignty and self-respect. Can't India at least try to de-couple when the entire West (at last) is desperate to do so? Fifty years ago, the Nixon-Kissinger duo preposterously led their prosperous and industrial country down the garden path; and now, multinational corporations of both the USA and Europe (especially Germany) are constantly challenging the authority of their governments. No wonder the CPC-PLA cracked down on their home-grown multinational corporations' billionaire bosses who could very well challenge the Chinese government, too, through sheer might and weight of money bags.

In future, the very concept of nation-state can surely be further weakened because of the way the so-called globalisation bubble is bursting. The present all-round global turmoil, from commodities to commerce, proves that despite everybody being linked to everybody through various multilateral treaties, agreements, protocols and the supreme benches from Brussels to Geneva, New York to Paris, for the majority of the people, prosperity is going downhill. Coming back to Beijing, note the name of the Chinese entity: China International Development Cooperation Agency (CIDCA). It doesn't have words like 'sea' or 'ocean'. Why? Because the CIDCA is a 'foreign aid agency' of the home state, a former wing of the Ministry of Commerce, now reporting direct to the CPC State Council. Obviously, Beijing's aim is self-development through all means, as can be seen from Xinjiang to Xizang (Tibet); Taiwan to trade; terror aid to Pakistan to usurping India's territory. Owing ports of the West to the out-of-area fishing zones of South America, to the coast of Africa, all are under severe strain. Even Ratnagiri on India's Konkan coast is under the scanner of the CPC-PLA fishing fleet with powerful intelligence penetration devices.

The CIDCA, therefore, unlike India's IORA, is a muscle-flexing forum of unequal members consisting of perceived or potential client states whose ports and economies could be tapped for possession. One instance would suffice. According to the 2022 report of the Stockholm International Peace Research Institute (SIPRI), "China delivered major arms to 48 states in 2017-2021, but 47% of its arms exports went to just one state, Pakistan," which is a CIDCA member. Of the 19 'participating' member states, two (the Maldives and Australia) flatly denied their CIDCA 'participation'. Incidentally, the CIDCA consists of two remote, landlocked states amidst the Indian Ocean member-states. Why? Because they're potential targets for Han subjugation and also for countering the IORA. "South China Sea can be China's Sea", but "Indian Ocean is not India's Ocean" — the nefarious intention is to force the Indian Navy to move out to operate anywhere except the waters along the 4,104-nautical mile coastline.

<https://www.tribuneindia.com/news/comment/dragon-throws-its-weight-around-in-the-sea-458397>



*Tue, 06 Dec 2022*

## **Russia Deploys Defence Missile System on Kuril Island Near Japan**

Russia's defence ministry has said it has deployed mobile coastal defence missile systems on a northern Kuril island, part of a strategically located chain of islands that stretch between Japan and the Russian Kamchatka Peninsula. Japan lays claim to the Russian-held southern Kuril islands, which Tokyo calls the Northern Territories, a territorial row that dates to the end of World War Two, when Soviet troops seized them from Japan. The Russian Bastion systems, which have missiles with a flight range of up to 500 km (310 miles), were deployed on the island of Paramushir, the Russian defence ministry said on Monday. "Coastal servicemen of the Pacific Fleet will keep a round-the-clock watch to control the adjacent water area and strait zones," it said.

The ministry said that a military camp was set up on Paramushir with facilities allowing for year-round service, accommodation, recreation and food for personnel. This deployment comes a year after Russia set up the Bastion systems on the island of Matua, in the central part of the Kuril ridge, the ministry said in a statement. Japan's Chief Cabinet Secretary Hirokazu Matsuno told a Tuesday news conference that the government will closely monitor the Russian military activity, adding it has been intensifying in the far east regions in tandem with Moscow's invasion of Ukraine. Russia calls the invasion a "special operation". The Washington-based think tank Center for Strategic and International Studies said in a September report that overshadowed by the invasion of Ukraine, Moscow's militarisation of the Kuril Islands "has flown largely under the radar."

"Russia's steps to boost its presence suggest that the islands will continue to play a pernicious role in the future of Russo-Japanese relations and that Japan and the United States should deepen consultations regarding Russia's activities in the region," according to the report, published on the centre's website. Japan has joined its Western allies in applying economic sanctions on



Russia after it sent tens of thousands of troops into Ukraine in what Moscow calls a "special military operation." Ukraine and its allies say Russia launched an unprovoked war. Russia withdrew from peace treaty talks with Japan and froze joint economic projects related to the disputed Kuril Islands because of Japanese sanctions over Russia's invasion of Ukraine.

<https://www.hindustantimes.com/world-news/russia-deploys-defence-missile-system-on-kuril-island-near-japan-101670312579658.html>



*Tue, 06 Dec 2022*

## **Russia's Defence Minister says Ukraine Committing 'Nuclear Terrorism'**

Russian Defence Minister Sergei Shoigu said on Tuesday that Ukraine was continuing to shell the Zaporizhzhia nuclear power plant, deliberately creating the threat of a possible nuclear catastrophe. Shoigu said Russian forces were taking "all measures" to ensure the safety of the nuclear power plant in the face of what he called "nuclear terrorism" from Kyiv. Ukraine denies shelling the facility, which has been under the control of Russian forces since the first days of the war.

<https://www.hindustantimes.com/world-news/russias-defence-minister-says-ukraine-committing-nuclear-terrorism-101670320161895.html>



*Wed, 07 Dec 2022*

## **Russian Airfield Hit Day after Drone Strikes on Bases**

A fire that broke out at an airport in Russia's southern Kursk region that borders Ukraine was the result of a drone attack, the regional governor said Tuesday, a day after Moscow blamed Kyiv for drone strikes on two air bases deep inside Russia and launched a new wave of missile strikes on Ukrainian territory. Kursk Governor Roman Starovoy said in a Telegram post that the drone attack ignited an oil reservoir in the area of Kursk airport and the blaze was being contained by crews at the scene. Ukrainian officials have not formally confirmed carrying out the drone attacks, maintaining their apparent policy of deliberate ambiguity as they have done in the past when it comes to high-profile attacks on Russian targets.

Presidential adviser Mikhail Podolyak taunted Moscow in comments on Twitter. "If something is launched into other countries' airspace, sooner or later unknown flying objects will return to the point of departure," Podolyak wrote. "The earth is round." The unprecedented attacks in Russia - more than 500 km (300 miles) from the border with Ukraine - threatened a major escalation of the nine-month war. One of the airfields houses bombers capable of carrying nuclear weapons. The attacks also exposed the vulnerability of some of Russia's most strategic military sites, raising questions about the effectiveness of their air defences. Russia's Defence Ministry said

three Russian servicemen were killed and four others wounded by debris, and that two aircraft were slightly damaged.

The ministry didn't say where the drones had originated. But Russian military bloggers said they likely were launched by Ukrainian scouts, and argued that the strikes had inflicted serious reputational damage on Moscow. The attacks on the Engels base in the Saratov region on the Volga River and the Dyagilevo base in the Ryazan region in western Russia were part of Ukraine's efforts to curtail Russia's long-range bomber force, the ministry said. The Engels base hosts Tu-95 and Tu-160 nuclear-capable strategic bombers that have been involved in strikes on Ukraine. Dyagilevo houses tanker aircraft used for mid-air refuelling. In a daily intelligence update on the war in Ukraine, Britain's Defence Ministry said Russia was likely to consider the base attacks as "some of the most strategically significant failures of force protection since its invasion of Ukraine".

It said the bombers would likely be dispersed to other airfields. Kremlin spokesman Dmitry Peskov said that Russian authorities will "take the necessary measures" to enhance protection of key facilities in view of the latest Ukrainian attacks. Speaking in a conference call with reporters Tuesday, Peskov said "the Ukrainian regime's course for continuation of such terror attacks poses a threat." Peskov reaffirmed that Russia sees no prospects for peace talks now, adding that "the Russian Federation must achieve its stated goals." Russia, meanwhile, maintained intense attacks on Ukrainian territory, shelling towns overnight near the Zaporizhzhia nuclear power plant that left more than 9,000 homes without running water, local Ukrainian officials said.

The towns lie across the Dnieper river from the nuclear plant, which was seized by Russian forces in the early stages of the war. Russia and Ukraine have for months accused each other of shelling at and around the plant. The head of Ukraine's northern Sumy region, which borders Russia, said that Moscow launched over 80 missile and heavy artillery attacks on its territory. Governor Dmytro Zhyvytsky said the strikes damaged a monastery near the border town of Shalyhne.

<https://www.dailypioneer.com/2022/world/russian-airfield-hit-day-after-drone-strikes-on-bases.html>



*Tue, 06 Dec 2022*

## **Buying F-35 Fighters ‘Biggest Mistake’ of Australia; US Jets a ‘Total Disaster’, can’t ‘Stand Up’ to China — Aussie Critic**

*By Tanmay Kadam*

Australia's fifth-generation F-35 stealth fighter jets have again come under the scanner due to concerns related to their cost, capabilities, and viability for the Royal Australian Air Force (RAAF). A senior Australian journalist, Brian Toohey, who has been writing extensively for Australia's national security policy since 1973, has criticized the 'Defense Strategy Review' of the Australian government that has recommended buying the fourth squadron of F-35 fighter

jets. Australia has committed to buying 72 F-35A fighter jets for three operational squadrons, and adding a fourth squadron will bring the total number of aircraft to 96.

However, Toohey points out the long history of costly problems of the F-35s already acquired while arguing that Australia “should be asking for a refund” and that “the biggest mistake was to buy the plane in the first place.” In April, Air Vice-Marshal Leon Phillips, head of the Aerospace Systems Division, informed the Australian parliament’s Foreign Affairs, Defense and Trade Legislation Committee that the government expects to spend a whopping AUD14.6 billion (\$10.87 billion) to sustain its Lockheed Martin F-35A Lightning II fleet till 2053. Before that, in February 2022, budget estimates documents filed by the Australian Department of Defense (DoD) revealed that RAAF’s F-35 Lightning II aircraft would spend less time in the air over the next four years than previously expected, igniting a national debate on the aircraft’s capability and viability. Flying hours of the F-35 have been revised by 25% in the 2021-22 financial year (FY22) and are slated to be cut down by 17% in FY23, 14% in FY24, and 13% in FY25.

Australian media reports suggested the cause behind the reduction in expected flight hours was supposed to be maintenance issues related to operating the Joint Strike Fighters (JSFs). The opposition also said that the \$16.6 billion fighter jet program was “plagued with issues.” It sought an explanation from the then Defense Minister Peter Dutton about the data in the DoD’s budget estimates documents.

### **F-35s Cannot Meet Australia’s Security Needs**

Australia joined the F-35 JSF program as a Level 3 industrial partner in 2002 and committed to buying 72 planes for approximately \$16 billion. So far, the RAAF has received 54 of its planned 72 F-35As, and the service intends to have all of its aircraft operational by the end of 2023. However, according to defense experts and Australian media reports, the Lockheed Martin F-35 fighters supplied to the RAAF have turned out to be a total disaster. For example, Australia’s two F-35 fighter jets, purchased for more than \$280 million in 2013, are probably too old to be updated to the current configuration. Apart from that, there are also shortcomings in the F-35s capabilities relevant to Australia’s security needs. As reported earlier by EurAsian Times, the effective combat radius of the F-35A is only about 1,000 kilometers, and with a tanker aircraft, it could be extended to around 1,500 kilometers.

The F-35A cannot reach the South China Sea without aerial refueling. Even then, in the middle of a conflict, the availability of aerial tankers is doubtful over contested airspace. Furthermore, the Australian defense journalist, Anthony Galloway, has suggested that the actual combat range of the F-35 might only be around 500 kilometers, considering the aircraft will have to accelerate during combat which uses more fuel. Also, while the F-35 is said to be a supersonic fighter, experts suggest the fighter cannot get to a target, or away, in a hurry if required because it can only fly at its top speed of 1,960 kilometers per hour (1.6 Mach) for 50 seconds after which it has to slow down noticeably.

### **F-35 Version Not Fit To Go Up Against China**

Another major problem of Australia’s latest F-35 aircraft is that they use the Block 3F software, a digital operating system designed by Lockheed Martin. It has also been proving very expensive to keep updated. Worse, the current F-35 version is not even fit to go up against China, according to senior US Air Force officials. Last year, Lt. Gen. S. Clinton Hinote, the USAF’s deputy chief of staff, expressed grave concerns about the Block 3F software, saying, “the block that is coming

off the line right now is not a block that I feel good about going up against China and Russia.” Hinote noted that the USAF did not even use the current version of the F-35 during the war games held in 2018 and 2019, focusing on the scenario of a Chinese air attack in Taiwan.

“We wouldn’t even play the current version of the F-35. It wouldn’t be worth it. ... Every fighter that rolls off the line today is a fighter we wouldn’t even bother putting into these scenarios,” said Hinote. The only solution to these problems is a significant upgrade to the Block 4 operating system software, which is being advocated by Lockheed Martin and is reportedly running years late, with delivery expected before 2027. Also, it is going to be very expensive. More importantly, as EurAsian Times reported earlier, a full Block 4 upgrade will include advanced electronic warfare capabilities, improved target recognition, and the ability to carry more missiles, among other features. This may require a significant upgrade to the existing Pratt & Whitney F135 Engine, or possibly even a new engine, as the Block 4 upgrades will need more power from the propulsion system and will also make the fighter run hotter, requiring greater cooling capabilities.

<https://eurasianimes.com/buying-f-35-fighters-biggest-mistake-of-australia-us-jets/>



*Wed, 07 Dec 2022*

## **North Korea Fires Artillery Again Over South Korea's Drills**

North Korea on Tuesday fired a barrage of artillery rounds into waters near rival South Korea for the second consecutive day in a tit-for-tat for ongoing U.S.-South Korea live-fire drills in an inland border region. South Korea's Joint Chiefs of Staff said it detected North Korea firing around 90 artillery rounds from the eastern coastal town of Kosong around 10 am and another 10 rounds from the nearby town of Kumkang around 6 pm. It said the shells landed in the northern side of a maritime buffer zone the Koreans established in 2018 to reduce border tensions. The South said it communicated verbal warnings to North Korea and urged it to abide by the military agreement.

The South Korean assessments were slightly different from details announced by North Korea's military, which said it fired 82 shells from multiple rocket launchers. An unidentified spokesperson of the North Korean People's Army's General Staff said the firings were meant as a warning against “enemy side” artillery exercises in a region near the inter-Korean land border. The spokesperson said South Korea was being hypocritical in criticising North Korea for breaching the 2018 agreement, saying the South's unspecified past actions in violation of the agreement must be “calculated first.” “The (Korean People's Army) seriously warns the enemy side once again to stop at once the irritating military actions in the area close to the front,” the spokesperson said. “Our military counteraction against the continued provocative actions of the enemies will be more offensive as the days go by.” North Korea also on Monday fired around 130 artillery rounds into waters inside the maritime buffer zones with South Korea, while accusing the South of raising unnecessary tension in front-line areas.

The latest North Korean military action has worsened animosity between the rivals, whose relations have sharply declined amid a prolonged pause in nuclear negotiations between Washington and Pyongyang. The South Korean army had earlier issued a public notice about live-fire exercises involving multiple rocket launch systems and howitzers in two separate testing grounds in the Cheorwon region this week. South Korea's Defence Ministry on Tuesday confirmed that the exercises, which began on Monday and continue through Wednesday, are part of combined training with U.S. Troops. The ministry said that the exercises did not run against the 2018 inter-Korean military agreement, because they are being conducted outside the ground buffer zone set within 5 kilometers of the military demarcation line separating the Koreas. “We sternly warn that North Korea will be solely responsible for any outcome produced by the North's unilateral and consistent violations” of the 2018 agreement, the ministry said in a statement. North Korea's military said it ordered Monday's artillery fire after detecting dozens of South Korean projectiles flying southeast from the Cheorwon region.

<https://www.dailypioneer.com/2022/world/north-korea-fires-artillery-again-over-south-korea-s-drills.html>

## DefenseNews

*Tue, 06 Dec 2022*

### **US Army Plans ‘Dramatic’ Ammo Production Boost as Ukraine Drains Stocks**

As donations to Ukraine strain allied munitions stockpiles, the U.S. Army is seeking a “dramatic” ramp up in monthly production of 155mm artillery shells over the next three years, its chief weapons buyer said Saturday. Those plans hinge on emergency spending for Ukraine that Congress already approved, but also on the more than \$600 million in industrial investments in the next tranche of aid and multiyear authorities in the annual defense policy bill still under debate in Congress, according to Doug Bush, the assistant secretary of the Army for acquisition, technology and logistics. “Funding is already in place, contracts are underway to basically triple 155mm production,” Bush told Defense News on the sidelines of the Reagan National Defense Forum. “There’s funding on the Hill, in the supplemental, to more than double that again. That would take a period of years.

“We want to be able to build our stocks not just where we started the war, but higher. We’re posturing for a pretty — over a period of three years — a dramatic increase in conventional artillery ammunition production.” Army Secretary Christine Wormuth separately told reporters that the U.S. will go from making 14,000 155mm shells each month to 20,000 by the spring and 40,000 by 2025. The service in recent days awarded contracts to three private companies to produce and deliver 155mm artillery: General Dynamics Ordnance and Tactical Systems, American Ordnance, and IMT Defense. The push comes as the U.S. has supplied Ukraine with more than 1 million artillery rounds, and as Pentagon officials see the war in Ukraine continuing indefinitely, further draining stocks for the U.S. and allies. Bush said it’s unclear what the Ukrainian military’s mid- and long-term needs will be, and the U.S. Army wants to be ready.

“We are in a position to support Ukraine, but it’s more the mid and long term,” Bush said. “By creating this capacity ... if this war goes three or four years, we’ll be in a position to just vastly

outproduce the Russians all by ourselves — and if you combine that with our allies, then we're just dwarfing their capability. They won't be able to keep up." Bush noted the Army is paying to expand and improve production capacity at its ammunition plants in Scranton, Pennsylvania; Kingsport, Tennessee; and Middletown, Iowa. Army officials also aim to contract with defense firms outside the U.S. for artillery shells for Ukraine, a step in line with talks between senior Pentagon officials and their foreign counterparts about greater industrial cooperation.

Beyond artillery shells, Bush said he is pushing to double production for the most in-demand precision munitions for Ukraine: Guided Multiple Launch Rocket System rounds for the Lockheed Martin-made High Mobility Artillery Rocket System and Javelins, the portable anti-tank weapon jointly made by Lockheed and Raytheon Technologies. The Senate-passed version of the sweeping 2023 National Defense Authorization Act aims to authorize massive purchases of high-priority munitions using multiyear contracts to help Ukraine fight Russia and to refill U.S. stockpiles; the bill would also provide waivers to speed up the process. A compromise bill was still under negotiations between the House and Senate on Monday.

While approval for multiyear purchasing authorities for munitions through the NDAA would be the starting gun for the Army to begin planning those buys, the effort must also get approval in next year's appropriations legislation, Bush said. The defense industry's lack of robust production capacity for ammunition is a product of historically "lumpy" purchases by the military, Ellen Lord, a former Pentagon acquisitions chief, told reporters. She said that without steady demand over time, defense firms haven't been making capital investments in their plants. "So we have to be clear about the demand signal and the volumes over multiple years, and then industry will develop that capacity," said Lord, who now works in the private defense sector. "But industry [executives] can't go to their board of directors and say: 'Hey, I think there's going to be a lot of orders out there, so let's spend \$50 million to build a plant and hope.' "

At the conference, Raytheon's chief executive, Greg Hayes, said that the war's consumption rates so far have vastly outstripped industrial capacity. Since the start of Russia's invasion of Ukraine in February, donation efforts have used up five years of Javelin production and 13 years of production for portable anti-aircraft Stinger systems, he said. "So the question is: How are we going to resupply, restock the inventories?" Hayes said. Speaking on a panel with Hayes, Wormuth said the contracts for a production boost have already begun. She pointed to the service's \$1.2 billion award to Raytheon for six National Advanced Surface-to-Air Missile System batteries for Ukraine and a \$431 million award to Lockheed to replenish donated HIMARS launchers. "Thanks to Congress ... we've actually pushed \$6 billion out to industry to help us with replenishment, which is going to enable us to not only continue to supply Ukraine but also to replenish our own stocks," Wormuth said. The Army, she added, is now "working closely with industry to increase their speed and capacity" and resolve "chokepoints" in supplies. "We're working on it, and we're going to ramp up," she said, adding that the Army is also compressing training for Ukrainians to use donated weapons. Hayes credited Army and Pentagon officials with compressing contracting and delivery processes, from months to days, for NASAMS — once U.S. President Joe Biden made the decision to send them. But Hayes also said that because NASAMS, which are co-produced with Norway, were infrequently manufactured, "we're going to have ramp up production from zero here."

<https://www.defensenews.com/pentagon/2022/12/05/army-plans-dramatic-ammo-production-boost-as-ukraine-drains-stocks/>

## **US Lawmakers Authorize \$800 Million More Aid for Ukraine in Defense Bill**

U.S. lawmakers agreed to provide Ukraine at least \$800 million in additional security assistance next year and to boost Taiwan with billions in aid over the next several years, according to an \$858 billion defense policy bill unveiled on Tuesday. The Fiscal 2023 National Defense Authorization Act, or NDAA, authorizes the additional spending for the Ukraine Security Assistance Initiative, an increase of \$500 million over President Joe Biden's request earlier this year. The bill also strengthens the Pacific Deterrence Initiative, with \$11.5 billion in new investments. And it authorizes the Taiwan Enhanced Resilience Act of 2022, legislation to increase security cooperation with Taiwan with up to \$10 billion in spending over five years.

<https://www.hindustantimes.com/world-news/us-lawmakers-authorize-800-million-more-aid-for-ukraine-in-defense-bill-101670380122668.html>

### Science & Technology News



**Press Information Bureau**  
Government of India

Ministry of Science & Technology

*Tue, 06 Dec 2022*

## **Infosys Awardee Professor SumanChakraborty from IIT, Kharagpur Brings Affordable Diagnostic Technologies for Remote, Resource Constrained Areas**

A slew of technologies by Professor SumanChakraborty, who recently received the Infosys prize, along with his group, are helping community health-workers deliver healthcare-support to last-mile populations. Their initiative has been specially triggered by the recent pandemic. A Nucleic-Acid Based Rapid Diagnostic Test for infectious disease detection called COVIRAP they have developed is a substitute for the resource-intensive RT-PCR for testing of infectious diseases. The technology has been transferred to several companies and organizations. It can be used for any infectious disease detection by suitably customizing and preprogramming the device as per the specific test protocol, with no need of changing the hardware.

Diagnostics with Finger-Prick Blood on Paper Strip, an ultra-low-cost, rapid extreme point-of-care device can quantitatively measure plasma glucose, hemoglobin, creatinine, and lipid profile

from finger-prick blood collected on a paper-strip via a smartphone-based app. Just like how a credit card interfaces with a card reader, the paper strip interfaces with a hand-held device for getting the test results. This can be used for mass screening of several non-communicable diseases at the grass root level. A low-cost portable hand-held imaging device for early screening of oral cancer on the basis of measured changes in the blood flow rate of the tissue from thermal imaging and analytics has been developed by the group. It does not require any clinical infrastructure. This portable device can be used for early risk assessment and categorization of the stages of oral cancer and this method can be extended to other forms of cancer. The device has successfully passed Phase-I clinical trial and has entered into field trial mode.

They have also developed a portable spinning disc capable of testing several body fluid-based diagnostic parameters from a single drop. The technology for measuring Complete Blood Count (CBC) using this platform, was designed and validated. An electrochemical sensor has been integrated for reading out the test results. It is designed to be a substitute of the laboratory centrifuge for diagnostic testing. The group has developed a folded paper-kit for evaluating antibiotic resistance, which is a growing challenge. The kit helps assess the susceptibility of the bacteria to a medicine, simply by tracking the color changes at marked test-spots on it. In this way, within 3-4 hours, a recommendation on the efficacy of specific drugs for killing the bacteria may be arrived at, facilitating life-saving timely clinical decision making.

A reagent-free anemia detection technology they have developed harnesses on the fact that blood forms unique patterns while spreading on a moist paper strip. The pattern carries the signature of the red blood cell contents in a manner that those for anemic and normal patients may be classified and interpreted to be grossly different when analyzed via a custom-made image-analytics App. This can quickly classify at-risk patients needing emergent blood transfusion or other life saving measures. Professor Chakraborty, a J C Bose National Fellow of Science and Engineering Research Broad (SERB), an attached institute of the Department and Science and Technology (DST), along with his group trained a large numbers of rural women to work as an interface between the patient, 'remote' doctor and the invented frugal diagnostic-technologies, enabling sustainable livelihood in the process. In addition, the empowerments of micro-small-and medium scale enterprises towards participating in manufacturing the most technologically advanced yet deceptively simple medical products have opened up a new paradigm of employment generation under difficult circumstances.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1881076>

**mint**

*Tue, 06 Dec 2022*

## **ISRO, In-Space Announce MoU with Vyom Space to Build Private Space Capsules**

The Indian Space Research Organisation (Isro) has signed a memorandum of understanding (MoU) with Gurugram, Haryana-based private space firm, Vyom Space Exploration and Services Private Limited, for its "human and cargo transportation capsule program", the central space agency announced on Tuesday. The MoU was facilitated by India's nodal space authorization body, Indian National Space Promotion and Authorization Center (In-Space).



According to Isro, the startup is being incubated under 'JSIIC'. Details about the incubation program, or Isro's targeted timelines, were not disclosed publicly by the body. A 'capsule' in a space mission is the module inside which any cargo is placed for being carried to space. In manned missions, the capsule is what hosts the astronauts.

The capsules have typically been single-use in nature, with the exception of US-based private space firm, Elon Musk's SpaceX's reusable human and cargo module, Crew Dragon. Manish Kukreti, founder and chief executive of Vyom Space, told Mint that the company has so far been working with research and development (R&D) partners in Europe to develop its product. "India is not a market that is already developed in terms of the entire gamut of space infrastructure, which required us to tap global partners to develop our product. There will be a clear and obvious demand in the space industry for reusable capsules that can carry cargo and eventually humans, and so far, only the US and China have been able to develop such a product," Kukreti said.

According to Kukreti, the company will be delivering the first prototype of its space capsule to Isro within the next 16 months, subsequent to which the capsule would be tested by the space body. "We are developing only the core technology of the capsule itself, and given the vast body of expertise that Isro has in the other parts of a space mission, wouldn't want to delve into every single aspect of it," he said. Isro's announcement of an MoU with Vyom Space comes amid a slew of achievements for the private space sector in India. On November 18, Hyderabad-based Skyroot Aerospace became the first homegrown private space company to launch a rocket into space. A week later, on November 26, Pixxel and Dhruva Space launched their second round of satellites aboard Isro's latest commercial mission.

Last week, Srinath Ravichandran, chief executive of Agnikul Cosmos, told Mint that the company plans to launch its own rocket — and India's first orbital private rocket — from Srihariokota, Andhra Pradesh before the end of the year. Vyom's Kukreti said that the company's own module will be reusable, and therefore be an evolution of what the first prototype module of Isro's manned mission, Gaganyaan, will use. "If you look at Gaganyaan, the modules are all single-use modules, which thus do not have high commercial viability. This is what we seek to offer to Isro's missions," he said. While Kukreti refused to disclose funding details of the startup, he admitted that building a space capsule is "a very capital intensive task". However, he claimed that the startup already has "commitments" from private investors around the world.

<https://www.livemint.com/news/india/isro-in-space-announce-mou-with-vyom-space-to-build-private-space-capsules-11670347768145.html>



*Tue, 06 Dec 2022*

## **India's First Open-Source Satellite to be Launched by ISRO In December**

A Class 12 student of the BSF Senior Secondary School Jammu OnkarBatra has developed India's first open-source satellite 'InQube' which is going to be soon launched this month with the help of the Indian Space Agency- ISRO. This satellite InQube was prepared under the banner of Paradox Sonic Space Research Agency.

## India's first open-source satellite 'InQube'

OnkarBatra gave details about his project informing that the satellite has been developed by using Nanotechnology and weighs one kilogram. The cost for its launch in India is Rs 20-80 lakh, while in foreign countries this price goes into crores, as per ANI. Every satellite launched into space has a special mission, he added.

### InQube also has two missions-

Whether such a lightweight satellite can work in space. The other will look at the temperature there to help researchers know what the weather conditions are like and how hard it is if they want to launch a satellite in space. OnkarBatra is also the Chief Executive Officer of Batra Technology. He received the National Ball Shakti Award from the then President of India Ram NathKovind, for creating an interactive website for COVID-19 in 2020. The Government Medical College Jammu developed the Quaidcare website with the help of doctors, with the help of which around fifty people could contact a doctor at a time.

Batra created the first website at the age of seven and registered his name in the Guinness Book of World Records by becoming World's Youngest Webmaster (male). He became the world's youngest theoretical author by writing his book 'When The Time Stops' at 12 years old. He founded two companies-- Batra Technologies in 2018 and the other was United India Publishing in 2019. Earlier in September 2021, Onkar took to Twitter and informed about meeting Union Minister Dr. Jitendra Singh over a discussion on the launch possibilities of InQube.

<https://www.republicworld.com/india-news/general-news/inqube-indias-first-open-source-satellite-to-be-launched-by-isro-in-december-articleshow.html>



## इसरो अगले साल चांद पर फिर भेजेगा उपग्रह, तेजी से चल रही है मिशन चंद्रयान-3 की तैयारी

भारतीय स्पेस एजेंसी ISRO जल्द ही एक नया कीर्तिमान रचने की तैयारी कर रहा है। चंद्रयान 1 और चंद्रयान 2 के बाद अब चंद्रमा के लिए तीसरा उपग्रह मिशन, चंद्रयान 3 अगले साल लॉन्च किया जाएगा। केंद्रीय अंतरिक्ष राज्यमंत्री डॉ. जितेंद्र सिंह ने बताया कि, भारत के प्रमुख अंतरिक्ष कार्यक्रमों में मानव अंतरिक्ष उड़ान केंद्र है, जिसे भारत में गगनयान परियोजना कहते हैं। इसके तहत 2024 में अंतरिक्ष में भारत अपनी पहली चालक दल की उड़ान भेजने की योजना बना रहा है। 'भारतीय अंतरिक्ष उद्योग विश्वसनीयता और अर्थव्यवस्था के लिए पूरी दुनिया में प्रसिद्ध' उन्होंने कहा कि भारतीय अंतरिक्ष उद्योग विश्वसनीयता और अर्थव्यवस्था के लिए पूरी दुनिया में प्रसिद्ध है। भारत को अपने प्रमुख अंतरिक्ष प्रक्षेपण यान - पोलर सैटेलाइट लॉन्च व्हीकल या पीएसएलवी के लिए दुनिया में अधिकतम सफलता अनुपात अर्जित होने पर गर्व है। कुछ सप्ताह पहले ही भारत के पीएसएलवी ने विकसित और विकासशील दोनों

देशों के 36 उपग्रह लॉन्च किए हैं। डॉ. जितेंद्र सिंह ने बताया कि भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) ने अब तक 100 से अधिक उपग्रह लॉन्च किए हैं। जीसैट, पृथ्वी अवलोकन उपग्रहों और अंतरिक्ष आधारित सैटेलाइट नेविगेशन सिस्टम के लिए व्यापक इन-हाउस उपग्रह निर्माण क्षमताएं हैं। उन्होंने कहा कि भारत ने अपना जीपीएस भी विकसित कर लिया है, जिसे हम इंडियन रीजनल नेविगेशन सैटेलाइट सिस्टम या आईआरएनएसएस कहते हैं।

उन्होंने कहा कि भारत विदेशी सरकार और निजी क्षेत्र की संस्थाओं के प्रवेश की सुविधा के लिए अंतरिक्ष क्षेत्र में स्टार्ट-अप्स के विकास को भी बढ़ावा दे रहा है। इस संबंध में, भारत ने भारतीय अंतरिक्ष संवर्धन और प्राधिकरण केंद्र या इन-स्पेस नामक एक समर्पित संगठन की स्थापना की है, जिसे अंतरिक्ष क्षेत्र में हमारी नई निजी संस्थाओं को संभालने के उद्देश्य से कार्य सौंपा गया है। उन्होंने कहा कि अगर हम यह सुनिश्चित करना चाहते हैं कि अंतरिक्ष हमारी साझा मानवता की सेवा के लिए एक क्षेत्र बना रहे, तो अंतरिक्ष क्षेत्र के भविष्य के बारे में चर्चा और विचार-विमर्श करने के लिए सभी हितधारकों को एक मंच पर लाना महत्वपूर्ण है और इस संबंध में, इस मंच में अंतरिक्ष क्षेत्र के भविष्य को आकार देने की क्षमता है।

<https://www.indiatv.in/india/national/isro-will-again-send-satellite-to-the-moon-next-year-preparations-for-chandrayaan-3-are-going-on-fast-2022-12-06-909282>

## THE TIMES OF INDIA

Wed, 07 Dec 2022

### **India to be Drone Tech Hub, Need 1L Pilots by Next Year: Anurag Thakur**

Union minister Anurag Thakur on Tuesday said that India will become a hub of drone technology and the country will require at least one lakh drone pilots by next year. He was addressing the gathering after flagging of the 'Drone Yatra 2.0', in Chennai. Detailing the advancements in drone technology in India, he said that during the Beating Retreat, the entire nation was mesmerised by the spectacular display of 1000 'Made in India' drones by Indian start-up 'Botlab Dynamics' led by an IIT alumni. As a part of the SWAMITVA scheme (Survey of Villages and Mapping with Improvised Technology in Village Areas), the survey of the land and houses are being prepared through drones in the villages, he added. Drones are increasingly being used to sprinkle pesticides and nano fertilisers in the fields in rural villages.

Stating that India will require at least one lakh drone pilots in 2023, he said that each pilot would earn in the range of Rs 50-80 thousand a month. Even at a conservative average, at least Rs 6,000 crore a year worth employment could be created, he said.

<https://timesofindia.indiatimes.com/india/india-to-be-drone-tech-hub-need-1l-pilots-by-next-year-anurag-thakur/articleshow/96040749.cms>

## मेडिकल सेक्टर को बदल देगी ड्रोन सर्विस

भारत में ड्रोन से दवा की आपूर्ति शुरू हो गई है। पहली बार मेघालय के वेस्ट गारो हिल्स जिले में ड्रोन ने 2 घंटे बचाते हुए सिर्फ 36 मिनट में 1.5 किलो दवा पहुंचाई



एम. रियाज हाशमी

सोमवार को देश में दवा की पहली ड्रोन डिलीवरी ने स्वदेशी ड्रोन क्रांति की दिशा में एक महत्वपूर्ण कदम बढ़ाया है। भारत में पहले ड्रोन स्टेशन के उद्घाटन पर मेघालय के वेस्ट गारो हिल्स जिले के जंगल उप मंडलीय अस्पताल में 'वर्टिप्लेन X3' ड्रोन ने 1.5 किलोग्राम दवाओं को महज 36 मिनट में सफलता से पहुंचाया। यह सड़क मार्ग से लगने वाले नियमित समय से 2 घंटा कम है। आईआईटी के पूर्व छात्रों के स्टार्टअप ने इस को डिजाइन किया है, जिसमें 4 किलोग्राम वजन लेकर उड़ान भरने की क्षमता है।

ऐसे बड़ा काम : राजधानी शिलांग के बाद सबसे बड़े शहरी केंद्र तुरा से 32 किमी दूर स्थित जंगल को 50 किमी के दायरे में स्थित ग्रामीण स्वास्थ्य केंद्रों तक दवा वितरण के लिए एक रणनीतिक ड्रोन स्टेशन के रूप में चुना गया था। नवंबर 2021 में राज्य

के पश्चिमी खासी हिल्स जिले में पायलट परियोजना के एक साल बाद यह स्टेशन स्थापित हुआ। दवा डिलीवरी को 'टेक-ईगल' नियंत्रित कर रहा है, जो एक थर्ड पार्टी ड्रोन लॉजिस्टिक सेवा प्रदाता है। मेघालय हेल्थ सिस्टम स्ट्रैथनिंग प्रॉजेक्ट के निदेशक रामकुमार एस ने कहा, 'हमें मार्च 2023 तक 25 किग्रा तक दवाइयां, सर्पदंश रोधक वॉयल्स और अन्य स्वास्थ्य संबंधी जरूरतों के लिए बड़े ड्रोन मिलने की उम्मीद है। उच्च क्षमता वाले ड्रोन का एक बेड़ा राज्य सरकार को दूरदराज के इलाकों में किसानों तक बीज और कृषि उपज को बाजारों में समय से पहुंचाने की क्षमता दे देगा।' राज्य के स्वास्थ्य मंत्री जेम्स पी.के. संगमा कहते हैं, 'मेघालय में लोगों को शीघ्र सेवाएं प्रदान करने में यहां की विषम भौगोलिक परिस्थितियां आड़े आती हैं। अब दूर-दराज के इलाकों में लोगों के लिए कुछ जरूरी सेवाएं पहुंचाने में जंगल ड्रोन स्टेशन काफी काम आएगा।'

नियमों में छूट : नागरिक उड्डयन मंत्रालय ने अप्रैल 2021 में मेडिकल सेवाओं के क्षेत्र में संभावना तलाशने के उद्देश्य से ड्रोन के सख्त नियमों में सशर्त छूट दी। भारत दुनिया में तीसरा बड़ा ड्रोन आयातक देश है, लेकिन 9 फरवरी से कुछ सेवाओं को छोड़ भारत में इसके आयात पर प्रतिबंध है। रिसर्च एंड



### कॉमन रूम

डिवेलपमेंट, डिफेंस और सिक्योरिटी मामलों को छोड़कर किसी अन्य मकसद से ड्रोन इंपोर्ट नहीं होते हैं।

**देहरादून और महाराष्ट्र :** वहीं देहरादून में फार्मा कंपनी टाटा 1एमजी ने दवाओं की डिलीवरी और लैब टेस्टिंग सैंपल पहुंचाने के लिए सोमवार से ड्रोन सेवा शुरू की है। कंपनी सीओओ तन्मय सक्सेना बताते हैं, 'इससे हरिद्वार, मसूरी और ऋषिकेश तक पहुंच बढ़ेगी। जल्द ही उत्तराखंड के अन्य हिस्सों में भी स्टोर खोले जाएंगे। एक ड्रोन 6 किग्रा तक पेलोड ले जा सकता है।' इसके अलावा 18 दिसंबर 2021 को महाराष्ट्र के पालघर जिले के जाट गांव में राज्य स्वास्थ्य

विभाग की ओर से ड्रोन से एंटी कोरोना वैक्सीन पहुंचाई गई थी। ड्रोन से महज 9.5 मिनट में यानी सड़क मार्ग से 51 मिनट पहले वैक्सीन पहुंचाई गई। उत्तराखंड ने भी ऊंचे और दूरस्थ पहाड़ी इलाकों में एंटी कोरोना वैक्सीन पहुंचाने को ड्रोन ट्रायल किया था।

देश में ड्रोन उड़ाने के नियम सख्त हैं। इनके उल्लंघन पर 5 लाख रुपये जुर्माने का प्रावधान है। विधिक और आर्थिक रूप से भी ड्रोन उड़ाना व्यावहारिक नहीं है। मानकों के तहत ड्रोन आपूर्ति दुर्लभ और महंगी है। इसके लिए बीमा भी जरूरी है। पीएम नरेंद्र मोदी 27 मई 2022 को जब प्रगति मैदान में ड्रोन महोत्सव का उद्घाटन कर रहे थे, तो उन्होंने केदारनाथ, लैंड रेकॉर्ड और खेती के बारे में चर्चा की थी। दरअसल, सरकार इन्हें ड्रोन टेक्नॉलजी से जोड़ने को लेकर गंभीर है, इसके स्टार्टअप को बढ़ा रही है। भारत में 3 साल में ड्रोन इंडस्ट्री 30 हजार करोड़ रुपये की होगी। इसमें 5 लाख नौकरियां होंगी। बीटिंग रिट्रीट समारोह में 1000 ड्रोन ने एक साथ मेक इन इंडिया के लोगो में बने शेर और महात्मा गांधी की तस्वीर को पेश किया था। अभी तक यह क्षमता केवल अमेरिका, चीन और रूस के पास ही थी। सरकार का लक्ष्य है कि 2030 तक देश ड्रोन सेक्टर में ग्लोबल हब बन जाए।

