

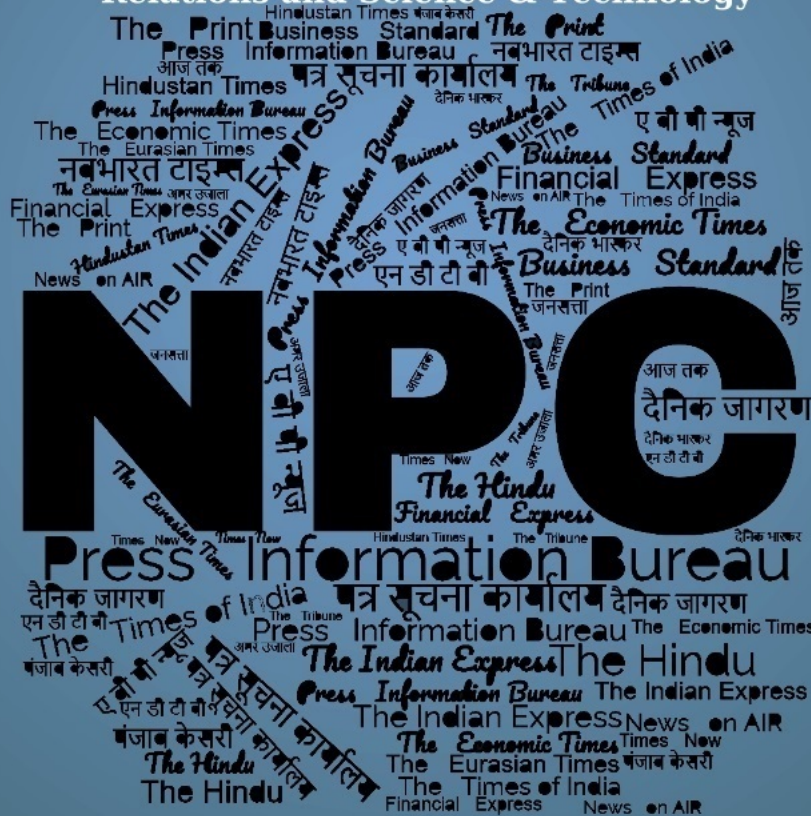
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समाचार पत्रों से चयित अंश Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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नवभारत टाइम्स

Tue, 04 Jun 2024

भारत के पड़ोस में बढ़ रहा चीन का दखल, चीनी राजदूत से मिले मालदीव के रक्षा मंत्री, सैन्य संबंध बढ़ाने पर जोर

मालदीव और भारत के बीच पिछले कुछ महीनों में तनाव देखा गया है। मालदीव ने भारत सैनिकों को वापस भेज दिया था। मालदीव के राष्ट्रपति मुइज़ू ने कहा था कि किसी भी देश की सेना को वह मालदीव में नहीं चाहते। लेकिन अब मालदीव चीन की सेना के साथ संबंधों को बढ़ाने में लगा है।

मालदीव और चीन के बीच सैन्य संबंधों को मजबूत करने के लिए रक्षा मंत्री घासन मौमून और मालदीव में चीनी राजदूत वांग लिक्सिन ने सोमवार को मीटिंग की। चीनी राजदूत ने रक्षा मंत्री से शिष्टाचार मुलाकात की और दोनों ने सैन्य संबंधों को मजबूत करने और दोनों देशों की सुरक्षा पर चर्चा की।

चीनी सेना की ओर से मालदीव की सैन्य और सुरक्षा सेवाओं को सहायता देने के लिए मार्च में एक समझौते पर हस्ताक्षर किए गए थे। 4 मार्च को मालदीव ने माले में चीन के साथ एक रक्षा समझौते पर हस्ताक्षर किया था। अंतर्राष्ट्रीय सैन्य सहयोग के लिए चीन की तरफ से निदेशक मेजर जनरल झांग बाओकुन ने चीन की ओर से समझौते पर हस्ताक्षर किया। मालदीव की ओर से रक्षा मंत्री घासन मौमून ने हस्ताक्षर किया था।

मालदीव को क्या देगा चीन?

राष्ट्रपति मोहम्मद मुइज़ू ने पहले कहा था कि समझौते के तहत चीन सैन्य उपकरणों की आपूर्ति करेगा और सैनिकों को प्रशिक्षित करेगा। इसके अलावा उन्होंने कोई जानकारी नहीं दी। राष्ट्रपति मुइज़ू के प्रशासन की शुरुआत में सरकार को चीन के साथ संबंधों पर विपक्ष की आलोचनाओं का सामना करना पड़ा था। क्योंकि एक चीनी जासूसी जहाज जिसे कई देशों ने अपने तट पर नहीं रुकने दिया उसने मालदीव के विशेष आर्थिक क्षेत्र (EEZ) के पास एक महीने बिताए।

भारत के हेलीकॉप्टरों का इस्तेमाल कर रहा मालदीव

भारत के मालदीव से अपने सैनिकों को वापस बुलाने के कुछ सप्ताह बाद भी, भारत की ओर से मालदीव को उपहार स्वरूप दिए गए दो हेलीकॉप्टरों का नियमित रूप से संचालन किया जा रहा है, जिनमें एमएनडीएफ का एक सैनिक सवार होते हैं।

'अजाजू डॉट कॉम' ने एक हवाईअड्डा अधिकारी के हवाले से कहा कि हेलीकॉप्टर उड़ाए जाने पर मालदीव राष्ट्रीय रक्षा बल (एमएनडीएफ) का एक सैनिक उनपर मौजूद रहता है।

चीन समर्थक राष्ट्रपति मोहम्मद मुइज़ू ने पिछले साल सितंबर में सत्ता में आने पर अपने देश से सभी भारतीय सैन्यकर्मियों को वापस भेजने का वादा किया था। 10 मई की तय समयसीमा तक 88 में से अंतिम भारतीय

सैन्यकर्मियों को वापस भेज दिया गया था। भारत की तरफ से उपहार में दिए गए दो हेलीकॉप्टर और एक डोर्नियर विमान का उपयोग मालदीव में सैकड़ों निकासी और मानवीय मिशनों के लिए किया गया है।

<https://navbharattimes.indiatimes.com/world/asian-countries/maldives-and-china-defence-ties-becoming-strong-tension-for-india-chinese-defence-minister-meets-chinese-ambassador/articleshow/110719510.cms>

THE ECONOMIC TIMES

Tue, 04 Jun 2024

Maldives and China discuss further bolstering defence ties

Three months after inking the first bilateral defence agreement with the Maldives, China's Ambassador here has met with the island nation's defence minister to discuss "the strengthening of military ties and the security and safety of the two countries." Chinese Ambassador to Maldives Wang Lixin paid a courtesy call on Defence Minister Ghassan Maumoon on Monday, news portal Adhahu.com reported.

They held talks to strengthen military ties between the two countries and discussed the strengthening of military ties and the security and safety of the two countries, it said. "The Ambassador of the People's Republic of China to the Republic of the Maldives, H E Wang Lixin called on Minister of Defence Mohamed Ghassan Maumoon @mgmaumoon today.

Discussions were focused on future defence cooperation and issues of mutual security concerns," the Ministry of Defence posted from its official X handle after the meeting. Later, Wang responded by quoting that post as she said: "Very pleased to meet with H E Minister @mgmaumoon, discussing further promoting exchanges and cooperation in the defence area."

After Maldives and China signed a defence agreement on March 4, President Mohamed Muizzu, who is perceived to be pro-China, announced that Beijing would supply military equipment and train soldiers under the agreement but offered no details, the portal said.

Two days later, Muizzu announced that the Maldives would get free "nonlethal" military equipment and training from China's military under the agreement and underlined that it would further strengthen the Indian Ocean island nation's independence and autonomy. The March agreement was the first time the Maldives had signed a deal with China for military cooperation of this level.

Previously, China had been exclusively known for its assistance towards the urban and economic development of the Maldives. Muizzu's administration has faced a lot of criticism as a high-tech Chinese research vessel that was denied entry to some countries, docked in Male' after spending a month near the border of the Maldives' Exclusive Economic Zone (EEZ), the portal added.

Soon after assuming charge as the President, Muizzu forced India to withdraw its military personnel manning three aviation platforms in the Maldives. Under a bilateral agreement, India has now sent civilians to the Maldives to operate two helicopters and a Dornier aircraft gifted by the country.

The Maldives is India's key maritime neighbour in the Indian Ocean Region and occupies a special place in its initiatives like 'SAGAR' (Security and Growth for All in the Region) and the 'Neighbourhood First Policy' of the government.

<https://economictimes.indiatimes.com/news/defence/maldives-and-china-discuss-further-bolstering-defence-ties/articleshow/110710513.cms>

China ‘Heats-Up’ Indian Border With Civil-Military Fusion, Dual Use Villages To Assert Claims Near Disputed LAC

India’s China problem has been festering for some time now. The new Indian government will have a task cut out for it to arrest the downward spiral of ties with China as Beijing has already begun upgrading its “xiaokang” (villages) along the 3,500-kilometer-long border with India. Experts see it as a “gray zone” tool from China’s playbook to assert claims on disputed areas.

These villages have “military and dual-use infrastructure,” and many are clustered along the eastern sector that borders Arunachal Pradesh, an Indian state that China covets and claims to be “South Tibet.”

A no-patrol buffer zone was created around Patrolling Point-14 in Galwan Valley three weeks after the violent clash in which 20 Indian soldiers and an unspecified number of Chinese troops were killed on June 15, 2020. China, however, has recently completed construction of a road from the north of Samzungling to the Galwan Valley, providing the PLA with a 15 km shorter alternate axis to rapidly build up troops in the area.

China has also tried to offset its air combat disadvantage at high altitudes by deploying its J-20 and J-10 fighters closer to the border.

The infrastructure building is indicative of China’s efforts “to use gray zone tactics to advance its strategic and security interests in disputed areas while staying below the threshold of armed conflict.”

“By building civilian villages, China can increase the population of remote border areas, adding legitimacy to its territorial claims. This simultaneously creates the necessary infrastructure to better support military and police forces, which, in turn, helps to protect local civilians from perceived threats across the border,” an analysis by the Centre for Strategic and International Studies (CSIS) contends.

The analysis, done under the China Power Project, elucidates how these villages are located as close as just seven kilometers from the Line of Actual Control (LAC). The border village of Zhuangnan (庄南) has seen significant additions to military or paramilitary infrastructure in recent years.

Previously, satellite images showed a walled complex with at least eleven buildings in 2019. By 2020, some buildings will be demolished to pave for new ones. In 2022, barracks-like structures appeared along with a large building and a radome or communication tower. An image from December 31, 2023, showed the construction of new infrastructure for monitoring or logistics support purposes.

“The barracks, perimeter walls, and radome/communications tower located at these complexes indicate the likely presence of China’s military, the People’s Liberation Army (PLA). It is also possible these facilities are operated by the paramilitary People’s Armed Police (PAP). Under China’s Land Borders Law, these two forces share responsibility for defending China’s borders from armed attacks or other encroachments,” the commentary reads.

The location of these villages so close to the border indicates that it gives the Chinese Army and Para Military forces a “vantage point” for monitoring activities along the border.

Indian experts have been raising concerns over the massive infrastructure building on the Chinese side of the border.

Former Indian Army Chief General MM Naravane (retired) told the EurAsian Times: “China has been investing in creating infrastructure, especially roads and railways in border areas ostensibly for the benefit of local people. However, in the absence of any sizable local population to justify such investment, it is apparent that such developments are for military purposes.”

Another village, Majiduncan, less than 10 km northwest of the disputed border, has seen many infrastructure additions over the past two years. Earlier, it had few buildings and a helipad, but by November 2023, images show that a huge building complex had emerged alongside two helipads and a paved network of roads.

“Given the region’s mountainous terrain, helipads play a key role in facilitating the swift movement of people, equipment, and supplies in the area, especially during emergencies,” the CSIS commentary reads.

Civil-Military Fusion To Assert Claims

The dual-use facilities align with China’s Land Borders Law, which embeds border defense into the responsibilities of border area governments. The border villages are meant to strengthen the construction of defense infrastructure to maintain border security.

“This emphasis on leveraging civilian villages to support the military bears the hallmarks of China’s “military-civil fusion” strategy, which aims to fuse China’s economic and military development to support overall national objectives,” the report reads.

China has also been constructing a new highway, G216, along the Ladakh region of India, which will allow the rapid mobilization of Chinese troops during a similar confrontation between the two countries on the LAC.

So far, China has only one highway, G219, in Ladakh. Earlier, the treacherous terrain in the region thwarted Beijing’s plan for infrastructure development. But not anymore. The sole highway has been vulnerable to the Indian military. And now, China is close to eliminating its vulnerability by completing an alternate route known as the G216.

The CSIS analysis covers just four villages. In recent years, China has expanded and upgraded its civilian and military infrastructure in the area.

The Pentagon’s 2023 Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China said that Beijing continued to develop military infrastructure along the LAC. “These improvements include underground storage facilities near Doklam, new roads in all three sectors of the LAC, new villages in disputed areas in neighboring Bhutan, a second bridge over Pangong Lake, a dual-purpose airport near the center sector, and multiple helipads,” the report said.

With the adversarial ties between India and China showing signs of improvement, New Delhi has also started building strategic infrastructure on the border. India has been building tunnels, roads, and bridges on its side of the border for quick deployment of troops and weapons.

However, beyond infrastructure development, the new Indian government will need to focus on defense acquisition for its military to continue combating parity with China.

<https://www.eurasiantimes.com/china-heats-up-indian-border-with-civil-military/>

Business Standard

Tue, 04 Jun 2024

Airbus unveils concept of unmanned wingman protecting manned fighter jets

Air power theorists have agreed for years that manned aircraft have had their day. They say too much planning and redundant survival systems in combat aircraft are devoted to protecting human crew members.

A decade ago, it was believed that the current, fifth generation of manned fighters – America’s F-35 lightning II; the F-22 Raptor, the Russian Sukhoi-57; the Chinese J-31 Shenyang and F-20 Chengdu, and India’s Advanced Medium Combat Aircraft (AMCA) – will be followed by unmanned drones that would be directed to their targets remotely, where their weapon-loads would be autonomously released from stand-off distances.

Indian Air Force (IAF) planners were amongst the few sceptics of autonomous warfare. In the Aero India 2021 air show in February 2021, Hindustan Aeronautics Ltd (HAL) presented a vision called the Combat Air Teaming System, a combination of manned and unmanned systems that would operate in tandem in wartime, reinforcing each other’s strengths and capabilities.

Global major, Airbus, has adopted this concept too. At the International Aerospace Exhibition ILA Berlin that kicks off on Wednesday, Airbus will present its new “wingman” concept. In military aviation, a “wingman” is a pilot in another friendly aircraft that protects and supports the flight lead, delivering more tactical options and thus contributing to mission success.

In the Airbus concept, the “wingman” will operate in much the same way - except that she would not be a pilot. The “wingman” would be a combat drone, commanded by a pilot in a current combat aircraft, such as the Eurofighter, taking on high-risk mission tasks that would pose an unacceptably large threat to manned-only aircraft.

The 1:1 model, which Airbus will exhibit from June 5 to 9 on its static display at ILA, is similar to a “show car” that is used as a design exercise by the automotive industry.

“The wingman model showcases all of the foreseen capabilities required, such as low observability, the integration of various armaments, advanced sensors, connectivity and teaming solutions. Not all of what is on display may find its way into series production,” said a Ministry of Defence (MoD) press release.

“In this aspect, the model on display at ILA Berlin will serve as a foundation and catalyst to drive the design requirements for each generation of the wingman,” said the MoD.

Based on the current concept, the “wingman” is intended to augment the capabilities of current manned combat aircraft with uncrewed platforms carrying weapons and other effectors.

“The German Air Force has expressed a clear need for an unmanned aircraft flying with and supporting missions of its manned fighter jets before the Future Combat Air System will be operational in 2040,” said Michael Schoellhorn, Chief Executive Officer of Airbus Defence and Space.

“Our Wingman concept is the answer. We will further drive and fine-tune this innovation made in Germany, so that ultimately we can offer the German Air Force an affordable solution with the performance it needs to maximise the effects and multiply the power of its fighter fleet for the 2030s,” he said.

“The wingman’s tasks can range from reconnaissance to jamming targets and engaging [them] on the ground or in the air with precision guided munitions or missiles. Pilots in manned aircraft acting as command fighters will always have control of the mission,”

“They are always the final decision-making authority, while benefiting from the protection and smaller risk exposure that the delegation of tactical taskings to unmanned systems offers,” said Airbus.

https://www.business-standard.com/external-affairs-defence-security/news/airbus-unveils-concept-of-unmanned-wingman-protecting-manned-fighter-jets-124060400948_1.html

Science & Technology News



Tue, 04 Jun 2024

China's spacecraft takes off from far side of Moon to bring home first samples

China's Chang'e-6 probe on Tuesday lifted off from the far side of the Moon for its journey back to Earth carrying the first rock samples ever collected from the rarely explored terrain, in an ambitious mission that underscored the country’s rise as a major space power.

The ascender has entered a pre-set orbit around the Moon after taking off from the far side this morning, the China National Space Administration (CNSA) announced. At 7:38 am (Beijing Time) on Tuesday, it lifted off from the lunar surface, carrying samples collected from the Moon's far side, the state-run Xinhua news agency reported. Its return journey to Earth is estimated to take about three weeks, with a landing expected in China’s Inner Mongolia region.

After the sampling was completed, a Chinese national flag carried by the lander was unfurled for the first time on the far side of the Moon, the CNSA said. The Chang'e-6 probe, comprising an orbiter, a lander, an ascender and a returner -- like its predecessor Chang'e-5 -- was launched on May 3. It is tasked with collecting and returning samples from the Moon's far side, the first endeavour of its kind.

China is the only country to have landed on the far side of the moon, having also done so before in 2019. India became the first country to land near the little-explored lunar south pole region last year when its Chandrayaan-3's lander, carrying the Pragyaan rover, successfully landed there. The lander-ascender combination, separated from the orbiter-returner combination on May 30, touched down at the designated landing area in the South Pole-Aitken (SPA) Basin on June 2 for the first time in human history.

The spacecraft finished its intelligent and rapid sampling work, and the samples were stowed in a container inside the ascender of the probe as planned, the CNSA said. During sampling and packaging, researchers conducted simulated sampling in a ground lab based on the detection data sent back by the Queqiao-2 relay satellite, providing important support for decision-making and operations in every link. "The mission has withstood the test of high temperature on the far side of the moon," the CNSA said.

It adopted two methods of moon sampling, including using a drill to collect subsurface samples and grabbing samples on the surface with a robotic arm.

Ge Ping, the spokesperson for the Chang'e-6 mission, said that through detailed analysis of the soil structure, physical properties and material composition of the Chang'e-6 samples, scientists will be able to deepen research on the formation and evolutionary history of the Moon, the origin of the solar system and so on, laying an improved foundation for later exploration missions to build on.

The multiple payloads installed on the lander, including the landing camera, panoramic camera, lunar soil structure detector and lunar mineral spectrum analyser, worked well and carried out scientific exploration as planned, the CNSA said. The international payloads carried by the lander of Chang'e-6, including the Negative Ions on the Lunar Surface (NILS), developed by the European Space Agency (ESA)/Sweden, and the Detection of Outgassing Radon (DORN), developed by France, also worked well and carried out corresponding scientific detection, it said.

The ascender is expected to carry out unmanned rendezvous and docking with the orbiter-returner combination in lunar orbit, and the samples will be transferred to the returner, Xinhua news agency reported. The orbiter-returner combination will orbit the Moon, awaiting the optimal time to transfer back to Earth. When it approaches Earth, the returner carrying the lunar samples will re-enter the atmosphere, aiming for a touchdown at Siziwang Banner in north China's Inner Mongolia Autonomous Region, the CNSA said.

China's plans include landing astronauts on the moon by 2030 and building a research base at its south pole, a region believed to contain water ice. China plans to launch two more missions as it nears its 2030 target of sending astronauts to the moon.

<https://www.deccanherald.com/world/chinas-spacecraft-takes-off-from-far-side-of-moon-to-bring-home-first-samples-3051525>



Tue, 04 Jun 2024

First demonstration of metal 3D printing on ISS is giant leap forward for inorbit manufacturing

The European Space Agency has demonstrated metal 3D printing on board the International Space Station (ISS) for the first time. An industrial team led by Airbus developed the 3D printer technology demonstration, which was ferried to the ISS in January. ESA astronaut Andreas Mogensen installed the payload in the European Draw Rack Mark II, part of ESA's Columbus module.

The metal 3D printer uses a design based on a stainless-steel wire being fed into the printing area, which is heated by a highpower laser, about a million times more powerful than a standard laser pointer. The end of the wire melts and is added to the print as it dips into the melt pool. The process was primarily overseen from the ground, with the crew only having to open and venting a nitrogen valve before initiating the printer.

ESA technical officer Rob Postema said, "This S-curve is a test line, successfully concluding the commissioning of our Metal 3D Printer. The success of this first print, along with other reference

lines, leaves us ready to print full parts in the near future. We've reached this point thanks to the hard efforts of the industrial team led by Airbus Defence and Space SAS, the CADMOS User Support Centre in France, from which print operations are overseen from the ground, as well as our own ESA team."

Towards a circular space economy

Four shapes have been chosen for subsequent full-scale 3D printing, which will be returned to the Earth and compared to reference prints made under the influence of normal gravity. One of the goals of ESA is to create a circular economy in space, where materials in orbit can be recycled, allowing for better use of resources. The raw material for 3D printing can potentially be sourced from old and defunct satellites and other space debris, which can be used for fabricating new tools or even structures. An operational version of such a metal 3D printer would eliminate the need to send up a particular tool or spare part to orbit, allowing the astronauts to print stuff they need in orbit itself.

<https://www.news9live.com/science/first-demonstration-of-metal-3d-printing-on-iss-is-giant-leap-forward-for-in-orbit-manufacturing-2563923>

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