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2023

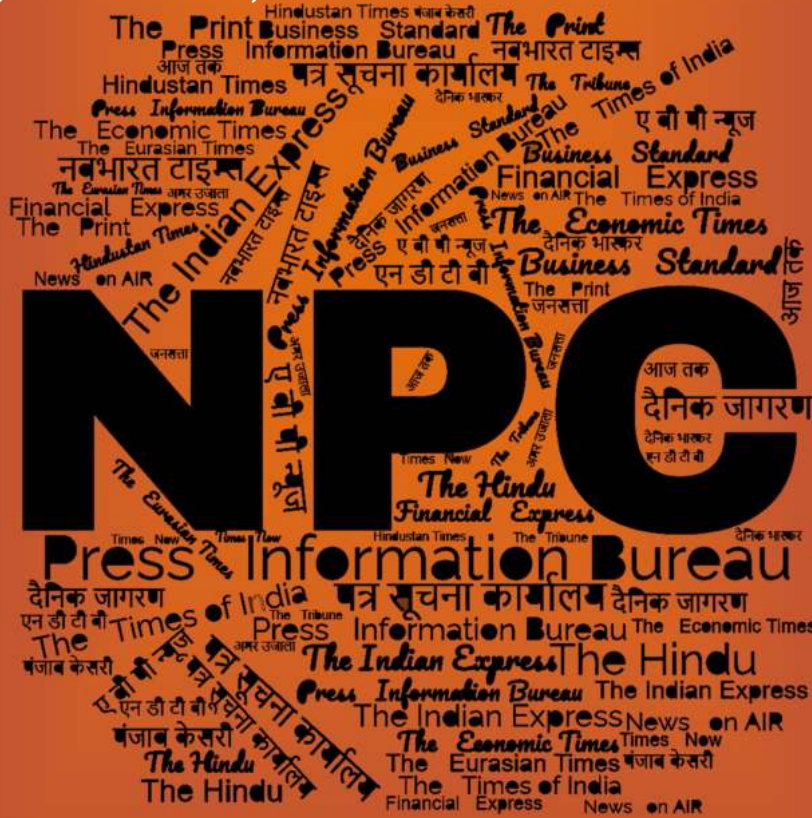
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Defence News

Defence Strategic : National/International



Press Information Bureau
Government of India

Ministry of Defence

Sun, 12 Mar 2023

Maritime Partnership Exercise (MPX) with French Navy

Indian Navy's indigenously built guided missile frigate, INS Sahyadri participated in a Maritime Partnership Exercise (MPX) with French Navy (FN) ships FS Dixmude, a Mistral Class Amphibious Assault Ship and FS La Fayette, a La Fayette Class Frigate, in the Arabian Sea on 10 – 11 March 2023.

The exercise witnessed a wide spectrum of evolutions at sea which included cross deck landings, boarding exercises and seamanship evolutions. The seamless conduct of the exercise reaffirmed the interoperability and high level of cooperation between the two navies.

INS Sahyadri is fitted with state-of –the art weapons and sensors, which makes her capable of detecting and neutralising air, surface and sub-surface threats. The ship is a part of Indian Navy's Eastern Fleet based at Visakhapatnam, under operational control of FOCinC (East).

<https://pib.gov.in/PressReleasePage.aspx?PRID=1906097>



Press Information Bureau
Government of India

Ministry of Defence

Fri, 10 Mar 2023

Participation of INS Trikand in International Maritime Exercise/Cutlass Express 23 (IMX/CE-23)

INS Trikand participated in Sea Phase-I of the International Maritime Exercise/Cutlass Express 2023 (IMX/CE-23) held in the Gulf from 05 to 09 March 2023. During the period, the ship exercised with naval units of Bahrain, Japan, Oman, Saudi Arabia, UAE, UK and USA with the common aim of enhancing maritime security, keeping shipping lanes open and ensuring safety of navigation.

INS Trikand is part of the Indian Navy's Western Fleet and operates under the Western Naval Command headquartered at Mumbai. She is a modern warship with advanced technologies to make her stealthy, fast and formidable. With long reach and a state-of-the-art combat suite, the ship is designed to undertake a wide spectrum of naval operations.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1905563>



Press Information Bureau
Government of India

Ministry of Defence

Fri, 10 Mar 2023

Australian PM Visits INS Vikrant

The Australian Prime Minister, Hon'ble Anthony Albanese, visited INS Vikrant in Mumbai on 09 Mar 23 as part of his visit to India from 08 to 11 Mar 23. This is his first bilateral visit to India after he assumed charge in May 22.

The Australian PM was received onboard by Admiral R Hari Kumar, Chief of the Naval Staff. Vice Admiral Dinesh K Tripathi, Flag Officer Commanding-in-Chief, Western Naval Command was also present. The Hon'ble PM was accorded a guard of honour onboard and briefed about the roles and capabilities of INS Vikrant. He was also introduced to the Light Combat Aircraft. He then interacted with a cross-section of personnel of the Indian Navy.

While addressing the media, he underscored the strong diplomatic and military ties between the two countries and announced that Australia, for the first time, will host the 27th edition of the annual multilateral naval wargaming exercise, MALABAR, that is scheduled later this year among the navies of the USA, India, Japan and Australia. The MALABAR Exercise is an annual multilateral naval wargaming exercise that began in 1992 between the navies of India and the United States. Japan joined the exercise in 2015, while Australia became part of it in 2020.

Australia and India upgraded their bilateral relationship from a Strategic Partnership in 2009 to Comprehensive Strategic Partnership (CSP) in 2020. Over the years, they have put in place several institutional mechanisms to promote their bilateral cooperation, including high-level visits, annual meetings of Prime Ministers, the Foreign Ministers' Framework Dialogue, 2+2 Defence and Foreign Ministers' Dialogue, Joint Trade and Commerce Ministerial Commission, Defence Policy Talks, Australia-India Education Council interactions, Defence Services Staff Talks, Energy Dialogue, and consultations of Joint Working Groups on different issues.

In Jun 20, the two sides signed the pact that enables reciprocal access to military bases for logistics support, the Mutual Logistics Support Agreement (MLSA) that allows the militaries of the two countries to use each other's bases for repair and replenishment of supplies, besides scaling up overall defence cooperation.



<https://pib.gov.in/PressReleasePage.aspx?PRID=1905903>

THE TIMES OF INDIA

Mon, 13 Mar 2023

Defence Ministry Finalising ₹15,000 crore+ deal for 200 more BrahMos for Navy

In another mega deal for the BrahMos supersonic cruise missiles, the defence ministry is now finalizing the acquisition of over 200 more such extended range missiles for frontline warships of the Navy.

The procurement proposal for the missiles and associated equipment will soon be taken up for consideration by the Rajnath Singh-led Defence Acquisitions Council (DAC). “It will then be sent for the final nod to the PM-led cabinet committee on security,” a source told TOI on Sunday.

The exact contours of the deal, which will include deliveries over a long period, are being fine-tuned at present. “The actual cost will depend on the BrahMos numbers and configurations that finally get cleared...but it’s likely to be upwards of Rs 15,000 crore,” a source said. Among other warships, these missiles will also be for the four Project-15B destroyers (two INS Visakhapatnam and INS Mormugao have been commissioned) as well as seven Project-17A frigates (five ‘launched’ in water till now).

Ten frontline warships are already armed with the BrahMos missiles jointly developed by Russia, which fly almost three times the speed of sound at Mach 2.8, while its vertical launch systems have also been installed on another five warships.

The Navy, incidentally, had tested the air-breathing BrahMos with “an indigenous seeker and booster designed by DRDO” from a warship in the Arabian Sea on March 5.

The armed forces are now also progressively inducting the upgraded BrahMos missiles, with an extended range of 450-km from the original 290-km. A 800-km range variant of BrahMos has also undergone its maiden test, while a couple of more are slated this year, as was earlier reported by TOI.

BrahMos has emerged as the “prime conventional (non-nuclear) strike weapon” for the armed forces over the years, with contracts worth over Rs 38,000 crore already inked till now.

All frontline warships will progressively be armed with BrahMos. The DAC on January 10, for instance, had approved the procurement of the BrahMos launchers and fire control systems for the Shivalik-class frigates and next-generation missile vessels “for enhanced capability to carry out maritime strike operations, interdicting and destroying enemy’s warships and merchant vessels”.

Similarly, the IAF is looking to arm another 20-25 Sukhoi-30MKI fighters with the BrahMos after getting the first lot of 40 jets modified by Hindustan Aeronautics to carry the missile.

With a combat radius of almost 1,500-km without mid-air refuelling, Sukhois armed with BrahMos missiles constitute a decidedly potent weapon package for pinpointed strikes against high-value targets like warships on the high seas or enemy positions, bunkers, command-and-control centres and the like on land.

The Army’s BrahMos missile batteries, incidentally, have been deployed in both Ladakh and Arunachal Pradesh as part of the overall military readiness posture against China along the 3,488-km Line of Actual Control.

India is also looking to export the BrahMos to other countries after inking the first such \$375 million contract for three anti-ship coastal missile batteries with the Philippines in January 2022.

<https://timesofindia.indiatimes.com/india/defence-ministry-finalising-15000-crore-deal-for-200-more-brahmos-for-navy/articleshow/98588671.cms>

THE ECONOMIC TIMES

Fri, 10 Mar 2023

Defence Ministry Inks Contract with HAL to Procure 6 Dornier Aircraft

The defence ministry on Friday sealed a deal with Hindustan Aeronautics Limited (HAL) to procure six Dornier aircraft at a cost of Rs 667 crore for the Indian Air Force. The addition of the six aircraft will further bolster the operational capability of the IAF in remote areas, the defence ministry said announcing the contract.

The Dornier-228 aircraft is a highly versatile multi-purpose light transport aircraft.

It has been developed specifically to meet the manifold requirements of utility and commuter transport as well as for maritime surveillance.

The aircraft will have an upgraded fuel-efficient engine coupled with a five-bladed composite propeller, the ministry said.

"The Ministry of Defence, on March 10, signed a contract for procurement of six Dornier-228 aircraft for the Indian Air Force from Hindustan Aeronautics Limited (HAL) at a cost of Rs 667 crore," it said.

"The aircraft was used by IAF for route transport roles and communication duties. Subsequently, it has also been used for training of transport pilots of the IAF," it said.

The aircraft is ideally suited for short-haul operations from semi-prepared and short runways of the North East and island chains of India.

<https://economictimes.indiatimes.com/news/defence/defence-ministry-inks-contract-with-hal-to-procure-6-dornier-aircraft/articleshow/98547093.cms>



Sun, 12 Mar 2023

IAF Inducting In-house System to Identify Friendly Forces in Combat

The Indian armed forces are in the process of inducting a homegrown innovation along the country's northern and eastern borders which will help commanders identify friendly forces in a joint battlespace.

This will facilitate better coordination during complex operations and curb instances of mistaken fratricide as happened in Budgam in the aftermath of the 2019 Balakot air strikes.

The Vayulink system has been developed by Wing Commander Vishal Mishra, a helicopter pilot with the Indian Air Force (IAF). He said it will not only help enhance battlefield transparency through identification of friendly forces in a combat situation — whether airborne or on the ground — through secure, jammer-proof communication, but will also arm pilots with accurate weather data before they fly.

The Vayulink system was showcased by the IAF at the Aero India 2023 show in Bengaluru last month.

Senior IAF officers said trials for operational deployment of the system have been completed. "The procurement required for deployment is under process. Once the procurement is completed, mass deployment of the system will start in all forward areas," an officer said.

Air Marshal Narmadeshwar Tiwari, Deputy Chief of the Air Staff, told The Sunday Express that the Vayulink ecosystem is an in-house developed tactical data link system. "It integrates inputs available from multiple sources in a joint battlefield and provides near real-time data to

operators, thereby vastly improving their situational awareness and consequently aiding in effective decision making,” he said.

“The IAF has already deployed the system on a trial basis at forward locations in the Western and Northern sectors. We are planning to further enhance the reach and applicability of the system in future,” he said.

Wing Commander Mishra said the Vayulink is effectively a data link system which connects all entities, combat and non-combat, through a single link.

“The system can help you get the position of all friendly forces in a battlefield or even those in support roles. When in use in a complex combat situation, the system can help all aircraft see each other’s position and location of ground troops,” he said.

The system, he said, can have a range of applications and is not confined to one service, but can integrate all combat entities through a single link. It has also been inducted into the Army under the name Trishul link.

The system can improve the efficiency of operations, especially complex ones such as the one launched in response to the Pathankot air base terror attack in 2016.

The counter-terror operations in Pathankot lasted nearly four days, despite IAF helicopters supporting the ground forces. Seven security personnel were killed by the terrorists who had infiltrated the air base.

Explaining how the Vayulink can help, another IAF officer said an attack pilot does not have the capability at present to see on a device the exact position of friendly forces.

“When actual contact battle takes place, you do not know where the friendly forces and where the enemy forces are. So, a pilot going for a busting role can face difficulties in identifying his own troops at that time. A system like Vayulink is going to help,” the officer said.

It is learnt that the system can also curb Budgam-like cases of mistaken fratricide by bringing in battlefield transparency that will enable the ground crew to identify friendly forces and be aware of their exact positions.

After the Balakot air strikes in 2019, the IAF had shot down its Mi-17 V5 helicopter at Budgam by mistake, killing six personnel on board. The helicopter’s IFF (Identification of Friend or Foe) system was also switched off, which had led to gaps in communication between the helicopter crew and the ground forces.

Asked about the limitations of the existing IFF systems, the officer said that the IFF system is only applicable to an aircraft and requires radars to function. “On the other hand, the Vayulink system can be carried by an aircraft, individual troops or armoured vehicles on ground, distinguishing them from their enemy counterparts. Secondly, the IFF system has limitations with respect to the line of sight,” the officer said.

The development team is currently focusing on its smooth induction into the Indian armed forces. The Vayulink system can also arm the pilot with real-time weather details before flying, thereby preventing accidents.

<https://indianexpress.com/article/india/iaf-inducting-in-house-system-to-identify-friendly-forces-in-combat-8491420/>

Defence Forces Halt ALH Dhruv Fleet Operations in Wake of Navy Accident

In the wake of the accident off the Mumbai coast two days ago, the defence forces have halted the operations of the ALH Dhruv helicopters till the time investigators find the reason for the incident and precautionary checks are carried out.

The ALH choppers are operated by all three defence forces including the Army, Navy and Air Force along with the Indian Coast Guard. "The operations have been halted till the time investigators find out the reason for the incident off the Mumbai coast and precautionary checks are carried out," defence forces' officials told ANI.

The ALH Dhruv choppers are used in multiple roles by the Indian defence forces including transportation of men and material.

"HAL had already initiated steps and will closely work with the customers to ensure that the Helicopters fleet is fully operational," HAL officials told ANI.

The ALH Dhruv has become one of the important parts of helicopter missions undertaken by all three forces involved in different terrains they are deployed.

Defence officials said they were hopeful of resuming the ALH Dhruv operations very soon.

During the incident, two days back, an Indian Navy ALH Dhruv on a routine flying mission off Mumbai experienced a sudden loss of power and rapid loss of height.

The Navy stated that the pilot carried out controlled ditching over water and all three aircrews exited the helicopter safely and were recovered as part of a swift rescue operation.

The ditched helicopter had deployed its emergency flotation gear and efforts are underway to salvage it.

<https://economictimes.indiatimes.com/news/defence/defence-forces-halt-alh-dhruv-fleet-operations-in-wake-of-navy-accident/articleshow/98550439.cms?from=mdr>

ThePrint

Lockheed Martin, Tata Group Sign MoU for Fighter Wing Production in India

US Aerospace major Lockheed Martin and Tata Group have reached an agreement to begin the implementation of fighter wing production at the companies' joint venture, Tata Lockheed Martin Aerostructures Limited (TLMAL) in Hyderabad.

According to an official statement, the Memorandum of Understanding (MOU) envisions the production of 29 fighter wing shipsets, with an option of additional shipsets and deliveries commencing in 2025.

Lockheed Martin formally recognized TLMAL as a potential co-producer of fighter wings in October 2021 following TLMAL's successful production and qualification of a prototype fighter wing shipset. Through this prototype project, TLMAL was required to demonstrate the capability to perform detailed part manufacturing and delivery of a fully compliant fuel-carrying 9-g, 12,000-hour, interchangeable/replaceable representative fighter wing, the statement said.

That achievement further strengthened Lockheed Martin's partnership with India and supports its F-21 offering for procurement of 114 new fighter aircraft — exclusively for India and the Indian Air Force — by proving additional indigenous production capability. The India F-21 represents an unprecedented strategic and economic opportunity for the United States-India relationship and represents a catalyst to future advanced technology cooperation, the statement said.

“This MOU between Lockheed Martin and Tata Group further exemplifies Lockheed Martin's commitment to a self-reliant India and the degree of confidence that exists in our relationships with our partners in India,” said Lockheed Martin chairman, president and CEO James Taiclet.

“Lockheed Martin's 21st-century security vision aims to deliver integrated mission-focused defence capabilities with innovation and urgency, and with that, we are one of the only aerospace companies with a complex aerostructure capability for advanced fighters in India. This strong partnership embodies our principle of For India, From India, For the World,” added Taiclet.

Tata Advanced Systems Limited and Lockheed Martin Aeronautics established TLMAL as a joint venture in 2010. TLMAL demonstrates the government of India's Aatmanirbhar Bharat 'Make in India' and 'Skills India' goals and serves as the single global source of C-130J empennage assemblies that are installed on all new Super Hercules aircraft. To date, TLMAL has manufactured and delivered nearly 200 C-130J empennages.

“I am proud of the Tata Group's partnership with Lockheed Martin on this prestigious project. I would like to congratulate the TLMAL team for successfully industrializing and qualifying the fighter wing in spite of the technological complexity involved. I am confident the initiative of manufacturing fighter wings in India will go a long way in strengthening the aerospace and defence manufacturing ecosystem in India,” said Tata Sons chairman N Chandrasekaran.

Headquartered in Bethesda, Maryland, Lockheed Martin Corporation is a global security and aerospace company that is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services, said the company statement.

Tata Advanced Systems Limited is a wholly-owned subsidiary of Tata Sons focused on providing integrated solutions for aerospace, defence and homeland security. In less than a decade, Tata Advanced Systems has become a significant player in the global aerospace market, becoming the premier manufacturing partner for global original equipment manufacturers (OEMs) as well as the government of India's Defence Research and Development Organization (DRDO), the statement added.

<https://theprint.in/economy/lockheed-martin-tata-group-sign-mou-for-fighter-wing-production-in-india/1434163/>

India, Australia Deepen Trade, Defence Relations

India and Australia discussed the finalisation of a comprehensive trade deal and a migration pact as well as ways to boost defence cooperation at the first annual summit between Prime Ministers Narendra Modi and Anthony Albanese, reflecting the growing strategic and commercial ties between the two countries.

Against the backdrop of strategic convergences and shared interests in the Indo-Pacific, including challenges posed by China's aggressive actions, the two sides also focused on ways to ramp up cooperation in maritime security and creating resilient and reliable supply chains.

Modi and Albanese told a joint media interaction after their talks that the two sides are moving ahead with negotiations on a comprehensive economic cooperation agreement (CECA) to upgrade an interim trade deal finalised last year, and a migration and mobility pact to benefit students and professionals.

Last year's economic cooperation and trade agreement (ECTA) opened better opportunities for trade and investment for both sides, Modi noted. "And our teams are also working on the CECA," he said, speaking in Hindi.

Renewable energy, including joint efforts in clean hydrogen and solar power, was an area of priority, Modi added.

Albanese appeared more bullish about the speedy conclusion of talks on CECA, saying the entry into force of ECTA eliminated tariffs on more than 85% of Australian exports to India, benefiting consumers and providing cheaper inputs for industry.

"We also agreed on an early conclusion of our ambitious CECA as soon as possible. And I'm hopeful that we'll be able to finalise that this year," Albanese said, describing it as a "transformational deal" that will create new employment opportunities and raise living standards for people on both sides.

India and Australia recently finalised a mechanism for recognising each other's educational qualifications, and Modi said the two sides are "moving forward" on the mobility agreement that will benefit students, workers and professionals.

Albanese, too, welcomed the agreement on educational qualifications, and said he is keen to expand the presence of Australian universities in India.

"I am also pleased to report that officials have made significant progress on a new migration and mobility partnership arrangement. This arrangement will... support the mobility of students, graduates, academic researchers, businesspeople and other professionals from the emerging and hi-tech sectors now and into the future, while also enhancing cooperation on issues pertaining to irregular migration. We hope to have more to announce on this new initiative the next time we meet in Australia," he said.

Modi described security cooperation as an important pillar of the bilateral partnership and said the two sides discussed maritime security in the Indo-Pacific and increasing mutual defence and

security cooperation. Albanese said both sides are committed to strengthening the defence and security partnership to address shared challenges and work towards an open, stable and prosperous Indo-Pacific in an “increasingly uncertain global security environment”.

Modi noted that the two sides had signed important defence-related agreements in recent years, including one on reciprocal provision of logistics support between their armed forces. He said both sides had discussed ways to strengthen the regular exchange of information between security agencies.

Foreign secretary Vinay Kwatra sought to play down China as a factor in the growing India-Australia strategic relations, telling a media briefing that such cooperation should be seen as part of the “bilateral eco-system of engagement and partnership and not as a derivative of what a third country does”.

Albanese, who is set to visit India again in September for the G20 Summit, invited Modi to Australia for the Quad Leaders’ Summit in May.

The two sides signed four agreements on cooperation in sports, audio-visual co-production to support skilled jobs and development of film projects, creation of two task forces on solar power and green hydrogen, and cooperation between India’s Atal Innovation Mission and Australia’s Commonwealth Scientific and Industrial Research Organisation.

Tim Thomas, a former vice president of Prudential Financial, was named the first CEO of the new Centre for Australia-India Relations, which will work across government, industry and academia to support new opportunities for collaboration. It will also administer the Maitri programme of scholarships and grants.

Albanese arrived in Ahmedabad on March 8 for a three-day visit. Besides participating in Holi celebrations on Wednesday, he joined Modi to watch the first day of the final Test match of the Border-Gavaskar Trophy on Thursday. Albanese and the high-power business delegation accompanying him interacted with leading Indian CEOs in Mumbai on Thursday.

He also visited the aircraft carrier INS Vikrant in the waters off Mumbai and announced Australia will host this year’s edition of the annual Malabar naval exercise that features the navies of India, Japan and US.

<https://www.hindustantimes.com/india-news/india-australia-deepen-trade-defence-relations-101678472714264.html>



Sat, 11 Mar 2023

Mumbai-based Defence Firm Discussing Supply of Made in India Drone to Australian Navy

An Indian drone business is in talks with Australian Navy to offer their drones, which can transport cargo and personnel to them, at a time when their top brass, including their Prime Minister Anthony Albanese, are visiting the nation.

The Indian Navy has provided the drone company with ably supported development of its products, including the human-carrying "Varuna" drone, which was shown to Prime Minister Narendra Modi at an indigenization event hosted by the naval force.

"The Indian firm is in talks with the Royal Australian Navy through its local partner there to supply them the made-in-India drones," Naval representatives were reported saying by ANI.

The Indian Navy has been actively promoting "made in India" in the defence industry and has helped the private sector create its own goods. These drones will be used to transport people and goods on huge warships, such as the brand-new aircraft carrier INS Vikrant, for which the Indian Navy has also placed orders.

The Varuna drone, which has a cargo capacity of 130 kg and a range of 25 km, can transport humans and has a flying time of about 30 minutes.

Nikunj Parashar, the CEO of the drone manufacturing company, stated that his company was in contact with the military about buying drones, but he did not go into further detail, ANI reported.

He claimed, however, that the Indian Navy had provided significant assistance in the creation of his drones, which are currently being incorporated into the Indian defence services.

He added that the Navy gave its own platforms to aid in product development and that with their assistance alone, his company was able to create Spotter, a multi-copter that can remain in the air for two hours to conduct surveillance.

Indian Navy's effort on the IDex programme to promote homegrown defence technologies has been a remarkable success.

<https://www.timesnownews.com/india/mumbai-based-defence-firm-discussing-supply-of-made-in-india-drone-to-australian-navy-article-98569549>



Sun, 12 Mar 2023

Rishi Sunak, Joe Biden, Anthony Albanese to Meet in San Diego to Finalise AUKUS Deal

U.K. Prime Minister Rishi Sunak is heading to San Diego on March 12, 2023 to finalise the AUKUS deal — a trilateral security partnership between Australia, the U.K. and the U.S. that will provide nuclear-powered submarines to Australia. The partnership was announced in September 2021 as part of the U.S. and U.K.'s strategies to more deeply with the Indo-Pacific, largely to counter Beijing's assertiveness in the region, including what Canberra has described as Beijing's "economic coercion".

"I am travelling to the United States today to launch the next stage of the AUKUS nuclear submarine programme, a project which is binding ties to our closest allies and delivering security, new technology and economic advantage at home," Mr Sunak said in a statement, prior to his departure.

Mr Sunak will have meetings on March 12 and March 13 with Australian Prime Minister Anthony Albanese and U.S. President Joe Biden . Mr Albanese, who has just wrapped up a visit to India, announced on Twitter that he had arrived in the U.S. along with Australia’s Navy chief, Mark Hammond. The White House said Mr Biden will fly to San Diego on Monday and will hold bilateral talks with Mr Albanese and Mr Sunak, in addition to AUKUS discussions.

Currently only six countries have nuclear-fuelled submarines — India, the U.S., the U.K, France, Russia and China. Australia, whose fleet consists of six diesel-powered Collins-class submarines will be the seventh, once the AUKUS fleet is deployed. Canberra could acquire up to five Virginia-class submarines from the U.S., in the 2030s, under AUKUS, according to a Reuters report. It would also work with the U.K. to design a new generation of submarines , using American technology. These would likely not be ready until the 2040s.

Mr Sunak’s trip to the west coast of the U.S. comes as the U.K. prepares to release its updated Integrated Review, a comprehensive statement about its security and foreign policy , which will be released on March 13, 2023.

“The Integrated Review Refresh will address the grave risks from Putin’s Russia, the increasingly concerning behaviour of the Chinese Communist Party and hybrid threats to our economy and energy security,” Downing Street said on Sunday.

<https://www.thehindu.com/news/international/rishi-sunak-joe-biden-anthony-albanese-to-meet-in-san-diego-to-finalise-aucus-deal/article66610414.ece>



Sun, 12 Mar 2023

Rishi Sunak Announces £5bn Extra Defence Spending During US Trip

Rishi Sunak has pledged to increase defence spending by nearly £5bn over the next two years to counter emerging threats from hostile states.

The funding boost will be confirmed in a new UK foreign and security strategy, to be published on Monday.

It comes ahead of talks between the prime minister and his US and Australian counterparts in California.

The trio are set to agree details of a UK-US pact to supply Australia with nuclear-powered submarines.

The agreement, known as the Aucus pact, was signed in 2021 as part of a joint effort to counter Chinese military power in the Indo-Pacific region.

Reports have suggested Australia could opt to build a modified version of the British Astute-class submarine, while taking delivery of up to five US Virginia-class submarines during the production stage.

Downing Street said £3bn from the extra spending would be earmarked to support the pact, along with boosting industrial infrastructure and servicing UK submarines.

The remaining £1.9bn will be used to replace weapons sent to Ukraine and improve the UK's munitions infrastructure.

Of the new money, £1.98bn will be spent this year and £2.97bn next year, with defence spending then reviewed again after 2025.

Spending after this date would be assessed against a target to increase defence spending to 2.5% of national income in the "longer term", No 10 said, without specifying a timeframe.

Mr Sunak's short-lived predecessor Liz Truss had committed to spend 3% of GDP on defence by 2030 - but the prime minister has stepped back from that pledge.

'Stand our ground'

A new version of the so-called Integrated Review will be published on Monday, replacing the first version of the security strategy document unveiled under Boris Johnson in 2021.

The update was ordered by Ms Truss in September last year to take account of Russia's invasion of Ukraine.

Downing Street said the new strategy would take account of an increased security risk posed by Moscow, as well as "increasingly concerning" military, financial and diplomatic activity by China.

It is expected to confirm extra funding for Mandarin language training and diplomatic expertise on China, as well as a new approach to guaranteeing UK access to minerals critical to new industries.

The document will also outline details of a new training curriculum for security officials, as well as a unit within MI5 to offer security advice to businesses and other organisations.

Speaking ahead of the document's release, Mr Sunak said the increased defence spending would help the UK "stand our ground" in an increasingly "volatile" world.

"We have seen all too clearly in the last year how global crises impact us at home, with Russia's appalling invasion of Ukraine driving up energy and food prices," he told reporters on the plane taking him to the meeting in the US.

"We will fortify our national defences, from economic security to technology supply chains and intelligence expertise, to ensure we are never again vulnerable to the actions of a hostile power."

He also said he will formally invite Mr Biden to Northern Ireland next year to mark the 25th anniversary of the Good Friday Agreement.

The prime minister's visit to San Diego comes just 48 hours after his day trip dash to Paris and back to meet the French President Emmanuel Macron.

Mr Sunak sees both trips, in quick succession, as evidence of his desire to be "active, open and engaged around the world", as he told reporters on the flight to California.

But he confronts not just a war in Europe, in Ukraine, but a growing awareness inside government of the increasing concerns about China.

The prime minister told the BBC that Beijing presented "an epoch defining challenge to the global order" and added that it was a 'regime' that was 'increasingly authoritarian at home and assertive abroad.'

That might sound like strong language. But some Conservative MPs would like it to be stronger. And there are concerns from others that the promises being made for defence spending don't go far enough. While Defence Secretary Ben Wallace has publicly welcomed the prime minister's announcement, he had been hoping for considerably more.

Labour rubbished Mr Sunak's promise, and said defence spending had not hit 2.5% of GDP since it had left power.

John Healey, the shadow defence secretary, said the Conservatives were "failing to secure Britain's national defence for the future".

"The Tories crashed the economy and sent inflation soaring, squeezing defence budgets even further as threats to the UK were increasing," he said.

The announcement, he added, would not deal with "credibility gaps" that weakened the UK's defence and its contribution to the Nato security alliance.

<https://www.bbc.com/news/uk-politics-64932951>



Fri, 10 Mar 2023

UK and France Commit to Greater Defence Cooperation at Paris Summit

Defence and security were a key focus at today's 36th UK-France Summit in Paris, with new initiatives to advance the already strong military relationship between the two nations.

Defence Secretary Ben Wallace met France's Minister for the Armed Forces, Sébastien Lecornu, reaffirming our longstanding partnership and friendship as Prime Minister Rishi Sunak and President Macron outlined a shared vision to meet the greatest challenges the UK and France face, including in defence and security.

As permanent members of the UN Security Council, and as members of the G7, G20 and NATO, our nations already work closely to promote international security and tackle shared challenges. A joint statement was published covering a range of agreements made during the summit. Chief of the Defence Staff, Admiral Sir Tony Radakin, joined the Defence Secretary for the dialogues taking place in Paris – focusing on Ukraine and ambitions for further integration of our Armed Forces over the next decade.

Defence Secretary Ben Wallace said:

It has been a great pleasure to meet again with my friend and defence counterpart Sébastien Lecornu. We have agreed to strengthen our defence and security partnership, committing to look at areas of cooperation to increase the interoperability of our joint defence capabilities – and to advance key projects to develop complex weapons systems.

Our shared and ongoing support for Ukraine remains unwavering. We will continue to provide that support for as long as it takes.

Defence Secretary Ben Wallace and Minister Sébastien Lecornu set out how both our nations will continue our steadfast support for Ukraine, and work together as NATO allies to ensure that Putin's aggression and illegal invasion will fail. The UK and France committed to do all they can to strengthen Ukraine's abilities on the battlefield and ensure the country defend its people and critical infrastructure against Russian aggression. This includes increased cooperation on provision of equipment, in particular ammunition, and supporting the training of Ukrainian personnel, including marines, in the UK.

Chief of the Defence Staff, Admiral Sir Tony Radakin, said:

As our leaders meet in Paris, the British and French Armed Forces are working together in response to Russian aggression in Europe, and to protect our shared values and interests across the globe. Now we will deepen our cooperation by supporting Ukraine today or meeting the challenges of tomorrow, from security in the Arctic to carrier deployments in the Pacific.

We will also pursue a host of joint endeavours from intelligence sharing to complex weapon development. This reflects the mutual respect and confidence that exists between us, our shared technological ambitions, our unwavering commitment to NATO and our recognition that the security of Europe and the Atlantic is tied to that of the wider world.

During the summit, the UK and France agreed to coordinate deployments of our aircraft carriers to provide complementary and a more persistent European presence in regions of shared interest. This will mean routinely providing support for each other's task groups, cooperating in exercises to prepare our carriers for warfighting, and explore opportunities for the United Kingdom and France to demonstrate the sequencing of more persistent European carrier strike group presence in the Indo-Pacific.

Further integration of the UK and French Armed Forces over the next decade was also discussed, with a vision to enable seamless operations and draw on common intelligence, surveillance and reconnaissance (ISR) data.

The UK and France also agreed to work to ensure interoperability of weapons and platforms across Europe and NATO, including advance landmark projects to develop their future complex weapons systems, such as the Future Cruise and Anti-Ship Weapon (FC/ASW) programme. An agreement was also reached on a new dialogue on defence industrial strategy, and to cooperate further on European air defence capabilities and directed energy weapons.

In addition, discussion covered strengthening our cooperation on homeland defence and greater focus on cyber activities. The nations also agreed to continue to harness the potential of the Combined Joint Expeditionary Force (CJEF), making it fit for the evolving security environment and new contested areas, including in the High North.

<https://www.gov.uk/government/news/uk-and-france-commit-to-greater-defence-cooperation-at-paris-summit>

China Leading in Hypersonic Weapons: US Defence Officials

Russia's repeated use of advanced hypersonic missiles as part of its bombardment of Ukraine may be getting the bulk of the West's attention, but United States defense officials say it is China that has the world's leading hypersonic arsenal, Voice of America (VOA) reported.

"While both China and Russia have conducted numerous successful tests of hypersonic weapons and have likely fielded operational systems, China is leading Russia in both supporting infrastructure and numbers of systems," the Defense Intelligence Agency's chief scientist for science and technology told U.S. lawmakers on Friday.

"Over the past two decades, China has dramatically advanced its development of conventional and nuclear-armed hypersonic missile technologies and capabilities through intense and focused investment, development, testing and deployment," said the DIA's Paul Freisthler, testifying in front of the House Armed Services Committee.

VOA reported that unlike ballistic missiles, which fly at hypersonic speeds but travel along a set trajectory, hypersonic weapons are highly maneuverable despite flying at Mach 5, or five times the speed of sound.

According to U.S. defense officials, that high-speed maneuverability makes hypersonic weapons especially difficult to detect and, therefore, difficult to stop.

According to the DIA and information gathered by the Congressional Research Service, China operates two research sites for hypersonic weapons, with at least 21 wind tunnels. Some of the wind tunnels can test vehicles flying at speeds of up to Mach 12.

China's hypersonic arsenal includes the DF-17, a medium-range ballistic missile with a hypersonic glide vehicle that has a range of 1,600 kilometers.

It also has the DF-41 intercontinental ballistic missile, which also carries a hypersonic glide vehicle. During a test of the system in July 2021, the hypersonic weapon circumnavigated the globe, prompting a top U.S. defense official to compare the incident to the start of the original space race in the 1950s.

Beijing also has the DF-ZF hypersonic glide vehicle, with a range of close to 2,000 kilometers, and the Starry Sky-2, a nuclear capable hypersonic prototype.

Russia's missile attack against Ukraine on Friday included about six of Moscow's hypersonic Kinzhal missiles. The Kinzhal travels at speeds of up to Mach 10 and has a range of about 2,000 kilometers. Russia also has the Avangard hypersonic glide vehicle, which it claims can travel at speeds of more than Mach 20 with a range of more than 10,000 kilometers, and the ship-launched Zircon hypersonic missile, with a top speed of Mach 8 and a range of 1,000 kilometers. The DIA's Freisthler said Friday that Moscow is also developing an air-launched hypersonic missile (the Kh-95) and has announced plans to place a hypersonic glide vehicle on its Sarmat intercontinental ballistic missile.

The U.S. military has been developing a range of hypersonic weapons, all of which are still in testing or development. Officials have said that, unlike China and Russia, Washington has no plans to arm any of its hypersonic weapons with a nuclear warhead.

<https://economictimes.indiatimes.com/news/defence/china-leading-in-hypersonic-weapons-us-defence-officials/articleshow/98567887.cms>

THE ECONOMIC TIMES

Mon, 13 Mar 2023

China Appoints US-Sanctioned General as Defence Minister

China on Sunday appointed a US-sanctioned army general as its new Defence Minister, displaying scant regard for Washington's ban on its military personnel. Gen. Li Shangfu, a Chinese aerospace engineer and General of the People's Liberation Army (PLA), was sanctioned by the US in 2018 for the purchase of Russian Sukhoi Su-35 fighter jets and S-400 surface-to-air missiles by China's Equipment Development Department (EDD) in violation of the US sanctions on Russia.

The US sanctioned both the EDD and its then director Gen Li.

On Sunday, Gen Li was confirmed as the new Defence Minister by China's rubber-stamp parliament, the National People's Congress (CPC). He will succeed Gen Wei Fenghe.

Gen Li was appointed along with a new set of cabinet ministers for various ministries as part of change of the Chinese government officials every 10 years.

On Saturday, Gen Li was appointed as a member of the Central Military Commission (CMC) - the high command of the Chinese military headed by President Xi Jinping.

The US Department of Defence's 2022 China Military Report described Gen Li as the general officer who offers "technical expertise on military modernisation on space issues" to Xi.

"Li's rise reflects the unprecedented development of China's space enterprise since Xi Jinping took power in 2012," according to the Diplomat magazine.

"It also signals to the world that, against the backdrop of increasingly intensified China-US technological competition, China will continue to prioritize aerospace in its defence modernisation agenda during Xi's third term and beyond," it said.

"General Li Shangfu's appointment represents more consistency in the PLA senior leadership than change. Like Wei Fenghe, who also rose within the PLA under Xi's tenure, Li will continue to be a steward of China's defence modernization programs, which have received sustained and continuous support of Chinese leaders from Jiang Zemin to Xi Jinping. Moreover, as the highest-ranking state councilor and a CMC member, Li will enjoy direct access to Xi and serve as his key military advisor," it said.

<https://economictimes.indiatimes.com/news/international/world-news/china-appoints-us-sanctioned-general-as-defence-minister/articleshow/98588322.cms>

US, South Korea Kick off Largest Drills in Five Years

South Korea and the United States kicked off their largest joint military exercises in five years on Monday, after nuclear-armed Pyongyang warned such drills could be seen as a "declaration of war".

Washington and Seoul have ramped up defence cooperation in the face of growing threats from the North, which has conducted a series of banned weapons tests in recent months.

The US-South Korea exercises, called Freedom Shield, are scheduled to run for at least 10 days from Monday and will focus on the "changing security environment" due to North Korea's redoubled aggression, the allies said.

In a rare move, the Seoul military this month revealed that it and Washington special forces were staging "Teak Knife" military exercises -- which involve simulating precision strikes on key facilities in North Korea -- ahead of Freedom Shield.

All such exercises infuriate North Korea, which views them as rehearsals for an invasion.

It has said its nuclear weapons and missile programmes are for self-defence.

Over the weekend, North Korea fired two "strategic cruise missiles" from a submarine in waters off its east coast, the official KCNA news agency reported Monday.

The agency cited the country's "invariable stand" to confront a situation in which "the US imperialists and the South Korean puppet forces are getting ever more undisguised in their anti-DPRK military maneuvers".

"Pyongyang has military capabilities under development it wants to test anyway and likes to use Washington and Seoul's cooperation as an excuse," said Leif-Eric Easley, a professor at Ewha University in Seoul.

DPRK is the initialism for North Korea's official name, the Democratic People's Republic of Korea.

In a separate statement, North Korea's foreign ministry said the United States was "scheming" to call a UN Security Council meeting on human rights in the reclusive communist state, to coincide with the joint manoeuvres.

"The DPRK bitterly denounces the US vicious 'human rights' racket as the most intensive expression of its hostile policy toward the DPRK and categorically rejects it," the ministry said, according to KCNA.

Last year, the North declared itself an "irreversible" nuclear power and fired a record-breaking number of missiles, with leader Kim Jong Un last week ordering his military to intensify drills to prepare for a "real war".

Shift in position?

Washington has repeatedly restated its "ironclad" commitment to defending South Korea, including using the "full range of its military capabilities, including nuclear".

South Korea, for its part, is eager to reassure its increasingly nervous public about the US commitment to so-called extended deterrence, in which US military assets, including nuclear weapons, serve to prevent attacks on allies.

Although the official policy of both countries towards the North -- that Kim must give up his nukes and return to the table for talks -- has not changed, experts said there had been a practical shift.

Washington has "effectively acknowledged that North Korea will never give up its nuclear programme", An Chan-il, a defector turned researcher who runs the World Institute for North Korea Studies, told AFP.

This Freedom Shield training is the first since that happened, meaning it "will be very different -- both qualitatively and quantitatively -- from previous joint exercises that took place in recent years", he added.

North Korea, which recently called for an "exponential" increase in weapons production, including tactical nukes, had been widely expected to respond with missile launches and drills of its own -- with experts saying more were likely over the course of the US-South Korean exercises.

"North Korea will use the Freedom Shield 2023 Exercise to unify its people and as an excuse to further invest in weapons of mass destruction," said Chun In-bum, a retired South Korean army general.

"More missile launches with variations in style and scope should be expected with even a nuclear test. More acts of intimidation from North Korea should not come as a surprise."

But Hong Min of the Korea Institute for National Unification said Pyongyang was not expected to "cross the red line".

The North is likely to refrain from activities "at which the US and South Korea are forced to counter strike in response", he said.

<https://economictimes.indiatimes.com/news/defence/us-south-korea-kick-off-largest-drills-in-five-years/articleshow/98591815.cms>



Fri, 10 Mar 2023

Ukraine Crisis: EU Seeks to Increase and Speed up Production of Artillery Ammunition

European Union (EU) defence ministers meeting informally in Stockholm on 7–8 March discussed a plan for increasing and accelerating the production of artillery shells. High Representative of the EU for Foreign Affairs and Security Policy Josep Borrell outlined the plan during the press conference that followed the meeting.

He said the plan would consist of three complementary, connected, and mutually reinforcing tracks. The first track would consist of a EUR1 billion (USD1.06 billion) package from the European Peace Facility (EPF) to pay for 155 mm artillery shells and Soviet-style 152 mm and other artillery ammunition to supply to Ukraine from existing stocks or those in production in the EU. The second track, with another EUR1 billion from the EPF, would involve the joint procurement of 155 mm artillery shells to meet Ukrainian and EU requirements, identified and co-ordinated by the European Defence Agency (EDA), with the aim of fast-tracking production and reducing costs. The third track would involve ramping up industrial capacity in the medium term and reducing delivery times.

Borrell expected the plan to “encourage EU members to dig deeper in their stocks”. He said there was general agreement among the defence ministers on the plan, with some questions pending. He foresaw them, along with EU foreign ministers, agreeing to it during a joint meeting in Brussels on 20 March, followed by the approval of EU leaders during their summit on 23–24 March, also in Brussels.

<https://www.janes.com/defence-news/news-detail/ukraine-crisis-eu-seeks-to-increase-and-speed-up-production-of-artillery-ammunition>



Sat, 11 Mar 2023

Why would Russia Use Hypersonic Missile to Strike Ukraine?

The latest Russian missile barrage against Ukraine’s civilian infrastructure has marked one of the largest such attacks in months.

On Thursday, Russia fired over 80 missiles in a massive effort to overwhelm Ukrainian air defenses and cripple the country’s energy system.

Russia has been regularly launching similar strikes since October in a bid to demoralize the population and force the Ukrainian government to bow to the Kremlin’s demands.

Thursday’s strikes differed from earlier attacks, though, by including a larger number of sophisticated hypersonic missiles that are the most advanced weapons in the Russian arsenal. But just like previous such barrages it has failed to cause lasting damage to the country’s energy network, with repair crews quickly restoring power supplies to most regions.

Here is a look at the latest Russian missile attack and the weapons involved.

WHAT DID UKRAINIAN AND RUSSIAN OFFICIALS SAY?

Ukraine’s military chief, Gen. Valerii Zaluzhnyi, said that Russia launched 81 missiles and eight exploding Iranian-made Shahed drones in a barrage early Thursday, and Ukraine’s air defenses downed 34 missiles and four drones.

According to Zaluzhnyi, those missiles included six hypersonic Kinzhal missiles, the most advanced weapons in the Russian arsenal. Ukrainian air force spokesman Yuriy Ihnat emphasized

that Ukraine lacks assets to intercept the Kinzhal and the older Kh-22 missiles that were also used in Thursday's strikes.

Russia's Defense Ministry described the barrage as a "strike of retribution" in retaliation for what Moscow described as a cross-border raid by Ukrainian saboteurs who attacked two villages in the Bryansk region in western Russia last week. A group of self-exiled Russians fighting alongside Ukrainian forces claimed responsibility for the attack, while Ukraine denied involvement. Moscow didn't say how many missiles were fired, but claimed they hit the designated targets.

HOW DID THE LATEST BARRAGE DIFFER FROM EARLIER RUSSIAN ATTACKS?

Military analysts noted that the number of Kinzhal missiles used in Thursday's barrage was significantly higher compared to previous strikes, which have typically involved no more than a couple of such weapons.

The Kinzhal is one of the latest and most advanced Russian weapons. The Russian military says the air-launched ballistic missile has a range of up to 2,000 kilometers (about 1,250 miles) and flies at 10 times the speed of sound, making it hard to intercept. A combination of hypersonic speed and a heavy warhead allows the Kinzhal to destroy heavily fortified targets, like underground bunkers or mountain tunnels.

Russia has used the Kinzhal to strike targets in Ukraine starting from the early days of the invasion, but it has used the expensive weapon sparingly and against priority targets, apparently reflecting the small number of Kinzhals available.

The precise targets for Russian strikes and the resulting damage remain unclear as Ukrainian authorities have maintained a tight lid of secrecy on such information to avoid giving Russia a clue for planning future attacks. It's also unclear what missiles Russia has used to hit which targeted facilities, although Western officials and military analysts have argued that Russia has faced an increasing shortage of state-of-the-art weapons, with new production far too slow to compensate for the amount already spent.

The British Defense Ministry noted Friday that the intervals between Russian missile strikes have grown bigger, probably "because Russia now needs to stockpile a critical mass of newly produced missiles directly from industry before it can resource a strike big enough to credibly overwhelm Ukrainian air defenses."

The Kinzhal is carried by MiG-31 fighter jets, some of which are based in Belarus. Russia has used the territory of its ally as a staging ground for the invasion and maintained its troops and weapons there.

WHAT OTHER WEAPONS DID RUSSIA USE?

The Ukrainian military said that Thursday's barrage also included six older Kh-22 missiles, which are launched by Tu-22M heavy bombers and fly at more than three times the speed of sound.

The massive weapon, which has a range of 600 kilometers (370 miles) and dates back to the 1970s, was designed by the Soviet Union to strike U.S. aircraft carriers and other warships. It packs a big punch thanks to its supersonic speed and a heavy load of 630 kilograms (nearly 1,400 pounds) of explosives, but its outdated guidance system could make it highly inaccurate against ground targets, raising the probability of collateral damage.

Like in previous strikes, Russia also fired the modern Kh-101 cruise missiles carried by strategic bombers and the Kalibr cruise missiles that are launched by warships. The long-range, high-precision missiles are subsonic and the Ukrainian military has said it has successfully engaged them.

Another fixture in the Russian strikes were S-300 air defense missiles that Russia uses against ground targets at a comparatively smaller distance from the front line. While its relatively small warhead lacks the punch of bigger weapons designed to hit ground targets, Russia appears to have a big stock of such missiles and Ukraine can't intercept them.

Russia has also used some shorter-range air-launched missiles carried by fighter jets and the Iranian exploding drones. Ukrainian officials have said that the military has become increasingly successful in tackling them, downing the bulk of drones launched in each strike.

Ukrainian officials and experts say that by using numerous types of missiles as well as drones in one massive attack Russia tries to overwhelm Ukrainian air defenses.

"It's much more difficult for the Ukrainian air defenses to deal with an attack when they launch a motley collection of ballistic and ordinary missiles along with drones," Zhdanov said. "Russia has been searching for weak spots in Ukrainian air defenses and it has partially succeeded."

<https://apnews.com/article/ukraine-russia-kinzhal-hypersonic-missiles-e0dc1e20e9dd53528c5381ca5fdee66a>

THE ECONOMIC TIMES

Sat, 11 Mar 2023

Iran Says Deal Reached to Buy Russian Fighter Jets

Iran has finalised a deal to buy Sukhoi Su-35 fighter jets from Russia, state media reported, as defence cooperation between the two countries deepens.

The air force of sanctions-hit Iran has an ageing fleet of aircraft and has struggled to acquire spare parts to keep its warplanes in the air.

In a statement to the United Nations, Tehran said it began approaching "countries to buy fighter jets" to replenish its fleet in the wake of the 1980-88 Iran-Iraq war.

"Russia announced it was ready to sell them" after the expiry in October 2020 of restrictions on Iran purchasing conventional weapons under UN Resolution 2231, said the statement carried late Friday by the official IRNA news agency.

"The Sukhoi 35 fighter jets were technically acceptable for Iran," it added.

Tehran has forged strong ties with Moscow in various sectors including the military in the past year.

Kyiv has accused Tehran of supplying Moscow with Shahed-136 "kamikaze" drones used in attacks on civilian targets since Russia's invasion of Ukraine in February last year -- an allegation the Islamic republic denies.

The United States has expressed alarm over the growing military cooperation between Iran and Russia, with Pentagon spokesman John Kirby warning in December that Russia looked likely to sell Iran its fighter jets.

Kirby maintained that Iranian pilots had reportedly been learning to fly the Sukhoi warplanes in Russia, and that Tehran may receive the aircraft within the next year, which would "significantly strengthen Iran's air force relative to its regional neighbours".

Iran currently has mostly Russian MiG and Sukhoi fighter jets that date back to the Soviet era, as well as some Chinese aircraft, including the F-7.

Some American F-4 and F-5 fighter jets dating back to before the 1979 Islamic Revolution are also part of its fleet.

The United States began reimposing sanctions on Iran in 2019, a year after its unilateral withdrawal from the Iran nuclear deal under then-president Donald Trump.

The 2015 deal formally known as the Joint Comprehensive Plan of Action, or JCPOA, gave Iran relief from international sanctions in return for curbs on its suspect nuclear programme.

<https://economictimes.indiatimes.com/news/defence/iran-says-deal-reached-to-buy-russian-fighter-jets/articleshow/98565842.cms>



Sun, 12 Mar 2023

China's 'AI Ship Designer' Works at Unprecedented Speed; Performed a Year's Work only in 24 Hours!

By Tanmay Kadam

A team of Chinese researchers funded by China's People's Liberation Army (PLA) recently claimed to have used artificial intelligence (AI) to design an electrical layout of a warship with 100 percent accuracy and at an unprecedented speed.

A team of researchers from the China Ship Design and Research Center, headed by Luo Wei, a senior engineer with the ship design center, published a paper in the Chinese-language journal Computer Integrated Manufacturing Systems on February 27.

The researchers claimed in the paper that their AI designer took only a day to complete work that humans would need nearly a year to achieve with the most advanced computer tools.

Considering the scale and complexity of modern warships, mistakes are sure to happen during the design process, and it can take several hours to discover and rectify them. However, when the researchers put the AI designer to the test, with more than 400 challenging tasks, they found that the AI could accomplish 100 percent accuracy.

According to the researchers, while there is still room for improvement, their AI designer was “ready for engineering applications” in China’s shipbuilding industry to increase the rate of warship manufacturing.

Luo’s team said that the Chinese military funded their AI designer project because the design process was the main area hindering the speed of production of warships rather than shipyard delays.

Chinese AI Compared To That Of Google

Luo’s team compared their AI designer to those developed by companies like Google to increase the speed of computer chip design. There were some critical differences between the two, according to the team.

Firstly, the team notes in the paper that there is no room for error in warship design, and the AI chip designer can make a few mistakes.

Furthermore, the team said that while an AI chip designer could produce many products, computing resources could be assigned to train it, and the company could still realize a profit margin.

Whereas their AI warship designer was only working on one vessel without the resources of a Big Tech company.

Also, unlike an AI system that learns and makes decisions independently without human intervention, the warship designer created by the team is a machine that operates with human guidance.

The AI designer starts by consulting a database of Chinese ship design knowledge and experience from past decades, and then it comes up with a design, which it checks against the database. According to Luo’s team, this approach significantly reduced the computing resources needed and eliminated errors.

The team also noted that the AI designer’s effectiveness had only been proven for the layout of electrical systems. However, it also carried out these design tasks much faster and more accurately than humans, and it could be used easily with a small computer system.

“Other countries may have developed similar systems, but they have not disclosed them publicly due to the military sensitivity,” the team added.

China Could Surpass The US

China already boasts the world’s largest navy numerically after overtaking the US Navy between 2015 and 2020. If the recent claims by Luo’s team are anything to go by, the US military planners have much to fear.

The US is already concerned about China’s expanding naval fleet and its capacity to produce warships at a very high pace.

The US Navy Secretary Carlos Del Toro told reporters in Washington last month that US naval shipyards cannot match the output of Chinese ones.

“They have 13 shipyards. In some cases, their shipyard has more capacity – one shipyard has more capacity than all of our shipyards combined. That presents a real threat,” Del Toro said.

China intends to build a fleet of more than 400 warships by 2025. The US naval fleet is currently under 300 ships, and the Pentagon aims to have 350 manned vessels by 2045, according to the US Navy's Navigation Plan 2022 released last summer, which is still way behind China.

In January, a senior American naval expert, Sam Tangredi, a former US Navy captain and the Leidos Chair of Future Warfare Studies at the US Naval War College, warned that the US Navy might lose to China's PLA Navy, which enjoys a substantial numerical advantage over the US, saying, "the side with the most ships almost always wins."

In a January issue of the US Naval Institute's (USNI's) Proceedings magazine, Tangredi looked at 28 naval wars in history, going back to the Greco-Persian Wars of 500 BC, and found that superior technology defeated more significant numbers in only three instances.

"Using technological advantage as an indicator of quality, historical research on 28 naval wars (or wars with significant and protracted naval combat) indicates that the side won 25 with the larger fleet," wrote Tangredi, while noting that in cases where fleet size was roughly equal, superior strategy and substantially better trained and motivated crews carried the day.

"Only three could be said to have been won by a smaller fleet with superior technology," according to Tangredi's findings.

On the issue of a potential future conflict with China, Tangredi says that a naval war against China in the western Pacific in this decade would see a smaller US Naval force against a gigantic PLA Navy, and that too in waters near China, inside the range of PLA's air and rocket forces.

"US leaders must ask themselves to what extent they are willing to bet on technological—without numerical—superiority in that fight," wrote Tangredi.

<https://eurasianimes.com/chinas-ai-ship-designer-works-at-unprecedented-speed-performed/>

Science & Technology News



Fri, 10 Mar 2023

In a First, Scientists Create Mice with Two Biological Fathers

In a breakthrough, Japanese scientists have created mice with two biological fathers, an advance that can pave the way for new fertility treatments in humans.

The team led by scientists at the universities of Kyushu and Osaka in Japan made the mice using eggs from male skin cells, The Guardian reported. The novel technique could allow two men to have children together. And also help in treatments for severe forms of infertility, such as Turner's syndrome, where one copy of the X chromosome is missing or partly missing.

"This is the first case of making robust mammal oocytes from male cells," Katsuhiko Hayashi, from Kyushu was quoted as saying.

Hayashi presented the development at the Third International Summit on Human Genome Editing at the Francis Crick Institute in London on Wednesday.

Previously, scientists have created mice that technically had two biological fathers, and also mice with two mothers. However, this is the first time eggs have been cultivated from male cells.

In the study, yet to be published, Hayashi and the team transformed a male skin cell with the XY chromosome combination, into an egg, with the female XX version.

Male skin cells were reprogrammed into a stem cell-like state to create so-called induced pluripotent stem (iPS) cells. The team then deleted the Y-chromosome and replaced it with an X chromosome that was "borrowed" from another cell to produce iPS cells with two identical X chromosomes, the report said.

"The trick of this, the biggest trick, is the duplication of the X chromosome," said Hayashi. "We really tried to establish a system to duplicate the X chromosome."

The cells were then cultivated in an ovary organoid which replicated the conditions inside a mouse ovary.

After fertilising the eggs with normal sperm, the team obtained about 600 embryos. These were then implanted into surrogate mice, resulting in the birth of seven mouse pups.

The efficiency of about 1 per cent was lower than the efficiency achieved with normal female-derived eggs, where about 5 per cent of embryos went on to produce a live birth, the team said.

The baby mice appeared healthy, had a normal lifespan, and went on to have offspring as adults, the report said.

"They look OK, they look to be growing normally, they become fathers," said Hayashi.

Scientists now look to replicate the new findings with human cells. Hayashi, who is internationally renowned as a pioneer in the field of lab-grown eggs and sperm predicted it is possible in the span of a decade

"Purely in terms of technology, it will be possible (in humans) even in 10 years," he said.

"I don't know whether they'll be available for reproduction," he said. "That is not a question just for the scientific programme, but also for (society)."

<https://www.deccanherald.com/science-and-environment/in-a-first-scientists-create-mice-with-two-biological-fathers-1198819.html>



Fri, 10 Mar 2023

India, U.S. to Launch a Semiconductor Sub-committee

India and the United States on March 10 signed a Memorandum of Understanding (MoU) that will pave the way for creating a Semiconductor Sub-Committee under the Commercial Dialogue

between the U.S. Department of Commerce and India's Ministry of Electronics and Information Technology (MeitY) and the Ministry of Commerce. The announcement of the MoU was made during the revised India-U.S. Commercial Dialogue that was relaunched in New Delhi on Friday.

"One of the major outcomes of the Commercial Dialogue was the Memorandum of Understanding on establishing semiconductor supply chain and innovation partnership under the framework of the India-U.S. Commercial Dialogue," announced Minister of Commerce and Industry Piyush Goyal. News about the MoU was earlier shared by visiting U.S. Commerce Secretary Gina Raimondo on Thursday.

Mr. Goyal said the key features of the Commercial Dialogue included creating "reliable supply chains, diversifying and friend-shoring [sourcing of material from countries with similar social and political values], facilitating climate and clean technology cooperation, inclusive digital growth, talent development, post-pandemic economic recovery, and a focus on cooperation and conformance".

Mr. Goyal and Ms. Raimondo welcomed the recent launch of the U.S.-India initiative of Critical and Emerging Technology (iCET) that will broaden "strategic technology partnership".

A joint statement issued after the event declared, "The Minister and the Secretary charged the Semiconductor Sub-Committee with convening its first engagement in advance of any Commercial Dialogue mid-year review and reviewing recommendations from the joint industry-led task force launched in connection with the iCET."

According to the joint statement, Ms. Raimondo welcomed "India's active partnership in the Indo-Pacific Economic Framework for Prosperity [IPEF]" and expressed her appreciation for India's hosting of the special round of negotiations for "IPEF Pillars II-IV" between February 8-11. "The Minister and the Secretary noted that deepening economic engagement among IPEF partner countries is crucial for continued inclusive growth, peace and prosperity in the Indo-Pacific region," it said.

<https://www.thehindu.com/news/national/india-us-sign-mou-on-establishing-semiconductor-sub-committee/article66604653.ece>



Sun, 12 Mar 2023

Here's why the Maiden Flight of World's First 3D-printed Rocket was Cancelled Last Minute

The launch of the world's first 3D-printed rocket had to be cancelled at the last minute again. The launch which was scheduled for Saturday was aborted after it encountered an "automation issue". At 110 feet tall and 7.5 feet wide, the 9,280 kg Terran 1 rocket is the world's largest 3D-printed object to attempt an orbital flight. As per an AFP report, the engine of the unmanned Terran 1 had begun igniting, when the rocket faced the issue which ultimately led to its takeoff being aborted for the second time in less than a week.

Space Relativity, the start-up behind the 3D-printed rocket, also made a second attempt to launch the rocket but had to abort due to pressure issues in the rocket's second stage.

"The team went HARD today and we intend to do so during our next attempt. More to come on the new launch date," said the company in a tweet.

An earlier launch scheduled for last Wednesday (March 8th) was postponed over last-minute propellant temperature issues.

Terran 1 is a marvel in innovation with 85 per cent of its mass, including its engines, 3D printed with metal alloys. To achieve this feat, the company used the world's largest 3D metal printers. The company's goal is to produce models which are 95 per cent 3D printed.

On its maiden flight, the world's largest ever 3D-printed object will not carry any payload. However, subsequent flights will make use of its capability to carry up to 2,755 pounds (1,250 kg) into the low Earth orbit.

<https://www.wionews.com/technology/heres-why-the-maiden-flight-of-worlds-first-3d-printed-rocket-was-cancelled-last-minute-571023>

Business Standard

Fri, 10 Mar 2023

Scientists Call for Legally Binding Global Treaty to Eliminate Space Junk

Scientists have called for a legally binding treaty to ensure Earth's orbit isn't irreparably harmed by the future expansion of the global space industry.

The number of satellites in orbit is expected to increase from the current 9,000 to more than 60,000 by 2030, with estimates suggesting there are already more than 100 trillion untracked pieces of old satellites circling the planet.

While such technology is used to provide a huge range of social and environmental benefits, there are fears the predicted growth of the industry could make large parts of Earth's orbit unusable, wrote an international collaboration of experts in fields, including satellite technology and ocean plastic pollution, the journal *Science*.

This demonstrates the urgent need for global consensus on how best to govern Earth's orbit, said researchers, including from the Universities of Plymouth, Arribada Initiative, The University of Texas at Austin, California Institute of Technology, NASA Jet Propulsion Laboratory, Spaceport Cornwall and ZSL (Zoological Society of London).

The experts acknowledged that a number of industries and countries are starting to focus on satellite sustainability, but this should be enforced to include any nation with plans to use Earth's orbit.

Any agreement, they added, should include measures to implement producer and user responsibility for satellites and debris, from the time they launch onwards. Commercial costs should also be considered when looking at ways to incentivise accountability.

"Minimising the pollution of the lower Earth orbit will allow continued space exploration, satellite continuity and the growth of life-changing space technology," said co-author Kimberley Miner, scientist at the NASA Jet Propulsion Laboratory.

https://www.business-standard.com/article/current-affairs/scientists-call-for-legally-binding-global-treaty-to-eliminate-space-junk-123031000760_1.html

