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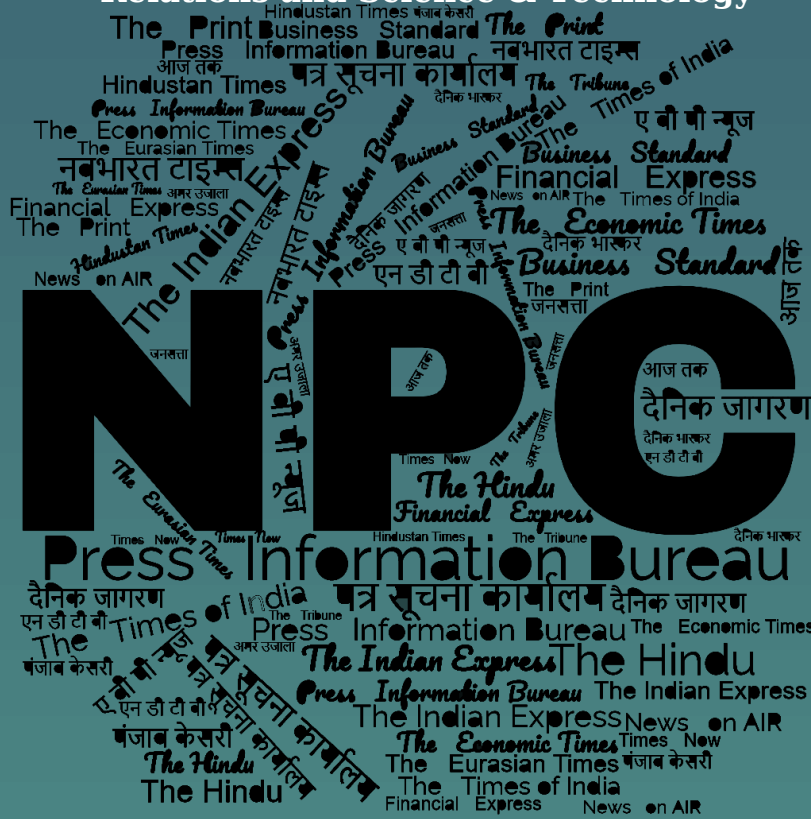
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NSTL Director Stresses the Importance of RRR (Reduce, Reuse and Recycle) to Control Pollution

Naval Science & Technological Laboratory (NSTL) Director Abraham Varughese has stressed on the importance of 'RRR' (Reduce, Reuse and Recycle) techniques to keep pollution levels under control.

Speaking at a programme on 'Swachhta awareness' as part of the Swachhta Pakhwada, organised at NSTL on Monday, Mr. Abraham described 'swachhta' (cleanliness) as an essential component of human life both in physical and spiritual terms to ensure the well-being of humanity and ensure healthiness of mind and soul respectively.

He said that the initiatives of the government to promote cleanliness would work only when there was active participation of employees. He called upon all the employees of NSTL to make a small contribution at the individual level to realise the Prime Minister's dream of 'Swachh Bharat' into a reality.

Scientist 'G' & Associate Director H.N. Das;, Scientist 'G' & Group Director(Works & Estate) ChV Satya Srinivas and other Scientists, officers and staff participated in the programme to spread much needed awareness about the necessity of cleanliness and sanitation.

Swachhta Pakhwada was an initiative envisioned by the Prime Minister for making Swachhta "everyone's business". The allocated fortnight for Defence Research & Development(DRDO) for observing the Swachhta Pakhwada is from December 1 to 15.

<https://www.thehindu.com/news/cities/Visakhapatnam/nstl-director-stresses-the-importance-of-rrr-reduce-reuse-and-recycle-to-control-pollution/article67604022.ece>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 04 Dec 2023

Prime Minister Shri Narendra Modi Attends Program Marking Navy Day 2023 Celebrations in Sindhudurg, Maharashtra

Witnesses Operational Demonstrations by Indian Navy's ships and special forces

"India salutes the dedication of our navy personnel"

"We are committed to increasing the strength of our Nari Shakti in the armed forces"

"India has a glorious history of victories, bravery, knowledge, sciences, skills and our naval strength"

Strong Navy must for any major global power; PM Modi-led Government upgrading Naval capabilities & providing necessary resources: Raksha Mantri Shri Rajnath Singh

"We have become a 'builder Navy' from 'buyer Navy; Transforming it from Coastal Navy to Blue water Navy"

Prime Minister Shri Narendra Modi attended the program marking 'Navy Day 2023' celebrations at Sindhudurg, Maharashtra on December 04, 2023. He also witnessed the 'Operational Demonstrations' by Indian Navy's ships, submarines, aircraft and special forces from Tarkarli beach, Sindhudurg. Shri Modi inspected the guard of honor.

Addressing the gathering, the Prime Minister said that the historic day of 4th December along the magnificent fort of Sindhudurg on the coast of Malvan, Tarkarli, the splendor of Veer Shivaji Maharaj and the inauguration of his spectacular statue at Rajkot Fort along with the roars of the Indian Navy has filled every citizen of India with passion and enthusiasm. Shri Modi conveyed his best wishes on the occasion of Navy Day and bowed before the brave hearts who laid down their lives for the country.

Prime Minister Modi said that it is indeed a moment of unprecedented pride to celebrate Navy Day from the victorious land of Sindhudurg. "The Sindhudurg Fort instills a feeling of pride in every citizen of India", the Prime Minister said as he underlined Shivaji Maharaj's foresight in recognizing the importance of naval capabilities for any nation. Reiterating Shivaji Maharaj's acclamation that those who have control over the seas hold the ultimate power, the Prime Minister

said that he had drafted a powerful navy. He also bowed before warriors like Kanhoji Angre, Mayaji Naik Bhatkar and Hiroji Indulkar, and said that they remain an inspiration even today.

Inspired by the ideals of Chhatrapati Shivaji Maharaj, the Prime Minister said, the India of today is moving forward abandoning the slavery mentality. He expressed happiness that the epaulettes donned by the Naval Officers will now highlight the heritage and legacy of Chhatrapati Shivaji Maharaj as the new epaulettes will be similar to the naval ensign. He also recalled unveiling the Naval Ensign last year. With the feeling of taking pride in one's heritage, the Prime Minister announced that the Indian Navy is now going to name its ranks in line with Indian traditions. He also emphasized strengthening Nari Shakti in the armed forces. Shri Modi congratulated the Indian Navy on the appointment of India's first woman commanding officer in a naval ship.

The Prime Minister said that the trust of 140 crore Indians is the biggest strength as India is setting big goals and working to achieve them with full determination. The Prime Minister said that a glimpse of positive outcomes of unity of resolutions, emotions and aspirations are visible as people of the diverse states are being driven by the spirit of 'nation first'. "Today, the country has taken inspiration from history and is busy preparing a roadmap for a bright future. People have pledged to move forward in every field by defeating the politics of negativity. This pledge will take us towards a developed India", he added.

Reflecting on India's widespread history, the Prime Minister emphasized that it is not about slavery, defeats and disappointments alone, but also comprises the glorious chapters of India's victories, courage, knowledge and science, art and creative skills, and India's maritime capabilities. He highlighted India's capabilities by giving the example of forts like Sindudurg which were erected when technology and resources were next to none. He mentioned the heritage of the Indus Valley Civilization port found in Lothal, Gujarat and the docking of more than 80 ships in the port of Surat. The Prime Minister credited India's maritime strength for the expansion of trade to countries of South East Asia by the Chola Empire. Lamenting that it was the maritime power of India that first came under attack by foreign powers, the Prime Minister said that India which was famous for making boats and ships, lost control of the sea and thereby lost strategic-economic strength. As India is moving towards development, the Prime Minister emphasized regaining the lost glory and highlighted the government's unprecedented impetus to the Blue Economy. He mentioned the port-led development under 'Sagarmala' and said that India is moving towards harnessing the full potential of its oceans under the 'Maritime Vision'. He informed that the government has made new rules to promote merchant shipping, leading to the number of seafarers in India increasing by more than 140 percent in the last 9 years.

Emphasizing the importance of the present time, the Prime Minister said, "This is that period of India's history, which is going to write the future not just of 5-10 years but for the coming centuries." He informed that in the last 10 years, India became 5th largest economy from 10th place and rapidly moving towards 3rd spot. "The World is seeing the rise of a 'Vishwa Mitra (friend of the world) in India", Shri Modi said measures like India Middle East European Corridor will recreate the lost spice route. He also touched upon the strength of Made in India and illustrated that with the mention of Tejas, Kisan Drone, UPI system and Chandrayaan-3. Self-reliance in defence is also visible by the imminent start of production of transport aircraft, aircraft carrier INS Vikrant.

Reiterating the government's approach of treating the coastal and border villages as the first villages instead of the last, Shri Modi said "Today, it is the priority of the Central Government to improve the life of every family living on the coastal areas." He mentioned the creation of the separate fisheries ministry in 2019 and 40 thousand crore rupees investment in the sector. He informed that after 2014 fishery production increased by 8 percent and exports increased by 110 percent. Furthermore, insurance cover for the farmers has been increased from 2 to 5 lakh and they are getting the benefit of the Kisan Credit Card.

Concerning the value chain development in the fisheries sector, the Prime Minister said that the Sagarmala Scheme is strengthening modern connectivity in the coastal areas. Lakhs of crore rupees are being spent on this and new business and industry will come to the coastal areas. Seafood processing-related industry and modernization of the fishing boats are also being undertaken.

“Konkan is a region of unprecedented possibilities”, the Prime Minister said. Highlighting the government’s commitment to the development of the region, the Prime Minister mentioned the inauguration of medical colleges in Sindhudurg, Ratnagiri, Alibaug, Parbhani and Dharashiv, operations of Chipi Airport, and the Delhi-Mumbai Industrial Corridor connecting till Mangaon. The Prime Minister also mentioned special schemes being drafted for the cashew farmers here. He underlined the government’s priority is to safeguard the residential areas situated on the sea coast. In this effort, he mentioned the emphasis being laid on expanding the scope of mangroves. Prime Minister Modi informed that the many sites of Maharashtra including Malvan, Achara-Ratnagiri, and Devgarh-Vijaydurg have been selected for mangrove management.

“Heritage as well as development, this is our path to a developed India”, the Prime Minister underlined. He said that central and state governments are determined to preserve the forts and forts built during the period of Chhatrapati Veer Shivaji Maharaj where hundreds of crores of rupees are being spent on the conservation of these heritages in the entire Maharashtra including Konkan. The Prime Minister stated that it would also increase tourism in the area and create new employment and self-employment opportunities.

Concluding the address, the Prime Minister talked about the new tradition of holding armed forces day such as Army Day, Navy Day etc outside Delhi as this expands the occasion to all over India and the new places get new attention.

Speaking on the occasion, Raksha Mantri Shri Rajnath Singh termed the unveiling of the statue of Chhatrapati Shivaji Maharaj as a moment of privilege. “Chhatrapati Shivaji’s life continues to serve as an inspiration to everyone. He was a statesman who foresaw the future possibilities. He recognised the relevance of the Navy and added a new chapter to India’s rich naval tradition. In line with the Prime Minister’s call to get rid of the colonial mindset, the new ensign was adopted by the Navy, which is inspired by the glorious legacy of Chhatrapati Shivaji,” he said.

The Raksha Mantri pointed out that Prime Minister Shri Narendra Modi is moving ahead on the path paved by Chhatrapati Shivaji. He emphasised that it is essential for any major global power to possess a strong Navy; therefore, for a leader to upgrade Naval capabilities and provide them with necessary resources to strengthen Swarajya, shows visionary statesmanship.

Shri Rajnath Singh was of the view that till a decade ago, the Navy was not considered important and it was believed that the only threat the country faces was land based. But, PM Modi rose above this limited thinking and focused on all the three wings of the Armed Forces alike.

The Raksha Mantri highlighted the strides being made in the Navy to achieve ‘Aatmanirbharta’, making special mention of the country’s first indigenous aircraft carrier INS Vikrant, which was commissioned by the Prime Minister in September 2022. “Earlier, most of the Navy’s equipment imported, but today we have become ‘builder Navy’ from ‘buyer Navy’. Today, we are transforming it from Coastal Navy to Blue water Navy. This transformation truly shows the visionary leadership of our Prime Minister,” he said.

Shri Rajnath Singh asserted that the nation has been witness to the unprecedented progress and achievements made in the last 9-10 years under the Prime Minister’s leadership. He pointed out that the villages adjacent to the border were once called the last villages of India; but today next generation infrastructure development is taking place in far-flung areas, making these villages as the first villages of the country. He added that efforts are not only being made to ensure the safety

of women, but today they are equal partners in the development of the country in every field from the Armed Forces to Parliament.

The Indian Navy celebrates 4th December as Navy Day every year to acknowledge the role of the Indian Navy and commemorate its achievements in 'Operation Trident during the 1971 Indo-Pak War. The Navy Day Celebrations were conducted outside any major naval station, for the first time, at Tarkarli beach in Sindhudurg Taluk of Malvan District of Maharashtra. The backdrop for the event was the iconic Sindhudurg Fort built in 1660 by the iconic Maratha ruler Chhatrapati Shivaji Maharaj which boasts of India's rich maritime history.

Significantly, the event also included the unveiling of a spectacular 43 feet high statue of Chhatrapati Shivaji Maharaj at the Rajkot Fort by the Prime Minister. The statue was conceived and conceptualised by the Indian Navy and funded by the government of Maharashtra.

The Prime Minister thereafter witnessed the Operational Demonstration as the Chief Guest conducted at Tarkarli Beach. The event was hosted by Admiral R Hari Kumar, Chief of the Naval Staff and conducted by Vice Admiral Dinesh K Tripathi, Flag Officer Commanding-in-Chief, Western Naval Command.

The Operational Demonstration showcased capabilities of Indian Naval ships, submarines, aircraft, helicopters and Special Forces. The event saw participation of more than 15 major and minor warships (mostly indigenous) along with over 40 aircraft comprising MIG 29 K, indigenous LCA Navy and Advanced Light Helicopter, as well as the newly inducted multi-mission helicopter MH 60 R. Other major attractions included performance by the Naval Band, Continuity Drill by the Naval contingent and Hornpipe dance by the Cadets of Sea Cadet Corps. The grand event culminated with the traditional illumination of ships at anchorage followed by laser show and illumination of Sindhudurg Fort.

The magnificent event was also witnessed by Shri Ramesh Bais, Governor of Maharashtra, Shri Eknath Shinde, the Chief Minister of Maharashtra, the Deputy CM Shri Devendra Fadnavis and Shri Ajit Pawar. Also in attendance were Union Minister Shri Narayan Rane, General Anil Chauhan, Chief of Defence Staff and a host of dignitaries from the Armed Forces, Foreign Service Attaches, Central and State government, as well as local populace in large numbers.

Navy Day celebrations are aimed at fostering greater outreach, renewing maritime consciousness amongst the citizens and highlighting the Navy's contributions towards national security and nation building.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1982489>



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Government of India

Ministry of Defence

Mon, 04 Dec 2023

First Ship of Survey Vessel (Large) Sandhayak Delivered to Indian Navy

Sandhayak (Yard 3025), the first of four Survey Vessel (Large) ships, being built at Garden Reach Shipbuilders & Engineers (GRSE), Kolkata, was delivered to the Indian Navy on 04 Dec 23. The Contract for four Survey Vessel (Large) was signed on 30 Oct 18.

The SVL ships are designed and built to the rules of Indian Register of Shipping Classification society by M/s Garden Reach Shipbuilders & Engineers (GRSE), Kolkata. The primary role of the ship would be full scale coastal and deep-water Hydrographic Survey of Port/ Harbour approaches and determination of navigational channels/ routes. Zone of operation includes maritime limits upto EEZ/ extended continental shelf. The ships will also collect oceanographic and geophysical data for defence and civil applications. In their secondary role, ships will provide limited defence and function as Hospital ship during war/ emergencies. With a displacement of about 3400 tons and an overall length of 110 meters, Sandhayak is fitted with state of the art hydrographic equipment such as Data Acquisition and Processing System, Autonomous Underwater Vehicle, Remotely Operated Vehicle, DGPS Long range positioning systems, Digital side scan sonar etc. Powered by two Diesel Engines, the ship is capable of achieving speeds in excess of 18 knots.

The Keel for ship was laid on 12 Mar 19 and the ship was launched on 05 Dec 21. The ship has undergone a comprehensive schedule of trials in harbour and at sea, leading up to its delivery to Indian Navy on 04 Dec 23.

Sandhayak has an indigenous content of over 80% by cost. The delivery of Sandhayak is an affirmation of the impetus being given by the Government of India and the Indian Navy towards 'Aatma Nirbhar Bharat'. The induction of Sandhayak, despite COVID and other Geo Political challenges during its construction, is a tribute to the collaborative efforts of large number of stake holders, MSMEs and Indian Industry in enhancing the maritime prowess of the Nation in the Indian Ocean Region.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1982348>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 04 Dec 2023

INS Sumedha - Mission Deployed at Antsiranana, Madagascar

As part of Indian Navy's Long Range Mission Based Deployment, Indian Naval Ship Sumedha is undertaking port call at Antsiranana, Madagascar from 04 to 06 December 2023. The visit is aimed at reinforcing Indian Navy's commitment to enhance Maritime Security, building bridges of friendship and strengthening maritime co-operation with Madagascar. India and Madagascar have traditionally enjoyed warm and friendly relations, sharing common ethos of democracy, secularism and development. The deployment also highlights warm and cordial relation of India with Eastern African countries.

During her stay, INS Sumedha will engage in professional interactions, cross training for exchange of best practices and interaction with Malagasy Navy personnel. The visit aims to enhance interoperability towards capacity building between the two friendly navies in Indian Ocean Region in line with the Prime Minister's vision of Security And Growth for All in Region (SAGAR). The ship is also scheduled to undertake Maritime Partnership Exercise (MPX) with Malagasy Navy upon departure on 06 December 2023, wherein, various facets of maritime operations such as communication drills, tactical manoeuvres and flying operations are planned.

INS Sumedha is third of the indigenously constructed Naval Offshore Patrol Vessel (NOPV) of Saryu class deployed for multiple roles independently and in support of Fleet Operations. She is part of the Indian Navy's Eastern Fleet based at Visakhapatnam and functions under the operational command of the Flag Officer Commanding-in-Chief, Eastern Naval Command.

The ship is equipped with several weapon systems, sensors, state of art navigation and communication systems/Electronic Warfare suite. Sumedha has undertaken various Fleet support operations, coastal and offshore patrolling, ocean surveillance, Non-combatant Evacuation Operations and HADR missions. The ship also has the distinction for being the maiden Indian Naval Ship to participate in Exercise Bright Star (a Multinational exercise held biennially in Egypt) from 06 to 15 September 2023 and India-EU Joint Naval exercise 24 to 26 October 2023.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1982360>



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Ministry of Defence

Mon, 04 Dec 2023

Lieutenant General Vikum Liyange, RWP, RSP, USP, Commander of the Sri Lanka Army on a Visit to India

Lieutenant General Vikum Liyange, RWP, RSP, USP, Commander of the Sri Lanka Army, is on a visit to India from 3rd to 7th December 2023. The visit is a testimony to the longstanding relationship between the armies of India and Sri Lanka.

The visit commenced with a poignant wreath laying ceremony at the National War Memorial on 4th December, where Lieutenant General Vikum Liyange paid homage to the heroes of the Indian Armed Forces who have made the supreme sacrifice for the nation.

A ceremonial Guard of Honour was presented to him at the South Block Lawns in New Delhi after which he called on General Manoj Pande, the Chief of the Army Staff. They exchanged ideas and held constructive discussions on various contemporary issues, including strengthening bilateral cooperation between the two armies. Thereafter, Lieutenant General Vikum Liyange interacted with Shri Giridhar Armane, Defence Secretary, Air Chief Marshal VR Chaudhari, Chief of Air Staff and Vice Admiral Sanjay Jasjit Singh, Vice Chief of Naval Staff.

Commander of the Sri Lanka Army is also scheduled to call on General Anil Chauhan, Chief of Defence Staff. These meetings and bilateral discussions underscore the shared goals of further enhancing defence cooperation between the two nations.

The visit marks a momentous milestone in strengthening the diplomatic and military ties between two friendly neighbours. It reinforces the enduring camaraderie that has flourished over the years, promoting cooperation and mutual understanding in the realms of defence and security.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1982391>

ATAGS Resumes Trials in Pokhran, Indian Army Set to Order 307 Units Following Successful Tests

Advanced Towed Artillery Gun System or ATAGS are back in action after modifications suggested by the Army. The Indigenous Advanced Towed Artillery Gun System developed by DRDO is undergoing final trials in the Pokhran Field Firing Ranges after the desired changes have been done in the Gun System to meet the requirements of the Indian Army in diverse terrain ranging from super high-altitude areas to hot deserts.

India witnessed the roar of the indigenous Advanced Towed Artillery Gun System (ATAGS) for the first time during the 21 Gun Salute at the Red Fort on August 15, 2022.

ATAGS had conducted summer trials at Pokhran in May 2022 and after undergoing DGQA evaluation, there were certain modifications suggested by the Army. The DRDO then made the changes in the ATAGS before the Army places orders for 307 new ATAGS by the end of this year.

The project was started in 2013 by DRDO to replace older guns in service in the Indian Army with a modern 155mm artillery gun. DRDO laboratory Armament Research and Development Establishment (ARDE) has partnered with Bharat Forge Limited and Tata Advanced Systems Limited for the manufacturing of this specialised gun.

ATAGS, the 155mm calibre Gun has a firing range of 45 kms. With advanced features like high mobility, quick deployability, auxiliary power mode, advanced communication system, automatic command and control system with night capability in direct-fire mode, the gun is a world class system which fires in Bi-modular charge system in Zone 7. It is noteworthy that no other Gun in the world is known to have that capability yet.

The gun is designed to provide one of the best accuracy and consistency in gun systems around the world.

The specialised Gun System is compatible with C3I systems like the Artillery Combat Command and Control System (ACCCS) called Shakti for technical fire control, fire planning. The indigenous Advanced Towed Artillery Gun System (ATAGS) developed by the Defence Research and Development Organisation (DRDO) jointly with private industry has also completed user trials in various locations including Sikkim and Ladakh to ensure the mobility on hilltops varying between 10,500 ft to 18,000 ft. The previous trials have been satisfactory as indicated by the Army officials. The latest validation trials aim towards meeting the specifications of the Army. The successful re-validation, retrials, trials will pave the way for induction of the ATAGS into service as per officials.

The ATAGS is a 155mm, 52 calibre heavy artillery gun jointly developed by Armament Research and Development Establishment (ARDE), Pune based laboratory of DRDO, in partnership with Bharat Forge and Tata Group.

In August 2018 the Defence Acquisition Council had accorded approval for purchase of 150 of these guns at an approximate cost of ₹3,365 crore which would be split between the two companies. The deal will be split in 60:40 ratio between the lowest bidder (L1) and L2. The Army has a requirement of 1580 artillery guns in this category. In March 2023, DAC approved AoN for 307 more ATAGS. The orders for these ATAGS are expected to be placed as soon as the final trials are successfully completed.

As reported earlier, in the past, the Army had flagged the issue of overweight compared to its requirements which officials said has been addressed. Army wanted the weight to be around 18 tonnes so it can be carried in the mountains and that it is now by and large in that range, officials had stated earlier.

<https://www.timesnownews.com/india/atags-resumes-trials-in-pokhran-indian-army-set-to-order-307-units-following-successful-tests-article-105724756>



Tue, 05 Dec 2023

India Deploys Camels for Logistics, Patrolling in Eastern Ladakh

Amid a protracted border dispute with China, the Indian Army has deployed doubled-humped camels along the Line of Actual Control (LAC) in the strategic eastern Ladakh.

The four legged animal has been deployed for the twin purposes of patrolling along the LAC and providing logistical support to the troops deployed in the harsh and barren terrain.

“Bactrian (double humped) camels are deployed in Eastern Ladakh as an innovative means for last mile delivery of critical load and mounted patrolling in sandy terrain of plateau. The utilisation of camels, generated employment and also paved way for conservation of fast dwindling population of double humped camels in Ladakh,” Udhampur based Northern Command of the Army posted on micro-blogging site “X” on Monday.

“Leh-based Defence Research and Development Organisation (DRDO) had been conducting research on the double humped camels, who can easily ferry load of 170 kgs at an altitude of 17,000 feet height in the Eastern Ladakh,” said army officials in Northern Command.

A local animal of the region, double-humped camels are known for their endurance and load carrying capacity, they added.

“With 170 kgs of load, these animals can patrol for 15 kms at a stretch,” informed the officials.

Till now, the army had been using mules, whose load capacity was around 40 kgs. “This step of the army would also ensure a quantum increase in their ever –dwindling population,” they said.

The army’s 14 corps is deploying these animals in the Depsang and Daulat Beg Oldie (DBO) areas along the LAC. DRDO reared these camels at their facility in Leh.

In September this year, the Border Roads Organisation (BRO) started work on Nyoma airfield in eastern Ladakh. The air-field is being prepared and developed as a staging ground for troops deployed on forward posts in Ladakh.

Defence minister Rajnath Singh had laid the foundation stone for the much-needed air-field. Singh said, “It would be a game-changer for the country’s armed forces.”

The air-field, at a height of 13,700 feet, will be one of the highest airfields in the world for the fighter jets. It will come up at a cost of ₹219 crores. India has been ramping up its border infrastructure along the LAC with China and LoC with Pakistan.

<https://www.hindustantimes.com/cities/chandigarh-news/india-deploys-camels-for-logistics-patrolling-in-eastern-ladakh-101701718264747.html>

Mon, 04 Dec 2023

Advancements in India-US Technological Collaboration

The visit of Jonathan Finer, Principal Deputy National Security Adviser of the United States, to New Delhi unveils a crucial chapter in the evolving solidarity between India and the US. This diplomatic engagement follows the footsteps of US NSA Jake Sullivan's visit to India in June 2023 and the reciprocal visit of India's NSA Ajit Doval to the US. in January 2023.

Central to this interaction was the comprehensive mid-term review of the India-US Initiative on Critical and Emerging Technologies (iCET), a joint endeavour launched by Prime Minister Narendra Modi and President Joe Biden in May 2022. This initiative seeks to foster outcome-oriented cooperation in cutting-edge technologies. Deputy NSAs Finer and Misri scrutinized the progress made under the iCET framework, expressing satisfaction with ongoing collaborations across diverse domains.

Semiconductors, quantum technologies, Artificial Intelligence (AI), High-Performance Computing (HPC), defense innovation, space, and advanced telecommunications took the spotlight during their discussions. The deputy NSAs acknowledged the substantial strides achieved through interactions involving governments, industry, academia, and various stakeholders.

Their commitment resonated in expanding the iCET framework to encompass biotechnology, critical minerals, rare earths processing technologies, digital connectivity, digital public infrastructure, and advanced materials.

The diplomatic visit also witnessed strategic meetings, as Finer engaged with NSA Ajit Doval and External Affairs Minister S Jaishankar. The discussions underscored the mutual dedication to elevating the bilateral strategic partnership. A key focus emerged on easing regulations to facilitate high-tech collaborations and technology transfer.

The visit's significance extends beyond bilateral talks, as Finer's participation in the Global Technology Summit adds an extra layer to this diplomatic exchange. It highlights the shared pursuit of technological advancements, bridging the gap between India and the United States. The stage is set for deeper collaborations, leveraging the immense potential that lies in the fusion of domestic initiatives and the enhancement of industry competitiveness in both nations.

<https://www.financialexpress.com/business/defence-advancements-in-india-us-technological-collaboration-3327884/>

THE TIMES OF INDIA

Tue, 05 Dec 2023

Sipri: 3 PSUs among World's Top 100 Arms Producing Companies

Sales of arms and military services by the 100 largest armament companies in the world totalled \$597 billion in 2022, with Russia's invasion of Ukraine and geopolitical tensions fuelling a major increase in demand for weapons across the globe.

Indian defence PSUs Hindustan Aeronautics (HAL), Bharat Electronics (BEL) and Mazagon Docks (MDL) figure in the list of the top 100 arms-producing companies, which was dominated by US and Chinese companies, as per a report released by Swedish think-tank Stockholm International Peace Research Institute (SIPRI) on Monday.

HAL was ranked 41st with \$3.4 billion in arms sales, BEL 63rd with \$1.9 billion and MDL 89th with \$1 billion, all three benefitting from the major orders placed by the 14-lakh strong Indian armed forces. But the three together accounted for just a paltry 1% of the \$597 billion global arms sales last year.

Their revenues will, of course, register a jump in the near future. The defence ministry just last week gave preliminary approval for orders worth Rs 1.8 lakh crore (around \$22 billion) for HAL, which includes 97 more Tejas Mark-1A fighters and 156 Prachand helicopters as well as upgrade of 84 Russian-origin Sukhoi-30MKI fighters.

SIPRI said though the demand for arms rose sharply around the world in 2022, revenues of the 100 largest companies were 3.5% less than 2021 in real terms due to the actual production lagging behind.

“Despite receiving new orders, many US and European arms companies could not significantly ramp up production capacity because of labour shortages, soaring costs and supply chain disruptions that were exacerbated by the war in Ukraine,” it said.

“In addition, countries placed new orders late in the year and the time lag between orders and production meant that the surge in demand was not reflected in these companies’ 2022 revenues,” it added.

The US continues to overwhelmingly dominate the Top-100 list, despite revenues of its 42 companies falling by 7.9% to \$302 billion in 2022. Its top five companies are Lockheed Martin (\$59 billion arms sales), Raytheon (\$40 billion), Northrop Grumman (\$32 billion), Boeing (\$29 billion) and General Dynamics (\$28 billion).

The revenues of arms companies in other parts of the world, like Asia and the Middle East, however, grew significantly. Domestic demand and reliance on local suppliers shielded Asian arms companies from the supply chain disruptions. “Companies in China, India, Japan and Taiwan all benefited from sustained government investment in military modernization,” SIPRI said.

China has eight companies in the Top-100 with total arms sales of \$108 billion, accounting for the second largest share as a country in the list at 18%.

China has systematically built a strong defence-industrial base by often reverse-engineering advanced military technologies and now majorly exports arms to Pakistan and several African countries, among others. SIPRI included only two Russian companies in the list due to a lack of data.

As per earlier SIPRI figures, India (\$81.4 billion) is the fourth largest military spender in the world, after the US (\$877 billion), China (\$292 billion) and Russia (\$86.4 billion). But the modernization of its armed forces is hobbled by a huge salary and pension bills, as reported by TOI.

Moreover, despite the government’s ongoing major thrust on “Make in India”, India also continues to remain in the strategically-vulnerable position of being the world’s largest arms importer, accounting for 11% of the total global imports in 2018-2022.

<https://timesofindia.indiatimes.com/india/sipri-3-psus-among-worlds-top-100-arms-producing-cos/articleshow/105739370.cms>

For Navy, Small Aircraft Carriers Limit Options

By Abhijit Singh

Last week, India's Defence Procurement Board, a key defence ministry agency, approved a plan for the Indian Navy (IN) to acquire a second indigenous aircraft carrier. To be built at a cost of over ₹40,000 crore, the IAC-II will be modelled on INS Vikrant, India's first indigenous aircraft carrier, commissioned in September 2022. The new warship is intended to bolster India's maritime security posture against China's People's Liberation Army Navy, whose expanding incursions into the Indian Ocean region have generated anxiety in New Delhi. Even so, the move raises questions about the advisability of a second "light" 40,000-tonne aircraft carrier for the Indian Navy, instead of a "big" 60,000-tonne plus flattop.

It is instructive that the IN has, at least since 2018, been pushing for a big aircraft carrier. However, last year the Navy unexpectedly dropped its demand for a large carrier and announced that the next flattop would be a small one. What led to this reversal is still unclear, but it seems the IN is in a fiscal situation in which building a large aircraft carrier is no longer feasible.

The current focus of the Modi government is on achieving self-reliance for India, and the Navy is under pressure to prioritise the development of indigenous capabilities. With capital allocations down and the government having significantly reduced the acquisition of foreign systems, the Navy has neither the material resources needed nor an assurance of imports for the development and construction of a big carrier. Choosing a smaller flattop design potentially guarantees that Cochin Shipyard and its considerable expertise gained during the construction of the Vikrant are effectively utilised.

Naval planners seem to have taken another factor into their calculations. The Navy is also looking to induct indigenous twin-engine deck-based fighters by 2030. To operate these aircraft, which are intended to replace the MiG-29Ks, the IN will require at least two operational aircraft carriers. A light aircraft carrier makes better sense because a large flattop could take over two decades to enter service.

Nonetheless, the transition from a supercarrier to a modest flattop creates a predicament for the Navy. The problem with light carriers is that they are unsuitable for use in today's dynamic and contested maritime environment.

In wartime conditions, a small carrier is constrained in its operations, particularly when faced with the adversary's anti-access, anti-denial systems. In the absence of a catapult system to enable the launch of heavy, long-range multi-function aircraft, the ship is forced to operate within the engagement envelope of the adversary's shore-based missiles and air defence systems.

Small carriers are also less capable than large deck carriers in other critical respects. Small flattops feature conventional propulsion (gas turbine or diesel), which provides less power than large carriers, which are typically nuclear-powered and have enough power to operate constantly in sensitive littorals. This results in reduced flexibility and agility in operations. A light carrier has a shorter operational range, a lower sortie generation rate, and less endurance than a large aircraft carrier, which can act as a floating base and deploy for lengthy periods. Small flattops also have less powerful onboard defence systems than larger carriers and are especially vulnerable to drone swarm attacks.

While small deck carriers are valuable in peacetime presence activities, their combat role is restricted unless their air wing consists of a strong aircraft with improved range, lethality, and survivability. Maritime planners today know the importance of having a fifth-generation carrier-based fighter that can deliver precision munitions over extended distances without endangering aircraft or aircrews. The IN does not have such an aircraft presently. Over the next decade, MiG-29Ks and Rafale marines would likely operate from Indian aircraft carriers. How successful these operations will be in deterring opponents in the far seas is hard to say.

There are, admittedly, two views on the subject of light aircraft carriers. Aircraft carrier sceptics believe that the flattop being expensive and vulnerable assets ought to be small and well-protected. With limited defensive capability against modern anti-ship cruise and ballistic missiles, the carrier must not venture too close to enemy territory. Aircraft carrier proponents disagree, and point to the ship's decisive ability to tip the psychological balance at sea. A large flattop, they rightly claim, is the only platform capable of maintaining a continuous and visible presence in the far-littorals. That complicated the adversary's cost-benefit calculus in a way that no other asset is capable of doing.

If the sceptics are right and symbolic presence at sea is all that matters, then a light carrier is indeed a worthy asset. But if a carrier is meant for use in combat, then it must be capable of supporting larger numbers of long-range combat and reconnaissance aircraft. Whatever the rhetoric surrounding IAC-II in the media, China — with large aircraft carriers, such as the 65,000-tonne Shandong and the 80,000-tonne still-to-be-commissioned Fujian — is unlikely to be deterred by the presence of two 40,000-tonne Indian flattops in the Indian Ocean.

It is not that India's naval planners are unaware of this reality. Their decision to opt for a smaller carrier seems to be the result of diminishing options. Despite the ship's shortcomings, particularly its limited warfighting capability, a second Vikrant is all they can hope for at the moment. Yet, policymakers ought to know that a small aircraft carrier won't cut it in combat with a worthy adversary in the littorals.

<https://www.hindustantimes.com/opinion/for-navy-small-aircraft-carriers-limit-options-101701696045571.html>



Mon, 04 Dec 2023

South Korea Tests Solid-fuel Rocket amid Space Race with North Korea

South Korea on Monday successfully conducted a test flight of a solid-fuel space rocket over the sea near Jeju Island, the defence ministry said, amid a growing space race with neighbouring North Korea. It was the third test of its kind following two others in December and March last year.

The launch involved technology developed at the state-run Agency for Defense Development and a space rocket and a satellite produced by South Korea's Hanwha Systems, the ministry said in a statement.

The ministry hailed the launch as achieving a milestone at a time when Pyongyang recently launched a military spy satellite, which the United States and its allies have condemned for using missile technology contravening U.N. security resolution.

South Korea's successful launch would accelerate the country's intelligence, surveillance and reconnaissance capabilities, the ministry said. Monday's test flight comes after a SpaceX Falcon 9

rocket carried South Korea's first spy satellite into orbit on Friday from California's Vandenberg Space Force Base.

Last month, North Korea launched its own military reconnaissance satellite, with leader Kim Jong Un receiving photos of White House, Pentagon and U.S. aircraft carriers at the naval base of Norfolk, according to state media.

A functioning reconnaissance satellite could give North Korea its first capability to remotely monitor U.S., South Korean, and Japanese troops. South Korea's satellites would reduce its dependence on American intelligence systems.

Pyongyang has not released any imagery, however, leaving analysts and foreign governments to debate how capable the new satellite is and has defended satellite launches as part of its sovereign rights in response to criticism.

<https://www.thehindu.com/sci-tech/science/south-korea-tests-solid-fuel-rocket-amid-space-race-with-north-korea/article67603751.ece>



Mon, 04 Dec 2023

Defence Acquisition Jumps ahead across Europe in 2022, but Research Lags

Total defence spending across the European Union (EU) in 2022 was EUR240 billion (USD260.6 billion) – a 6% increase compared to 2021 and a record high in absolute terms for the 27 countries, according to the European Defence Agency's (EDA's) new annual report Defence Data 2022: Key findings and analysis. However, that figure equalled only 1.5% of the countries' collective GDP and thus fell well short of the 2% of their GDP or EUR361 billion they should have spent on defence in 2022.

Despite the rising expenditure, “we have key capability gaps and continue to lag behind other global players in spending”, High Representative of the EU for Foreign Affairs and Security Policy Josep Borrell said in a statement accompanying the report. “We must find extra value in our ability to co-operate and seize the opportunities to strengthen our armed forces through common planning, shared projects, and joint procurements.”

Observing that defence budgets across Europe continue to “evolve rapidly in response to Russia's war of aggression against Ukraine”, the 20-page report points above all to EU countries' rising investment in defence equipment and systems.

Of their total defence spending, for example, the 27 member states allocated 24.2%, or EUR58 billion, to investment – 5.9% higher than in 2021. This easily surpassed the countries' common benchmark for investment of 20% of defence spending and was the fourth straight year since 2019 that benchmark was collectively exceeded. Individually, 20 EU countries reached or surpassed the investment benchmark, while the remaining seven – Austria, Czech Republic, Finland, Hungary, Romania, Netherlands, and Portugal – fell below it.

<https://www.janes.com/defence-news/news-detail/defence-acquisition-jumps-ahead-across-europe-in-2022-but-research-lags>



Press Information Bureau
Government of India

Ministry of Science & Technology

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Climate Resilient Development in Indian Himalayan Region Discussed at Indian side Event at CoP 28

Impacts and implications of Climate Change Vulnerability in the Himalayan Region and ways of creating 'Climate Resilient Development in Indian Himalayan Region by making mountain communities green and resilient were discussed the side event hosted at the India pavilion at the UN Climate Conference COP 28 on December 3, 2023.

Dr Anita Gupta, Head, Climate Change and Clean Energy Division who led the discussions at the two sessions at the side event, underscored the necessity for immediate action in the face of worsening impacts of climate change and briefed the international audience about India's Climate Change Initiatives at the side event organised by the Department of Science and Technology (DST).

During the first session, representatives from Switzerland Development Corporation (SDC); International Centre for Integrated Mountain Development (ICIMOD), Nepal; Directorate of Environment and Climate Change, Manipur, India; GBPNIHE, Almora, India and DST, India deliberated about the Climate Change Programme (CCP) under National Action Plan on Climate Change of government of India; Vulnerability and Risk Assessment in India; regional perspective on Cryosphere; Climate risk profile for adaptation plan in Manipur state; and inclusive climate actions for sustainable development of IHR, respectively.

In Session-2 co-hosted with the Government of Himachal Pradesh, representatives from DST, showcased the initiatives under National Mission on Sustaining the Himalayan Ecosystem while the representatives from Govt. of Himachal Pradesh spoke about present climate policy interventions; Climate Risk Assessment (CRA) for transition towards – development of ecologically oriented resilient villages with climate-resilient practices in agriculture and horticulture.

The 28th Conference of Parties is being held at Dubai, in the United Arab Emirates (UAE), from 30 November until 12 December 2023, where the representatives from 197 countries are showcasing and their efforts to limit global warming and prepare for future climate change. This is the first time where countries formally assess their progress under the 2015 Paris climate agreement.

The delegates at COP 28 also discussed adaptation and mitigation efforts in order to achieve the significant positive outcomes in the coming years towards tackling climate change. Such efforts are especially crucial for countries that are highly vulnerable and also for the fragile ecosystems of the world such as Himalayan Mountain range in Asia.

The climate of India is highly dependent on Himalayan range and Indian Himalayan region (IHR) has been a shelter for more than 50 million people. Any impact in the Himalayas would mean an effect on the life of millions of people not only of India but also of entire subcontinent. These

include changes on account of natural causes, climate change resulting from anthropogenic emissions and developmental pathways. Hence it becomes crucial to assess the vulnerability of the Indian Himalayan region.

The experts at the side event elaborated on the importance of the National Mission for Sustaining the Himalayan Ecosystem (NMSHE) launched as part of National Action Plan on Climate Change (NAPCC), to better understand the linkages between climate change and the Himalayan ecosystem for improved adaptation. DST officials like Dr Susheela Negi and other domain experts interacted on ways to take this mission which the Department of Science & Technology (DST) is coordinating, implementing and monitoring the mission in collaboration with several other central ministries and all Himalayan States/Union territories, forward for long term solutions to climate change.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1982425>

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