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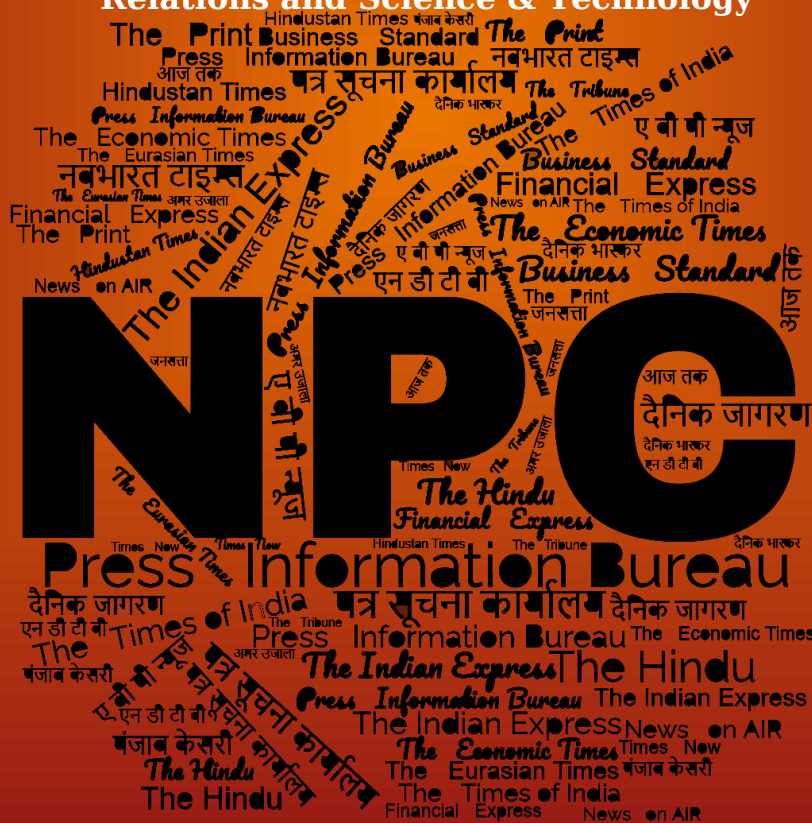
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Fri, 12 Jan 2024

IIWA, in Association with DRDL, Organises Two-day Workshop on AWTNP-2024

Indian Institute of Welding (IIW) Hyderabad Branch, in association with the Defence Research and Development Laboratory (DRDL) Hyderabad, organised a two-day workshop on “Advanced Welding Technologies in National Mission Programmes” (AWTNMP-2024) at DRDL here on Thursday.

The workshop was inaugurated by G.A. Srinivasa Murthy, Distinguished Scientist and Director, DRDL Hyderabad, in the presence of Dr. G. Madhusudhan Reddy, former Director, DMRL, and C. Phani Babu, former Deputy Chief Executive, NFC Hyderabad. AWTNMP Chairman Dr. Jaiteerth R. Joshi motivated the participants through his inspirational talk, emphasising the need to develop welding technologies for strengthening the manufacturing sector and the economic growth of the country.

Srinivasa Murthy enlightened the participants with his speech and informed them about the welder training programmes being conducted by DRDL for the skill development of welders from industry partners.

In his keynote address on “Innovative Approaches in Joining of Advanced Materials,” Dr. Madhusudhan Reddy shared that material joining shall take the primary stage on par with design for better structural performance in field application.

Dr. Madhusudhan Reddy and C. Phani Babu, Past Chairman, IIW Hyderabad Branch, were conferred with the Lifetime Achievement Award by Dr. C.V. Srinivasa Murthy, Chairman, IIW Hyderabad Branch.

More than 120 participants attended the event from different laboratories of DRDO, the Department of Atomic Energy, DPSUs, industry partners, and academia. Eminent speakers from various industries, academia, and laboratories will be delivering lectures these two days.

<http://www.uniindia.com/iiwa-in-association-with-drdl-organises-two-day-workshop-on-awtnp-2024/south/news/3122564.html>



Press Information Bureau
Government of India

Ministry of Defence

Thu, 11 Jan 2024

Visit by Admiral Fahad Abdullah S Al-Ghofaily, Chief of Staff Royal Saudi Naval Forces to India

Admiral Fahad Abdullah S Al-Ghofaily, Chief of Staff, Royal Saudi Naval Forces is on a four day official visit to India from 10 - 13 Jan 24. The visit is a testimony to the longstanding relationship between the navies of Saudi Arabia and India. Admiral Fahad Abdullah S Al-Ghofaily called on Adm R Hari Kumar, the Chief of the Naval Staff, Indian Navy on 11 Jan 24 at New Delhi and held discussions on collaborative mechanisms and measures to further strengthen Navy to Navy cooperation. He was received with a ceremonial Guard of Honour at the South Block Lawns.

Indian Navy cooperates with Royal Saudi Naval Force through various initiatives, which include operational interactions such as bilateral naval exercise Al Mohed Al Hindi, training and other maritime avenues. Indian Navy ships have been regularly undertaking port calls at various ports of Saudi Arabia. Indian Navy has also been interacting with Royal Saudi Naval Force in various multilateral fora viz. IONS (Indian Ocean Naval Symposium), MILAN, CMF (Combined Maritime Forces) and DCoC-JA (Djibouti Code of Conduct - Jeddah Amendment), where both navies have been supporting each other to supplement maritime security in the region. The visit of Admiral Fahad Abdullah S Al-Ghofaily includes interaction with the Chief of Defence Staff, Defence Secretary, Chief of Air Staff and Vice Chief of Army Staff. During this visit, Admiral Fahad Abdullah S Al-Ghofaily would also visit IFC-IOR at Gurugram and Southern Naval Command at Kochi. The extant visit by the Chief of Staff, Royal Saudi Naval Forces is aimed to increase naval cooperation between the two navies and has renewed the sense of commitment of two friendly maritime neighbours to address shared maritime challenges in the IOR.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1995227>

 **The Indian EXPRESS**

Fri, 12 Jan 2024

Indian Army Looks to Upgrade to Insulated 'Pup Tents' on the Icy Heights along LAC

Amid the standoff with China, the Army is planning to get insulated 'pup tents' for the thousands of troops deployed on the icy heights along the Line of Actual Control (LAC) — where temperatures are extreme and plunge as low as minus 50 degrees Celsius.

These ‘pup tents’ — relatively lighter, easier to set up and better insulated — will accommodate up to four soldiers each. They are meant to replace the existing ‘Tent Arctic Small Mk II’, which can accommodate two to three troops, and, as per an Army Request for Information (RFI), has limitations that affect troop productivity and safety in high-altitude areas.

In the recently floated RFI, the Army invited original equipment manufacturers and authorised dealers to participate in the upgradation process.

The pup tents are meant for soldiers deployed in extreme cold weather conditions, such as in eastern Ladakh (the site of the China standoff), Sikkim and the Siachen glacier. They will have exceptional insulation capabilities for winter but can also be adjusted for summer.

Other criteria listed by the Army include a robust structural design that can withstand strong winds and heavy snow, efficient ventilation, and cold-resistant components and materials such as zippers, fabric and insulation.

The pup tents should also be easy to set up, with colour-coded or reflective components for easy assembly in low light or adverse weather. They should be compact and light enough for troops to carry with their personal load, but with adequate headroom and space for storing equipment.

As per officials, the small size of the tents will make it easy to be carried by soldiers during patrols, and, being self-contained, will be easy to set up. “They could be easily deployed on small posts where there is limited space. They can be established for sentries and observation posts operating in buddy pairs, farther from the main post,” an official said.

The Army has scheduled a vendor interaction later this week to discuss and fine-tune other criteria for the tents. All interested vendors will have to provide two sample tents on the broad criteria listed for user trials, which, tentatively, begin next month.

<https://indianexpress.com/article/india/indian-army-looks-to-upgrade-to-insulated-pup-tents-on-the-icy-heights-along-lac-9105950/>

THE TIMES OF INDIA

Thu, 11 Jan 2024

Situation Stable but Sensitive in Eastern Ladakh, Indian Army Prepared to Deal with Challenges along Line of Actual Control: Gen Manoj Pande

Army Chief Gen Manoj Pande on Thursday stated that the situation along the Line of Actual Control in eastern Ladakh is stable, but sensitive. He emphasised that Indian troops are prepared to deal with any challenge. Gen Pande also mentioned that India and China are engaged in talks at both military and diplomatic levels to resolve remaining issues. He assured that the Indian Army maintains a high level of operational preparedness and adequate reserves to confront security challenges in the region.

Regarding Jammu and Kashmir, Gen Pande stated that the ceasefire understanding with Pakistan along the Line of Control (LoC) is holding, despite attempts of infiltration. He mentioned a drop in overall incidents of violence in the region, but an increase in the Rajouri-Poonch sector. Gen Pande highlighted the presence of terror infrastructure across the border, indicating Pakistan's support to terrorist groups. He stated that the Pakistan Army is trying to aggregate terrorism in the Rajouri-Poonch area. When asked about the boundary dispute between Bhutan and China, Gen Pande stated

that India closely monitors developments that may impact its security. He mentioned robust military engagement with Bhutan and assured that the situation along the Indo-Myanmar border is being closely watched.

Regarding Bhutan, Gen Pande emphasized the unique bilateral relationship and mutual security concerns. He assured that India closely monitors military talks and maintains communication with Bhutan. "With Bhutan, we have a unique bilateral relationship with mutual trust and it transcends into the military domain as well. India and Bhutan share mutual security concerns, of which we are aware. We are closely monitoring the military talks and we are communicating with Bhutan," he said. Gen Pande also mentioned the successful integration of Agniveers into the Army and emphasized that 2024 will be a year of technology adoption for the Indian Army as part of its overall modernization.

Furthermore, Gen Pande informed about contracts worth Rs 12,000 crore signed with private Indian firms, including major projects like light tanks and future-ready combat vehicles.

Gen Pande addressed the security situation along the Indo-Myanmar border, expressing concern over the activities of the Myanmar army, ethnic armed organizations, and the People's Defense Force. He mentioned the influx of Myanmar army personnel crossing the border and civilians from Bhutan seeking shelter in Mizoram and Manipur. Gen Pande stated that some insurgent groups are attempting to enter Manipur due to the pressure across the Indo-Myanmar border. He highlighted the presence of 20 Assam Rifle Battalions deployed at the border and discussions to strengthen the border fence.

In conclusion, Gen Pande addressed various security concerns and assured the public of the Indian Army's preparedness to handle any challenges.

<https://timesofindia.indiatimes.com/india/situation-stable-but-sensitive-in-eastern-ladakh-indian-army-prepared-to-deal-with-challenges-along-line-of-actual-control-gen-manoj-pande/articleshow/106724485.cms?from=mdr>

ThePrint

Thu, 11 Jan 2024

India, Bhutan have Common Security Concerns, Closely following Thimphu's Talks with China — Army Chief

Army Chief General Manoj Pande Thursday said India and Bhutan have common security concerns and that the Indian force was closely monitoring the border talks between Thimpu and Beijing.

"With Bhutan, we have a unique bilateral relationship based on utmost trust and understanding and this translates to a military relationship... Bhutan and us share mutual security concerns," General Pande said, addressing his annual press conference ahead of Army Day.

His comments come as China and Bhutan have agreed to fast-track the talks over delimitation and demarcation of the border, besides establishing diplomatic ties.

These talks will have an impact on India's strategic interests because the areas under discussion are near India's borders with Bhutan, and could fall under Chinese control.

"We are closely monitoring and interacting with our friends in Bhutan on a transparent basis when it comes to the border talks. Our relationship is proceeding well," General Pande said.

As reported first by ThePrint in 2019, China and Bhutan were at that time close to striking a deal on the Doklam boundary dispute. The Chinese holding line in the contentious region was to become the working boundary between the two countries.

However, while a formal agreement on this aspect has not been inked yet, the Chinese are already in control of the area and have built several dual-use villages on Bhutanese territory, near the tri-junction with India.

But now the border talks between Bhutan and China have sped up, which is a matter of concern in the Indian strategic and security community.

Bhutan's foreign minister Tandi Dorji last October met his Chinese counterpart Wang Yi and Vice-President Han Zheng on his two-day official visit to the country.

During the visit, Dorji and Han agreed to "accelerate" the boundary demarcation process and establish diplomatic ties between the two countries.

Immediately after that in November, Bhutan's King Jigme Khesar Namgyel Wangchuck made an eight-day visit to India and met with Prime Minister Narendra Modi, Foreign Minister S. Jaishankar among others.

This was his second visit to the country last year.

As ThePrint reported in October, China claims around 764 square kilometres of land in northwestern and central Bhutan. This dispute goes back to the Chinese occupation of Tibet in the 1950s.

In 1959, China seized control of eight enclaves of Bhutan and refused to recognise the "dividing line" between Tibet and Bhutan.

Negotiations have continued since then on three areas of contention — the Jakarlung and Pasamlung areas in north Bhutan, and the well-known Doklam area in west Bhutan, which had seen a stand-off between India and China in 2017.

In 2020, Beijing asserted ownership of the Sakteng Wildlife Sanctuary, which is located in eastern Bhutan and borders Arunachal Pradesh. It is learned that China is willing to give up its claim on the sanctuary if Bhutan agrees to hand over Doklam.

However, Doklam, a plateau with an area of approximately 89 square kilometres and a width of less than 10 kilometres, is of strategic interest to India as it overlooks the Siliguri corridor — a gateway to India's Northeast.

Since the late 1990s, China had captured small pieces of area in Doklam and had started building a road. In 2017, it started constructing a road headed to the strategically important Jampheri ridge-line.

On 18 June 2017, several companies of the Indian Army stepped in to form a human wall to prevent Chinese earth excavators and workers from carrying out construction activities.

The stand-off lasted for over two months, which increased regional tension and was closely monitored by global powers.

It ended with China agreeing to not construct the road and moving back by 200 metres, while India moved back to the Dokala Post that it has maintained for the last several years.

China continues to have a huge presence there and has built military infrastructure even though it is Bhutanese territory.

<https://theprint.in/defence/india-bhutan-have-common-security-concerns-closely-following-thimphus-talks-with-china-army-chief/1919759/>

Indian Navy to Don New Outfit with Hi-Tech Fabric to Fight Fungi & Improve Moisture Management

The Navy has formalised a memorandum of understanding (MoU) with Arvind Limited, a textile and apparel company, to procure high-tech uniform fabric. A spokesperson for the Indian Navy announced on social media, stating, "An MoU has been signed between the Indian Navy and Arvind Limited for the supply of technically advanced uniform fabric for the Navy."

According to Navy officials, the newly developed fabric is engineered to combat fungi, microbes, and bacteria, specifically tailored for tropical conditions. The fabric, as per Navy's requirements, shall boast better moisture management technology and maintains a higher whiteness index even after undergoing multiple washing cycles, as per the navy statement. This collaboration marks a significant stride in modernising and enhancing the Navy's uniform technology.

Navy Augments Ties with Saudi Forces

In other military-related developments, Admiral Fahad Abdullah S Al-Ghofaily, Chief of Staff of the Royal Saudi Naval Forces, embarked on a four-day official visit to India from January 10-13. During his stay, he met with Admiral R Hari Kumar, Chief of the Naval Staff of the Indian Navy in New Delhi. The discussions revolved around fortifying collaborative mechanisms and implementing measures to enhance naval cooperation between the two nations. Admiral Al-Ghofaily received a Guard of Honour at the South Block Lawns.

This visit underscores the burgeoning relationship between the naval forces of Saudi Arabia and India, with Indian Navy ships routinely making port calls at various Saudi Arabian ports. The friendly ties between India and Saudi Arabia, established in 1947, are deeply rooted in centuries-old economic and socio-cultural connections. This diplomatic engagement reflects the robust and cordial relations shared between the two nations.

<https://www.republicworld.com/defence/indian-navy-new-uniform-hi-tech-fabrics-to-fight-fungi-improve-moisture-management-tropical-conditions-news-january-12/>

*Thu, 11 Jan 2024*

Army Officer, Soldier Develop Hybrid Anti-drone System on Russian Air Defence Platform to Tackle Swarm Attacks

To cope with the swarm drone attacks, an Indian Army officer and a jawan have developed an integrated anti-drone system that includes an indigenous jammer integrated with an upgraded Russian-origin Schilka Weapon System.

Army Air Defence officer Major Nagaraj SY and his fellow soldier Mohammed Firoze Khan have developed this system for the Army.

"In today's Russia-Ukraine conflict, we have seen that there is a lot of threat to mechanized operations through stealth drones. Worldwide research says that the best way to eliminate swarm

drone attacks is a hybrid anti-drone system that has both kinetic and non-kinetic system," Major Nagaraj SY said. "It took us approximately 8-10 months to make it. Its deployment has started in our western sector," he added.

The hybrid anti-drone system includes an indigenous jammer integrated with an upgraded Russian-origin Schilka Weapon System. The system can be used effectively against swarm drone attacks.

The Schilka Weapon System can track any incoming drone from a far distance, which can be taken out using both kinetic and non-kinetic system.

Meanwhile, the Indian Army will observe 2024 as "Year of Technology Absorption."

"The Indian Army shall be observing the year 2024 as the Year of Technology Absorption. This theme underscores our commitment to leverage technology as a catalyst for transformative change, as well as to utilise in-house expertise to innovate solutions to our operational and logistic requirements and give shape to these projects in collaboration with the domestic defence industry." Additional Directorate General of Public Information, IHQ of MoD (Army), posted on X.

The Indian Army has started mission to enhance its cyberspace capability. "The Indian Army personnel are being trained to leverage technology and exploit the cyber domain effectively through institutionalised, procedural and technological measures. Project SAMBHAV is an end-to-end, secure, network-agnostic mobile ecosystem to provide secure communication with instant connectivity on the move. Operating on state-of-the-art contemporary 5G technology, it represents a significant leap forward in India's defence capability," ADGPI, Indian Army posted on X.

<https://www.aninews.in/news/national/general-news/army-officer-soldier-develop-hybrid-anti-drone-system-on-russian-air-defence-platform-to-tackle-swarm-attacks20240111211357/>



Thu, 11 Jan 2024

UK should Partner with India to Strengthen Rules-based World Order: Rajnath Singh

The UK and other like-minded countries should work with India to strengthen a stable global rules-based order, including through partnering New Delhi in its "inexorable rise", defence minister Rajnath Singh has told British Prime Minister Rishi Sunak.

Singh, the first Indian defence minister to visit the UK in 22 years, met Sunak in London on Wednesday to discuss defence and economic cooperation and how the two sides can work together to bolster the rules-based order. Singh also met his British counterpart Grant Shapps and foreign secretary David Cameron.

Singh told Sunak about Prime Minister Narendra Modi's efforts to make India a developed country by the middle of the 21st century, and noted the country's economic growth is "sustainably on the upswing", poverty has been reduced and a business-friendly architecture has been put in place. At the global level, Singh said, the Indian government is "ready to partner with friends like the UK to strengthen the rules-based world order". The UK and other like-minded countries "should work with India for strengthening a peaceful and stable global rules-based order, including through partnering India in its inexorable rise, which can be strengthened, reinforced and speeded up with friendly collaboration", Singh was quoted as saying in a readout from the Indian side.

Singh added in a post on X, “We discussed issues pertaining to defence, economic cooperation and how [we] could work together for strengthening a peaceful and stable global rules-based order.”

He pointed to a recent enhancement in bilateral defence engagement, including joint exercises, training, capability building, increased interoperability, and military-to-military ties especially in the maritime domain. Sunak agreed with Singh on the need for the UK and India to work together in trade, defence and technology. He expressed hope that negotiations on a free trade agreement (FTA) could be brought to a “successful conclusion soon”, the readout said.

Sunak underlined Britain’s keenness to strengthen the defence and security pillar of bilateral relations, including through government backing for stronger business and technology partnerships with Indian counterparts. India and the UK initially had plans to finalise the FTA by October 2022 but were unable to meet the deadline because of differences on key issues. The two sides have been able to agree on most of the 26 chapters of the proposed agreement, though divergences remain on matters such as tariffs on alcohol and electric vehicles, rules of origin and mobility of professionals. During the meeting between Singh and Shapps, the UK announced it will deploy a littoral response group, a specialised formation for amphibious warfare, in the Indian Ocean in 2024 and its carrier strike group in 2025 to train and operate with Indian forces.

The deployment of the two groups, among the UK’s most advanced naval capabilities, marks a “decisive step in bolstering UK-India security ties”, the British side said in a statement.

India and the UK confirmed several new initiatives in defence, including the launch of Defence Partnership-India, a special office designed to further collaboration. A Youth Exchange MoU was signed to strengthen relations between cadet organisations of the two sides, and a letter of arrangement was finalised to facilitate research and development focused on next-generation capabilities.

At his meeting with foreign secretary Cameron, Singh outlined his goal of integrating defence industries of India and the UK, including through supply chain integration to build resilience. He emphasised the importance of identifying joint projects that India and the UK can implement jointly.

Cameron reiterated the UK government’s desire to cooperate with India in defence as one of the ways to strengthen support for a rules-based global order.

Singh interacted with industry leaders at the UK-India Defence CEO Roundtable in London. He also interacted with the more than 160 prominent people of Indian-origin at the Indian high commission. A number of former Indian military personnel, including some family members of World War 2 veterans, were also present.

<https://www.hindustantimes.com/india-news/uk-should-partner-with-india-to-strengthen-rules-based-world-order-rajnath-singh-101704974023243.html>



Thu, 11 Jan 2024

Red Sea Crisis: Inter-ministerial Meet Next Week to Discuss Ways to Insulate India’s Trade

The commerce ministry has called a high-level inter-ministerial meet next week to discuss ways to insulate India’s trade from the ongoing problems in the Red Sea, a senior official said on Thursday.

Senior officials from five ministries — external affairs, defence, shipping and finance and commerce — will participate in the deliberations. The commerce ministry has also set up an internal strategic group, comprising additional secretaries of the ministry, to discuss global issues impacting the country's trade on a daily basis and prepare a strategy to deal with them.

“The idea of the inter-ministerial meeting is to see how we can strategise our trade so that it gets least affected in such a situation,” the official said.

The situation around the Bab-el-Mandeb Strait, a crucial shipping route connecting the Red Sea and the Mediterranean Sea to the Indian Ocean, has escalated due to recent attacks by Yemen-based Houthi militants.

Due to these attacks, the shippers are taking consignments through the Cape of Good Hope, resulting in delays of almost 14 days and also higher freight and insurance costs. The issues being faced by the stakeholders concerned were discussed at a high-level meeting in the commerce ministry on January 4.

Stakeholders, including traders, shippers, container firms and freight forwarders were there at the meeting. “We are doing this inter-ministerial consultation meet based on that stakeholder consultation meeting about what measures can be taken to deal with the problem,” the official said.

The stakeholders have stated that freight and insurance costs have increased as they have to take a long route now and due to that, the turnaround time has increased. Exports to Europe, the east coast of the US and Latin America are facing problems.

The strategic group formation assumes significance as the government has to take strategic decisions during war and conflict like situations. “That group is meeting every morning and discussing global issues and I have directed them to develop a strategy. They are also working on the Red Sea area,” the official added.

Further the ministry is also looking at ways to increase exports in countries like Australia, with which India has implemented an interim free trade agreement. “We have started an exercise to see global imports of all countries and see where we can increase our share in that,” the official added.

The data analytics wing of the commerce ministry is working on analysing the impact of the Red Sea crisis on India's trade in value terms. Due to attacks, shipping lines have reduced their movement through the Red Sea and taking the longer route via the Cape of Good Hope, encircling the African continent.

According to exporters, due to rising freight rates, some are postponing shipping their goods. Besides, the uncertainty may lead to a shortage of containers. The increase in freight rates varies with the route. Apart from basic freight rates, risk surcharge and peak season surcharge have also shot up.

The trade route of Bab-el-Mandeb Strait, the Suez Canal, and the Red Sea is shorter and faster than the Cape of Good Hope route, making it the preferred option for most shipping companies.

The route starts from major Indian ports like Mumbai, JNPT, or Chennai, heads westward through the Arabian Sea, enters the Red Sea, and navigates through the Suez Canal into the Mediterranean Sea.

From there, ships can reach various European ports, depending on their destination. The Cape of Good Hope route is longer and slower than the Suez Canal route, but it avoids the potential for delays or disruptions at the Suez Canal.

It is typically used for bulk cargo shipments where time is less critical or when political instability in the Middle East raises concerns about using the Suez Canal.

The route starts from the same Indian ports, heads southward across the Indian Ocean, rounds the Cape of Good Hope at the southern tip of Africa, and then sails northward along the west coast of Africa before entering the Mediterranean Sea and reaching European ports.

<https://www.financialexpress.com/business/defence-red-sea-crisis-inter-ministerial-meet-next-week-to-discuss-ways-to-insulate-indias-trade-3362255/>



Thu, 11 Jan 2024

Military Unmanned Aerial Systems: Establish a Specialised Corps for Operational Excellence

By Col Ashwani Sharma

The exponential growth of drone technology has revolutionised military operations, introducing new possibilities and challenges. As drones become increasingly prevalent across diverse military domains, the need for a focused and dedicated approach to their deployment and training becomes evident. The same goes for anti-drone systems.

The proliferation of Unmanned Aerial Vehicles (UAVs) and drones has reshaped the landscape of modern warfare, offering unprecedented versatility, cost-effectiveness, and the ability to operate in high-risk environments without fear of losing highly trained military personnel.

The conflict between Azerbaijan and Armenia in 2020 over the Nagorno-Karabakh region saw significant use of unmanned aerial vehicles (UAVs) and drones for the first time. Drones played a crucial role in intelligence gathering, surveillance, and precision strikes, influencing the dynamics of the conflict, and altering the course of war in favour of Azerbaijan. Armenia, whose military enjoyed a technological edge, until the UAVs appeared on the battlefield was in for a rude shock. Azerbaijan used the Turkish Bayraktar TB2, Israel HAROP, Orbiter1k (loitering munitions) and Hermes 900 to name a few. This action and its resultant outcome were repeated during the ongoing Russia – Ukraine war when these lethal munitions caused massive damage to Russian assets in the initial stages of the conflict. Over the tactical battle areas, it was the UAVs that ruled the roost along with some other PGMs (precision-guided munitions) and autonomous weapon systems as manned platforms, particularly in the air, yielded space to the unmanned aerial systems (UAS).

Initial reverses and losses led the Russians to innovate anti-UAS measures which included the use of anti-UAV drones, electromagnetic anti-drone measures, physical destruction and changing tactical battle drills. Russians, being quick learners, also took turns exploiting the capabilities of unmanned aerial systems and caused havoc on Ukrainian platforms. Iran's affordably priced, Shahed136, carrying 50kgs of explosive payload over a range of 1000 km has been a Russian favourite along with their own ballistic and cruise missiles. Russia's combat aircraft have maintained a low profile, perhaps due to an extensive air defence cover provided by the high density of ground-based Air Defence systems deployed in Ukraine. The gap has been filled by the likes of Lancet (kamikaze) drones which have reportedly destroyed almost 45% of Ukraine's Western-made artillery. Ukraine on the other hand is now resorting to DIY (do it yourself) drones and holds hundreds of thousands of low-cost repurposed drones. Russia's MoD is reportedly hard at work to innovate anti-drone systems to combat the threat.

In short, drones and anti-drone systems have altered the battlefield dynamics by breaking the linearity of hitherto conventional battlefields. Compared to other legacy platforms and weapon systems, drones offer a much cheaper alternative for doing the same job. Being relatively new, the employment philosophy is yet to be worked out and there are no dedicated formal training schools as yet. So is the case with anti-drone technologies; a number of them are emerging without a coherent philosophy or formal training methodology to guard against the threat.

Can such developments be ignored by any modern military? The answer of course is a big No. Indian defence forces, like most militaries across the world, have been scouring around the world to add this potent yet highly affordable arsenal to their inventory. Mechanised forces, infantry, artillery, logistic services, the IAF and the Navy, are all adding this force multiplier in some form or the other for a variety of roles including surveillance, firepower and logistics. Anti-drone technologies and products face a similar situation; numerous options are emerging without a mature, central philosophy and training directive. But as the role, scope and capability increase, acquiring such a capability in penny packets and silos will detract from the overall operational performance. With every arm and service having different operational requirements and employment philosophies, UAV capability development may not be in sync. Inventory management, training, maintenance and repairs of diverse platforms will result in confusion and chaos. And if we include the number of drones and anti-drone systems being acquired by paramilitary and Central Armed Police Forces, the overall image is chaotic.

Defence forces therefore must take the lead by creating a distinct and specialised corps within the military framework dedicated to the deployment and management of military UAS and as well as anti-UAS technologies. A detailed examination of the current state of drone usage, potential challenges, and the strategic advantages of a dedicated corps is crucial for optimising operational efficiency and maximising the impact of drone technology in military scenarios.

The Rationale for a Dedicated Corps

Acquisition. Once a doctrinal philosophy for the employment of drones is adopted at the national level, acquisition can be easily centralised. This step itself accords major financial, technical, and common training advantages.

Strategic Integration. Integrating drones into military strategies requires a deep understanding of their capabilities and limitations. A specialised corps can facilitate the seamless integration of drone technology into overarching military strategies, maximising their impact on the battlefield.

Operational Expertise. Establishing a specialised corps ensures that personnel are trained and skilled in the nuanced operation and maintenance of military drones. This expertise can enhance the effectiveness of drone missions, optimising their potential in diverse military scenarios. The same goes for anti-drone systems.

Standardised and Central Training. Standardised and central training is a must to optimise the operational impact and enhance interoperability. A central training facility can also train paramilitary and CAPFs and thus get all users on the same page.

Centralised Command and Control. A dedicated corps allows for centralised command and control of drone operations, fostering better coordination and strategic alignment. These drones, and more importantly anti-drone units integrated at various battle formation levels, will ensure a more cohesive and synchronized use of drone capabilities across different military branches. This will also help in the avoidance of fratricide, which is very likely to occur if the anti-drone deployment ethos lacks a common strategy thread.

Resource Optimisation. A dedicated corps can streamline resource allocation, ensuring that military drones are strategically distributed based on mission priorities. This approach enhances cost-effectiveness and maximises the return on investment in drone technology.

While the establishment of a specialised corps offers numerous advantages, potential challenges such as ethical considerations, legal frameworks, and public perceptions need to be addressed. A comprehensive central approach to regulation, transparency, and accountability is essential to mitigate these challenges.

<https://www.financialexpress.com/business/defence-military-unmanned-aerial-systems-establish-a-specialised-corps-for-operational-excellence-3362033/>



Thu, 11 Jan 2024

Indian Army's Technological Leap: Embracing Innovation, Indigenization, and Modernization in 2024

By Huma Siddiqui

The Indian Army has declared 2024 as the Year of Technology Absorption, signifying a focused commitment to incorporating and harnessing technological advancements.

In a prelude to Army Day on January 15, Army Chief General Manoj Pande elucidated the Army's steadfast dedication to development, innovation, and the integration of niche technologies. The objective is to propel the Indian Army into a modern and agile force, with a pronounced emphasis on indigenization.

General Pande emphasized the pivotal role of technology as a catalyst for transformative change. "This theme underscores our commitment to leverage technology as a catalyst for transformative change, as well as to utilize in-house expertise to innovate solutions to our operational and logistic requirements and give shape to these projects in collaboration with the domestic defense industry."

The acknowledgment of disruptive technologies as the new arena of strategic competition underscores the evolving landscape in which the Indian Army operates. General Pande emphasized the paramount importance of national interests and the established relevance of hard powers in this dynamic scenario. The security forces are resolutely aligned to ensure a stable and secure environment for the nation.

A significant aspect of the Indian Army's technological endeavors is its foray into cyberspace capabilities. General Pande revealed, "The Indian Army personnel are being trained to leverage technology and exploit the cyber domain effectively through institutionalized, procedural, and technological measures." Project SAMBHAV takes center stage in this initiative, presenting an end-to-end secure mobile ecosystem operating on contemporary 5G technology. This project is positioned as a substantial leap forward in enhancing India's defense capabilities.

In addressing connectivity challenges, General Pande stated, "We have identified 355 Army posts from where we have asked for 4G connectivity with the telecom ministry. Infrastructure also has to do with forward airfields, villages, and helipads. We are also working on underground storage. Regarding the infrastructure along the LAC, we are progressing in all domains."

Efforts to enhance the Army's technological capabilities extend to restructuring initiatives, encompassing both the artillery and electronic warfare units. General Pande detailed, "We have restructured our artillery unit and also have restructured units of electronic warfare and electronic intelligence." Notably, the Army is in the process of reducing reliance on animals in transport units, replacing them with drones—a move aligned with modernization goals.

Optimizing the Army's strength is a key focus, with plans to achieve a significant reduction of 1 lakh numbers by 2027. General Pande stated, "We have given the proposal to the government." The transformative human resource initiative highlighted by the Army Chief aims not only to provide productive employment for retiring soldiers but also to empower veterans.

Innovations on Display

In the pursuit of innovation, the Indian Army places a strong emphasis on fostering creativity at the unit level. The Army Design Bureau (ADB) has identified and selected 34 out of 80 in-house innovations. These innovations span a spectrum of cutting-edge technologies, including AI, software applications, unmanned aerial platforms, and counter-drone systems. The collaborative approach involves partnering with academic and industry entities to develop ruggedized solutions meeting military-grade standards.

The Army Design Bureau's initiatives extend to integrating the capabilities of the entire defence industry ecosystem. Collaborations with premier academic expertise, such as the Foundation for Innovation and Technology Transfer, IIT Delhi, resulted in the identification of fifteen niche tech innovations last year. Eight of these initiatives have already undergone the Intellectual Property Rights process.

The collaborative effort with academia continues, with four niche tech innovations currently in progress under the guidance of faculty from IIT Delhi through the Army Technology Board route. One notable success in this innovation journey is "Vidyut Rakshak," an IoT-based Generator Monitoring and Control System, which has transitioned to the Indian industry for mass production.

In addressing the labour-intensive and time-consuming aspects of intelligence data collection, an AI-driven software has been developed. This software provides dynamic graphical representation, offering informative graphs that reveal hidden trends and patterns, thereby enhancing situational comprehension.

Another significant stride in innovation is the Military Objects Detection System in Satellite Images. This AI-based system enables the automatic detection and classification of military objects in satellite imagery in real-time. The developed AI module enhances Intelligence, Surveillance, and Reconnaissance capabilities, empowering commanders at all levels to make timely decisions.

The in-house research and development efforts of the Indian Army have also given rise to the Multipurpose Octocopter. This versatile tool, with a payload capacity of 25 kg in high-altitude areas, serves various functions. It facilitates the delivery of essential supplies to forward posts, conducts surveillance operations, and offers a live camera feed to the operator. Additionally, it features a platform for firing assault rifles and throwing grenades, showcasing its multifaceted utility.

General Pande highlighted the induction of better vehicles, drones, and counter-drone systems as part of the Army's emergency provisions. The restructuring of artillery units and the reduction of reliance on animals in transport units underscore the Army's commitment to modernization and adaptability in evolving warfare domains.

<https://www.financialexpress.com/business/defence-indian-armys-technological-leap-embracing-innovation-indigenization-and-modernization-in-2024-3362267/>

Thu, 11 Jan 2024

Rafael Tests SPYDER All in One Air-defence System with Israeli MoD

Rafael and the Israel Ministry of Defense's (MoD's) Directorate for Defense Research and Development have completed a successful test of the All in One (AiO) variant of the company's SPYDER air-defence system, it was announced on 10 January.

Carried out in December 2023, the test included the interception of an unmanned aerial vehicle (UAV) “in a challenging operational scenario, achieving a direct and effective hit”, Rafael said in a statement. “The success of the test is a significant milestone in developing the system against different threats and demonstrates the system's outstanding effectiveness in intercepting challenging ground-launched threats.”

Introduced at the Singapore Air Show in February 2022, the SPYDER AiO has its radar and command station on the same vehicle as the launcher and electro-optical sensor, rather than on separate vehicles like the other variants of the SPYDER family, which uses the Python-5, I-Derby, and I-Derby ER air-to-air missiles in the ground-based air-defence role.

Rafael says the AiO's radar can detect targets while moving, with the system transitioning into its stationary firing mode within three minutes, during which time the radar is elevated, stabilising jacks lowered, and the launcher raised to a nearly vertical position.

It can use all three of the missiles, but not ones fitted with the booster that increases the ranges of the SPYDER-MR and LR systems, so has a maximum range of 40 km with the I-Derby ER.

Rafael released a video of the SPYDER AiO test showing the system launching a Python-5 that hit the target UAV.

<https://www.janes.com/defence-news/news-detail/rafael-tests-spyder-all-in-one-air-defence-system-with-israeli-mod>

Science & Technology News

Fri, 12 Jan 2024

First Made-in-India Semicon Chip by the End of 2024, Claims Ashwini Vaishnav

During the ongoing Vibrant Gujarat Global Summit 2024, Ashwini Vaishnav, Union Minister for Railway, Communication & Electronics, and IT announced that the Micron's semiconductor

manufacturing plant at Sanand GIDC in Gujarat will give India's first domestically manufactured semiconductor chip by the end of this year.

Vaishnav said, "Semiconductor is a foundational industry like steel industry that comes along with many other connecting industries. The unprecedented fast speed of setting up of Micron's manufacturing unit has increased the confidence of the world in the Indian growth story. As a result, one of the largest substrate manufacturing companies in the world, Simmtech has signed a MoU with the government of Gujarat. According to this MoU, complementing Microne's manufacturing unit, Simmtech will be establishing a substrate manufacturing facility at Sanand GIDC."

As per the MoU, the Japanese company will be investing Rs 1,250 crore to set up its manufacturing facility in the state. The Gujarat government has allocated an area of 30 acres at Sanand Industrial cluster for the establishment of the proposed manufacturing unit.

Vaishnav said, "Simmtech will start its work within a couple of months and the unit will be ready for production before December 2024. Simmtech has applied for this proposal under the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECES) scheme. Under this scheme the company is entitled to have a 25% capital subsidy and it will further get state specific benefits depending on the Electronic manufacturing policy of the government of Gujarat."

He further said, "The unparalleled experience about the speed and process of establishing the manufacturing unit by Micron and the MoU with Simmtech means that we are moving forward to establishing the semiconductor ecosystem. Furthermore, the announcement by the Tata Sons about establishing a Fab manufacturing unit at Dholera also indicates in the same direction."

The minister said that the proposed Tata's fab manufacturing unit will be much more grander on scale compared to the unit being developed by Micron at Sanand GIDC. It should also be mentioned that the Phase 1 of the Microne's plant will be completely operational by 2025 and the company has started hiring local workforce for its new manufacturing unit. Sanjay Mehrotra, CEO, Micron Technology, said, "We have already hired around 2,000 workers from the domestic talent pool. The training for the new employees is under process at the Micron laboratory in Mohali and at our manufacturing unit in Malaysia."

Vaishnav also talked about MoUs between NamTech, an industry aligned technical training institute, Microne and Cisco, one of the leading digital communication tech companies. These MoUs are focused on developing a local talent pool capable enough to work in the complex manufacturing and designing process of the semiconductor ecosystem.

<https://www.financialexpress.com/business/industry-first-made-in-india-semicon-chip-by-the-end-of-2024-claims-ashwini-vaishnav-3362282/>



Thu, 11 Jan 2024

NISAR: ISRO-NASA Satellite to Unravel Earth's Frozen Mysteries

Indian space agency ISRO and its U.S. counterpart NASA are gearing up for a collaborative launch of a radar satellite later this year, named the NASA-ISRO Synthetic Aperture Radar mission

(NISAR). This joint effort aims to capture crucial Earth data, measuring the health of wetlands, ground deformation caused by volcanoes, and the dynamics of land and sea ice.

NISAR will play a pivotal role in unraveling the intricate processes that lead to significant changes in ice sheets covering Antarctica and Greenland, as well as in mountain glaciers and sea ice globally.

NASA's Jet Propulsion Laboratory highlighted the significance of NISAR in providing the most comprehensive understanding to date of the motion and deformation of frozen surfaces in Earth's ice- and snow-covered regions, collectively known as the cryosphere.

Glaciologist Alex Gardner from NASA's Jet Propulsion Laboratory emphasized the urgency of comprehending the ongoing changes, stating, "Our planet has the thermostat set on high, and Earth's ice is responding by speeding up its motion and melting faster. We need to better understand the processes at play, and NISAR will provide measurements to do that."

Scheduled for launch in 2024 by ISRO from southern India, NISAR is designed to observe nearly all of the planet's land and ice surfaces twice every 12 days, offering an unprecedented frequency of data collection.

The satellite's capabilities will be enhanced through the use of two radars: an L-band system with a 10-inch (25-centimeter) wavelength and an S-band system with a 4-inch (10-centimeter) wavelength.

NISAR's orbit orientation will allow it to collect data from Antarctica's far interior, close to the South Pole. Given that Antarctica's ice sheets hold the planet's largest reservoir of frozen fresh water, understanding the rate at which ice may be lost is crucial for accurate sea level rise projections, as per NASA Jet Propulsion Laboratory.

The expanded coverage provided by NISAR will be particularly vital for studying the flow of ice from central Antarctica's high elevations toward the sea. Additionally, the satellite's measurements will enable scientists to closely examine the complex interactions at the intersection of ice and ocean.

<https://ddnews.gov.in/sci-tech/nisar-isro-nasa-satellite-unravel-earths-frozen-mysteries>

