

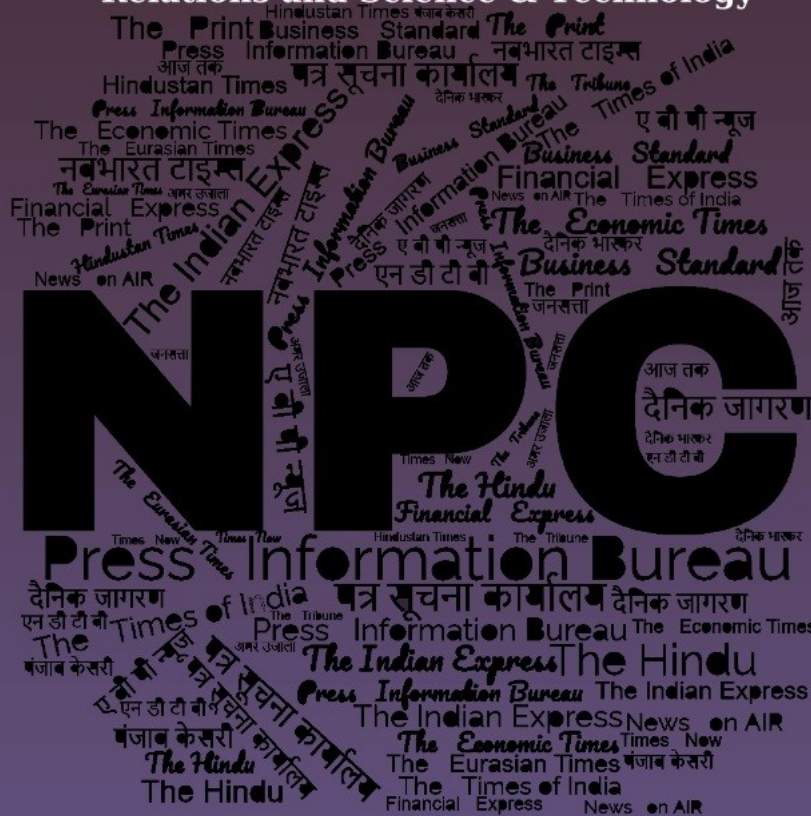
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समाचार पत्रों से चयनित अंश Newspapers Clippings

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**Press Information Bureau
Government of India**

Ministry of Defence

Thu, 18 July 2024

Multiple initiatives are being taken by the Indian Armed Forces to maintain an edge over our adversaries: CDS Gen Anil Chauhan

“Kargil War has become synonymous to resoluteness, selflessness, fierce courage, and determination of our Armed forces”

Multiple initiatives are being taken by the Indian Armed Forces to maintain an edge over our adversaries, and improvements in our war fighting doctrines, strategy and concepts as per perceived threat have been enunciated. This was stated by Chief of Defence Staff General Anil Chauhan in an event in New Delhi on July 18, 2024 to mark 25 years of Kargil Vijay Diwas. Presenting the Kargil Honours, CDS thanked the Veterans and Veer Naris for their immense contributions and sacrifices during the Kargil War. He also lauded the Indian Defence Industry for supporting the national effort.

Gen Anil Chauhan said that capability development to include infrastructure and robust operational logistics is being attempted in a progressive manner through indigenous means to build future ready Armed Forces. Multiple re-organization & re-structuring initiatives are ongoing to enhance warfighting efficiency and effectiveness, he added.

CDS highlighted that the nature of future military and non-military security challenges brings to fore the imperative need for the Armed Forces to be prepared for multi-domain and multi-spectrum challenges. “There is an inescapable requirement of seamless integration across all domains – land, sea, air, space, info and cyberspace, and infusion of inter-operable systems among various branches of Armed Forces,” he said.

Kargil was a conflict that underscored the need for a robust and responsive defense strategy. “The Kargil conflict highlighted the significance of maintaining vigilance and preparedness for safeguarding our borders. It also emphasized the importance of public and international diplomacy, a strategy which was used effectively to maintain the neutrality of inimical nations and gain global support,” said CDS.

Highlighting the steps taken towards integration of the Armed Forces, Chief of Defence Staff said, moving beyond Jointness the three services are now working towards promoting Joint Culture and integrating themselves in a number of domains. Mentioning Kargil War as the first televised war in India where free and open media exist, CDS stressed that with constant battle of narratives attempting to shape perceptions across the world, ‘Information domain’ has emerged as another key battle zone. Gen Anil Chauhan said the Kargil War has become synonymous to resoluteness, selflessness, fierce courage, and determination of our Armed forces, and collectively exhorts the nation to focus towards the future threats and challenges.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2034069>



Press Information Bureau
Government of India

Ministry of Defence

Thu, 18 July 2024

Indian Naval Ship Tabar Arrives In Hamburg, Germany

Indian Navy’s frontline frigate, INS Tabar arrived at Hamburg, Germany on 17 July 24 for a three day visit. Activities during the visit include professional interactions between the Indian Navy and German Navy, visit of ship's crews to the German Naval Academy and ship open to visitors. The crew of INS Tabar would also offer community service at Old Age Home. On departure from Hamburg, the two Navies will also undertake Maritime Partnership Exercise at sea.

These engagements seek to enhance bilateral relations, particularly in the maritime domain between both countries and also offer an opportunity to showcase Indian culture. India and Germany share a relationship built on a foundation of shared values, democratic principles and a commitment to global peace and security. The relations between both countries span across various domains, from economic cooperation and scientific research to cultural exchanges and, importantly, defence collaboration. The visit by INS Tabar further aims to strengthen these bonds and also explore newer avenues of bolstering the relationship between the two Navies.

INS Tabar, is a stealth frigate built for the Indian Navy in Russia. The ship is commanded by Captain MR Harish. The ship is equipped with a versatile range of weapons and sensors and is among the earliest stealth frigates of the Indian Navy. The ship is part of the Indian Navy’s Western Fleet which is based at Mumbai under the Western Naval Command.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2034171>

Why is there an escalation of violence in the Jammu region and why have the attacks become deadlier?

By organising a series of deadly attacks in Jammu region, Pakistan has made it clear that it wants to be a party in the resolution of the Kashmir issue and the changes made by India in Jammu and Kashmir in August 2019 have no finality. Pakistan's anger against India is not limited to the changes made in J&K. It has also accused India of launching a campaign of "extra judicial and extra territorial" assassinations of Pakistani nationals on Pakistani soil. A charge denied by India.

Notwithstanding the denial, the rhetoric by BJP's senior leadership in the runup to Lok Sabha elections left no one in doubt about India's intentions in targeting those whom it considered as hostile even if they resided on foreign soil. A report in 'The Guardian' on April 4, 2024, buttressed Pakistan's charges and claimed that about 20 such people have been killed by unknown gunmen in Pakistan since 2020. The report also admitted that all those killed were known terrorists associated with outlawed terror groups and were wanted by India. What perhaps emboldens Pakistan now is that the United States needs it to stem the economic rise of China by ensuring that the work on China Pakistan

Economic Corridor remains stalled and no more agreements are signed for CPEC's next version. Besides, the US also levelled a similar allegation against India by identifying elements within Indian government for planning to assassinate its national in the US. Canada's accusation blaming agents linked to Indian government for assassination of its national on its soil was also backed by the US.

Therefore, an escalation from Pakistan's side should have been anticipated. By coinciding the first major attack of targeting a bus carrying pilgrims at Reasi with the swearing in of Prime Minister Narendra Modi, Pakistan army signalled to the new government in New Delhi that it intended to change the status quo on Kashmir.

The attack took place around the same time that Modi was being sworn in on June 9. A day earlier, Jammu and Kashmir director general of police had sounded an alarm that around 70-80 Pakistani terrorists had infiltrated. Since then, in two major ambushes in Kathua and Doda, Indian Army lost 9 personnel, including one officer. At the same time, in a separate encounter, the Army also killed three Pakistani terrorists in Doda on June 26.

The first crucial question is why is there an escalation of violence in Jammu region?

It is well known that the international border and Line of Control in Jammu don't have the kind of anti-infiltration grid as in the Valley. Besides, the security grid in the hinterland is also not that close knit. So, if terrorists manage to breach the first line of defence on the border, they may not have to confront security formations to reach their destination. What baffles security experts is that unlike past, these freshly infiltrated groups are aggressively targeting Indian Army, thereby exposing their location.

Besides, in any ambush, these terrorists would expend the ammunition brought from across and that would make them vulnerable the next time when they would be surrounded by the Army. This would mean that these terrorists would either be killed or might risk going back to Pakistan with depleted ammunition stock.

The second crucial question is why the attacks have become deadlier?

Unlike in the past, terrorists are now carrying deadlier weapons like American-made M4 assault rifles that are customised with thermal imaging sights suitable for attacks in dense fog and night conditions. These weapons use armour-piercing bullets ideal for ambushes. M4 assault rifles were recovered from terrorists killed in Hiranagar and Doda. Pakistan army has laid hands on these weapons that the US had given to defence forces in Afghanistan. Those who have seen terrorism in Jammu and Kashmir since the onset of militancy understand as to how Pakistan controls and calibrates flow of terrorists to our side. There is no dearth of trained terrorists that Pakistan can infiltrate at short notice.

So, how should India move from here?

The sensible way would be to first lower the prevailing sentiment against New Delhi that was reflected in the recently concluded Parliament elections in the Valley. Suggestion: Release those unjustly detained, restore statehood and hold assembly elections. The order giving more powers to the lieutenant governor is counterproductive. Also, remarks by J&K DGP blaming mainstream political parties for the infiltration should have been disowned and discarded. There is hardly any local support for terrorists in all districts along the border with Pakistan in Jammu region. Hence any over-reaction to identify and punish alleged local collaborators will prove to be counterproductive and alienate locals whose support is crucial for interception of the infiltrating groups.

The most difficult and tricky issue is how to deal with Pakistan? It would be better for both India and Pakistan to engage bilaterally to build trust rather than bringing in third countries like the US. It's true that help from friendly countries like the United Arab Emirates ensured that both sides observed truce on border in Jammu and Kashmir since February 2021. But a new beginning of bilateral engagement could be made.

<https://economictimes.indiatimes.com/news/defence/why-is-there-an-escalation-of-violence-in-the-jammu-region-and-why-have-the-attacks-become-deadlier/articleshow/111844955.cms>

THE ECONOMIC TIMES

Thu, 18 July 2024

Amid rising Chinese activities, India clears major plans to build two military airfields in Lakshadweep

In a major boost to its defence capabilities, India on Thursday approved a major plan to build military airfields in Lakshadweep island territories to keep an eye on growing Chinese activities in the region and expand its reach.

The Central government, at a high-level meeting held on Thursday, cleared the proposals, defence sources told ANI.

The proposal from the three services led by the Department of Military Affairs is to build a new airbase in Minicoy islands and extend the existing air field on Agatti island in the Arabian Sea on western side of India, they said.

The dual-purpose airfields, which would also be used by commercial airlines, would be capable of deploying and operating all types of fighter and transport aircraft, along with long-range drones and would give an edge to the Indian forces in the region.

The move has come at a time when the Chinese Navy has been expanding its presence in the Indian Ocean Region and collaborating closely with the Pakistan Navy in the region.

The Indian Air Force would be the lead in the project that would see a military conclave coming up there, which would be used by all three defence forces and the Indian Coast Guard.

The Indian Coast Guard was the first force under the Defence Ministry to suggest the development of an airstrip in the Minicoy Islands. As per the present proposal, the Indian Air Force would be in the lead to run the operations from Minicoy.

The airport at Minicoy would also give the defence forces the capability to extend their area of surveillance in the Arabian Sea. The airport at Minicoy would also provide a boost to tourism in the region, as has been planned by the government.

The Minicoy islands are just around 50 miles from the Maldives.

<https://economictimes.indiatimes.com/news/defence/amid-rising-chinese-activities-india-clears-major-plans-to-build-two-military-airfields-in-lakshadweep/articleshow/111843730.cms>

THE ECONOMIC TIMES

Thu, 18 July 2024

Strengthening US-India defence ties: Lockheed Martin CEO after meeting PM Modi

On Thursday, Lockheed Martin CEO Jim Taiclet joined Prime Minister Narendra Modi, emphasizing the commitment of the world's oldest and largest democracies to strengthen their bilateral ties. Taiclet praised the local workforce in India, recognizing its promising talent and capabilities.

Strengthening Bilateral Ties

"As a trusted partner of over three decades, we recognize the promising talent and capabilities of the local industry and remain committed to strengthening the defence and industrial ties between our two nations," Lockheed Martin stated.

Historic State Visit Boosts Relations

Last year, Prime Minister Modi paid a state visit to the US, which Lockheed Martin described as "truly historic." The company noted, "This visit is going to take our relationship (India-US ties) to the next level and I think that's a cross-hold sector for supply chain resilience."

Economic Engagement on the Rise

Dilip Chauhan, Deputy Commissioner for New York City Mayor's Office for International Affairs, highlighted the positive impact of Modi's visit. "PM Modi's visit made US and India's ties stronger than before. Several investments have been announced during the visit. Around 120,000 Indian American doctors are currently working in the US, and around 28,000 hotels are owned by Indian Americans in the US," he said, adding that it was the best time for economic engagement between the two countries.

Lockheed Martin in India

Lockheed Martin, an American multinational corporation specializing in aerospace, arms, defence, information security, and technology, has been a significant player in the Indian defence sector. The company has exported defence products worth millions from India, showcasing the strong industrial ties between the two nations. This ongoing collaboration is a testament to the robust and growing partnership between the US and India.

<https://economictimes.indiatimes.com/news/defence/strengthening-us-india-defence-ties-lockheed-martin-ceo-after-meeting-pm-modi/articleshow/111844492.cms>

THE ECONOMIC TIMES

Thu, 18 July 2024

Russia and China finish successful South China Sea joint naval drills, TASS cites Russian Navy

Russian and Chinese ships have used joint naval exercises in the South China Sea this week to successfully rehearse anti-submarine operations, naval combat and providing air defence to vessels, Russia's TASS news agency reported on Thursday.

TASS cited a statement from Russia's Pacific Fleet as saying that the drills - dubbed 'Maritime Cooperation 2024 - had now finished.

The opening ceremony of the exercise took place in the Chinese port of Zhanjiang, the Russian defence ministry said earlier this week.

Russia's Pacific Fleet was cited as saying that the two navies had carried out about 30 combat exercises, including joint artillery firing at sea, coastal and air targets, and joint search and rescue operations at sea.

"Their main purpose was to strengthen naval cooperation between the Russian Federation and the People's Republic of China as well as to maintain peace and stability in the Asia-Pacific region," the Fleet was quoted as saying.

The drills follow the completion of a separate joint naval patrol in the north Pacific, which the Russian defence ministry said earlier involved a detachment of Russia's Pacific Fleet ships, including two corvettes, the Rezky and the Gromky.

China claims control over almost the entire South China Sea, including the disputed Second Thomas Shoal, where the Philippines maintains a rusty warship that it deliberately grounded in 1999 to reinforce its own maritime claims and has been central to a recent standoff between the two countries.

The rising tensions have led U.S. officials to remind Beijing that their mutual defence treaty obligations with the Philippines are ironclad.

China and Russia declared a "no limits" partnership in 2022 when President Vladimir Putin visited Beijing just days before he sent tens of thousands of troops into Ukraine.

<https://economictimes.indiatimes.com/news/defence/russia-and-china-finish-successful-south-china-sea-joint-naval-drills-tass-cites-russian-navy/articleshow/111832590.cms>

THE ECONOMIC TIMES

Thu, 18 July 2024

Indian Navy P-8I aircraft taking part in US' RIMPAC exercise at Pearl Harbour

The Indian Navy P81 aircraft is taking part in a military drill at Joint Base Pearl Harbour in the US, in the multilateral exercise, Rim of the Pacific (RIMPAC) 2024.

Joint Base Pearl Harbour-Hickam (JBPHH) is a US military base on the island of Oahu, Hawaii.

"Watch the #IndianNavy P8I coming in for landing at Joint Base Pearl Harbour, Hickam Airfield, Hawaii after undertaking Anti-Submarine Mission with @USNavy & other participating Navies during the ongoing Multilateral Exercise - #RIMPAC2024," it stated on X.

Indian multi-role stealth frigate INS Shivalik, mission deployed in the South China Sea and North Pacific Ocean, reached Pearl Harbour in Hawaii last month on June 29 to take part in the 29th edition of the Rim of the Pacific (RIMPAC) exercise, which is the world's largest naval exercise. INS Shivalik sailed into Pearl Harbour on Thursday on completion of JIMEX 24, a bilateral exercise between India and Japan.

"Indian Navy's indigenous stealth frigate #INSShivalik has arrived at Pearl Harbour, Hawaii to participate in 29th edition of Exercise Rim of the Pacific #RIMPAC24. Harbour Phase, #27Jun - #07Jul, will incl Professional Interactions, Cross Deck Visits, insightful workshops & team building sessions," the Indian Navy posted on X.

The sea phase of RIMPAC-24, divided into three sub-phases will witness ships undertaking basic and advanced level integration exercises during the first two sub-phases.

RIMPAC-24, spanning over six weeks of intense operations and training is aimed at enhancing interoperability and building trust among the navies of friendly foreign countries.

Led by the US Navy, approx 29 countries are participating in the current edition of the multi-dimensional exercise.

The world's largest international maritime exercise, RIMPAC-24 provides a unique training opportunity while fostering and sustaining cooperative relationships among participants, critical to ensuring the safety of sea lanes and the security of the world's oceans.

<https://economictimes.indiatimes.com/news/defence/indian-navy-p-8i-aircraft-taking-part-in-us-rimpac-exercise-at-pearl-harbour/articleshow/111837853.cms>

THE ECONOMIC TIMES

Thu, 18 July 2024

Here's how India can tackle the new wave of terrorism in Jammu-Kashmir

Recent months have seen a significant shift in Pakistan's proxy war tactics, moving the focus from Kashmir to a strategically vital zone in Jammu. This area, extending from Poonch to Kathua and encompassing the mountainous tracts of the Pir Panjal South to the Kishtwar range, has become a new hotspot for terrorist activities. Pakistan's deep state seems intent on reviving terrorism and fomenting antipathy against the Indian state in this region, which has seen a chain of attacks over the last two years.

Historical Context and Present Challenges

Pakistan began its proxy war in Kashmir in 1989 and gradually spread militancy to Jammu to thin out Indian forces and incite the local Muslim population. However, sustaining this campaign in Jammu proved difficult due to low popular support, despite ample resources. The region's rugged terrain, with its heights, rocky terrain, and thick jungles, offered hideouts for terrorists. Notably, the 2003 Operation Sarp Vinash in the Hilkaka area above Surankot, involving seven battalions, neutralized a significant number of terrorists.

Resurgence of Militancy in Jammu

High-end militancy in Jammu lasted from 1994 to about 2009, with the Armed Forces (Jammu and Kashmir) Special Powers Act being notified for the region in 2001. Additional Army formations were deployed but de-inducted after peace was largely restored by 2009. However, with increasing infiltration in Kashmir, resources were gradually redeployed, weakening the counterterrorism grid in Jammu. This dilution made the region more susceptible to infiltration and terror activities.

The Genesis of Operation Sarp Vinash

In 2003, under the leadership of Lt Gen Rostum Nanavatty, Operation Sarp Vinash was launched by Northern Command to eliminate terrorist strongholds in Hilkaka near Surankote. This area had

become a sanctuary for groups like LeT, JeM, and Al-Badr, who operated freely, even engaging in recreational activities like cricket with locals.

Tactical Planning and Execution

Planning for Operation Sarp Vinash involved meticulous preparation by 16 Corps and the Counterinsurgency Force (Romeo) led by Maj Gen (later Lt Gen) HS Lidder. The operation required detailed intelligence gathering, infrastructure development including helipads, and coordination with local populations for effective execution.

Operational Challenges and Strategic Adjustments

Challenges included the seasonal migration of civilians with livestock, which posed logistical and operational challenges. Overcoming these, Lidder's forces infiltrated the area from multiple directions, securing bases and conducting search and destroy missions. The operation was timed to capitalize on the post-winter period when the area was less accessible due to snow.

Outcome and Legacy

Operation Sarp Vinash concluded on May 1, 2003, with significant results: 65 terrorists neutralized, 3 captured, and a substantial recovery of weapons and warlike stores. Despite the success, it highlighted ongoing security challenges in the region, necessitating continued vigilance and strategic responses to maintain peace in J&K.

Continuing Strategic Imperatives

Today, two decades later, the threat landscape has evolved, but the imperative to secure areas like Hilkaka remains. The security establishment must remain proactive, employing calibrated coercive actions to prevent destabilization efforts by external actors and ensure sustainable peace in J&K.

Dynamic Security Grid and Resource Allocation

Grids in counter-terrorism operations are dynamic, with resources always at a premium. The Kashmir CT grid strengthened progressively while the one in Jammu weakened, making it easier for terrorists to infiltrate. This shift in focus by Pakistani proxies aims to exploit the voids created by troop redeployments from Jammu to other regions like Ladakh.

The "No War, No Peace" Zone

Jammu has emerged as a "no war, no peace" zone, requiring a new counterterrorism approach. The stronger Kashmir CT grid and initiatives like Operation All Out have significantly reduced terrorist strength and infrastructure. However, the resurgence of terrorism in Jammu, employing new operational tactics, necessitates a fresh, technology-driven approach to address the evolving dynamics.

Addressing the Challenges

To counter the evolving terrorist threat, India needs to:

- **Strengthen Intelligence Networks:** Refurbish intelligence networks and integrate the Special Operations Group (SOG) with Rashtriya Rifles (RR) to leverage their strengths.
- **Enhance Military Operations:** Revisit unit drills, sub-tactical operations, and large-scale operations to disrupt terrorist logistics, similar to Operation Sarp Vinash.

- **Foster Community Relations:** Establish and reiterate a sound relationship with the local populace to garner support for counter-terrorism efforts.
- **Deploy Adequate Troops:** Ensure additional troops are deployed efficiently to strengthen the security grid and prevent infiltration.

Political and Social Implications

With Jammu & Kashmir expected to go to the polls soon, administratively managing the region without a democratically elected government is impractical. Conducting elections, despite security challenges, can contribute to restoring normalcy. The Modi government needs to confront the true state of affairs and avoid misleading narratives.

Escalating Violence in Jammu Region

Recent months have witnessed a surge in terrorist incidents striking various districts across Jammu, often overlooked amidst the focus on Kashmir.

May 2022: Katra Bus Fire Incident

Initially labeled as an accident, a bus fire in Katra resulted in four fatalities. Later investigations pointed towards a suspected terrorist attack involving sticky bombs.

December 2022: Sidhra Encounter

Security forces engaged in a firefight with terrorists in Sidhra near Jammu, resulting in the neutralization of four militants. A significant cache of weapons was recovered, preventing a major terror plot.

January 2023: Dangri Village Massacre

Terrorists targeted Dangri village, signaling a disturbing trend of attacks on civilian areas. The aftermath led to the arming and training of local defense guards to safeguard their communities.

June 9-12, 2024: Series of Attacks

Reasi Bus Attack: On the day of Prime Minister Narendra Modi's oath-taking, a bus carrying pilgrims in Reasi was targeted, resulting in nine deaths and 33 injuries when the driver lost control while attempting to evade attackers.

Kathua Village Attack: A gunfight in a village near the international border claimed the lives of two militants and a CRPF officer, highlighting the volatile border areas.

Doda District Incidents: Separate attacks on checkpoints at Gandoh and Chattergala injured seven security personnel, underscoring ongoing security challenges.

Other Notable Past Incidents

February 2018: Sunjuwan Terror Attack

Jaish-e-Mohammad terrorists attacked an army camp in Sunjuwan, resulting in the deaths of five soldiers and one civilian, with several others injured. The attackers were eventually neutralized after an intense gun battle.

January-March 2021: Increased Activity

Signs of heightened terrorist activity and innovative tactics, including the use of sticky bombs and tunneling under border fences, indicated evolving strategies by Pakistan-backed groups.

June 27, 2021: Drone Attacks

Low-flying drones suspected of dropping improvised explosive devices targeted security establishments and the Jammu air force station, marking a shift in attack methodologies.

Alarming Rise of TRF Terror Attacks in Jammu

New Threat: The Resistance Front(TRF)

A relatively new but dangerous terrorist organization, The Resistance Front (TRF), has claimed responsibility for several recent attacks in the Jammu region. Backed by Pakistan and affiliated with Lashkar-e-Taiba, TRF has signaled a "renewed start" with further threats against tourists and non-locals. The group initially took responsibility for the Reasi bus attack.

Heightened Security Measures

In response to these threats, security protocols have been significantly heightened. The National Investigation Agency has been tasked with leading the investigation into these attacks. The diversity of targets, from military camps to crowded markets and pilgrimage buses, highlights a concerted effort to destabilize the region through varied forms of violence.

Well-Equipped Insurgents

The recovery of sophisticated arms and ammunition, including US-made M4 assault rifles, Chinese weapons, and encrypted radio sets, underscores the well-equipped nature of these insurgents. These advanced weapons, left behind in Afghanistan by US and NATO forces, have made their way to Pakistan, fueling terrorist groups. The presence of active sleeper cells, such as the alleged mastermind behind the Katra bus bombing, who was a teacher, indicates the complexity of these operations.

Troop Redeployment Challenges

Despite security forces being well-prepared, the resurgence of terrorist activities presents a formidable challenge. The strategic redeployment of troops to the Ladakh sector in response to the standoff with China has left a void south of the Pir Panjal range, which terrorists are exploiting. According to Lieutenant General B.S. Jaswal (Retd.), former Northern Army commander, the reduction in troop density necessitates the deployment of the Central Armed Police Forces to bridge the security gap.

Importance of Human Intelligence

Counter-terror operations heavily depend on a robust human intelligence network. Incidents like the December 2021 terror attack in Poonch, where eight civilians were detained and allegedly tortured by security forces, erode public trust and make counter-insurgency operations more challenging. The army's investigation into the incident reportedly indicated that three men died of torture. In response, Defense Minister Rajnath Singh and Army Chief General Manoj Pande visited Rajouri to assure the victims' families that justice would be served. Such occurrences must be avoided to maintain confidence and effectiveness in security measures.

The Need for Democratic Governance

With J&K expected to go to the polls in the coming months, administratively managing a region as vast and complex as J&K as a Union Territory without a democratically elected government is impractical. The election is a critical step toward restoring normalcy in this strife-torn Union Territory. For the past seven years, J&K has been without an elected government, with the last assembly elections held in 2014. Last year, the Supreme Court directed the Election Commission to hold assembly elections in J&K by September 30, 2024.

Strategic Implications

Terror attacks in Jammu underscore Pakistan's malicious intent to prolong the Kashmir conflict, evidenced by a strategic shift in its modus operandi and operational tactics within the Jammu region. Without significant punitive measures and a new counter-terror strategy against Pakistan, the escalation of its terrorist activities within J&K is inevitable. An escalation of terrorist attacks in Jammu could give the Modi government reasons to postpone assembly elections yet again. It is crucial for the government to confront the true state of affairs and cease propagating misleading narratives.

Call to Action

It is imperative that security agencies, with the support of local communities, undertake carefully planned operations to dismantle terrorist networks, restore peace, and reinforce social cohesion in this strategically vital region.

<https://economictimes.indiatimes.com/news/defence/heres-how-india-can-tackle-the-new-wave-of-terrorism-in-jammu-kashmir/articleshow/111838377.cms>

THE ECONOMIC TIMES

Thu, 18 July 2024

Russia says it may deploy nuclear missiles in response to US weapons in Germany

Russia does not rule out new deployments of nuclear missiles in response to the planned U.S. stationing of long-range conventional weapons in Germany, Deputy Foreign Minister Sergei Ryabkov was quoted as saying on Thursday.

Interfax news agency cited Ryabkov as saying that the defence of Russia's Kaliningrad region, which is wedged between NATO members Poland and Lithuania, was a particular focus.

"I am not ruling out any options," the agency said he told reporters in Moscow when asked to comment on the U.S. deployment plans.

The United States said last week it would start deployment in Germany from 2026 of weapons that will include SM-6, Tomahawk and new hypersonic missiles in order to demonstrate its commitment to NATO and European defence.

Russian President Vladimir Putin said last month that Moscow would resume producing short and intermediate-range land-based missiles and decide where to place them if needed. Most of Russia's missile systems are capable of being fitted with either conventional or nuclear warheads.

Interfax quoted Ryabkov as saying Russia would choose from the widest possible array of options to work out the most effective response to the U.S. move, including in terms of cost.

He said Kaliningrad, the westernmost part of Russia that is cut off from the rest of its land mass, "has long attracted the unhealthy attention of our opponents".

"Kaliningrad is no exception in terms of our 100% determination to do everything necessary to push back those who may harbour aggressive plans and who try to provoke us to take certain steps that are undesirable for anyone and are fraught with further complications," Ryabkov said.

The missiles that Russia and the United States are contemplating deploying are intermediate-range ground-based weapons that were banned under a 1987 U.S.-Soviet treaty. The U.S. quit the treaty in 2019, accusing Russia of violations that Moscow denied.

Security experts say the planned deployments are part of an arms race that adds to an already complex array of threats at a time of acute tensions over the war in Ukraine.

A Russian deployment of nuclear missiles in Kaliningrad would send a powerful signal to the West because of its direct proximity to NATO countries.

But Andrey Baklitskiy, an arms control expert with the United Nations Institute for Disarmament Research, said Russian missile launchers in Kaliningrad would probably be visible "at every second" to NATO intelligence and surveillance, so such a deployment would amount to "posturing".

In a telephone interview earlier this week, he said Russia might also deploy missiles in its Moscow or Leningrad regions or in Chukotka in the far east, from where they could target Alaska or even California.

<https://economictimes.indiatimes.com/news/defence/russia-says-it-may-deploy-nuclear-missiles-in-response-to-us-weapons-in-germany/articleshow/111840118.cms>



Thu, 19 July 2024

Turkey Imposes 'Blanket Ban' On Defense Exports To India In Favor Of Pakistan; Delhi, Ankara Ties Set To Sink Further

Turkey—India ties have hit a nadir. The Turkish government has imposed a comprehensive ban on exporting military equipment to India, one of the biggest arms importers in the world. The move comes months after New Delhi canceled the contract with a Turkish firm involved in a shipbuilding project in an Indian shipyard.

The Turkish government has not made big announcements about it; rather, the decision was taken at a closed-door session in the Turkish Parliament. According to the minutes of the debate at the Foreign Affairs Committee on July 10, 2024, Mustafa Murat Şeker, deputy chairman of the Presidency of the Defense Industry (SSB), Turkey's top arms procurement agency, inadvertently disclosed the government's secret policy regarding India.

The move should not come as a surprise as the two countries have found themselves in opposite corners when it comes to geostrategic issues. With increasing hobnobbing between Turkey and Pakistan, India has been taking a stand against Turkey on international issues. After taking a stand in the Armenia-Azerbaijan conflict, New Delhi has made it clear that in the conflict in the Aegean Sea between Turkey and Greece, it is siding with the latter. In April, New Delhi canceled the contract with a Turkish firm involved in a ship-building project in India even as it hosted the Chief of the Hellenic National Defense General Staff at a fighter base.

Şeker, calling his disclosure sensitive, told lawmakers that not a single sale of any military article was approved by the government when the customer was based in India. The information about the secret ban has been made public despite the risk of the fallout with India. The minutes were obtained by Nordic Monitor. "India, for example, is one of the world's top five arms importers, a massive market, importing close to \$100 billion. However, due to our political circumstances and our friendship with Pakistan, our Ministry of Foreign Affairs does not give us positive feedback on exporting any products to India, and consequently, we do not grant any permits to our companies in this regard," he said.

The sale of Turkish defense articles abroad requires prior approval from the Turkish military, the SSB, and the Foreign Ministry. The ban has put India on a blacklist of countries to which Ankara will not supply military and defense products. The ties between India and Turkey have been going downhill as Turkey refused to decouple itself from Pakistan on the issue of Kashmir. Since the abrogation of Article 370 in 2019 in Jammu and Kashmir, Turkey has not let go of any opportunity to raise the issue on an international forum.

Turkish President Recep Tayyip Erdogan has supported Pakistan in all diplomatic forums, such as the UN General Assembly, the UN Human Rights Council, and the Financial Action Task Force. Erdogan, in his speech at the 74th session of the United Nations General Assembly, declared, "Kashmir is still besieged, and eight million people are stuck in Kashmir." On its sidelines, Erdogan elaborated. The "world should know the sufferings of Kashmir," he said, drawing parallels between Kashmir and Palestine by calling Kashmir an open-air prison.

The Indian government responded by cozying up with the leaders of Armenia, Cyprus, and Greece—all three countries with which Turkey is embroiled in disputes. In 2019, Indian Prime Minister Narendra Modi was slated to visit Turkey and Saudi Arabia. But the visit to Turkey was canceled, and the Prime Minister visited only Saudi Arabia, sending a message to Ankara about India's diplomatic preferences. In April, India's Hindustan Shipyard Limited (HSL) terminated all agreements with Turkish firms to construct the fleet of five support ships for the Indian Navy and decided to go ahead with the construction on its own. The project, estimated to cost between US \$1.5 billion and \$2 billion, initially envisaged the transfer of technology from Anadolu Shipyard, part of the Turkish TAIS consortium, with which HSL signed an agreement for technical collaboration in 2020.

Turkey's Growing Ties With Pakistan

While Turkey has banned exports to India, news has come that Ankara is in talks with Islamabad to make it an official partner in the development of the 5th-generation fighter jet KAAN. While it is unclear when Pakistan will be able to join the Turkish combat aircraft program, in 2023, Turkey has indicated that it plans to begin negotiations with Pakistan as soon as possible. "Pretty soon, within this month, we will be discussing with our Pakistani counterparts to officially include Pakistan in our Kaan national fighter jet program," Turkish deputy defense minister Celal Sami Tufekci said in Pakistan on August 2, 2023.

The announcement came just days after Azerbaijan joined the fighter jet project. Turkish Aerospace, which is leading the development of the Kaan, has a close relationship with Pakistan Aeronautical Complex (PAC) Kamra, the state-owned military aircraft company, and maintenance, repair, and overhaul house. Turkey has sided with Azerbaijan and Pakistan in the conflict with Armenia. New Delhi has responded by supplying arms to Armenia. At the beginning of this year, as India's ties with the Maldives went South, a move purported to be orchestrated by China, Turkey supplied Bayraktar TB2 drones for maritime surveillance. The UAVs were delivered as the Maldives asked Indian defense personnel to leave the island country, forgoing decades-old military and civil ties with India.

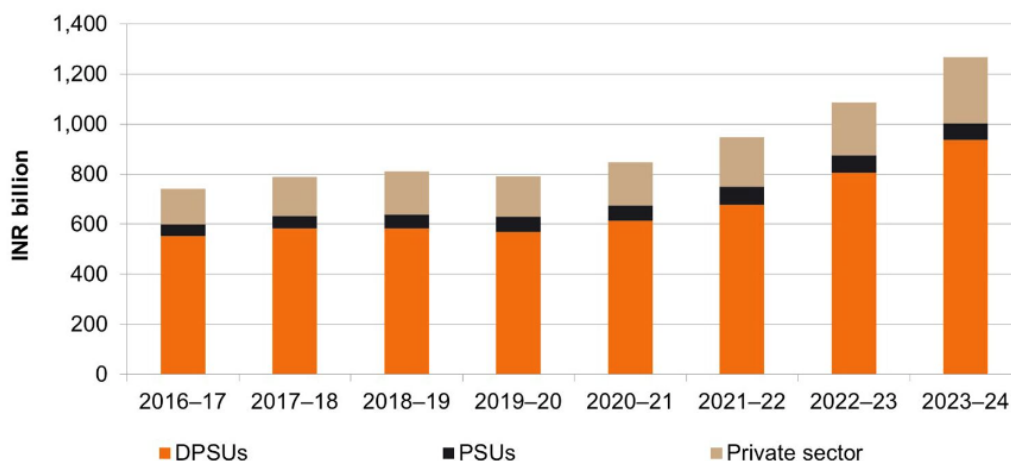
<https://www.eurasiantimes.com/after-needling-india-on-kashmir-turkey/>



Thu, 18 July 2024

India updates defence procurement rules

India – value of defence production



Notes: DPSU - Defence Public Sector Undertaking; PSU - Public Sector Undertaking
Source: Janes

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The value of defence production in India increased by more than 70% between 2016-17 and 2023-24. (Janes)

India's Ministry of Defence (MoD) has launched updated defence procurement rules, aimed at providing further support for localised private-sector research, development, and manufacturing.

The updated Defence Acquisition Procedure 2020 (DAP 2020) was issued by the MoD in mid-July. The MoD made no formal announcement about the update, but the new rules introduce several new mechanisms and requirements for companies bidding to supply defence equipment to the Indian military.

The updated rules provide additional support for spiral development programmes, introduce additional guidelines for offset-related technology transfers and the procurement of raw materials, outline new methodologies to evaluate intellectual property (IP), and institute a host of other measures to support new and small defence businesses.

The concept of a 'spiral development model' was introduced by the DAP 2020 on the policy's launch in late September 2020.

The newly updated version of the policy provides greater detail about this model, which is to be operated and financially supported by India's Innovation in Defence Excellence (iDEX) and Technology Development Fund (TDF), MoD schemes to support private-sector research and development.

This new model outlines three stages of spiral development for procurements valued at less than INR2.5 billion (USD29.9 million), with varying levels of compliance with user requirements. The model is intended to enable suppliers to secure what the MoD terms as "minimum pilot order quantities", based on end-user requirements, for field evaluations.

The new 'guidelines for the acquisition of technology' apply to offset-related technology transfers from foreign suppliers to state-owned defence public sector undertakings (DPSUs) and the Defence Research and Development Organisation (DRDO).

<https://www.janes.com/osint-insights/defence-news/industry/india-updates-defence-procurement-rules>

ThePrint

Thu, 18 July 2024

Philippines looks at India for military modernising, envoy lays out the roadmap

Amid its maritime tensions with China and its plans to modernise its military as a deterrence, Philippines envoy to India Josel Francisco Ignacio told ThePrint in an interview that defence cooperation is a key element of growing bilateral ties.

Noting that both India and Philippines have convergence on key security issues, he said that defence cooperation being implemented is more than just acquisitions of military equipment.

"Defence equipment acquisitions from India is just one aspect of a larger defence relationship. That is also very rapidly rising and expanding. We have military education and training. I am happy to

say we have Filipino cadets in Dehradun and Chennai in Indian military academies,” Ignacio told ThePrint in an interview here in the national capital.

The Philippine ambassador added: “Defence to defence and military to military dialogue, exchanges of views on issues of common concern also play an important part in this relationship. I am happy to tell our audience that the defence partnership is burgeoning on many fronts.”

New Delhi and Manila in January 2022 signed a \$374.6 million deal for the export of a shore-based variant of an anti-ship cruise missile – BrahMos. The deal was India’s first major international export order for the Indian defence industry. The missiles have a range of 290 km. In April 2024, India delivered the first set of launchers and missiles to The Philippines. However, experts from the strategic security space have questioned whether Manila has the capabilities to operate such missiles, including Ashley Tellis, a former senior advisor to the US State Department.

To this, ambassador Ignacio explained that the BrahMos missile systems is an “important element” to the nation’s defence modernisation strategy and deterrent capabilities, but just one part of its overall archipelagic defence plans. “What we intend to do is to build our deterrent capabilities with a multitude of partners and we are pleased that India has risen to become one of those partners in our defence modernisation,” said the ambassador. “Of course it goes beyond equipment acquisition, we would also want to build our capability to maintain, to operate, to upgrade.”

In November 2024, India and the Philippines will also be celebrating 75 years of ties between the two countries. The ambassador highlighted his hope of a high-level delegation visit happening later in the year to celebrate this moment, reminiscent of then President Ram Nath Kovind’s visit to Manila in 2019 to celebrate 70 years of ties.

India a ‘reliable friend’, convergence of interests in Indo-Pacific

In recent months, Manila has seen a series of confrontations with China in the South China Sea. In June, the Philippines claimed that a Filipino sailor was seriously injured in a high-speed ramming incident by the Chinese coast guard. Beijing rejected Manila’s claims and alleged that it was the Philippines ship that approached its coast guard vehicle in a deliberate and unprofessional manner.

“The tensions have sort of become of great concern recently. There have been moves by the Philippines to de-escalate as our President himself has articulated. We are of course talking to partners. Our relationship, our dialogue with partners, our exchange of views with partners form an important element of our diplomacy on the South China Sea issue,” explained the Philippine ambassador to ThePrint.

He added: “We are very pleased that India is part of that circle of our very close friends with whom we regularly exchange views and provide some information by which we can mutually benefit in terms of creating a larger picture of what we confront in the larger Indo-Pacific.”

The tensions in the South China Sea revolve around the claims over the Second Thomas Shoal. In 2016, an arbitral tribunal ruled in favour of the Philippines, determining that China’s historical claims and activities in the region were unlawful. India supports Manila’s position on the situation.

“To an extent, state-to-state relations almost follow the psychology of the people. Certain common issues, common threads tend to build and reinforce relationships and that goes for states as well and, I think, that is what we see happening to The Philippines and India,” said Ignacio.

Deepening trade links

The ambassador also explained to ThePrint that Manila and New Delhi are looking to improve trade ties, including creating a working group to look at avenues to deepen the financial technology partnership between the two countries. In the financial year 2023-2024, trade between India and the Philippines touched record highs of \$3.5 billion, according to data published by the Indian Ministry of Commerce and Industry. While this is a 15 percent increase in comparison to the previous year, the overall share in India's total trade is about 0.21 percent.

“Compared to the US and even our neighbours in ASEAN [trade ties] are relatively small. We acknowledge that there is plenty of room for us to ramp up trade by-and-by over the medium term. This is why we are looking at various modalities. I think the challenge has been finding complementaries,” said the ambassador.

To kick-start trade ties, Ignacio explained that the two countries in 2020 started negotiations for terms of reference over a preferential trade agreement (PTA). He further explained that the two countries are “very close” to completing negotiations over the terms of reference and starting on the negotiations over specific “product” lines.

<https://theprint.in/diplomacy/philippines-looks-at-india-for-military-modernising-envoy-lays-out-the-roadmap/2179463/>

THE TIMES OF INDIA

Fri, 19 July 2024

UPEIDA inks MoU to give a big push to defence testing

The UP Expressways Industrial Development Authority (UPEIDA) signed a memorandum of understanding (MoU) with the advanced materials (Defence) testing foundation (AMDTF) on Thursday, clearing the decks for the defence testing infrastructure scheme (DTIS) in UP.

The AMDTF is a special purpose vehicle (SPV) comprising five companies: Mishra Dhatu Nigam Limited (Midhani), Hindustan Aeronautics Limited (HAL), Bharat Dynamics Limited (BDL), Yantra India Limited (YIL) and PTC Industries Limited.

The MoU was facilitated by Invest UP, the state's agency for attracting investment and assisting investors. The SPV was led by SK Jha, chairman and managing director of Midhani.

Chief Secretary Manoj Kumar Singh, who also holds the positions of industries and infrastructure development commissioner and chief executive officer of UPEIDA, said, “India is emerging as a major aerospace and defence (A&D) market in the world, with requirements of over US\$ 250 billion by 2025. Alongside, A&D manufacturing is a key driver of the ‘Make in India’ initiative, but manufacturing cannot move forward until there is an adequate facility for defence testing. With the SPV and this MoU in place, work for the DTIS facility in Lucknow shall begin soon.”

Officials at UPEIDA, the nodal agency for the UP Defence Corridor, said that three kinds of defence testing activities might be undertaken once the Lucknow DTI is in place: mechanical and material testing, communications and unmanned aerial systems (UAS).

“A total of Rs 117.6 crore will be provided as a grant in aid by the Union ministry of defence, which is 75% of the project cost, against the total cost size of Rs 156.3 crore,” they said, hoping that the Centre will not only play a pivotal role in strengthening India’s defence manufacturing infrastructure but also propel UP as a hub for defence manufacturing and innovation.

<https://timesofindia.indiatimes.com/city/lucknow/upeida-signs-mou-with-amdtf-to-boost-defence-testing-infrastructure-in-up/articleshow/111848905.cms>



Thu, 18 July 2024

35 Years Of B-2 Stealth Bomber: World’s Most Expensive Aircraft Gets ‘Key Upgrades’ As U.S. Readies It For China Conflict

The B-2 Spirit Bomber, an aircraft that brought strategic deterrence and stealth to the US Air Force (USAF), is now 35 years old and receiving cutting-edge upgrades to ensure it remains as deadly as ever amid escalating tensions with China.

On July 17, 1989, the B-2 Spirit completed its maiden flight, ushering in a new era of strategic deterrence. The Edwards Air Force Base (AFB) took to the social media site X (previously Twitter) to wish the aircraft a ‘Happy Birthday.’

The B-2 Spirit is one of the three strategic bombers used by the USAF. Designed for covert nuclear and conventional strikes, it has expanded its mission to include traditional precision attacks, even though it was originally designed for the Soviet air defense network and a possible nuclear attack.

Thirty-five years on, the Spirit is still the bedrock of the air component of the US nuclear triad. The B-2 is expected to be replaced by the next-generation formidable B-21 Raider in the late 2020s or early 2030s. However, the USAF and Northrop Grumman are giving the bomber more teeth with new upgrades to increase its capability until it is replaced.

Announcing the anniversary of its inaugural flight, Northrop Grumman said in an official press release, “The B-2 program recently achieved a major milestone by providing the bomber with its first fieldable, an agile, integrated functional capability called Spirit Realm 1 (SR 1).”

These key upgrades will ensure that the B-2 Spirit continues to play a crucial role in carrying out long-range conventional strike missions. In addition to enhancing combat capability, SR 1 provides the B-2 with an open mission systems architecture that permits the installation of more weapons and communications.

“We are rapidly fielding capabilities with zero software defects through the software factory development ecosystem and further enhancing the B-2 fleet’s mission effectiveness,” said Jerry McBrearty, director and B-2 acting program manager, Northrop Grumman. “The agile framework methodology within SR 1 directly supports the Air Force’s initiative to adapt new capabilities in the aircraft, executing the mission today.”

Improved displays, flight hardware, and improvements seen in SR 1 have bolstered the B-2’s survivability. Northrop stated that the complete development of SR 1 took place inside the B-2 Spirit Realm software factory, which was founded in collaboration with the B-2 Systems Program Office and Air Force Global Strike Command.

Colonel Frank Marino, senior materiel leader and B-2 systems program manager for the US Air Force said, “Our implementation of a software factory is opening new doors for the B-2 to carry future weapons and advanced capabilities that will further strengthen our country’s strategic deterrence.”

While industry and the US Air Force collaborated to develop SR 1, it is unclear how the program is progressing. Furthermore, neither the contractor nor the USAF have disclosed the number of B-2 bombers that have received the upgrade out of the 20 currently in service. EurAsian Times understands that the USAF has been making concerted efforts to upgrade the B-2 Spirit to keep it up-to-date with modern combat situations.

For example, to enhance threat radar detection, identification, and avoidance capabilities, the service previously launched the Defensive Management System Modernization Program or DMS-M. This program included new ESM antennas, a digital electronic support measures (ESM) subsystem, and contemporary display processing units. This modernization program was the “largest major modification to the aircraft ever.”

In 2020, the USAF said it was looking to increase the mission readiness of the B-2s with a cockpit display upgrade under a new B-2 display modernization program. More recently, in May 2024, Northrop Grumman was awarded a \$7 billion contract to maintain and enhance the capabilities of the Air Force’s fleet of B-2 Spirit stealth bombers. The contract includes “B-2 enhancements, sustainment, logistics elements including sustaining engineering, software maintenance, and support equipment.”

The B-2 is the most expensive military plane ever built, at about \$2 billion per unit. Despite this high price tag, the aircraft continues to receive further investment and upgrades due to its cutting-edge capabilities, which are expected to play a crucial role in any potential combat between the United States and its adversaries, like China.

B-2 Is Old But Powerful

The B-2 Spirit bomber is a marvel of American aerospace engineering. It is capable of delivering both conventional and nuclear payloads while remaining virtually invisible to radars due to its superior stealth capability. Combining stealth, long-range strike, and precision weaponry, the B-2 Spirit can be a potent deterrent. It is the only of three types of bombers still carrying nuclear gravity bombs and is considered to be the most sophisticated in the US inventory.

The B-2A Spirit stealth bomber was equipped with the B61-12 nuclear bomb, making it the first aircraft in the US Air Force (USAF) inventory to be equipped with the lethal weapon. The B-2 bombers are expected to play a major role in any potential conflict in the Indo-Pacific. Amid rising tensions with Beijing, B-2 Spirit stealth bombers touched down on the island of Guam last month for the first time since 2019.

Guam is a strategic US territory in the Pacific that is anticipated to be a launchpad for US bombers in case of a conflict with China. The bomber was deployed for a joint exercise around Guam, Palau, and the Northern Mariana Islands. The B-2s have been used for force projection against US adversaries. The bomber made history in August last year when it conducted a hot pit refueling at Orland Air Base in Norway, its first landing in the Scandinavian country.

In April this year, the USAF flew 12 B-2 Spirit stealth bombers from Whiteman Air Force Base (AFB) in Missouri. The drill aimed to hone the logistical and operational procedures of strategic bombing strikes during conventional wars and send a message to Russia and China, two of its primary adversaries. Thirty-five years later, it is safe to say that the B-2 Spirit is old but not dusty. The B-2 Spirit bomber occupies a central role in the US strategic arsenal. It can influence the course of battles and discourage aggressiveness by using precision-guided munitions to strike deep into enemy territory, neutralize high-value targets, interfere with enemy command and control systems, and weaken hostile defenses.

<https://www.eurasiantimes.com/35-years-of-b-2-stealth-bomber-worlds/>

Science & Technology News



Press Information Bureau
Government of India

Ministry of Science & Technology

Thu, 18 July 2024

International study observes smaller object in a black hole pair directly for the first time

A new study carried out by a group of 32 scientists from 10 countries (Finland, Poland, India, China, USA, Czech Republic, Japan, Germany, Spain, Italy) spotted the smaller black hole of a pair, establishing the 'sight' of an orbiting blackhole for the first time.

Several international research groups have already confirmed the theory that there are two black holes at the centre of the four billion light years distant galaxy OJ 287, first suggested by astronomers at the University of Turku, Finland.

In 2021, NASA's exoplanet-hunting satellite was pointed towards the galaxy OJ 287 to help astronomers confirm the theory initially proposed by researchers at the University of Turku, Finland, of two black holes at the centre of the galaxy.

The Transiting Exoplanet Survey Satellite (TESS) is designed to discover thousands of exoplanets orbit around the brightest dwarf stars in the sky. TESS is finding planets ranging from small, rocky worlds to giant planets, showcasing the diversity of planets in our galaxy. It has so far found 410 confirmed exoplanets or “new worlds” circling stars other than the Sun.

In 2021, TESS spent several weeks studying another kind of system, a 4 billion light years away galaxy called OJ 287. Researchers have found indirect evidence that a very massive black hole in OJ 287 is orbiting a giant black hole 100 times its size. To verify the existence of the smaller black hole, TESS monitored the brightness of the primary black hole and the jet associated with it. Direct observation of the smaller black hole orbiting the larger one is very difficult, but its presence was revealed to the researchers by a sudden burst of brightness.

This kind of an event had never been observed in OJ287 before, but researcher Pauli Pihajoki from the University of Turku in Finland predicted the event in his doctoral dissertation already in 2014. According to his dissertation, the next flare was expected to take place in late 2021, and several satellites and telescopes were focused on the object at the time.

The TESS satellite detected the expected flare on 12 November 2021 and the observations of the 12 hour event were recently published the Astrophysical Journal Letters. The study of the observation by Shubham Kishore, Alok C. Gupta, both from Aryabhata Research Institute of Observational Sciences, an autonomous institute under the Dept. of Science & Technology, Govt. of India and Paul Wiita, The College of New Jersey, USA discovered a smaller black hole.

The discovery was also confirmed by NASA's Swift telescope, which was also pointed at the same target. In addition, a large international collaboration led by Staszek Zola from the Jagiellonian University in Cracow, Poland, detected the same event by using telescopes in different parts of the Earth. The different telescopes were targeted for the observation so that it was always nighttime at least at one of the telescope locations throughout the entire day.

Moreover, a group from Boston University, USA, led by Svetlana Jorstad and other observers confirmed the discovery by studying the polarisation of light before and after the flare. In a new study combining all the previous observations, Professor Mauri Valtonen and his research team at the University of Turku have shown that the 12-hour burst of light came from the smaller black hole in orbit and its surroundings.

The fast burst of brightness occurs when the smaller black hole "swallows" a large slice of the accretion disk surrounding the larger black hole, turning it into an outward jet of gas. The jet of the smaller black hole is then brighter than that of the larger black hole for about twelve hours. This makes the colour of OJ287 less reddish, or "yellow", instead of the normal red. After the burst, the red colour returns. The "yellow" colour indicates that for the 12-hour period, we are seeing the light from the smaller black hole. The same results can be inferred from other features of the light emitted from OJ287 over the same time period.

“Therefore, we can now say that we have ‘seen’ an orbiting black in the same way that we can say that TESS has seen planets orbiting other stars. And just as with planets, it is extremely difficult to

get a direct image of the smaller black hole. In fact, because of OJ 287's great distance, which is close to four billion light years, it will probably take a very long time before our observation methods have developed enough to catch a picture even of the larger black hole," say Professor Valtonen.

"However, the smaller black hole may soon reveal its existence in other ways, as it is expected to emit nano-Hertz gravitational waves. The gravitational waves of OJ 287 should be detectable in the coming years by the maturing pulsar timing arrays," says A. Gopakumar from the Tata Institute of Fundamental Research in Mumbai, India.

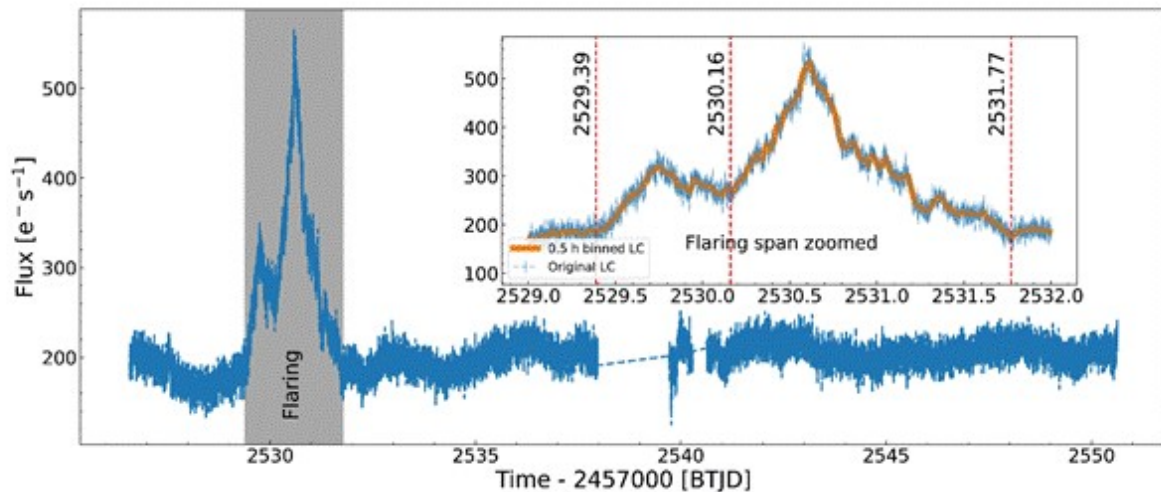


Image 1. The observed burst appears as a sharp flaring of the light curve from satellite observations, showing how an otherwise consistently dim object brightens suddenly and sharply. In the upper corner, the observed flaring is shown in more detail. The amount of light emitted in the burst is equivalent to the brightness of about 100 galaxies. (Image Kishore, Gupta, Wiita 2024)

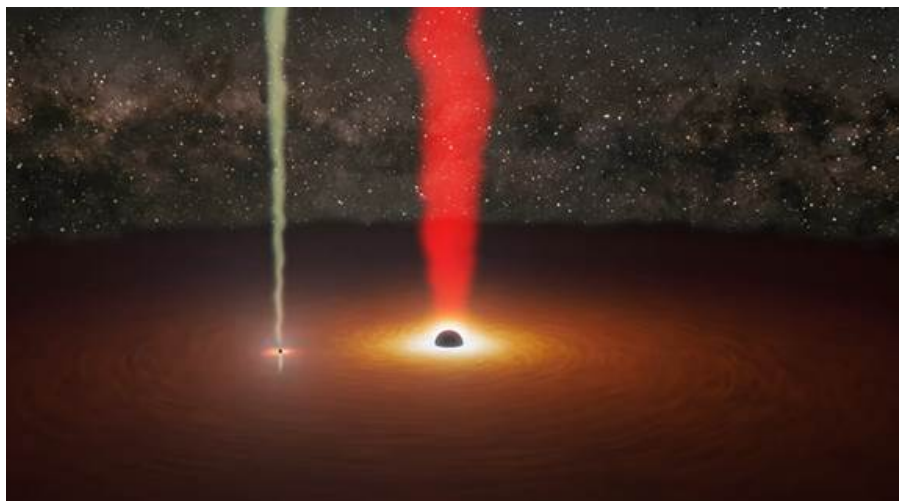


Image 2. The black holes in orbit around each other. Both black holes have jets associated with them: the larger one with reddish colour, and the smaller one with a yellowish colour jet. Normally only the reddish jet is seen, but during the 12 hour period on November 12, 2021, the smaller jet dominated, and gave a direct signal from the smaller black hole, and was observed for the first time. Credit: NASA/JPL-Caltech/R. Hurt (IPAC) & M. Mugrauer (AIU Jena).

Link to the newly published research article in The Astrophysical Journal Letters (Valtonen, Zola, Gupta et al. 2024): <https://iopscience.iop.org/article/10.3847/2041-8213/ad4d9b>

Link to the research article published earlier this year (Kishore, Gupta & Wiita 2024):
<https://iopscience.iop.org/article/10.3847/1538-4357/ad0b80>
<https://pib.gov.in/PressReleasePage.aspx?PRID=2034082>

THE ECONOMIC TIMES

Thu, 18 July 2024

How NASA and SpaceX will bring down the space station when it's retired

SpaceX will use a powerful, souped-up capsule to shove the International Space Station out of orbit once time is up for the sprawling lab. NASA and Elon Musk's company on Wednesday outlined the plan to burn the space station up on reentry and plunge what's left into the ocean, ideally at the beginning of 2031 when it hits the 32-year mark. The space agency rejected other options, like taking the station apart and bringing everything home or handing the keys to someone else.

NASA gave SpaceX a USD 843 million contract to bring down the station - the biggest structure ever built off the planet.

Here's a rundown on the work and challenges ahead:

Why get rid of the space station?

The space station is already showing signs of age. Russia and the US launched the first pieces in late 1998, and astronauts moved in two years later. Europe and Japan added their own segments, and Canada provided robotic arms. By the time NASA's shuttles retired in 2011, the station had grown to the size of a football field, with a mass of nearly 1 million pounds (430,000 kilograms). NASA figures the station will last until at least 2030.

The goal is for private companies to launch their own space stations by then, with NASA serving as one of many customers. That strategy - already in place for station cargo and crew deliveries - will free NASA up to focus on moon and Mars travel. NASA could decide to extend the station's life, too, if no commercial outposts are up there yet. The aim is to have an overlap so scientific research is not interrupted.

Why not bring it back to Earth?

NASA considered dismantling the space station and hauling the pieces back to Earth, or letting private companies salvage the parts for their own planned outposts. But the station was never intended to be taken apart in orbit, according to NASA, and any such effort would be expensive and also risky to the astronauts who would handle the disassembly. Besides, there's no spacecraft as big as NASA's old shuttles to bring everything down. Another option would be to boost the empty station to a higher, more stable orbit. But that, too, was dismissed given the logistical issues and the increased risk of space junk.

How will it be brought down?

Visiting spacecraft periodically boost the space station so it remains in an orbit approximately 260 miles (420 kilometres) high. Otherwise, it would keep getting lower and lower until it plunged, uncontrolled, from orbit. NASA wants to ensure a safe reentry over a remote section of the South Pacific or possibly the Indian Ocean, so that means launching a spacecraft that will dock to the station and steer it toward a watery grave. NASA expects some denser pieces to survive, ranging in size from a microwave oven to a sedan, in a narrow debris field 1,200 miles (2,000 kilometres) long.

NASA and its partners considered using three Russian supply ships for the job, but a more robust craft was needed. The call went out to industry and, in June, SpaceX won the contract for a deorbit vehicle.

What will the deorbit spacecraft look like?

SpaceX plans to use an ordinary Dragon capsule - the kind that carries supplies and astronauts to the space station - but with a much bigger trunk housing a record 46 engines and more than 35,000 pounds (16,000 kilograms) of fuel. SpaceX's Sarah Walker said the challenge will be creating a spacecraft powerful enough to guide the space station while resisting the tugs and forces from increased atmospheric drag during final descent.

This spacecraft will require an especially powerful rocket just to get to orbit, according to NASA. The capsule would be launched 1 1/2 years before the station's planned demise. Astronauts still would be aboard as it's gradually lowered. Six months before the station's destruction, the crew would abandon ship and return home. Once the station is down to about 137 miles (220 kilometres), the Dragon would bring it down four days later.

Has this been done before?

NASA's first space station, Skylab, came crashing down in 1979, with debris raining down onto Australia and the surrounding Pacific. The space agency had hoped one of the first space shuttle crews could attach a rocket to control Skylab's descent or boost its orbit.

But the shuttle wasn't ready by then, with its first flight not until 1981. Ground controllers managed to send Skylab into a slow tumble, aiming for the Indian Ocean. But some pieces also landed in Western Australia. Russia has had more experience with incoming space stations. Mir operated for 15 years before being guided to a fiery reentry over the Pacific in 2001. Before that, several Salyut stations bit the dust.

Will anything be saved?

NASA wants to bring back some small items from inside the space station for museum display, like the ship's bell and logs, panels with patches and other mementos. Those can come down in SpaceX supply ships in the final year or two. "Unfortunately, we can't bring home really, really big stuff," said NASA's Ken Bowersox. "The emotional part of me would love to try and save some," but the most practical approach is to bring everything down in one destructive stroke, he said.

<https://economictimes.indiatimes.com/news/science/how-nasa-and-spacex-will-bring-down-the-space-station-when-its-retired/articleshow/111836926.cms>

NASA cancels its moon rover mission, citing cost overruns and launch delays

The National Aeronautics and Space Administration (NASA) said on Wednesday, July 17, 2024, it's canceling its water-seeking moon rover, citing cost overruns and launch delays. The Viper rover was supposed to launch in late 2023 aboard a lander provided by Astrobotic Technology, but extra testing and increased costs kept delaying the mission, threatening other projects, the space agency said. The rover had aimed to explore the moon's south pole. About \$450 million had been spent so far on its development, NASA said.

The announcement comes days before the 55th anniversary of the Apollo 11 mission, which landed Neil Armstrong and Buzz Aldrin on the moon on July 20, 1969. NASA said it plans to study the presence of lunar ice through other projects.

Astrobotic still plans to fly its Griffin moon lander — minus a rover — by the end of next year. The company's first moonshot ended in failure in January with a fiery plunge over the South Pacific.

<https://www.thehindu.com/sci-tech/nasa-cancels-its-moon-rover-mission-citing-cost-overruns-and-launch-delays/article68416672.ece>

