

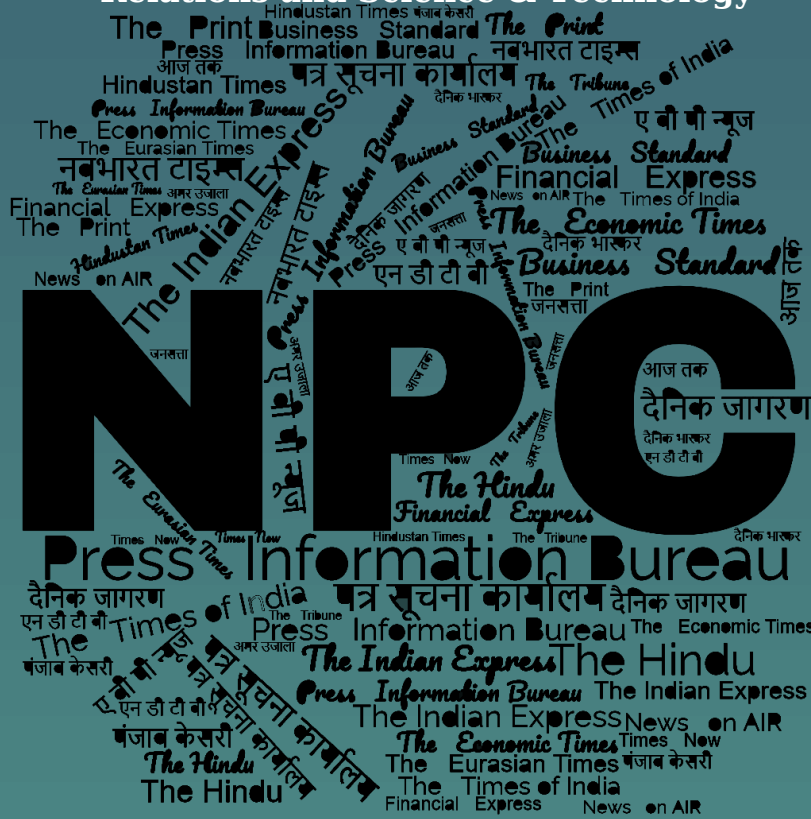
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समाचार पत्रों से चयित अंश Newspapers Clippings

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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Mon, 18 Dec 2023

India का अपना Iron Dome तैयार... एक ही मिसाइल सिस्टम से चार टारगेट ध्वस्त... ऐसा करने वाला भारत पहला देश बना

भारत दुनिया का पहला ऐसा देश बन गया है, जिसके पास एक ही मिसाइल यूनिट से चार एरियल टारगेट को ध्वस्त करने की क्षमता है. भारतीय सेना के आकाश मिसाइल सिस्टम (Akash Missile System) ने हाल ही में चार टारगेट्स को निशाना बनाया है. आकाश मिसाइल सिस्टम की सिंगल यूनिट में चार मिसाइलें होती हैं. जो अलग-अलग टारगेट्स को ध्वस्त कर सकती हैं. यानी फिलिस्तीनी आतंकियों की तरह हमले की आशंका अब खत्म.

भारतीय सेना और DRDO लगातार इसके एडवांस वर्जन की टेस्टिंग कर रहे हैं. फिलहाल ये क्षमता 25 किलोमीटर रेंज वाली आकाश मिसाइल सिस्टम में विकसित की गई है. बाद में इसके रेंज को और बढ़ाया जाएगा. यह मिसाइल सिस्टम टारगेट को हवा में ही ट्रैक करके उसे खत्म कर देता है. इस मिसाइल में स्वदेशी एक्टिव RF सीकर लगा है.

RF सीकर दुश्मन टारगेट को पहचानने की सटीकता को बढ़ाता है. इसके अलावा इसमें अत्यधिक ऊंचाई पर जाने के बाद तापमान नियंत्रण के यंत्र को अपग्रेड किया गया है. ग्राउंड सिस्टम को अपग्रेड किया गया है. इसके अलावा राडार, EOTS और टेलीमेट्री स्टेशन, मिसाइल ट्रैजेक्टरी और फ्लाइट पैरामीटर्स को सुधारा गया है. इससे ज्यादा जानकारी अभी तक सेना, सरकार या डीआरडीओ की तरफ से दी नहीं गई है.

आकाश मिसाइल सिस्टम के तीन वैरिएंट्स हैं

देश में इसके 3 वैरिएंट मौजूद हैं- पहला आकाश एमके- इसकी रेंज 30KM है. दूसरा आकाश एमके-2 - रेंज 40KM है. तीसरा आकाश-एनजी - रेंज 80KM है. आकाश-एनजी 20 km की ऊंचाई तक जाकर दुश्मन के विमान या मिसाइल को नष्ट कर सकती है. सबसे ज्यादा खतरनाक इसकी गति है. ये दुश्मन को बचने की तैयारी का मौका नहीं देता.

इसकी गति ही इसकी सबसे बड़ी खासियत

इसकी गति 2.5 मैक यानी 3087 किलोमीटर प्रतिघंटा है. यानी एक सेंकेंड में करीब एक किलोमीटर की दूरी तय करता है. आकाश-एनजी यानी आकाश न्यू जेनरेशन मिसाइल का सफल परीक्षण किया गया था. आकाश-एनजी जमीन से हवा में मार करना वाली मिसाइल है. इसे भारतीय वायुसेना के लिए बनाया गया है.

कई टारगेट पकड़ने में मास्टर है आकाश

आकाश-एनजी में डुअल पल्स सॉलिड रॉकेट मोटर है, जो इसकी गति को बढ़ाता है. इसकी रेंज 40 से 80 km है. साथ ही इसमें एक्टिव इलेक्ट्रॉनिकली स्कैन्ड एंटे मल्टी फंक्शन राडार लगा है जो एकसाथ कई दुश्मन मिसाइलों या विमानों को स्कैन कर सकता है. आकाश-एनजी (Akash-NG) मिसाइल को मोबाइल प्लेटफॉर्म से लॉन्च किया जा सकता है.

आकाश-एनजी मिसाइल के पुराने संस्करण साल 2009 से भारतीय सेनाओं को अपनी सेवा दे रहे हैं. आकाश-एनजी मिसाइल को T-72 या BMP चेसिस या टाटा मोटर्स के हैवी मोबिलिटी ट्रक्स पर बनाए गए मोबाइल लॉन्च सिस्टम से दागा जा सकता है. इस मिसाइल के मोबाइल लॉन्च सिस्टम के लिए गाड़िया टाटा मोटर्स और BEML-Tatra कंपनियां बनाती हैं.

लंबाई-चौड़ाई और वजन खास तौर से डिजाइन

आकाश-एनजी का कुल वजन 720 kg है. इसकी लंबाई 19 फीट और व्यास 1.16 फीट है. ये अपने साथ 60 kg वजन का हथियार ले जा सकता है. आकाश-एनजी मिसाइल के पुराने संस्करण को पिछले साल चीन के साथ हुए सीमा विवाद के दौरान लद्दाख स्थित लाइन ऑफ एक्चुअल कंट्रोल (LAC) पर भी तैनात किया गया था. इसके अलावा भारतीय वायुसेना ने आकाश मिसाइलों को ग्वालियर, जलपाईगुड़ी, तेजपुर, जोरहाट और पुणे बेस पर भी तैनात कर रखा है.

<https://www.aajtak.in/defence-news/story/akash-missile-can-engage-four-aerial-targets-simlutaneously-at-25-km-ranges-using-single-firing-unit-cds-1840990-2023-12-18>

Defence News

Defence Strategic: National/International



Tue, 19 Dec 2023

‘Jo Uchit Samjho Woh Karo’: Defence Minister Told Ex-Army Chief During Eastern Ladakh Tension

‘Jo ucchit samjho woh karo’ (Do whatever you deem appropriate), Defence Minister Rajnath Singh had told the then Army Chief Gen MM Naravane as the border tension between India and China escalated following the Galwan valley clash in eastern Ladakh. In his memoir ‘Four Stars of Destiny’, Naravane provided a gripping account of how a tense situation was handled after China’s PLA started moving tanks and troops in Rechin La mountain pass on the Line of Actual Control (LAC) in eastern Ladakh on the night of August 31, 2020. He said a series of phone calls were made between the Defence Minister, External Affairs Minister, the National Security Advisor and him that night on the sensitive situation.

Naravane said he spoke to Defence Minister and apprised him of the criticality of the situation. “He (Rajnath) said that he had spoken to the PM and that it was purely a military decision. ‘Jo ucchit samjho woh karo’ (Do whatever you deem is appropriate).”

“I had been handed a hot potato. With this carte blanche, the onus was now totally on me. I took a deep breath and sat silently for a few minutes,” he said. The former Army Chief said they were

ready to deal with any contingency but was not certain about “starting a war”. “We were ready in all respects, but did I really want to start a war?” he writes.

Ex-Army Chief reflects on his thought process

Reflecting on what all was going on in his mind that night, he said, “The country was in bad shape, reeling under the Covid pandemic. The economy was faltering, global supply chains had broken down. Would we be able to ensure a steady supply of spares, etc., under these conditions, in case of a long-drawn-out action?” Naravane also pondered over the collusive threat from China and Pakistan. “Who were our supporters in the global arena?... A hundred different thoughts flashed through my mind. This was no war game being played in a sand model room of the Army War College, but a life and death situation,” he writes. After much deliberation, he called up Northern Army Commander Lt Gen YK Joshi and told him that the Indian side can’t be the first ones to fire. He directed him to move a troop of tanks right to the forward slopes of the Pass.

“This was done forthwith and the PLA tanks, which had by then reached within a few hundred metres of the top, stopped in their tracks. Their light tanks would have been no match for our medium tanks. It was a game of bluff and the PLA blinked first,” he said.

He said that Indian Army was in a strong position both on the North and South Bank of Pangong Tso as well as the Kailash Range by the evening of August 30 and the PLA was of no threat to them. The ex-Army Chief said that on August 31, mobilisation of PLA troops was seen in several locations and the Indian side also consolidated its own position.

Flurry of phone calls between Defence Minister, NSA, Naravane

However, on the evening of August 31, four PLA tanks supported by infantry slowly started moving up the track towards Rechin La. “They had fired an illuminating round but this had had no effect. I had clear orders not to open fire, ’till cleared from the very top’,” he said in his memoir. Naravane immediately called Defence Minister and asked for clear directions as PLA tanks continued moving ahead and were less than a km from the top. Meanwhile, PLA Commander Maj Gen Liu Lin suggested that both sides should stop any further move and called for a meeting the next morning.

Naravane conveyed this message to Rajnath Singh and NSA Ajit Doval. The former Army Chief said he once again received a call from Northern Army Commander Joshi who informed him that the tanks had started moving up again and were now only about 500 metres away. Naravane said Joshi recommended that the only way to stop the PLA was by opening up with our own medium artillery, which he said was ready and waiting. “My position was critical...,” he said.

<https://www.news9live.com/india/jo-ucchit-samjho-wo-karo-defence-minister-told-ex-army-chief-during-eastern-ladakh-tension-2380935>



Mon, 18 Dec 2023

Jaishankar’s Moscow Mission: Elevating India-Russia Relations across Diplomacy and beyond

To further bolster the strategic partnership between India and Russia, external affairs minister Dr S Jaishankar is all set to travel to Moscow later this week.

Though the dates have not been formally announced it is expected that the minister is likely to travel over the coming weekend and the minister will be present through Christmas.

Jaishankar will meet with his Russian counterpart Sergey Lavrov. And, the agenda of the forthcoming visit is expected to focus on issues related to bilateral as well as multilateral including the BRICS, G20 Presidency under Brazil, SCO, the ongoing Israel-Hamas war, India's energy security among other issues.

India-Russia Annual Summit

According to reports in the Russian media, due to the busy schedules of leaders of both countries, there will be no India-Russia annual summit.

This year there were several high-level visits from Russia related to SCO meetings as well as G20 under India's presidency.

India's G20 presidency welcomed visits from Russia, with Foreign Minister Lavrov and Valentina Matvienko, Head of the Federation Council. Russia's SCO meetings delegation included Lavrov, Nikolai Patrushev, Alexander Kurenkov, and Sergei Shoigu.

The engagement spans diplomatic, economic, scientific, technological, and cultural realms. The India-Russia Intergovernmental Commission (IRIGC) is pivotal, with IRIGC-TEC led by EAM Jaishankar and Denis Manturov and IRIGC-M&MTC led by the Defence Ministers.

In December 2021, both nations enhanced bilateral ties with the inaugural 2+2 Dialogue. Foreign and defence ministers engaged alongside summit talks between President Vladimir Putin and Prime Minister Narendra Modi. This strengthened collaboration underscores the multifaceted nature of India-Russia relations, reaching beyond political exchanges to foster meaningful partnerships across various sectors.

Minister Jaishankar had last visited Russia in November 2022 and during that visit, he had discussions with Russian Foreign Minister Sergey Lavrov and Deputy Prime Minister Denis Manturov.

<https://www.financialexpress.com/business/defence-jaishankars-moscow-mission-elevating-india-russia-relations-across-diplomacy-and-beyond-3341700/>



Mon, 18 Dec 2023

Army Chief Manoj Pande, Tanzanian Defence Force Chief Discusses Ways to Boost Military Ties between Two Nations

Chief of Army Staff, General Manoj Pande, welcomed Chief of the Tanzanian People's Defence Force, General John Mkunda, on Monday and discussed ways to further strengthen existing military relations between the two defence forces.

Both officials interacted and discussed aspects related to bilateral defence cooperation.

Sharing on his social media X, Additional Directorate General of Public Information of the Indian Army stated, "General Manoj Pande #COAS welcomed and had an engaging interaction with General John Mkunda, #CDF, #Tanzania . Aspects related to bilateral defence cooperation and ways to further strengthen existing military relations between the two defence forces were discussed."

<https://twitter.com/adgpi/status/1736653707801149530>

Earlier today, Chief of Defence Staff General Anil Chauhan interacted with General Jacob John Mukunda, Tanzania, accompanied by the Commanders of Land Forces and Navy Forces Command of the Tanzania Peoples Defence Forces.

During their meeting, several aspects were discussed, including a comprehensive roadmap and defence equipment and technology collaboration.

"In their meeting, a comprehensive roadmap was discussed, spanning from defence cooperation, maritime collaboration, defence equipment & technology collaboration and structured training support, affirming stronger ties," the defence officials said.

India-Tanzania relations are marked by longstanding friendship and closeness, vibrant economic ties between our businesses, wide-ranging and substantive development partnerships and historical people-level linkages built over centuries-old commercial exchanges, according to the Ministry of External Affairs.

<https://www.aninews.in/news/world/asia/army-chief-manoj-pande-tanzanian-defence-force-chief-discusses-ways-to-boost-military-ties-between-two-nations20231218201157/>



Mon, 18 Dec 2023

DACA Proposes Dawon for Indian Army's Tactical Operational Requirements

Indian defence vehicle manufacturer DACA War Trucks has proposed its Dawon 4×4 all-terrain vehicle to the Indian Army, the company's co-founder Yash Srivastava told Janes in mid-December.

The Indian Army has initiated several vehicle procurement programmes, and DACA has offered Dawon for the service's all-terrain vehicle procurement programmes, Srivastava said.

"Official user trials of Dawon have already been conducted along the Line of Control (LoC) in [the] Jammu and Kashmir region by the Indian Army, and trials are now being planned in [the] Ladakh region," Srivastava added.

Key Naval Meeting to Focus on Indian Ocean Region Security

The naval chiefs of several countries with stakes in the strategic Indian Ocean region will on Tuesday kick off a key conclave in Thailand where they will discuss ways to step up maritime cooperation, address challenges in the vast expanse and strengthen its security architecture, officials aware of the matter said on Monday.

The four-day Indian Ocean Naval Symposium (IONS) in Bangkok comes at a time when the region is facing an array of security challenges, including Houthi militia targeting commercial shipping in the Red Sea after the Israel-Hamas conflict began on October 7, and the apparent resurgence of piracy, the officials said, declining to be named.

The Iran-backed Houthi rebels have declared their support for Hamas. Several shipping companies have suspended their operations in the Red Sea following the Houthi attacks.

Indian Navy chief Admiral R Hari Kumar will take part in the symposium, a voluntary initiative that seeks to enhance maritime cooperation among navies of the littoral states of the Indian Ocean region. The IONS grouping consists of 25 member countries and eight observers.

The theme of the IONS's 8th edition is Blue Economy: Ways Forward for Sustainable Development of IONS Member States. Conceived by the Indian Navy and held biennially, India hosted the maiden edition of IONS in 2008.

IONS seeks to attain mutually beneficial maritime security outcomes in the region through cooperation of all member countries in determining remedies relevant to regional maritime security.

The latest edition comes days after Somali pirates hijacked the Maltese-flagged merchant vessel Ruen carrying a crew of 18. The Indian Navy has deployed its P-8I maritime patrol aircraft and a front-line destroyer with marine commandos onboard to monitor the course of the hijacked vessel headed towards the Somali coast.

The European Union Naval Force (EUNAVFOR) Operation Atalanta - the EU maritime security operation in the western Indian Ocean – also swung into action to join the anti-piracy effort.

The Ruen incident has put piracy back in the spotlight. Pirate attacks in the region peaked between 2008 and 2013, but steadily declined thereafter because of concerted efforts by a multinational maritime task force.

The region accounted for almost 700 pirate attacks during 2008-13, but the figure nosedived to a mere 16 during 2014-19, according to EUNAVFOR data. The December 14 Ruen incident was the first in the past three years. The EUNAVFOR numbers cover all attacks by suspected pirates, including the ones repelled, aborted and those leading to ships landing in pirate hands and crews taken hostage.

The Indian Navy has been deployed in the Gulf of Aden for more than 15 years. At any given time, one Indian warship has been carrying out round-the-clock anti-piracy patrols in the Gulf of Aden since October 23, 2008, to protect Indian seaborne trade, instill confidence in the seafaring community and act as a deterrent for pirates.

So far 107 Indian warships have been deployed in the Gulf of Aden - once considered the world's most dangerous waters for commercial shipping - to ensure safe passage of India-flagged merchant

vessels. They have thwarted scores of piracy attempts and safely escorted thousands of ships with tens of thousands of Indian sailors, as previously reported by HT.

The IONS member countries include India, Australia, the UK, France, Iran, Qatar, Saudi Arabia, Oman, Sri Lanka, Thailand, Sri Lanka, Malaysia, Indonesia and South Africa. The observers include China, Russia, Japan, Italy and Spain.

The Indian Ocean has been in the spotlight amid China's rising influence in the region where it is setting up military bases, pushing countries to advance its maritime claims, and forcing strategic concessions from vulnerable states.

The Indian Navy is closely monitoring China's sustained presence in the Indian Ocean region as part of its efforts to keep under surveillance extra-regional forces operating in the vast stretch to assess the activities they are engaged in and their intentions, Admiral Kumar said on December 1.

He drew attention towards the possibility of disputes in the region "getting out of control or getting elevated" to conflict. He also listed piracy, illegal, unreported and unregulated fishing and drug trafficking as some of the other challenges confronting the region.

<https://www.hindustantimes.com/india-news/key-naval-meeting-to-focus-on-indian-ocean-region-security-101702928491738.html>

THE ECONOMIC TIMES

Mon, 18 Dec 2023

Sri Lanka Considers Permission Freeze for Chinese 'Spy' Ships

Sri Lanka is considering imposing a moratorium on granting diplomatic permission for foreign marine research vessels for 2024 and beyond in a bid to prevent Chinese 'research-cum-spy' ships from docking at Lankan ports in the backdrop of Indian reservations.

The move follows a request by China to allow yet another marine scientific research (MSR) vessel, the Xiang Yang Hong 3 to call on Sri Lankan ports by early 2024 to conduct a survey, ET has learnt.

However, Colombo turned down the request for the vessel to conduct a survey in Sri Lankan waters considering diplomatic tensions and the fact that the island nation's next presidential election is due in 2024, Colombo-based sources said.

The decision incidentally came as the national security advisors (NSAs) of India, Sri Lanka, and Mauritius met in Mauritius last week for the Colombo Security Dialogue.

"The government is considering a year-long moratorium on granting permission for foreign research vessels to conduct surveys in Sri Lankan waters or her exclusive economic zone (EEZ)," a senior Lankan minister told Lankan daily The Daily Morning. "The arrival of these ships creates serious diplomatic tensions, and it (2024) is an election year. Such ship visits can be highly disruptive for the region and Sri Lanka, because of the pressure the government may come under. So, a moratorium, for one year or perhaps more, is being considered," the minister said.

India in the past had expressed reservations about the Lankan authorities allowing Chinese 'spy' ships to dock at its ports as such vessels allegedly help Beijing gather critical information from India's southern states.

The increase in frequency of visits by Chinese ships to Sri Lanka is part of a wider strategy of not only collecting information about vital strategic assets in southern India and New Delhi's role in the region but also to gather information about ecological and mineral treasure in the Gulf of Mannar, ET had reported last month.

Sri Lanka will likely see presidential, general, and local government elections in 2024. The year will also bring an International Monetary Fund (IMF) review and is expected to be a "year of recovery" following the unprecedented economic crisis, which saw Sri Lanka declare bankruptcy last year.

There is a pattern in Chinese activities through its ships in Sri Lankan waters and Colombo in the past succumbed to pressure from Beijing, given Lanka's indebtedness, said people familiar with the Chinese strategy.

China owns 52% of Sri Lanka's bilateral debt, and Beijing's approval is crucial for any efforts by Colombo to restructure its outstanding loans.

Simultaneously, China is using Hambantota port to refuel its warships and other ships that are present at any given point in time across western-eastern and southern Indian Ocean regions.

<https://economictimes.indiatimes.com/news/international/world-news/sri-lanka-considers-permission-freeze-for-chinese-spy-ships/articleshow/106102661.cms>



Mon, 18 Dec 2023

China's Defence Budget could be Far Greater than Declared

Everyone acknowledges that China's declared defence budget is lower than its real expenditure. The only question is how much, and it turns out it could be several times higher than what most think.

When China announced its 2023 defence budget on March 5, the figure quoted by the government was CNY 1.5537 trillion (USD 224.59 billion). This represented a rise of 7.2 per cent compared to the previous year, the largest percentage increase in the past four years. In absolute terms, the 2023 budget was approximately CNY103.25 billion (USD 14.92 billion) more than in 2022, underscoring how China's defence spending has rebounded strongly.

However, just how realistic is that figure of USD 224.59 billion? Can Chinese data be believed? Of course, many are rightfully suspicious of statistics released by this one-party state, plus no independent verification of Chinese government data is possible.

In fact, most observers doubt that the defence budget proclaimed by Beijing is the real number. Certainly, whole categories of spending are absent, but the discrepancy between the stated and true defence budget could actually be vastly different than any have supposed. This was underscored when Senator Dan Sullivan told the US Senate in June, "...We had a briefing from some of our top intelligence agency officials. It was a classified briefing, and I asked him if this number was classified. They told me no. They came out and said the real Chinese budget, in terms of the military, is probably close to about USD 700 billion. That is a big budget... They are increasing in real terms 6, 7, 8 per cent - cranking out ships, cranking out fifth-generation aircraft."

Most assuredly, this figure of USD 700 billion for annual defence spending is astounding when compared with China's declared budget of approximately USD 225 billion. This number, as assessed by the US intelligence community, is three times higher than what Beijing admits to!

Such a number would fall only slightly short of the USD 816.7 billion that President Joe Biden authorized Defence America's defence budget in 2023.

However, Senator Sullivan did not provide details on how that figure was reached. For example, was it adjusted for purchasing power parity? Furthermore, it is not unknown for American officials to inflate some aspects in order to exaggerate their own cases for funding.

Nonetheless, a sum of USD 700 billion would equate to about 4 per cent of China's GDP, and would blow out of the water Beijing's reassuring claims that, as a proportion of GDP, its defence budget is "moderate and below global averages."

Perhaps the truth is that it far exceeds global averages and perhaps even the 3.5 per cent level of GDP for the USA. The Pentagon's annual report - entitled Military and Security Developments Involving the People's Republic of China 2023 - was quite reserved in its comments on Beijing's defence budget.

It said, "In 2022, China's actual military-related spending could be significantly higher than its officially announced defence budget. Actual PRC military expenses are difficult to calculate, largely due to the PRC's lack of transparency. United Kingdom and Europe-based think tanks estimate that the PRC's actual 2022 defence budget is at least 30-40 per cent higher than the PRC's announced budget."

As the US Department of Defence (DoD) just noted, estimates vary as to China's real defence spending. For example, Stockholm International Peace Research Institute (SIPRI) estimates in recent years give an average total of about 1.36 times larger than the official defence budget.

SIPRI also noted, "It is noteworthy that the gap between the official Chinese national defence budget and the spending estimates made by the US DoD is decreasing.

Since the DoD has historically always estimated actual Chinese spending to be much higher than the budget, the decreasing gap is a further sign that a growing share of China's spending on military activities is now in the official national defence budget."

It is remarkable that US intelligence sources, as quoted by Senator Sullivan, should give a figure so divergent from anybody else. Nevertheless, this astonishing figure of USD 700 billion stands out starkly. The fact is that the world does not know, and can only speculate and base its predictions on what the Chinese government announces.

Beijing could easily hoodwink the world, and it certainly has the motivation to do so to disguise its military build-up.

Unsurprisingly, there is a total lack of transparency or clarity in China's disclosures. Whereas the US issues very detailed information about defence budgets, expenses and contracts, the Chinese budgetary and acquisition system is totally opaque. In fact, the best detail that China can offer is breaking down spending into three broad categories personnel, training and maintenance, and equipment.

The Pentagon stated in its aforementioned 2023 report, "The PRC's published military budget does not include details of expenditure breakouts, including R&D and foreign weapons procurement."

Truly, there are massive defence-related expenditures that China does not categorise under its formal defence budget. Examples include its space program (which is totally managed by the PLA), a lot of civilian/dual-use R&D, facility construction, provincial military base operating costs, defence mobilization funds, and supplemental funding like military pensions and benefits.

Nor are internal security forces included in the official defence budget. It excludes the People's Armed Police (PAP), for example, which is better equipped militarily than many armed forces around the world. The Pentagon estimates that the PAP contains 660,000 personnel. The force, which integrates with the PLA's joint operation system, is directly under the Central Military Commission (CMC), and therefore constitutes part of the communist party's armed forces.

The same is true of the China Coast Guard (CCG), the world's largest maritime law enforcement force. Liberally equipped with major surface combatants such as frigates, corvettes and giant cutters - incidentally, the CCG has more than 150 regional and ocean-going vessels that displace more than 1,000 tons - the CCG is directly subordinated under the PAP and therefore the CMC.

According to the Coast Guard Law of February 1, 2021, the CCG can defend Chinese sovereignty claims by using force. This is precisely what it has been doing against Philippine vessels in the vicinity of the Second Thomas Shoal in the Spratly Islands, well within the exclusive economic zone of the Philippines.

Mention also has to be made of the People's Armed Forces Maritime Militia (PAFMM), which is subordinate to the CMC via the National Defense Mobilization Department. "Gray zone" operations are the PAFMM's modus operandi, and innumerable fishing boats of the PAFMM mobilize to support Chinese strategic goals in places like the South China Sea or Japan's Senkaku Islands.

For instance, dozens of PAFMM vessels swarmed Second Thomas Shoal and Philippine resupply boats in recent days. Since 2014, the PAFMM has amassed in its Spratly fleet at least 235 steel-hulled fishing vessels that displaced more than 500 tons.

The true situation of Chinese defence spending becomes even more confusing thanks to China's policy of civil-military fusion. This is where commercial entities get involved in dual-use R&D, investment and production that have both civil and military applications. The lines become very blurred as to what is or is not military spending.

This military-civil fusion strategy is precisely that, a determined effort to "fuse" security strategies into national development ones. This benefits the military by acquiring new technology for military purposes and helping reform national technology industries.

The phrase "military-civil fusion" has been de-emphasized in favour of "integrated national strategic systems and capabilities" in recent times, but one thread of that effort is building military requirements into civilian infrastructure, and another is leveraging civilian logistics and services to support the military.

An example is commercial vessels such as ferries that are required to meet military specifications so they can be commandeered for exercises or in times of war.

The PLA also benefits from a non-market economy, where equipment is cheaper and the military has greater purchasing power than in competitive markets like the USA.

It is estimated that approximately 40 per cent of China's defence budget goes on equipment, both new material and to sustain existing inventories.

Beijing is putting that money to good use too. China has the world's leading hypersonic missile arsenal, it is the top ship-producing nation in the world by tonnage, and it is increasing shipbuilding capacity in every naval class. It completed the Tiangong Space Station in 2022, and there are further plans to expand it.

The US DoD added, "China is capable of producing ground weapon systems at or near world-class standards; although customers also cite persistent quality deficiencies with some exported equipment, inhibiting the PRC's ability to expand its export markets."

It must be remembered that the yuan goes further in China than the dollar does in the USA. China, the factory of the world, can produce items more cheaply. The cost of production is significantly cheaper and that means, for example, that a missile or ship can be produced more cheaply by China than an identical one in the USA.

If apples are to be compared with apples, then purchasing power parity (PPP) calculations are needed. Interestingly, it turns out that the Chinese economy is larger than that of the USA if PPP is used.

Using the same equations for military personnel salaries or the cost of building military equipment, then China gets more bang for its buck. In fact, Bill Greenwalt of the American Enterprise Institute has calculated that China outspends the US in real terms when PPP and extraneous non-defence spending hidden within the defence budget are included.

Even using direct comparisons, American military recruits cost 16 times more than they do in China. A lowly private in the PLA costs just USD 108 per month, compared to USD 1917.60 for a US Army counterpart. Nor does China spend nearly as much on its veterans or on personnel expenses.

However, the Pentagon noted, "China is facing adverse demographics such as an aging population and low birth rates. The PLA could respond to the demographics issues by raising pay standards to support recruitment and retention efforts, which would place upward pressure on PLA personnel spending relative to other defence spending categories. The PLA is giving priority to recruiting college graduates with science and engineering backgrounds and those experienced in operating high-tech weapons, suggesting the PLA will have to compete with the private sector to attract top talent."

China is facing stiff economic headwinds, exacerbated by COVID-19 and Chairman Xi Jinping's harsh response to it. To cope with these challenges, spending on general public services declined 0.7 per cent in 2023, while education expenditure increased just 2 per cent.

Yet, the defence still managed a rise of 7.2 per cent! In this light, we can see how important the PLA is to Xi. China says its spending is an "appropriate and reasonable" amount, as China needs it to "fulfil its responsibilities as a major country."

Yet, its official military expenditure surpasses the combined defence budgets of the 13 next-largest countries in the Indo-Pacific, including Australia, India, Japan and South Korea.

China paints a narrative that it is simply reacting to strategic events and its neighbors activities. It conveniently hides the truth that its own spending is ringing alarm bells

across the world. If the US assessment of USD 700 billion is even remotely accurate, then the picture becomes even more alarming.

Could it be that China is hiding behind a "moderate" defence budget, whereas it is actually secretly spending billions more than that? With such resources being funnelled its way, a rapidly modernizing PLA is preparing not just to defend China, but to threaten, coerce and perhaps even invade others. Defence expenditure has practically doubled over the past decade, growing on average 6 per cent annually after adjustment for inflation.

Former and recently deceased premier Li Keqiang said earlier this year: "Our armed forces, with a focus on the goals for the centenary of the People's Liberation Army in 2027, should work to carry out military operations, boost combat preparedness and enhance military capabilities so as to accomplish the tasks entrusted to them by the party and the people."

Many are anxious about these "tasks entrusted" to the PLA by the party. Bludgeoning Taiwan is certainly one of them, whilst hounding smaller nations in the South China Sea is clearly another.

Keqiang also acknowledged, "We remain committed to the party's absolute leadership over the people's armed forces."

The PLA is a blunt instrument in Xi's hands, and perhaps it is far better funded than most of the world realizes.

<https://www.aninews.in/news/world/asia/chinas-defence-budget-could-be-far-greater-than-declared20231218225345/>



Mon, 18 Dec 2023

North Korea Fires ICBM after Condemning US 'War' Moves

North Korea fired an intercontinental ballistic missile on Monday that has a range to hit anywhere in the United States, said South Korea and Japan, marking its second launch in hours as Pyongyang condemned a U.S.-led show of force as "war" moves.

The missile has a potential to travel more than 15,000 km (9,300 miles), meaning it can reach anywhere in Japan and the mainland United States, Japan's Parliamentary Vice Minister of Defence Shingo Miyake said.

The U.N. Security Council is due to meet on Tuesday at the request of the U.S. and other states to discuss the launch.

South Korea's National Security Council said it was a solid-fuel intercontinental ballistic missile (ICBM), labelling the launch a destabilising act that ignored international warnings and multiple U.N. Security Council resolutions.

President Yoon Suk Yeol had ordered the upgrading of the effective operation of "nuclear deterrence" by South Korea and the United States, it added.

Coinciding with the North's fifth ICBM launch of the year, China and North Korea held a high-level meeting in Beijing on Monday. Beijing, which is Pyongyang's closest ally, reaffirmed a commitment to deepen cooperation and said discussions covered issues of "common concern", without elaborating.

As a permanent member of the U.N. Security Council, China supported all resolutions imposing sanctions on the North up to 2017 for its weapons development, but has since refused to back further sanctions saying these would only raise tensions.

Monday's missile was fired from an area near the capital Pyongyang towards the sea off the North's east coast and flew about 1,000 km, South Korea's Joint Chiefs of Staff said.

Japan's defence ministry reported the flight lasted 73 minutes, just short of the 74-minute flight by an ICBM North Korea fired in July. It reached a maximum altitude of more than 6,000 km and fell into the sea west of Hokkaido outside Japan's exclusive economic zone, Japan said.

The area near the international airport serving Pyongyang is where the North previously launched ICBMs and is suspected to be the location of a missile assembly facility.

The North's latest, solid-fuel Hwasong-18 ICBMs have been launched from near Pyongyang, at a grass field that analysts said is likely reinforced with concrete for the heavy launch vehicle.

Monday's missile launch came after North Korea fired a short-range ballistic missile on Sunday night, flying about 570 km and falling into the ocean.

North Korea followed up that launch with a fiery statement condemning the United States for orchestrating what it called a "preview of a nuclear war", including the arrival of a nuclear-powered submarine in South Korea on Sunday.

U.S SUBMARINE VISITS SOUTH KOREA

White House National Security Adviser Jake Sullivan spoke with his South Korean and Japanese counterparts and stressed the importance of sharing missile warning data, the White House said.

South Korea's presidential office also said the officials discussed working closer to stop the North's illicit cyber activities and illegal foreign businesses.

The allies have been working to set up a real-time missile data sharing system, but it is still "a few days" from going operational, South Korea's defence ministry said.

On Friday, following a high-level meeting by U.S. and South Korean officials on the use of U.S. strategic military weapons to deter North Korea's military threat, Washington warned any nuclear attack would lead to the end of the regime.

North Korea says it has a sovereign right to operate a ballistic missile programme for self defence and rejects a Security Council ban, which it says is a product of hostile U.S. policy.

After Sunday's launch, North Korea's defence ministry criticised "military gangsters" in the United States and South Korea for raising tensions with drills, displays of force, and nuclear war planning.

The statement by an unnamed ministry spokesman cited the arrival of the U.S. nuclear-powered submarine Missouri in the South Korean city of Busan on Sunday.

Visits by U.S. nuclear submarines had previously been rare, but they have increased under agreements between Seoul and Washington that have boosted arrivals of U.S. military assets.

The USS Carl Vinson, a U.S. aircraft carrier, also visited Busan last month as part of an effort to increase deterrence against North Korea's nuclear and missile programmes.

The North's defence ministry also condemned the meeting by South Korean and U.S. officials in Washington as another sign of efforts to streamline war preparations.

The United States and South Korea have increased the intensity of joint military drills against rising threats from the North, which had tested a range of ballistic missiles and in November launched its first military spy satellite.

<https://www.reuters.com/world/asia-pacific/north-korea-fires-ballistic-missile-south-korea-says-2023-12-17/>



Mon, 18 Dec 2023

US-led Force to Patrol Red Sea in Response to Attacks by Houthis Backing Palestinians

Several countries have agreed to jointly carry out patrols in the southern Red Sea and Gulf of Aden to try to safeguard commercial shipping against attacks by Yemen's Houthi rebels, U.S. Defense Secretary Lloyd Austin said.

The Iran-aligned group says the aim of its missile and drone attacks is to support the Palestinians as Israel and Hamas wage war in the Gaza Strip. On Monday, Mohammed al-Bukhaiti, a member of the Houthi politburo, told Al Jazeera that his group will be able to confront any coalition formed by the United States that could deploy to the Red Sea.

Austin, who is on a trip to Bahrain, home to the U.S. Navy's headquarters in the Middle East, said participating countries led by the United States include the United Kingdom, Bahrain, Canada, France, Italy, Netherlands, Norway, Seychelles and Spain.

"This is an international challenge that demands collective action. Therefore today I am announcing the establishment of Operation Prosperity Guardian, an important new multinational security initiative," Austin said in a statement early on Tuesday.

Austin on Monday said Washington's support for Israel was "unshakable" but he urged its ally to do more to protect civilians as its war against Hamas brought yet more death and destruction to Palestinians in the Gaza Strip, which Israel has besieged following an attack by Hamas on Israel on Oct. 7.

There is growing concern from foreign governments and international organisations over the death toll among civilians in Gaza from Israeli bombardments as well as rising hunger and destitution.

The Gaza health ministry said on Monday that 19,453 Palestinians had been killed and 52,286 wounded in the Israeli assault on the Hamas-ruled enclave in more than two months of warfare.

Israeli Prime Minister Benjamin Netanyahu has vowed to achieve total victory over Hamas, whose fighters killed 1,200 people and took 240 hostages in the surprise Oct. 7 raid into Israel that triggered the war, according to Israeli tallies.

TALKS ON REDUCING HARM

Austin told a press conference in Tel Aviv he had discussed with Israeli Defence Minister Yoav Gallant how to reduce harm to civilians trapped in the battlefield. They also talked about a transition from major combat to a lower-intensity conflict.

"In any campaign, there will be phases," Austin said. "We will also continue to urge the protection of civilians during conflict and to increase the flow of humanitarian aid into Gaza."

While the United States provides Israel with weapons and diplomatic support, it has recently sharpened its tone towards Netanyahu's government. Last week President Joe Biden said Israel risked losing international support because of what he called its "indiscriminate" bombing.

Austin, however, offered reassurance on Monday, saying: "American support for Israel security is unshakable. Israel is not alone."

Gallant meanwhile said Israel would gradually transition to the next phase of its operations in Gaza and displaced people would likely be able to return first to the north of the enclave.

Austin also renewed U.S. calls for a two-state solution to the wider Israeli-Palestinian conflict, saying both Israelis and Palestinians "deserve a horizon of hope". Those remarks followed a meeting with Netanyahu, who over the weekend expressed pride in past opposition to the formation of a Palestinian state.

STARVATION AND HOMELESSNESS IN GAZA

The war has left Gaza largely in ruins. Food is scarce for the territory's 2.3 million people, basic services have collapsed and most people are homeless.

Human Rights Watch in a report on Monday accused Israeli forces of deliberately blocking delivery of water, food and fuel, razing agricultural areas and depriving people of items needed for survival.

Israel responded by calling HRW an "antisemitic and anti-Israeli" group with no moral right to criticise after its "silent" reaction to Hamas' Oct. 7 rampage.

Israel denies targeting civilians and says Hamas is to blame for high casualties by embedding itself in residential areas. Government spokesperson Tal Heinrich also said there were zero restrictions on the amount of food and water allowed into Gaza.

In Deir al-Balah, central Gaza, medics said 12 Palestinians had been killed and dozens wounded, while in Rafah in the south, an Israeli air strike on a house left at least four people dead.

An Israeli tank shell hit the maternity building inside Nasser Hospital in Khan Younis, killing a 13-year-old girl who had lost a leg in a previous hit, the Gaza health ministry said.

On the Israeli side, the military released the names of four more soldiers killed in combat in Gaza, making it 126 dead in the strip since its ground invasion began in late October.

Residents reported gunfire between Israeli soldiers and Hamas fighters in various spots up and down narrow Gaza, with the militants saying they had launched a series of attacks.

Reuters was unable to verify the state of operations or claims from either side.

Heightened violence also continued in the Israeli-occupied West Bank, where four Palestinians were killed in an Israeli army raid on the Faraa refugee camp, the Palestinian health ministry said on Monday.

<https://www.reuters.com/world/middle-east/israeli-forces-launch-strikes-up-down-gaza-strip-hospital-hit-2023-12-18/>



Tue, 19 Dec 2023

US Defence Secretary Austin Says they will 'Continue' Providing Arms to Israel

Pentagon chief Lloyd Austin on Monday said the United States will provide more arms and munitions to Israel, whose forces battle Palestinian militants in Gaza following deadly attacks.

Austin also warned Iran to "stop" supporting Yemen's Huthi rebels who were increasingly attacking vessels in the Red Sea since the Israel-Hamas war began on October 7.

"We'll continue to provide Israel with the equipment that you need to defend your country... including critical munitions, tactical vehicles and air defence systems," the US defence secretary said, according to a statement from the Israeli prime minister's office.

"In the Red Sea, we're leading a multinational maritime taskforce to uphold the bedrock principle of freedom of navigation. Iran's support for Huthi attacks on commercial vessels must stop," Austin said.

He said an international coalition was being built to address the issue.

"This is an international problem, and it deserves an international response," Austin said.

"That's why I'm convening a meeting tomorrow, a ministerial meeting with fellow ministers in the region and beyond to address this threat," he said, adding it would be a virtual meeting.

Earlier on Monday the Huthi rebels said they had attacked two "Israeli-linked" vessels in the Red Sea in solidarity with Gaza.

The attacks on the Norwegian-owned Swan Atlantic and another ship identified by the Huthis as the MSC Clara are the latest in a flurry of maritime incidents that are disrupting global trade in an attempt to pressure Israel over its war against Hamas militants.

<https://www.hindustantimes.com/world-news/us-defence-secretary-austin-says-they-will-continue-providing-arms-to-israel-101702923455076.html>

Science & Technology News



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Mon, 18 Dec 2023

A Simple and Elegant Pathway to Attain a Soft Tunable 3D Photonic Crystal with Complete Photonic Band Gap

A new pathway to attain soft tunable 3D photonic crystal that can control light in all directions by introducing nanoparticles of appropriate shape and size in the blue phase liquid crystal can pave the way for sophisticated photonic devices.

Photonic crystals like wings of a butterfly, peacock feathers, etc are fascinating optical materials owing to their ability to manipulate light. They are optical analogues of semiconductors with a refractive index contrast along the light propagation direction. Photonic crystals can control light either along a particular direction (incomplete photonic band gap -- PBG) or in all directions (complete PBG).

Fabrication of three-dimensional (3D) photonic crystals that can operate in the visible spectrum is challenging due to the nanometer length scales requiring sophisticated techniques.

The blue phases (BPs) exhibited by highly chiral liquid crystals are increasingly being explored as cost-effective alternatives to conventional 3D photonic crystals, as the photonic property is realised by the self-assembly of LC molecules.

However, the refractive index contrast in BPs is very small, and hence they belong to the class of incomplete PBG materials. A 3D photonic crystal with tunable and complete photonic bandgap opens up the possibilities to be applied in sophisticated photonic devices such as lossless optical waveguides utilized for guiding optical signals from one point to another without any significant loss of signal intensity,

The research team from the Centre for Nano and Soft Matter Sciences, Bengaluru, an autonomous institution of Department of Science and Technology (DST) has shown an elegant pathway to achieve complete photonic bandgap in BPs. The simple and cost-effective methodology developed

by the team led by Dr Geetha Nair involves ingenious ways of incorporating high refractive index nanoparticles of appropriate shape and size in the blue phase liquid crystal.

The spherical-shaped, Selenium nanoparticles with a high refractive index that get confined inside the defect cores of the BP effectively increased the refractive index contrast. This led to PBG width getting enhanced, a clear indication that the BP is driven towards a complete PBG system. The results were published in the Journal Nanoscale,

“Extensive FEM (Finite Element Method -- a numerical method in electromagnetics) simulations carried out on such systems clearly indicate that getting a complete PBG system depends not just on the magnitude of refractive index contrast, but also on the symmetry of the photonic crystal, or blue phase in this case,” said Nurjahan Khatun, the PhD student who worked on the project. She also mentioned that experiments are underway to realise a room temperature stable and tunable complete PBG blue phase that may find applications in emerging field of photonic integrated circuits.

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<https://pib.gov.in/PressReleasePage.aspx?PRID=1987613>

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