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Fri, 11 Nov 2022

Twin Engine Carrier-based Fighter for Navy could be Inducted by 2031-32

As indigenous aircraft carrier INS Vikrant gears up for aviation trials, the project to develop a Twin Engine Deck Based Fighter (TEDBF), to operate from carriers in the near future is taking shape. The project under development is expected to get approval from the Cabinet Committee on Security (CCS) by mid-2023 and TEDBF could be inducted into the Navy by 2031-32, according to officials from the Aeronautical Development Agency (ADA). Separately, officials expressed confidence that a selection between Boeing F/A-18 and Dassault Aviation Rafale-M, under evaluation by the Navy to operate from the carriers in the interim, could be made by December-end. It is expected to be procured through the Government-to-Government route.

“We expect CCS clearance by mid-2023 and from then another 1.5-2 years for the prototype. The TEDBF is a replacement for the Mig-29K fighters in service and should be inducted with the Navy by 2031-32,” said P. Thangavel, the project director for the Naval Light Combat Aircraft (LCA)-Mk1 project in ADA, speaking at the recent DefExpo in Gujarat. Currently high speed modelling to test the supersonic characteristics is underway with internal funds by the Defence Research and Development Organisation (DRDO) and the project will be up for Preliminary Design Review, an important milestone, by March next year, Mr. Thangavel said.

While the development is underway, ADA has prepared an estimate and sent it to the Navy and once it comes back with comments to DRDO, it will be put up to the CCS for clearance, he added. The TEDBF is envisaged as a twin-engine medium weight fighter with an all-up weight of 26 tonnes and wing folding, ADA officials had stated earlier. In January 2020, DRDO had demonstrated successful arrested landing of Naval LCA on INS Vikramaditya and subsequently, 18 take-offs and landings were conducted in five days. The TEDBF is being taken up from the experience of the Naval LCA.

In 2017, the Navy had floated Request For Information (RFI) to procure 57 twin-engine carrier fighter which is now set to be downsized to around 26 including a few twin-seater trainer variants, with the TEDBF in the pipeline. The Navy had contracted 45 Mig-29K aircraft from Russia for INS Vikramaditya, few of which have been lost in crashes and given the availability rates, there won't be enough aircraft to operate from both the carriers.

<https://www.thehindu.com/news/national/twin-engine-carrier-based-fighter-for-navy-could-be-inducted-by-2031-32/article66124792.ece>

Only Technology can Lead to a Strong Economy: Reddy

Scientific Advisor to Defence Minister G. Satheesh Reddy has said that the country could become economically stronger only through technological development and it was the younger generation which could facilitate the same through innovations. Scientific Advisor to Defence Minister G. Satheesh Reddy has said that the country could become economically stronger only through technological development and it was the younger generation which could facilitate the same through innovations.

He was delivering a technical talk on “Atmanirbhar Bharat: Role of startups & MSME: Technology & Innovation“ at the Bio Technology Hall of KLE Technological University (KLETU) in Hubballi on Saturday. Addressing a gathering of students, academicians and industrialists, Mr. Reddy said: “It is time India became a technology exporter instead of a technology follower”. And in order to facilitate the same, the Union government had come up with several initiatives to involve entrepreneurs, particularly youngsters with innovative ideas in this path of progress, he said. “Today’s buzz word is innovation and that is why Government of India has thrown open even the defence sector for private participation. In the recent defence expo at Gandhinagar, over 1,200 private Indian companies participated”, he said.

Mentioning that there were around 15,000 startups registered in the country dedicated to defence alone, he said that this had been made possible with Prime Minister Narendra Modi’s ‘Atma Nirbhar Bharat’ vision. He said that although the foundation was laid for research and development in the country way back in 1950s, the actual momentum in the sector was seen only after 1980s. And such had been the advancement and development that ISRO had conducted the last 55 launches without any glitches. Mr. Reddy traced the development of R&D in the country and the change it had undergone in the last decade particularly with regard to opening up various sectors to private players, make in India and other initiatives.

He also briefed about the various initiatives by the Union government launched for encouraging startups, micro, small and medium enterprises (MSME). Even critical sectors had been opened up for private participation with the sole objective of developing products and taking up innovations of global standards and for increasing the exports, he said. He also elaborated on the funding extended by various central government agencies including DRDO and others especially for those with innovative ideas. As of now there were 75,000 startups in the country working in various sectors, he said. Quoting former President of India Abdul Kalam, he called on the students to dream big and start working for it. He also asked them not go after bigger projects but work on smaller innovations that could take them around the globe and make them global players. Presiding over the session, Executive Dean of KLETU B.L. Desai spoke on significance of innovations in nation’s growth and called on the students to make use of the opportunities to work on their innovative ideas. Dean Academics P.G. Tewari, Shivayogi Turmari, Uma Medenagudi were present. Mr. Satheesh also answered queries by the participants during the interaction that followed.

<https://www.thehindu.com/news/national/karnataka/only-technology-can-lead-to-a-strong-economy-reddy/article66128458.ece>



Press Information Bureau
Government of India

Ministry of Defence

Sat, 12 Nov 2022

Indo-French Air Exercise Garuda-VII Culminates at Air Force Station, Jodhpur

The seventh edition of the bilateral air exercise between the Indian Air Force (IAF) and the French Air and Space Force (FASF), 'Exercise Garuda-VII' concluded at Air Force Station, Jodhpur on 12 November 2022. The FASF participated in the exercise with Rafale fighter aircraft and A-330 Multi Role Tanker Transport (MRTT) aircraft, while the IAF contingent comprised Su-30 MKI, Rafale, LCA 'Tejas' and Jaguar fighter aircraft. This fighter element was complemented by the IAF's Flight Refuelling Aircraft, AWACS and AEW&C, as well as Mi-17 helicopters and the newly inducted LCH 'Prachanda'.

Exercise Garuda-VII provided the two Air Forces with the opportunity for professional interaction and sharing of operational knowledge and experience. With meticulous planning and execution of various phases of the exercise, personnel of the IAF and the FASF were exposed to realistic air combat simulations and the associated Combat Support Operations. This enabled the participating contingents to engage in wide ranging interactions, providing valuable insight into each other's best practices. The exercise also provided a platform for cultural exchange between the Air Force personnel of both the countries.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1875415>



NewsOnAIR

Sun, 13 Nov 2022

Ex Garuda VII Culminates: A Platform for Strengthening Indo-French Defence Ties

The seventh edition of bilateral Air Exercise Garuda VII between the Indian Air Force (IAF) and French Air and Space Force (FASF) concluded on November 12 at Jodhpur Airforce Station. The 18-day air exercise began on October 26 in Jodhpur. In Exercise Garuda VII, the IAF contingent consisted of Su-30 MKI, Rafale, LCA 'Tejas' and Jaguar fighter aircraft as well as

Mi-17 Helicopters. The FASF participated in the exercise with Rafale fighter aircraft and A-330 Multi Role Tanker Transport (MRTT) aircraft. The exercise is also the first time for IAF's newly inducted LCH 'Prachanda' and LCA Tejas to participate in an international exercise. Apart from the fighter elements, IAF's Flight Refuelling Aircraft, AWACS, AEW&C and Garud Special Force were also involved in the exercise. Exercise Garuda VII witnessed combined flying by the Chief of the Air Staff (CAS) of IAF Air Chief Marshal VR Chaudhari and CAS of FASF General Stéphane Mille on November 8.

During the sorties, the IAF chief flew in an IAF Rafale fighter while his french counterpart flew in an IAF Su-30MKI fighter. "Ex Garuda provides the unique opportunity for both Air Forces to learn and imbibe best practices of each other during operations," said CAS Air Chief Marshal V.R. Chaudhari after the sorty. He also emphasised on the interoperability between the two air forces, which has grown with each edition of the exercise. Exercise Garuda's first, third and fifth editions were conducted in India in 2003, 2006 and 2014 while the other editions were held in France. The seventh edition of the exercise provided the two Air Forces with the opportunity for professional interaction and sharing of operational knowledge and experience. The exercise also served as a platform for cultural exchange between the air warriors of both nations.

<https://newsonair.com/2022/11/13/a-platform-for-strengthening-indo-french-defence-ties/>



Press Information Bureau
Government of India

Ministry of Defence

Sun, 13 Nov 2022

India isn't Weak Anymore; We Believe in Peace but will Give a Befitting Reply if Provoked: Raksha Mantri Shri Rajnath Singh in Haryana

"India has become an assertor from a mere observer at world stage due to Prime Minister Shri Narendra Modi's efforts"

RakshaMantriShriRajnath Singh has assured the Nation that the Armed Forces are fully equipped to give a befitting reply to anyone who casts an evil eye on India. Addressing an event in Jhajjar, Haryana on November 13, 2022, the RakshaMantri asserted that safeguarding national interests is the main focus of the Government led by Prime Minister ShriNarendraModi and the military is being armed with state-of-the-art and indigenously-developed weapons/equipment to protect the country from future challenges. "India is no longer weak. We believe in peace, but if anyone tries to harm us, we will give a befitting reply. Our soldiers have proved this time and again. 2016 surgical strikes, 2019 Balakot airstrikes and the bravery shown by our soldiers during the Galwan Valley incident are proof of our prowess & preparedness," said ShriRajnath Singh.

The RakshaMantri commended the Prime Minister for transforming India's global image to an assertor from a mere listener, stating that the world now keenly listens to New Delhi. Highlighting that India is now among the top five economies of the world due to the Government's efforts, he hoped that the country will find itself in the top three in the times to

come. ShriRajnath Singh also stressed that the Government has taken inspiration from revolutionaries such as NetajiSubhas Chandra Bose, emperor PrithvirajChauhan & Maratha warrior ChhatrapatiShivaji and is working to realise the aspirations of India while safeguarding its cultural heritage. He touched upon the 'PanchPran of AmritKaal', the resolve of a 'New India', envisioned by the Prime Minister during his Independence Day address from the ramparts of the Red Fort this year.

The RakshaMantri said, to get rid of the colonial mindset, the Government has taken a number of initiatives including renaming of Rajpath as Kartavya Path; installation of a grand statue of NetajiSubhas Chandra Bose at India Gate premises; a new Indian Navy ensign inspired from Maratha warrior ChhatrapatiShivaji and abolition of around 1,500 obsolete British-era laws. ShriRajnath Singh rejected the views of certain quarters on the presence of lotus flower in the logo of India's G-20 presidency in 2023, which was launched by the Prime Minister recently. He said lotus is the national flower, connected with India's cultural identity. The event witnessed the unveiling of the statue of warrior king PrithvirajChauhan by the RakshaMantri in Jhajjar. He termed PrithvirajChauhan as a great ruler who not only reigned over a large territory, but was also an epitome of bravery, justice and public welfare. Haryana Chief Minister ShriManoharLal was among the dignitaries present on the occasion.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1875593>



Press Information Bureau
Government of India

Ministry of Defence

Sun, 13 Nov 2022

Chief of Army Staff Proceeds on a Visit to France

General ManojPande, the Chief of the Army Staff has proceeded on a visit to France from 14 to 17 November 2022. During the four day visit, he will be meeting his counterparts and senior military leadership of France with an aim to enhance defence cooperation between both the nations. During the visit, the Army Chief will be laying wreath at NeuveChapelle Indian Memorial, which commemorates the sacrifices of 4,742 Indian soldiers during the First World War. He is scheduled to call on the Chief of the Defence Staff, Chief of the Army Staff, and Commander Commandement des Forces Terrestres (CFT) / Command of the Land Combat Forces, where he will discuss avenues for enhancing India-France defence relations.

The COAS will be visiting EcoleMilitaire, comprising of various military training establishments in Paris and address Senior Staff Officers attending a course at Ecole de Guerra-T. He will also be visiting Military Schools at Draguignan, which are premier training establishments that train commissioned officers and non-commissioned officers. The ever-expanding defence cooperation engagements which encompass a broad spectrum of activities have established a strong bonhomie across every level of the two Armies. The visit of the COAS to France will further strengthen the bonds of trust and understanding between the two armies.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1875592>

Business Standard

Sun, 13 Nov 2022

India Army Chief General Manoj Pande Embarks on 4-day Visit to France

The Chief of the Army Staff, General ManojPande embarked on his four-day visit to France. During his visit from November 14 to November 17, General Pande will hold a meeting with his French counterparts and senior military leadership with the aim to strengthen defence ties between the two nations. Highlighting the importance of General ManojPande's visit to France, the Additional Directorate General of Public Information tweeted, "General ManojPande #COAS proceeded on a four-day visit to #France. The visit aims to further enhance the existing defence relation between both the Nations." During the visit, Army Chief General ManojPande will lay a wreath at NeuveChapelle Indian Memorial, which commemorates the sacrifices of 4,742 Indian soldiers during the first world war, according to the Ministry of Defence press statement.

General ManojPande is scheduled to hold a meeting with the Chief of the Defence Staff, the Chief of the Army Staff, the Commander Commandement des Forces Terrestres (CFT) / Command of the Land Combat Forces to discuss ways for enhancing defence ties between India and France. General ManojPande will visit EcoleMilitarie, comprising various military training establishments in Paris. He will address senior staff officers, who are attending a course at Ecole de Guerra-T. He will also visit Military schools in Draguignan, which are training establishments that train commissioned and non-commissioned officers. "The ever-expanding defence cooperation engagements which encompass a broad spectrum of activities have established a strong bonhomie across every level of the two Armies. The visit of the COAS to France will further strengthen the bonds of trust and understanding between the two armies," the Ministry of Defence said.

Earlier on November 7, Army Chief General ManojPande held a meeting with French Chief of Staff of Air and Space Force, General Stephane Mille. During the meeting, both sides discussed various aspects of defence cooperation between France and India. Taking to the official Twitter handle, the Additional Directorate General of Public Information tweeted, "General ManojPande #COAS interacted with General Stephane Mille, Chief of Staff, French Air and Space Force & discussed aspects of #DefenceCooperation between both the defence forces."

Meanwhile, the seventh edition of the bilateral exercise between the Indian Air Force (IAF) and the French Air and Space Force (FASF), 'Exercise Garuda-VII' concluded at Air Force Station in Jodhpur on November 12. The FASF participated in the exercise with Rafale fighter aircraft and A-330 Multi Role Tanker Transport (MRTT) aircraft. In the exercise, the IAF contingent comprised Su-30 MKI, Rafale, LCA 'Tejas' and Jaguar fighter aircraft, according to the statement issued by the Ministry of Defence. Exercise 'Garuda VII' provided the two air forces with an opportunity for professional interaction and sharing of operational knowledge and experience.

https://www.business-standard.com/article/current-affairs/india-army-chief-general-manoj-pande-embarks-on-4-day-visit-to-france-122111300609_1.html

"No Significant Reduction..." Army Chief Gen Manoj Pande on Chinese Troops at LAC

The situation in eastern Ladakh is stable but unpredictable and in spite of the onset of winter, there is no significant reduction in Chinese army's force levels on Line of Actual Control (LAC), Army Chief General Manoj Pande said on Saturday. The Army Chief was speaking at the 'Chanakya Dialogues' here in the national capital on subject 'Arming the Army-Atmanirbhar Bharat'. Replying to a question of Major Gaurav Arya (retd) during 'fireside chat' on situation in Eastern Ladakh, General Manoj Pande said "situation is stable but unpredictable.

"You are aware about the talks on the political, diplomatic and military level which is going on between the two sides. Because of these talks, we have been able to find resolution in five of the seven friction points which were on the table. And it is for the next two friction points, on that we are trying to find resolution," Gen Pande said. As far as China's People's Liberation Army (PLA) force levels are concerned, "there has been no significant reduction", he said. The Army Chief referred to the meeting of Working Mechanism for Consultation and Coordination on India-China Border Affairs (WMCC) held last month in which the two sides agreed to continue discussions through diplomatic and military channels to resolve the remaining issues along the LAC and agreed to hold the 17th round of talks between senior military commanders at an early date. "We are looking at a date for the 17th round of talks," he said.

In terms of infrastructure development, General Pande said "that is going on unabated". "We have infrastructure in terms of road and helipad. This helps forces to improve their ability and move them from one sector to other". The Army Chief said the force's transition to the winter posture is underway but "we have also made sure that we have adequate forces to deal with any contingency". He also said that the Army is also undertaking many transformational initiatives essentially to make it more modern and to be able to meet contemporary and future challenges of the battlefield.

Gen Pande said these transformational initiatives span across different domains and have been largely taken for the purpose to increase the efficiency of the Army, enhance effectiveness and find dominance. The Army Chief said the focus is being laid on restructuring, optimization, modernization and transformational roadmap and that "our operational preparedness levels along the border are in no way diluted". Answering a query related to the Russia-Ukraine conflict, the Army Chief said the message is clear that the country cannot rely on foreign sources only and that "it is our strategic necessity to develop our own capacity, become self-reliant, self-dependent and atmanirbhar."

<https://economictimes.indiatimes.com/news/defence/no-significant-reduction-army-chief-gen-manoj-pande-on-chinese-troops-at-lac/articleshow/95478634.cms>

Fri, 11 Nov 2022

Western Air Command Commanders' Conference Held on 10 And 11 November 2022 at New Delhi

The Western Air Command Commanders' Conference Held On 10 And 11 November 2022 At New Delhi The Western Air Command Commanders' Conference was held on 10 and 11 November 2022 at New Delhi. Air Chief Marshal VR Chaudhari, Chief of the Air Staff (CAS) was the chief guest during the conference. On his arrival at Command HQ, the CAS was received by Air Marshal SreekumarPrabhakaran, Air Officer Commanding-in-Chief, Western Air Command and was accorded a ceremonial Guard of Honour. In his address, CAS emphasised the need for maintaining Op preparedness, serviceability of assets and ensuring physical and information security. Enhancing the IAF's operational capability through force structuring, self-reliance and indigenisation was the key to being future-ready, he added. The CAS directed all Commanders present to ensure the operational readiness of all platforms, weapon systems and assets, at all times. During the conference, Mr Ashok K Kantha, who was Indian Ambassador to the People's Republic of China till 2016, shared his strategic analysis of the ongoing Russia-Ukraine War, the Sino-Russian relationship and the implications for India and the world. This was followed by a talk given by Dr Vijay Kumar Saraswat, Former SA to RM, DG DRDO & Secretary and presently a member of the NITI Aayog, who shared his views on emerging technologies.

<https://orissadiary.com/western-air-command-commanders-conference-held-on-10-and-11-november-2022-at-new-delhi/&source=gmail&ust=1668486358701000&usg=AOvVaw3lPDpN0aCzXM0DWHNsdkDh>

Outlook

Sun, 13 Nov 2022

Army Design Bureau's Regional Technology Node is to be Launched in Bengaluru Tomorrow

Given the availability of a sizeable defence industrial base, a startup ecosystem, and a considerable talent pool in southern states, a Regional Technology Node (RTN) of the Army Design Bureau (ADB) is being established in Bengaluru. RTN-B will be inaugurated at ASC Centre & College, Bengaluru, on Monday. RTN-B will leverage the location of the ASC Centre and College in the city as an interface with trade, industry, and academia with a specific focus on Information Technology, to coordinate advancements in technology for the overall benefit of the Indian Army on behalf of ADB and HQ ATRAC (Army Training Command).

"ADB is one of India's milestone projects under the Indian Army's Make-in-India initiative in defence sector," an official statement said. The role of the ADB, established in 2016, is to conduct technology scans, identify technologies for acquisition and development, and facilitate R&D efforts with industry, academia, defence Public Sector Undertakings (DPSUs), and the

Defence Research and Development Organisation (DRDO). The intention is to provide inputs and enable them to understand user requirements while initiating design and development cases to promote indigenisation. To further exploit the success of this model, it was visualised to have similar formal structures at the regional level to further extend the outreach and enhance the assimilation of technology in the Army, was stated. Regional Technology Node–Pune (RTN-P) was the first regional-level node set up under ADB to have an interface with industries in the Maharashtra region.

<https://www.outlookindia.com/national/army-design-bureau-s-regional-technology-node-is-to-be-launched-in-bengaluru-tomorrow-news-237021>

THE ECONOMIC TIMES

Sun, 13 Nov 2022

IAF's Surya Kiran aerobatic Team Carries Out Flying Display in Jamnagar

Surya Kiran aerobatic team of the Indian Air Force (IAF) on Sunday carried out a flying display in Jamnagar. "This event was divided into two parts. First was a composite manoeuvring in which nine aircrafts were flying together," said Ashvin Prasad, one of the pilots who took part in the show. He further said, "This event was to motivate the youngsters of the country to join the Indian defence forces. "The event was organised by AOC of Jamnagar. They invited us and so we are here. We were really happy to see the response from the public present at the event," said Captain GS Dhillon. Earlier in April, Surya Kiran aerobatic team of the Indian Air Force (IAF) carried out a flying display in Hyderabad.

<https://economictimes.indiatimes.com/news/defence/iafs-surya-kiran-aerobatic-team-carries-out-flying-display-in-jamnagar/articleshow/95485890.cms>



Sat, 12 Nov 2022

Drones from Across Pakistan Border more than Doubled in 2022: BSF DG

The BSF has been “bombarded” by the onslaught of drone flights from across the Pakistan border on the western front, and instances of the aerial vehicles bringing drugs, arms and ammunition more than doubled in 2022, the force’s Director General Pankaj Kumar Singh has said. He said the force has recently established a state-of-the-art laboratory at a camp in Delhi to study drone forensics and the results have been very encouraging. Security agencies could track the flight path and even address of criminals involved in this cross-border illegal activity that is rearing its head over the last few years, he said on Saturday.

“The BSF has been at the receiving end of the drone menace for quite some time... the versatility of the drone, which is very well known, has been posing problems to us with nefarious elements having found new uses of the drone due to its anonymity and quick flight at sufficient height bypassing the frontiers,” he said. The DG said this while briefing Union home secretary Ajay Kumar Bhalla, who was chairing an event to inaugurate the forensic lab through a webinar session. Quantifying the enormity of the drone menace, the DG said while the BSF detected about 79 drone flights along the India-Pakistan international border in 2020, it increased to 109 last year and “more than doubled at 266 this year”.

“The major culprit regions are Punjab which saw 215 flights this year... in Jammu, about 22 flights have been seen,” Singh said. “The problem is grave. We do not have a foolproof solution as of now. They (drones) have been bringing across narcotics, arms and ammunition, counterfeit currency and all kinds of things,” he said. The DG said initially the BSF grappled with the challenge of not knowing what to do and even when the drone fell they had “no clue” where was it coming from or going. “We then started getting into the forensics part. We realised that these drones had chips similar to computation devices like computers and mobile phones. As digital forensics help in solving cyber crimes, we got answers here too,” Singh said. The BSF, tasked to guard over 3,000 km of the India-Pakistan International Border running across Gujarat, Rajasthan, Punjab and Jammu, first established a drone repair lab at Delhi in September last year and later enhanced it in October to analyse the forensics of the drones shot down or recovered by it, the Punjab Police and the Narcotics Control Bureau. It spent about Rs 50 lakh in creating this forensic lab and has deployed a chosen manpower of tech-savvy officers and personnel to run it.

“We found (after forensic analysis of drones) their flight paths, launching and landing points, timings, GPS (global positioning system) coordinates and even messages they have exchanged and we realised there was an information mine. If we could get into this, we could find suspect’s addresses, locations and much more,” Singh said. He said the force developed “good coordination” with the Punjab Police over this issue which has also provided the BSF with 200 personnel to conduct “depth patrols” at the front to check drones and their droppings. Citing a success story, where drone droppings happened in the Havelia area of Punjab in March, the DG said a joint investigation and action by the two security agencies led to the arrest of 8 people, six of whom were convicted for narcotics crime.

The DG said the force has now begun a new system of incentivising and giving cash rewards to its border teams who shoot down drones. “Eleven drones have been shot down (by us) this year and we are giving very handsome incentives to teams that bring them down. There is a very good enthusiasm in these teams,” he said. The BSF chief said the force is now undertaking a two-pronged approach to check this menace. “We are undertaking depth patrolling so that people cannot come to the border to pick drone droppings. We are digging deep into drone forensics to extract information about its senders and receivers,” he said. The problem is “so acute” and, “this we know by interrogation (of suspects and those apprehended) that wherever our drone teams are deployed... depth patrols are or anti-drone equipment is installed, the criminals go to other parts to undertake the illegal activity”, the DG said.

<https://www.financialexpress.com/defence/drones-from-across-pakistan-border-more-than-doubled-in-2022-bsf-dg/2810463/lite/>

BSF's Drone Forensic lab at Border Helps Fight Menace from Pakistan

Border Security Force (BSF) has been "bombarded" by the onslaught of drone flights from across the Pakistan border on the western front, and instances of unmanned aerial vehicles (UAVs) bringing drugs, arms, and ammunition more than doubled in 2022 in contrast to the previous year. To tackle the menace, the BSF has established a state-of-the-art drone forensics laboratory at a camp here to study the flight patterns and take remedial measures, Director General Pankaj Kumar Singh said on Saturday.

The DG said the results of the drone forensics lab have been very encouraging. Security agencies could track the flight path and even address of criminals involved in this cross-border illegal activity that is rearing its head over the last few years, the BSF chief said on Saturday. "The BSF has been at the receiving end of the drone menace for quite some time... The versatility of the drone, which is very well known, has been posing problems to us with nefarious elements having found new uses of the drone due to its anonymity and quick flight at sufficient height bypassing the frontiers," he said. The DG said this while briefing Union home secretary Ajay Kumar Bhalla, who was chairing an online event to inaugurate the forensic lab.

The DG said while the BSF detected about 79 drone flights along the India-Pakistan international border in 2020, it increased to 109 last year and "more than doubled at 266 this year". "The major culprit regions are Punjab which saw 215 flights this year... In Jammu, about 22 flights have been seen," he said. "The problem is grave. We do not have a foolproof solution as of now. They (drones) have been bringing across narcotics, arms and ammunition, counterfeit currency and all kinds of things," the BSF chief said. Initially, the BSF grappled with the challenge of not knowing what to do and even when the drone fell they had "no clue" where it was coming from or going. We then started getting into the forensics part. We realised that these drones had chips similar to computation devices like computers and mobile phones.

As digital forensics helps in solving cyber crimes, we got answers here too," Singh said. The BSF invested about Rs 50 lakh in creating this forensic lab and has deployed a chosen manpower of tech-savvy officers and personnel to run it. "We found (after forensic analysis of drones) their flight paths, launching and landing points, timings, GPS (global positioning system) coordinates and even messages they have exchanged and we realized there was an information mine. If we could get into this, we could find the suspect's addresses, locations and much more," Singh said. The Force developed "good coordination" with the Punjab Police over this issue and also provided the BSF with 200 personnel to conduct "depth patrols" at the front to check drones and their droppings, he said.

Citing a success story, where drone droppings happened in the Havelia area of Punjab in March, the DG said a joint investigation and action by the two security agencies led to the arrest of 8 persons, six of whom were convicted for narcotics crime. The DG said the force has now begun a new system of incentivizing and giving cash rewards to its border teams who shoot down drones. "Eleven drones have been shot down (by us) this year and we are giving very handsome

incentives to teams that bring them down. There is a very good enthusiasm in these teams," he said. Underlining that the BSF is now undertaking a two-pronged approach to check this menace, the BSF boss said, "We are undertaking depth patrolling so that people cannot come to the border to pick up drone droppings.

We are digging deep into drone forensics to extract information about its senders and receivers." The problem is "so acute" and, "this we know by interrogation (of suspects and those apprehended) that wherever our drone teams are deployed... Depth patrols are or anti-drone equipment is installed, the criminals go to other parts to undertake the illegal activity", he added. The BSF secures over 3,000 km of the India-Pakistan International Border running across Gujarat, Rajasthan, Punjab and Jammu. The paramilitary first established a drone repair lab in national capital in September last year and later upgraded it in October to analyse the forensics of the drones shot down or recovered by it, the Punjab Police and the Narcotics Control Bureau. The National Investigation Agency that is probing a number of criminal cases related to drone hits and droppings is yet to set up such a specialized lab to take the investigation forward.

<https://www.dailypioneer.com/2022/india/bsf---s-drone-forensic-lab-at-border-helps-fight-menace-from-pakistan.html>



Mon, 14 Nov 2022

Drone Pilot Training Centre to Come up in Prayagraj

The Naini Aerospace Limited (NAL), which makes looms (electrical wiring harness) and stub wings (part of a wing on certain aircraft that lies next to the fuselage) of the light combat aircraft (LCA) Tejas, will soon also train youngsters to fly drones which have multiple uses in different sectors. "Drone pilots will be trained on the unit's premises in Naini and the course will start by the end of January or February next year," said chief executive officer of Naini Aerospace, Amit Mai Shrivastava. "We have started making preparations to open a dedicated training centre for drone pilots that would be spread across an area of around 10 acres," he added.

Human resource head of the company, Ritesh Singh said, "We are of the opinion that the use of drones is not limited only to photography. Their use in different sectors, whether for delivery of medicines and other necessary items in remote areas or for various uses in agriculture and defence sectors necessitates expert pilots. We will supply the expert hands." "We have signed a memorandum of understanding with Emyrean robotic technology of Prayagraj to jointly collaborate and make the ambitious project of remote pilot training organisation (RPTO) a success", said the CEO of NAL. The MoU was signed at defence Expo 2022 held in Gandhinagar. He added that a team of experts was deliberating on the course curriculum, number of seats and fees. "But we hope that youngsters who have passed intermediate can take the course which would be of short term, may be of two weeks of duration. Those with science background would be preferred," he added.

License will be taken from Director General Civil Aviation (DGCA), meeting all set parameters to open the training centre, he shared. Moreover, the duration of the course would depend on the

size of the drone on which these budding professional drone pilots would be trained. Like the looms for Tejas, NAL would also make looms for Dornier aircrafts which are used largely for guarding Indian coastline, as per the CEO, Shrivastava. NAL has already received the order to manufacture looms for Dornier aircraft. Till now the looms of Dornier aircraft were being built in Kanpur. Being smaller, Dornier aircraft flies much lower than fighter and normal aircraft. This aircraft is used to guard the border connected with the sea.

<https://www.hindustantimes.com/cities/others/drone-pilot-training-centre-to-come-up-in-prayagraj-101668364405438.html>

Business Standard

Sat, 12 Nov 2022

BHEL's Defence Unit in Haridwar Gets Certificate to Manufacture Naval Guns

The defence production unit of BHEL, Haridwar, has been given 'Self Certification Status Certificate' for manufacturing naval guns for the Indian Navy. The certificate was given to BHEL Managing Director Amit Gupta by Rear Admiral Sanjay Sharma, Additional Director General, Quality Assurance, said Acting Director of BHEL, Haridwar, Praveen Chandra Jha on Saturday. Jha congratulated officials and employees of the defence production unit for the significant achievement saying it was a result of their collective hard work.

https://www.business-standard.com/article/companies/bhel-s-defence-unit-in-haridwar-gets-certificate-to-manufacture-naval-guns-122111201226_1.html



Sat, 12 Nov 2022

Act East Policy: Indonesia Expresses Interest in BrahMos Missiles, Deal to be Sealed Soon

Indonesia has shown interest in India's defence sector. This was evident in the recently concluded Indo-Defence 2022 Expo & Forum in Jakarta, where Indonesia's defence minister PrabowoSubianto held a long meeting with AtulDinkarRane, CEO & MD of BrahMos. Ahead of the G20 Leaders Summit in Bali, in the meeting that lasted almost 45 minutes, the Indonesian defence minister is said to have reiterated his country's keen interest in buying BrahMos supersonic cruise missile for its armed forces.

However, "The discussions related to the BrahMos Supersonic Missiles are already in the advanced stages. Jakarta has not yet confirmed the deal due to its internal matters; the deal is likely to be concluded maybe early next year," sources confirmed to Financial Express Online in Jakarta. The development is significant ahead of Prime Minister NarendraModi's visit to Indonesia for the G-20 Summit next week.

Significance of the meeting

This month there will be two important meetings between the two countries. Next week on the sidelines of the G20 Leaders Summit Prime Minister Narendra Modi is expected to have a bilateral meeting with President Joko “Jokowi” Widodo in Bali. Though nothing has been announced officially, the two leaders when they meet for bilateral talks are expected to focus on enhancing bilateral cooperation in all sectors including defence and maritime security. Later this month around November 20, the ASEAN Defense Ministers’ Meeting Plus (ADMM Plus) is scheduled to take place where the defence ministers of the region will meet with India’s defence minister Rajnath Singh.

The focus of this meeting of the defence ministers will be the Indo-Pacific, expansion of maritime cooperation, and exports of military platforms, combating terrorism among other issues. Indonesia will become the second country after the Philippines in the ASEAN region whenever the deal is inked for the Indo-Russian BrahMos supersonic cruise missile. In 2018, Financial Express Online had reported the interest of Indonesia among other countries of the region to be interested in the supersonic missiles. Several nations have reached out to India expressing interest in the BrahMos Supersonic missiles as well as Akash and Pinaka Missiles.

Indonesia has expressed interest in the BrahMos Missile which it wants fit onboard its warships. There have been several rounds of discussions and visits and this includes a visit to the biggest shipyard in Indonesia. Once the deal is sealed it will give India a huge strategic hold in the region. With the Chinese presence growing in the Indian Ocean region and near Natuna Islands, India and Indonesia are both working towards strengthening their maritime cooperation and are focusing on secure sea lanes of communication in the Indo-Pacific. Since BrahMos supersonic missile is an Indo-Russian joint venture, Russia is not expected to have any objection to the sale of these missiles as the Indonesian Navy is already using Kilo class submarines and Su-27 fighter jets in its Air Force.

<https://www.financialexpress.com/defence/act-east-policy-indonesia-expresses-interest-in-brahmos-missiles-deal-to-be-sealed-soon/2810118/lite/>



Sat, 12 Nov 2022

Prolonging Military Readiness: The Indian Military Maintenance, Repair and Overhaul (MRO) Industry

By Girish Linganna

Maintenance Repair and Overhaul (MRO) is an important activity in an aircraft’s lifespan, and its cost and time for overhaul affect operations. Complex, vital, yet distinct from manufacturing. MRO of aircraft and associated equipment requires skill, experience, and a licence because of human safety, aviation safety, and expensive equipment. MRO is mostly used in regular aviation, not military. Hindustan Aeronautics Limited (HAL), the Indian Air Force, and sometimes the foreign OEMs have performed military aviation MRO in India. The Indian Army and Navy routinely maintain aircraft assets and rely on HAL/OEM for MRO.

With the expansion of the aviation industry, manufacturing capability for aircraft parts and equipment, growing interest by private players, and establishment of certain MRO facilities within India (mostly with OEM support), this field is anxiously watched by companies eager to participate and meet military aviation MRO needs. Only some organisations have experience in this arena by acting as ancillaries to civil aviation MRO facilities, collaborating with OEMs, or developing knowledge independently. More industries enter military aviation as capabilities development and privatisation expand. However, civil and military aviation requirements differ greatly and must be properly understood. Private enterprises should enter military MRO despite its complexity.

In recent years, a small number of companies have become involved in performing some MRO tasks for the Indian Air Force (IAF). These particular activities have been either partially delegated or outsourced. Only a select few businesses also perform maintenance on their own properties. Because of this procedure, these companies and their employees have acquired the necessary knowledge and experience to complete these assignments successfully. On the other hand, there is the potential for more participation from the private sector.

The cost of maintenance is a crucial aspect of the entire cost of operating an aeroplane and also has a significant role in the total cost over its lifetime. Most of the maintenance, repair, and overhaul (MRO) tasks are scheduled and planned by the designers, typically concerning flying hours, calendar life, and landings. The actions' scope determines whether these should be categorised as small or significant. These MRO tasks differ from the daily line maintenance carried out, which is referred to as routine maintenance. The term MRO will be used throughout the remainder of this paper, excluding any reference to line maintenance. In general, line maintenance or regular maintenance is performed by the airline staff (for civil aviation) and by uniformed personnel (in the Indian Air Force and the aviation arms of the Army and Navy). On the other hand, MRO activities, which are complex, labour-intensive, and time-consuming, are outsourced mainly by civil airline operators. In the case of the Indian Air Force, certain portions of MRO are performed by HAL, while other portions are handled by the Base Repair Depots (BRDs).

MRO work is done in strict accordance with aviation safety rules. The overhaul process includes taking parts apart, cleaning them, inspecting them (by looking at them, taking measurements, and doing non-destructive tests), replacing parts with new or refurbished ones, putting them back together, testing them with special equipment, and putting them back together again. After being fixed, the whole system is checked on the ground and in the air, as the technology requires. The repair process may be easier because it only involves finding and fixing the problem. MRO activities can be further broken down into the airframe, the engine, and the different parts. Even though the basic idea behind all the activities may be the same, the activities for the airframe, engine, and components are different.

Military MRO

Fighter jets, transport planes, helicopters, and trainers make up the majority of military aircraft. Drones and Remotely Piloted Aircraft are two newcomers (RPA). Even though the basic ideas of maintenance are the same for all types of planes, military planes and engines need to be more durable because of their job. In dynamic operating conditions, the whole plane has to be able to meet high requirements for manoeuvrability, high "g," and higher speeds. So, the building

materials are also different so that they can withstand extreme temperatures, stealth, and damage from the battle. Many of the systems on board are also different, such as the fire control radar, electronic warfare (EW) systems, weapon control systems, onboard oxygen generators (OBOGS), etc. Since military aircraft have to work in harsh conditions, the frequency of checks and maintenance, repair, and overhaul (MRO) activities is different from that of civil aircraft. This means that strict checks and procedures must be followed.

Contrary to what most people think, there is much more to military aviation than flying platforms. These include radars, communication systems, surface-to-air guided weapons (SAGW), specialised vehicles, specialised test equipment, ground equipment, and survival gear like parachutes and boats. Their MRO process includes similar tasks, but the details and amount of work depend on the type of equipment. The activities of MRO are done according to the OEM technology, which is written down in great detail. Any change from these must be approved by the authorities in charge of regulations and certification. The quality control process must be followed to the letter.

Indian military aircraft and systems are taken care of by HAL, Bharat Electronics Ltd, BRDs (for a wide range of aircraft and systems), and, in some cases, by the original equipment manufacturers (OEMs) from other countries. A long-term repair or annual maintenance contract for a foreign OEM may exist. MRO done by foreign companies is very expensive and takes time. This is one of the weak spots where foreign OEMs' proprietary clauses and refusal to share technology make it hard for the country to be self-sufficient. Along with high prices, these OEMs also keep a tight grip on the supply of spares. If the right parts are unavailable, it hurts the MRO activity and can cause delays. Finding the same spares or making them in India is hard because of the technology, raw materials, and special processes that go into making them.

Opportunities

With an emphasis on self-reliance, the Indian Defense Forces will use more platforms and equipment made in India in the future. When it comes to military planes, the Light Combat Aircraft (LCA "Tejas"), the Advanced Light Helicopter (ALH "Dhruv"), and the Light Combat Helicopter (LCH "Tejas") are all set to be brought into service (LCH). Already, work is being done on the Advanced Medium Combat Aircraft (AMCA). There are also plans to bring similar defence equipment for all three services.

Aside from sharing work on the maintenance and repair (MRO) of the main platforms, there is much room for outsourcing MRO work on different parts of aircraft or other systems. Currently, these facilities are only used for defence, DPSUs, and OEMs from other countries. Even for platforms made in India, like the LCA, there still need to be repair and overhaul facilities set up for many of the parts that come from other countries or are made in India.

MRO work, which takes a lot of time and requires a lot of work, can be given to private partners. So, the production agencies can focus on improving how they make things and work on future development. Even if not all of the work is moved, outsourcing can help share some of it. With more agencies working together to do the MRO work, this will improve efficiency and cut down on the Turnaround Time. Even though it has nothing to do with aviation, the main platforms of the army, which wait in long lines at Ordnance Factories, are similar in this way.

Many ITI technicians have learned about different parts of MRO in military aviation since apprenticeship training started. The Directorate of Skill Development and Entrepreneurship

should be able to give you this information. Also, there are a lot of highly skilled and experienced ex-servicemen who could fill the role of supervisor. The Director General of Resettlement or the Directorate of Air Veterans can help firms that want to hire them by giving them access to this database. With the introduction of the Agniveer concept in defence services, several skilled technicians who are disciplined and trained for the private sector should be available in the future. Even if they haven't done much MRO work before, they can pick it up quickly. Some MRO companies have also set up skill development institutes to train their employees.

When more and more companies do MRO work, they will need to do other things like make spare parts, sell consumables, etc., which creates more business opportunities. There are also chances to build and fix different kinds of ground equipment, test equipment, and specialty vehicles, among other things. Academic work, like programmes to improve reliability, studies on reducing the cost and time of MRO, changes, and development projects, can be a valuable result of these projects.

Challenges

Military planes are much more complicated than civilian planes because they have more systems, are made of different materials, and use the latest technology. Because of this, the technology and the work are different, so strict procedures and quality checks are needed. India's military aircraft and equipment come from different countries and are also made in India. Also, the ages of these items range from old to new. Since each type has different technology, the MRO procedures for each type would also be different. As was already said, aviation maintenance is a highly specialised field that needs workers with a lot of training and skill. Compared to civilian aircraft, the number of people who can work on military aircraft and equipment may be smaller. However, this problem can be solved with the right training.

No matter what kind of aircraft or equipment is being worked on, the MRO agency needs a license to do the job. The manufacturer and certain MRO agencies are the only ones with access to the repair and overhaul technology. So, a private company needs to be able to get a license and have access to technology. Regarding products made in India, DPSUs can provide MRO technology. When it comes to products made in other countries, defence establishments can share them, if available, with them. But if India still needs to get the technology, it has to be made there, which isn't easy, or it has to be paid for by the foreign OEM through partnerships with private firms. If a company has a long-term repair or annual maintenance contract, the OEM wants to keep the technology private for business reasons.

If the MRO work must be done by a private company on its own, a full technical infrastructure must be set up. It is also important to make sure that spare parts are available. Aside from common technical equipment and facilities, each component and system needs a test rig that is made for that type. This is too expensive, so the company needs to plan the investment based on how likely it is to bring in business and make money. This is one of the biggest problems because the nature of military operations means that the MRO establishments must provide support on-site. Because operational zones are spread out and have harsh working conditions, the MRO agencies must be ready to help field units with maintenance.

Way ahead

Since private industry could be involved in military maintenance, repair, and overhaul (MRO), the industry needs to understand the challenges and complexities involved. Even though there has been some growth in this area over the past few years, and a few private companies have started doing this work, the aviation industry is still not quite ready for military aviation. This is still possible, though, with help from DPSUs, defence establishments, and the government.

Even though the focus is on self-sufficiency, the country's security needs mean that foreign purchases will likely continue for the next few years, though their share may go down. For any foreign purchase, the MRO plan needs to be worked out during the contracting stage, and the OEM needs to be convinced to give the MRO technology to Indian agencies, whether they are private companies or defence establishments. This must be worked out at the start, not halfway through the equipment's life. If you have a clear plan at the beginning of the process, you won't need to depend on foreign OEMs in the future.

For aircraft and other systems that are already in use, the defence establishments and DPSUs can figure out how to divide up the work and give it to the private sector. For this to happen, the private sector will need help in the form of technology and other inputs. There is a huge chance for private partnerships with the indigenous platforms that are already being made and those that are still being made. Since it is also planned to export these, their MRO facilities in India can become regional hubs and help the countries that buy these assets keep them in good shape. So, from the beginning, it is important to work on MRO technology for the main equipment and all of its parts. This will give the private organisations time to get ready and build the facilities needed to set up the MRO.

If India wants to become a big defence exporter, it's up to the design and production agencies to think about this important point since anyone who buys an aircraft from India would want the best maintenance support for as long as the plane lasts. Exposure to the high-tech work of military aviation and the development of new capabilities can also be used by the civil aviation industry. India's aviation industry will grow and improve if all the agencies cooperate and help each other.

<https://www.financialexpress.com/defence/prolonging-military-readiness-the-indian-military-maintenance-repair-and-overhaul-mro-industry/2810048/lite/>



Sat, 12 Nov 2022

What India Needs to do to Plug its Defence Gap

By C. Uday Bhaskar

DefExpo 2022 held in Gandhinagar, Gujarat in October drew attention to a major policy initiative of Prime Minister Narendra Modi — the need for India to acquire the appropriate degree of “aatmanirbharata” (self-reliance) in the defence sector and the arduous path ahead. This objective is unexceptionable and the Modi government is to be commended for keeping this critical issue on the national radar. Even as India aspires to become a \$5-trillion economy, it is

evident that it faces many national security inadequacies. The high dependency index on foreign suppliers (traditionally the former USSR now Russia) for major military inventory items is stark. This dependency induces a macro national vulnerability and dilutes India's quest for meaningful and credible strategic autonomy.

Furthermore, the current gaps in combat capacity expose the chinks in the Indian ability to safeguard core national security interests. The Galwan setback apropos China is illustrative. DefExpo had an India focus — only domestic entities were allowed to participate. PM Modi asserted there that Make in India is becoming a success story in the defence sector and added: “Our defence exports have grown eight times in the last five years. We are exporting defence materials and equipment to more than 75 countries of the world. In 2021-22, defence exports from India reached \$1.59 billion (about Rs 13,000 crore). The government has now set a target of \$5 billion (Rs 40,000 crore).” This is an ambitious target and will demand mission-mode resolve to be realised.

Unexpected exigencies such as the Russian invasion of Ukraine and other factors including the Covid that disrupted the global economy and related supply chains, further exacerbated by a weakening rupee add to the challenges faced by the Indian defence manufacturing ecosystem. The management of this extended turbulence across different axes will be the biggest challenge for governance. Cumulatively, these multi-layered challenges and the opportunities embedded in moving towards “aatmanirbharata” ought to provide the framework for an informed and objective debate about the way ahead though this kind of discourse has remained elusive.

A quick recap of the more recent defence-related events includes, inter alia, the commissioning of the indigenously-designed and built aircraft carrier INS Vikrant; the firing of an SLBM (submarine-launched ballistic missile) from the INS Arihant; the radical decision to award the manufacture of a military transport aircraft (C 295) to a major private sector entity; the induction of the made in India Prachand LCH (light combat helicopter); and the conclusion of a deal with Russia to manufacture a Kalashnikov-type light weapon/small arms in India. These achievements have been applauded as the success of the indigenous effort. However, an objective review of the “made in India” initiatives is revealing. Regrettably, India does not yet have the domestic competence to fully design and manufacture any significant combat weapon/platform and is dependent on the foreign supplier for the critical components that lie at the core of the combat index of the equipment in question.

Thus, while it is commendable that India is now going to manufacture the C295 transport aircraft in a collaboration with Airbus, France, the reality is that the engine, avionics, landing gear, etc, will come from abroad and the integration will be done by the Indian entity. This is true for almost every major platform in the three services. While there are some promising green shoots — for instance, the 155-mm artillery guns being designed and manufactured in the country — meaningful indigenisation and credible “aatmanirbharta” calls for sustained funding support, fortitude and an ecosystem that will nurture this effort. At the heart of this challenge is the grim reality that historically, India has not invested enough in the national research and development (R&D) effort. As per data collated by the World Bank, India has been able to allocate only 0.66 per cent of GDP (2018) towards R&D, while the world average is 2.63 per cent. The comparable individual R&D allocation (per cent of GDP) for some other nations is as follows: Israel 5.44; USA 3.45; Japan 3.26; Germany 3.14; China 2.4; and Turkey 1.09.

While the Modi government has identified national security as a major priority, the emphasis has been on earnest nationalist flourish, often with an eye on the voter. Composite combat and manufacturing capabilities have not been reviewed and honed appropriately. Thus, while India now claims that it will soon become a major arms exporter, the composition of such inventory leans towards the “soft” category (clothing, helmets, surveillance equipment) and yes, the Brahmos missile. While there is an aspiration to add helicopters to this list — the ALH and the LCH — the reality check is that the engines for both these platforms are imported. Providing a sustained fillip to the national R&D effort across the board (state, corporate and academia) remains critical if India is to emerge as a credible military power and one would identify this as a high-priority issue for the national security apex — the CCS (cabinet committee on security).

India missed the industrial design and manufacturing bus, a national competence demonstrated by nations like South Korea and China, over the last five decades. Technological advances have made the design and manufacture of the semiconductor chip the new currency of national prosperity and military power. The US and China are now locked in intense competition in this domain and India is yet to acquire a profile that would be deemed relevant. Paradoxically, Indian brain power is very visible in the global semiconductor/chip fabrication effort but more at the lower end of the food chain, often as employees of the global venture capitalists. Progressively changing this techno-strategic landscape in India’s favour should be accorded the highest priority in the national policy debate.

<https://indianexpress.com/article/opinion/columns/what-india-needs-to-do-to-plug-its-defence-gap-8263704/>

Business Standard

Sat, 12 Nov 2022

Idea of War: The Battlefields are Changing

By Shekhar Gupta

Right at the outset, a dollop of gratitude is owed to our recently retired Chief of Army Staff, Gen. Manoj Mukund Naravane, for kicking off a debate on what India can and should learn from the war in Ukraine. In his lead article in *The Times of India*, he’s been wise, candid and realistic. What’s most important is that he’s given the entire strategic community more than one thing to debate over. That is what makes the ideal opinion piece. Especially as in this case it comes from an eminent person who isn’t just a topmost domain specialist, but also as contemporary as it gets. I am sobered by the near imprudence in a mere civilian joining the argument with him. But you know what, at least this argumentative Indian is a few years senior to him. Of course, we are only talking of age.

Gen. Naravane lists four essential takeaways:

- Battlefields have been changing and evolving through history. If you begin with World War 1, the tank was invented to break the deadlock of trench warfare. Before that, the machine gun had been invented to neutralise (horse) cavalry, sending troops into trenches.

- The 20th century then saw a see-sawing contest between the tank and anti-tank systems. Ukraine saw it reach another level altogether.
- Drones of some kind or the other first appeared in the late 1990s and it didn't take very long for military scientists and industry to modify them into instruments of war. Of course, Ukraine has now taught us how deadly these can be.
- The latest in modern warfare, particularly as seen in Ukraine, raises larger questions on the future of large armoured formations, big warships and manned fighter/strike aircraft.

We can examine each in somewhat greater detail, particularly as Gen. Naravane also argues that technological change usually comes first and the military leaderships then follow and respond to it in the course of time. Has it always happened that way? The answer is, not always. The history of World War 1 is replete with painful stories of generals, especially British, still hurling horse cavalry into machine gun barrages. Never mind that the troops that suffered in most of these battles were from their colonies, especially India. It was a series of such blunders by the brass (mainly British) that was too averse, lazy, arrogant, or maybe plain insensitive to change, that resulted in a series of military disasters from the Crimean War (1853-56) to the Boer War (1899-1902) and the two World Wars, which inspired Norman Dixon's classic *On the Psychology of Military Incompetence*.

Since he was only talking about the somewhat more open British, Dixon didn't get charged with treason. His book is now a text taught in military academies worldwide, including in India. My own copies were bought at a military bookshop in Dehradun. I have kept additional copies to gift to the bright young people who keep coming into my newsroom, starry-eyed about covering defence. Of course, this isn't the only thing I give them to read. This is just to ensure they get to understand 'both' sides. Because honest debate is what makes a great country, and an all-conquering army. The central takeaway, if I may say so humbly, is that armed forces can be sometimes so tradition-bound and intellectually drilled that they are slow to change, not always quick. Take the second point about the tanks. Sneesh Alex Philip, defence editor at ThePrint, wrote this deeply researched piece on what Ukraine teaches us about tank warfare.

We can extend it to how it exposes a disastrously outdated old Russian (Soviet-era) doctrine of assaulting across the European plains with massed armour and humongous bodies of troops. Open source intelligence confirms the loss of about 1,500 Russian tanks and about twice as many other armoured vehicles with photo and video evidence. This, when no major tank-to-tank battle has taken place. The Ukrainians have been cautious never to get within visual range. They've mostly hidden from sight, and either used drone+satellite communication to identify targets and hit them with very long-range artillery or anti-tank missiles, or visually with very small guerrilla-like bands armed with the American Javelins or British NLAWs. The Russian massed armour that the world feared for seven decades has been shown up as dated.

Another updated edition of Norman Dixon is now called for to analyse the Russian generals' failure — or laziness — to see this writing on the wall. They got a warning more than a year before when Azerbaijan used the same Turkish drones to defeat Armenia, devastate its armour, artillery and radars in about 72 hours without exposing any sizeable body of its troops. It wasn't even too far geographically. Both are former Soviet republics, using the same-source equipment, training and doctrines. Plus, the Armenians were under some kind of Russian protection and continue to be so. It is just that the Azerbaijanis had the smarts to see the change and move their

fighting from the ground to the skies, and almost entirely through unmanned drones or loitering munitions.

The Russian generals had more than a year to chew on this. Did they learn or change? They again did what the British generals had done about a hundred years ago. The short point is, the armies change, but often take too long changing. After much has been lost. Remember that old line: *Sab kuchh luta ke hosh mein aaye toh kya kiya...* (what's the point of accepting the reality after all is lost)? This could be the song of the Russian GHQ today. The fourth point now. It was more than 40 years ago that the vulnerability of the big warship to the nifty new, low-cost missiles was demonstrated in the Falklands War. The missiles have got niftier since, as the sinking of the *Moskva*, the Russian flagship in the Black Sea, tells us.

And now the marine drone attack in Sevastopol, which must be the Russian Navy's most protected naval base. Ships, capital assets of any kind, are going to be very vulnerable and far from cost-effective if not liabilities unless you have the wherewithal to secure large bodies of water and land to protect these from missiles. The same applies to manned aircraft. If in doubt, ask the Russians why their mighty air force isn't even daring to venture into Ukrainian airspace anymore? Because your electronics aren't strong enough to fend off the missiles, nor do you have enough stand-off weapons to deliver them from a safe distance. Again, for more detail on this, read this story in Snehesh Alex Philip's series. His third, on the experience with missiles on both sides, will be published early next week. The lessons on the seas and in the air, however, are the same as on land. The Russians, with all their vaunted academies and warlike history, had failed to embrace change.

In conclusion, Gen. Naravane makes his central point. That no matter what tactics, doctrine, or weapon system is used, the ultimate objective of any war is to control territory, land. "If war is a means to achieve political ends," he writes, "then that translates to territory." To illustrate his point, he brings back to us the Chinese helplessness in not being able to stop Nancy Pelosi from visiting Taiwan. If only the Chinese controlled the land. We dare to make three short points:

- If only Mao and his PLA had decent naval and air assets, would Chiang Kai-shek have been able to escape to the island?
- Unless the Chinese build a navy so powerful it can deter the Americans, an air force that can wrest the skies from Taiwan and allies, can they ever conquer the island?
- And finally, could Chiang and the Kuomintang have escaped to Taiwan without US help? Could Pelosi have landed without the US and its allies' protection? Would China shoot down a plane carrying the third most powerful person in the US? The consequences that would deter it won't be just military.

Our conclusion: In today's world, or during the Chinese revolution, the politics between nations and alliances matters most. The military is an instrument of asserting political will, which may not always be about land.

https://www.business-standard.com/article/opinion/idea-of-war-the-battlefields-are-changing-122111101871_1.html

The Tribune

Sat, 12 Nov 2022

India, Asean to Hold Defence Ministers' Meet, no Commitment on Review of FTA

12A firm commitment on reviewing the ASEAN-India Trade in Goods Agreement (AITIGA) eluded India at its meeting with the 10-member Association of Southeast Asian Nations (ASEAN) in Cambodia on Saturday. India is pressing for a review as it feels Indian exporters of automobiles and agriculture are facing non-tariff measures. Though there is a deadlock on the trade front, a joint statement by both sides resolved to undertake some new activities including an ASEAN-India Defence Ministers' Informal Meeting and Maritime Exercises. They also resolved to advance maritime cooperation, including in maritime security, countering piracy and armed robbery against ships, maritime safety, and search and rescue (SAR) operations. In the space sector, they noted the move to set up Tracking, Data Reception and Processing Stations in Vietnam and Indonesia as well as enhance cooperation in transport and connectivity through the early completion and operationalisation of the India-Myanmar-Thailand (IMT) Trilateral Highway which would be extended eastward to Lao, Cambodia and Vietnam.

India and ASEAN also decided to enhance cooperation against terrorism and transnational crimes; and in military medicine. In cybersecurity, India and ASEAN committed to establishing new dialogue platforms and working closely with the ASEAN-Singapore Cybersecurity Centre of Excellence, and the ADMM Cybersecurity and Information Centre of Excellence. Both sides agreed that the UN Convention on the Laws of the Sea (UNCLOS) sets out the legal framework within which all activities in the oceans and seas must be carried out, and that its integrity needs to be maintained. They also sought to explore concrete activities with focus on maritime connectivity, and economic and other possible areas of cooperation. A series of engagements with ASEAN nations are being attended by Vice President Jagdeep Dhankhar and External Affairs Minister S Jaishankar.

<https://www.tribuneindia.com/news/nation/india-asean-to-hold-defence-ministers-meet-no-commitment-on-review-of-fta-450265>

THE ECONOMIC TIMES

Sun, 13 Nov 2022

India's Presidency hopes to provide new strength, direction to G20 talks: MEA

India's Presidency hopes to provide new strength, direction and perspective to G20 discussions on diverse subjects which include green development, lifestyle for the environment, digital transformation, and more importantly greater voice for the global south in issues of international economic cooperation, the Ministry of External Affairs said on Sunday. "India's G20 presidency

hopes to provide new strength, direction and perspective to G20 discussions on diverse subjects which include green development, lifestyle for environment, digital transformation, inclusive and resilient growth and more importantly greater voice for the global south in issues of international economic cooperation as also on the need for reformed 21st-century institutions," Foreign Secretary Vinay Kwatra said during a special briefing on Sunday.

During the briefing ahead of PM Modi's visit to Bali for the G20 Summit, the Foreign Secretary emphasised the importance of inclusive and resilient growth and said that the Prime Minister along with G20 leaders would deliberate extensively upon key issues of contemporary relevance, including the state of the global economy, energy, environment, agriculture, health and digital transmission. He added that on the side of the G20, PM Modi will also brief the summit on India's evolving G20 priorities and review critical elements of bilateral engagement with the world leaders. Responding to media queries on digital technology, Kwatra said that the use of technology is able to deliver governance more efficiently and transparently, reiterating that it is something which has assumed global recognition in terms of what India's achievements have been over the last few years.

"The use of digital technology to be able to deliver that governance more efficiently, more transparently is something which over the last six to seven years has assumed global recognition in terms of what India's achievements have been and what India has done in this field," the Foreign Secretary said in a statement. Regarding the delegation who will be visiting Bali alongside PM Modi, he added that the Sherpa is already there as Sherpa meetings are going on. Moreover, External Affairs Minister S Jaishankar will be there and National Security Advisor (NSA) will also be a part.

"The Sherpa is already there as Sherpa meetings are going on, the External Affairs Minister will be there, NSA will also be a part," the Foreign Secretary said. Talking about bilaterals with other leaders, Kwatra said, "PM will have bilateral meetings with several leaders...They are still in the process of being scheduled." Notably, India, Indonesia and Brazil would be the G20 Troika during India's presidency. "During our G20 presidency, India, Indonesia and Brazil would be the Troika. This is the first time in G20 that this Troika would consist of developing countries and emerging economies in a row," said Kwatra. The FS also informed that during his visit to Indonesia, PM Modi will address and interact with the members of the Indian community on November 15th.

Prime Minister Modi will be attending G20 Summit on November 14-16th in Bali. The G20 logo launched by PM Modi draws inspiration from the vibrant colours of India's national flag - saffron, white and green, and blue. It juxtaposes planet Earth with the lotus, India's national flower that reflects growth amid challenges, said an official statement. "The theme of India's G20 Presidency - "VasudhaivaKutumbakam" or "One Earth One Family One Future" - is drawn from the ancient Sanskrit text of the Maha Upanishad. Essentially, the theme affirms the value of all life - human, animal, plant, and microorganisms - and their interconnectedness on the planet Earth and in the wider universe," read the official statement. The theme also spotlights LiFE (Lifestyle for Environment), with its associated, environmentally sustainable and responsible choices, both at the level of individual lifestyles as well as national development, leading to globally transformative actions resulting in a cleaner, greener and bluer future. During the G20 Summit, India will raise the issues of renewable energy and the digital revolution. Guided by the Prime Minister's vision, India's foreign policy has been evolving to undertake leadership roles on

the global stage. In a significant step in this direction, India will assume G20 Presidency on December 1, 2022.

<https://economictimes.indiatimes.com/news/india/indias-presidency-hopes-to-provide-new-strength-direction-to-g20-talks-mea/articleshow/95492616.cms>



रविवार, 13 नवंबर 2022

अमेरिकी विदेश मंत्री एंटनी ब्लिंकन से मिले एस जयशंकर, रूस-यूक्रेन जंग के साथ इन मुद्दों पर हुई बात

विदेश मंत्री एस. जयशंकर ने रविवार को यहां अमेरिकी विदेश मंत्री एंटनी ब्लिंकन से मुलाकात की और द्विपक्षीय मुद्दों, रूस-यूक्रेन युद्ध, ऊर्जा, जी-20 तथा हिंद-प्रशांत क्षेत्र में स्थिति पर चर्चा की। जयशंकर और ब्लिंकन के बीच यह बैठक प्रधानमंत्री नरेंद्र मोदी और अमेरिका के राष्ट्रपति जो बाइडन के बीच संभावित बैठक से कुछ दिन पहले हुई। जयशंकर और ब्लिंकन के बीच यह बैठक कंबोडिया की राजधानी नोम पेन्ह में आसियान-भारत शिखर सम्मेलन से इतर हुई। जयशंकर उपराष्ट्रपति जगदीप धनखड़ के साथ यहां आए हैं, जो आसियान-भारत शिखर सम्मेलन और 17वें पूर्वी एशिया शिखर सम्मेलन में भारतीय प्रतिनिधिमंडल का नेतृत्व कर रहे हैं। जयशंकर और ब्लिंकन की मुलाकात 15-16 नवंबर तक इंडोनेशिया के बाली में जी-20 शिखर सम्मेलन से इतर प्रधानमंत्री मोदी और बाइडन के बीच संभावित द्विपक्षीय वार्ता से कुछ दिन पहले हुई है। जयशंकर ने ट्वीट किया, 'अमेरिकी विदेश मंत्री एंटनी ब्लिंकन के साथ एक सार्थक बैठक हुई। यूक्रेन, हिंद-प्रशांत, ऊर्जा, जी20 और द्विपक्षीय संबंधों पर चर्चा की.'

ब्लिंकन ने ट्वीट किया, 'हमारी साझेदारी का विस्तार करने और यूक्रेन पर रूसी आक्रमण के प्रभावों को कम करने के लिए जारी प्रयासों पर चर्चा करने के लिए मैंने आज नोम पेन्ह में आसियान (दक्षिण पूर्व एशियाई देशों के संगठन) शिखर सम्मेलन के दौरान भारतीय विदेश मंत्री एस. जयशंकर से मुलाकात की। अमेरिका, भारत के जी-20 की अध्यक्षता करने का समर्थन करता है।' ब्लिंकन के साथ जयशंकर की मुलाकात मंगलवार को मास्को में रूसी विदेश मंत्री सर्गेई लावरोव के साथ बैठक और शनिवार को यहां यूक्रेन के विदेश मंत्री दिमित्रो कुलेबा के साथ बातचीत के बाद हुई।

अमेरिका के राष्ट्रीय सुरक्षा सलाहकार जेक सुलिवन ने कहा कि राष्ट्रपति बाइडन और प्रधानमंत्री मोदी के बीच उपयोगी और बहुत व्यावहारिक संबंध हैं। सुलिवन ने कहा कि राष्ट्रपति बाइडन बाली में जी-20 शिखर सम्मेलन से इतर प्रधानमंत्री मोदी से मुलाकात को लेकर उत्सुक हैं। उन्होंने बृहस्पतिवार को व्हाइट हाउस में संवाददाताओं से कहा, 'मैं यह बताना चाहता हूं कि राष्ट्रपति बाइडन के पदभार संभालने के बाद

प्रधानमंत्री मोदी व्हाइट हाउस आये थे और उन दोनों के बीच कई बार व्यक्तिगत मुलाकात तथा फोन और वीडियो कॉल पर बातचीत हुई है।

उन्होंने कहा कि दोनों नेता कई महत्वपूर्ण मुद्दों पर समान हित देखते हैं और अमेरिका-भारत साझेदारी को मजबूत करने के लिए वास्तव में मिलकर काम किया है। उन्होंने कहा, 'जब आप उन सभी चीजों को जोड़ते हैं, तो यह एक उपयोगी, बहुत व्यावहारिक संबंध होता है।' उन्होंने कहा, 'राष्ट्रपति बाइडन इस साल जी-20 में प्रधानमंत्री मोदी से मिलने के लिए उत्सुक हैं।' भारत अगले साल जी-20 की अध्यक्षता करेगा और उस दौरान अमेरिकी राष्ट्रपति के नयी दिल्ली की यात्रा करने की संभावना है।

भारत ने यूक्रेन पर रूस के आक्रमण की अभी तक निंदा नहीं की है और उसका कहना है कि संकट का समाधान कूटनीति और बातचीत के माध्यम से किया जाना चाहिए। फरवरी में यूक्रेन संकट शुरू होने के बाद से, प्रधानमंत्री नरेन्द्र मोदी ने रूसी राष्ट्रपति व्लादिमीर पुतिन और यूक्रेन के राष्ट्रपति वोलोदिमीर जेलेन्स्की, दोनों से कई बार टेलीफोन पर बातचीत की है। मोदी ने चार अक्टूबर को जेलेन्स्की के साथ फोन पर बातचीत में कहा था कि यूक्रेन संकट का 'कोई सैन्य समाधान नहीं हो सकता' और भारत शांति के किसी भी प्रयास में योगदान देने के लिए तैयार है।

उज्बेकिस्तान के समरकंद शहर में 16 सितंबर को पुतिन के साथ बैठक में, मोदी ने रूसी राष्ट्रपति को यह कहते हुए यूक्रेन में संघर्ष समाप्त करने के लिए प्रेरित किया था कि 'आज का युग युद्ध का नहीं है।' पिछले कुछ महीनों में, भारत ने रूस से रियायती कच्चे तेल का आयात बढ़ाया है। जयशंकर ने नोम पेन्ह में शनिवार को आसियान रात्रिभोज के अंत में संयुक्त राष्ट्र प्रमुख एंतोनियो गुतारेस से भी मुलाकात की थी। जयशंकर ने थाईलैंड के अपने समकक्ष डोन प्रमुदविनई के साथ भी बातचीत की।

विदेश मंत्री ने एक ट्वीट में कहा, 'थाईलैंड के उपप्रधानमंत्री और विदेश मंत्री डोन प्रमुदविनई के साथ मुलाकात करना हमेशा अच्छा लगता है। हमारी साझा क्षेत्रीय चिंताओं और आसियान के साथ साझेदारी मजबूत करने पर चर्चा की।' उन्होंने कहा, 'आसियान रात्रिभोज में कनाडा की व्यापार मंत्री मैरी एनजी और विदेश मंत्री मिलेन जॉली से मुलाकात की, जिसमें आतंकवाद और कट्टरपंथ का विरोध करते हुए अधिक से अधिक व्यापार तथा रणनीतिक सहयोग पर सहमति जतायी गई।' जयशंकर ने शनिवार को कनाडा, इंडोनेशिया और सिंगापुर के अपने समकक्षों के साथ कई मुद्दों पर चर्चा की थी।

<https://hindi.news18.com/news/nation/arvind-kejriwal-divide-to-rule-policy-what-is-the-connection-with-gujarat-and-mcd-elections-know-the-inside-story-rks-4893457.html>

The Tribune

Sat, 12 Nov 2022

EAM S Jaishankar, Ukraine Minister Discuss Ways to End Conflict

External Affairs Minister S Jaishankar on Saturday met his Ukrainian counterpart Dmytro Kuleba in Phnom Penh on the sidelines of the ASEAN summit and discussed the grain initiative, nuclear concerns and ways to end the conflict in Ukraine. Jaishankar met Kuleba days after returning from Russia where he met Russian counterpart Sergei Lavrov, who was also present in Phnom Penh. Kuleba tweeted that he discussed bilateral cooperation and ways to end Russia's war on Ukraine. "I emphasised that Russia must immediately cease deadly attacks, withdraw all troops from Ukraine and commit to peace," he tweeted. But Jaishankar's more noteworthy bilateral was with his Canadian counterpart Melan Joly with no mention of the Khalistan referendum, which has caused bad blood between the two sides. The so-called second Khalistan referendum had gone ahead in Canada on November 6 despite several demarches served on Ottawa by the MEA. A series of engagements with ASEAN nations are being attended by Vice-President Jagdeep Dhankhar and Jaishankar.

A firm commitment on reviewing the ASEAN-India Trade in Goods Agreement eluded India at its meeting with the 10-member ASEAN in Cambodia. Though there is a deadlock on the trade front, a joint statement by both sides resolved to undertake some new activities, including an ASEAN-India defence ministers' informal meeting and maritime exercises. They also resolved to advance maritime cooperation, including security, countering piracy and armed robbery against ships, maritime safety and search and rescue operations. In the space sector, they noted the move to set up tracking, data reception and processing stations in Vietnam and Indonesia and to enhance ties in transport and connectivity through early completion and operationalisation of the India-Myanmar-Thailand Trilateral Highway, which will be extended eastward to Lao, Cambodia and Vietnam.

<https://www.tribuneindia.com/news/nation/eam-ukraine-minister-discuss-ways-to-end-conflict-450361>

दैनिक जागरण

सोमवार, 14 नवंबर 2022

PM मोदी का बेहद 'व्यस्त और लाभकारी' दौरा, 45 घंटे 20 कार्यक्रम और 10 बड़े नेताओं से मुलाकात

प्रधानमंत्री नरेंद्र मोदी के अगले 3 दिन बेहद खास और व्यस्त रहने वाले हैं। पीएम मोदी आज जी-20 शिखर सम्मेलन में शामिल होने के लिए इंडोनेशिया के बाली जा रहे हैं। इस 3 दिन की यात्रा के दौरान

पीएम मोदी 20 कार्यक्रमों में शिरकत करेंगे। 10 वैश्विक नेताओं के साथ द्विपक्षीय वार्ता करेंगे और इसके इतर भी कुछ कार्यक्रमों में वह दिख सकते हैं। हालांकि, चीन के राष्ट्रपति शी चिनफिंग के साथ मुलाकात अभी तय नहीं है।

G-20 समिट की खास बातें और PM Modi का शेड्यूल

- पीएम मोदी जी-20 शिखर सम्मेलन में शामिल होने के लिए आज (सोमवार) को इंडोनेशिया के बाली शहर जाएंगे। वह यहां 3 दिन रुकेंगे।
- G-20 समिट में पीएम मोदी तीन प्रमुख सत्र- खाद्य और ऊर्जा सुरक्षा, स्वास्थ्य और डिजिटल परिवर्तन में हिस्सा लेंगे।
- भारत के लिए G-20 समिट बेहद महत्वपूर्ण माना जा रहा है। शिखर सम्मेलन में भारत, चीन और अमेरिका समेत अन्य देशों के राष्ट्र प्रमुख शामिल हों रहे हैं।
- अमेरिका पहले ही कह चुका है कि वो G-20 समिट के दौरान रूस-यूक्रेन युद्ध और इसके प्रभावों समेत वैश्विक चुनौतियों पर व्यापक विचार-विमर्श करेगा।
- पीएम मोदी बाली में करीब 45 घंटे तक रुकेंगे। इस दौरान वह करीब 20 कार्यक्रमों में शामिल होंगे। इसमें जी-20 शिखर सम्मेलन भी शामिल है।
- पीएम मोदी इस समिट के दौरान लगभग 10 वैश्विक नेताओं के साथ द्विपक्षीय बैठकें करेंगे।
- इंडोनेशिया के डायस्पोरा में भारतीय प्रवासियों के साथ पीएम मोदी की मुलाकात भी तय है। यहां पीएम मोदी के लिए स्वागत समारोह रखा गया है।
- पीएम मोदी का बाली दौरा बेहद 'व्यस्त और लाभकारी' बताया जा रहा है।
- G-20 समिट 15 और 16 नवंबर को आयोजित होगा। वार्षिक सभा के समापन समारोह में इंडोनेशिया जी-20 प्रेसीडेंसी को भारत को सौंपेगा।
- विदेश सचिव विनय क्वात्रा ने बताया कि शिखर सम्मेलन के इतर पीएम मोदी कई नेताओं के साथ द्विपक्षीय बैठकें करेंगे, लेकिन चीन के राष्ट्रपति शी चिनफिंग के साथ बैठक तय नहीं है।
- भारत सितंबर 2023 में अगले जी-20 शिखर सम्मेलन की मेजबानी करेगा। इस दौरान कई देशों के राष्ट्राध्यक्ष भारत आएंगे।

जी-20 ऐसे 20 देशों का समूह है, जिसमें दुनिया की प्रमुख विकसित और विकासशील अर्थव्यवस्थाओं वाले राष्ट्र शामिल हैं। इस समूह में भारत, अमेरिका, ब्रिटेन, अर्जेंटीना, ऑस्ट्रेलिया, ब्राजील, कनाडा, चीन, फ्रांस, जर्मनी, इंडोनेशिया, इटली, जापान, कोरिया गणराज्य, मेक्सिको, रूस, सऊदी अरब, दक्षिण अफ्रीका, तुर्की और यूरोपीय संघ (ईयू) शामिल हैं।

<https://www.jagran.com/news/national-pm-narendra-modi-in-g20-summit-20-sessions-bilateral-meets-in-45-hours-23202807.html>

राष्ट्रपति बनने के बाद बाइडेन पहली बार जिनपिंग से मिलेंगे:बाली में G-20 के दौरान होगी मीटिंग, मुद्दा ताइवान होगा

अमेरिकी राष्ट्रपति बाइडेन बाली में चीन के राष्ट्रपति शी जिनपिंग से मुलाकात करेंगे। 2020 में राष्ट्रपति बनने के बाद बाइडेन की जिनपिंग के साथ ये पहली फेस-टु-फेस मुलाकात होगी। इसके पहले दोनों नेताओं की मुलाकात तब हुई थी जब वे अपने देश के वाइस-प्रेसिडेंट थे। व्हाइट हाउस के मुताबिक, दोनों नेता अमेरिका और चीन के बीच कम्युनिकेशन बनाए रखने और रिश्तों को गहरा करने के प्रयासों पर चर्चा करेंगे। इसके अलावा चर्चा का फोकस ताइवान के मुद्दे पर होगा।

अमेरिका-चीन के रिश्तों में ताइवान सबसे बड़ा फ्लैश प्वाइंट

ये मुलाकात ऐसे समय हो रही है, जब दोनों देशों के रिश्तों में खटास है। इसकी वजह चीन की ताइवान पर कब्जा करने की मंशा है। दरअसल, चीन वन-चाइना पॉलिसी के तहत ताइवान को अपना हिस्सा मानता है, जबकि ताइवान खुद को एक स्वतंत्र देश की तरह देखता है। इधर, अमेरिका भी वन चाइना पॉलिसी को मानता है, लेकिन ताइवान पर चीन का कब्जा नहीं देख सकता।

ताइवान पर अपनी नीति नहीं बदलेगा US

10 नवंबर को एक प्रेस कान्फ्रेंस में बाइडेन ने कहा- मैं ताइवान मसले पर जिनपिंग से बात करूंगा। हम सॉल्यूशन निकालने की कोशिश करेंगे। उन्होंने साफ कर दिया की वो ताइवान पर अमेरिकी नीति में कोई बदलाव नहीं करेंगे। बाइडेन कई मौकों पर कहा चुके हैं कि अगर ताइवान पर चीन हमला करता है तो अमेरिका उसके बचाव में उतरेगा।

नैसी पेलोसी की विजिट के बाद तनाव गहराया

अमेरिका और चीन के बीच तनाव तब गहरा गया, जब US संसद की स्पीकर नैसी पेलोसी चीन की धमकी के बाद भी 2 अगस्त को ताइवान दौरे पर ताईपेई पहुंच गईं। न्यूज एजेंसी AFP के मुताबिक, चीन ने कहा था- हम टारगेटेड मिलिट्री एक्शन जरूर लेंगे। इसके बाद से ताइवान की सीमा में चीन के जेट्स की घुसपैठ बढ़ गई। आम तौर पर ये उड़ानें ताइवान के दक्षिण-पश्चिम में हवाई क्षेत्र में होती हैं। इसे AIDZ (एयर डिफेंस आइडेंटिफिकेशन जोन) कहते हैं। 1949 में गृहयुद्ध के दौरान ताइवान और चीन अलग हो गए थे, लेकिन चीन इस द्वीप पर अपना दावा करता रहा है। नतीजतन बीजिंग ताइवान सरकार की हर कार्रवाई

का विरोध करता है। ताइवान को अलग-थलग करने और डराने के लिए राजनयिक और सैन्य ताकत का इस्तेमाल करता रहता है।

ताइवान कार्ड खेलना बंद करे US

चीन अमेरिका से आग्रह करता है कि वो ताइवान कार्ड खेलना बंद करे और चीन को रोकने के लिए ताइवान का इस्तेमाल बंद करे। अमेरिका ताइवान की आजादी मांगने वाली अलगाववादी ताकतों के साथ मिलकर साजिश रचना और उनकी मदद करना बंद करे।

चीन ने दी थी अमेरिका को धमकी

चीन, यूक्रेन में हो रही जंग का फायदा उठाकर ताइवान पर हमला कर सकता है। अमेरिकी राष्ट्रपति जो बाइडेन ने शी जिनपिंग की इस साजिश को भांप लिया था। कुछ महीने पहले उन्होंने एक इमरजेंसी मीटिंग की और इसके फौरन बाद अमेरिकी डिफेंस एक्सपर्ट्स और फॉरेन मिनिस्ट्री का एक हाईलेवल डेलिगेशन ताइवान की राजधानी ताइपेई रवाना कर दिया था। जिसके बाद बौखलाए हुए चीन ने अमेरिका को धमकी दी थी। उसने धमकी भरे लहजे में कहा थी कि वे (अमेरिका) आग से खेल रहे हैं और इसमें खुद ही जल जाएंगे।

<https://www.bhaskar.com/international/news/xi-biden-meeting-taiwan-top-of-agenda-for-chinese-and-us-leaders-130548337.html>



Sun, 13 Nov 2022

South Korea Likely to Bag Royal Malaysian Air Force Deal, not India

State-owned Hindustan Aeronautics (HAL) has left no stone unturned to close the Royal Malaysian Air Force deal for the Light Combat Aircraft (LCA) Tejas Mark 1A. Amidst the changing political landscape in that country, it is said that South Korea is on the brink of closing the deal.

Covert Korea

Amid Malaysian political uncertainty, based on reports in the public domain the chances of the deal going to South Korea are more compared to the possibility of HAL getting the deal. “The deal related to the sale of the Light Combat Fighter Aircraft (LCA) ‘Tejas’ is expected to come up when defence minister Rajnath Singh meets his ASEAN counterparts in New Delhi on November 20, 2022 for a meeting. ASEAN countries like Indonesia and the Philippines have expressed interest in Indian defence offerings like the BrahMos cruise missile, fighter jets and helicopters and other platforms.

Financial Express Online has reported earlier that HAL has been among the front runners for the Royal Malaysian Air Force contract. They are in the market to replace their decommissioned MiG 29s. Along with LCA Tejas and the KAI FA-50, the Sino-Pakistani JF-17 from Pakistan Aeronautical Complex and Chengdu Aircraft Corporation, the Italian M-346 from Leonardo, and the Russian Yak-130 have been named as the potential contenders. And HAL set up its first overseas office in Kuala Lumpur, Malaysia, that would liaison the company's interests in the South East Asia region.

Expert View: Fighting Finesse: How Do FA-50 and LCA Tejas Compare?

“HAL LCA Tejas, a modern fighter, is the most expensive consideration for the Royal Malaysian Air Force. Compared to the KAI FA-50's mechanical radar, HAL has equipped Tejas Mark 1A with Active Electronically Scanned Array (AESA) radar. For this variant, indigenous Uttam AESA radar will replace the Israeli EL/M-2052,” explains GirishLinganna, Defence and Aerospace Analyst. According to him, “In terms of technological advancements, LCA Tejas trumps FA-50. The latter only carries forward a flying boom for refuelling from the T-50A. The status of the certification for airworthiness and penetration is ambiguous too.” “The modern LCA Tejas Mark 1A can carry anti-ship missiles, unguided rockets, conventional/retarded bombs and a variety of air-to-air missiles on its eight hardpoints. While the FA-50 has a similar range, Tejas can fly to a higher service ceiling with its delta wing design. FA-50 also loses out in top speed and maximum take-off weight,” Linganna adds.

India & Malaysia

Malaysian foreign policy has been akin to the Indian foreign policy of Non-Alignment. Hence, Malaysia shall enjoy the ability to integrate a more significant number of weapons onto the HAL Tejas, which has tested weapons from India, Russia, France, Israel and the US. The FA-50 is entirely oriented towards the US and misses out on Russian weaponry, with which Malaysia has a history. Whoever wins the bid for the 18 Lead in Trainer-Light Combat Aircraft (FLIT-LCA) programme will build an assembly line in Malaysia. “This is also where HAL shines, given its ability to provide maintenance, repair and overhaul (MRO) facilities for the Royal Malaysian Air Force's Russian Su-30s. Interestingly, the Indian Air Force aided and trained the Royal Malaysian Air Force pilots to fly the Su-30. The two air forces continue to share a deep bond and train regularly,” opines Linganna.

<https://www.financialexpress.com/defence/south-korea-likely-to-bag-royal-malaysian-air-force-deal-not-india/2810922/lite/>

Mon, 14 Nov 2022

Threat for Indian Army? China Displays Deadly Unmanned All-Terrain Vehicles (ATV) in Ladakh-Like Background

A concept computerized video showing Chinese unmanned-capable multipurpose All-Terrain Vehicles (ATV) performing combined arms and networked strikes on enemy positions reveals ominous signs for India, given the background terrain portrayed. As social media posts have called the series, the Lynx ATV appeared in promotional videos last year, showing the most diverse variants for nearly all ground operations. China possesses the most diverse range of unmanned systems – aerial, sea-borne, and ground – fielded and has unveiled many of them even before the latest Zhuhai Air Show. Unmanned Surface Vessels (USVs) can threaten the United States Navy in the western Pacific theatre; however, India can afford to be not too worried about them in the region.

The chances of a naval engagement between India and China either in the South China Sea (SCS) or the Indian Ocean Region (IOR) are little to none, given the lack of appetite in both parties for challenging the other in either of their home seas. However, Chinese UAVs challenge both countries equally and would be a defining feature in both theatres. But ground forces particularly are threatening to India, given the predominance of the terrain and the core political reason for tension between the two countries – contested land territories. On the contrary, the likelihood of a ground war between the US and China is little to none and would primarily be a naval and air clash. The only conceivable scenario under which US and Chinese land armies would clash would be in the event of an invasion of mainland China.

All Purpose Unmanned-Capable ATVs

Called the Lynx ATV, the videos show the vehicle's most varied variants, ranging from troops carrier; logistics; medical evacuation (MEDEVAC); surveillance; mortar carrier; infantry support; miniature command and control, air defense; and swarm drone launcher. The video shows threatening small unit tactical force multiplier capabilities, appearing to operate at the Platoon to Company level. The official Chinese military video showed tracked and wheeled ATVs carrying troops, operating in three types of terrain – jungle, riverine, mountainous desert, and high altitude snow-clad. It shares all these geographies with India in its southern and southwestern border.

The video shows troop carrier ATVs disembarking from PLAAF's new indigenous Y-20 strategic airlift transport plane. A recon ATV meanwhile scans its surroundings from a height in a mountainous region and coordinates with other ATV-mounted recon units, lightweight tactical drones, and a two-person command center inside another ATV. They detect fixed and moving ground targets and plan a multi-pronged attack on a major enemy base camp from various directions. From the graphic, it almost appears to be Battalion headquarters-sized encampment. Of the 27 different ATVs, 12 include two mobile command centers and two drone launchers, and eight comprise infantry fighting support and troops carriers connected to an ISR-capable UAV on overwatch. Others outside this 'core network,' including the mortar

and other Infantry Fighting-All Terrain Vehicles (IF-ATV), are connected among themselves. A satellite shows a standard uniform coverage to all assets, indicating a dedicated military-use part of the BeiDou satellite navigation constellation.

Meanwhile, the surveillance and command and control (C&C) ATVs are linked to a larger command and control, supposedly a Corps-level formation directly under the Western Theatre Command. Mortar ATVs then shell an outpost, and several dozen kamikaze munitions launched from an unmanned ATV hit three tactical vehicles. The most frightening was 20-25 mm autocannons mounted on unmanned IF-ATVs taking out heavily reinforced machine gun encampments perched at a height. This is possibly the most telling since it challenges the time-tested practice in mountain warfare to dominate heights. Other unmanned ATVs with autocannons and heavy machine guns take out ground trenches and defense lines which are fighting back with machine guns and armored tactical vehicles. Some unmanned ATVs are then seen carrying supplies and fuels to forward troops.

Interestingly, many of the ATVs seen are shown to have manual controls in the form of a steering wheel, which allows for quick human intervention in case of glitches with a remote control or avoiding detection through Radio Frequency (RF) transmissions. The actual video of the ATVs surfaced in October of last year and was prepared and released by China North Industries Group Corporation Limited (NORINCO). It showed an IF-ATV with the autocannon; a mortar ATV; a tube rocket artillery firing vehicle; one with four Man-Portable Air Defence (MANPAD) missiles; one carrying fuel boxes in the hold for tactical resupply; a recon ATV; an ATV carrying a trailer that has a dome-like shape indicating signals, communications relay or tactical-level electronic warfare. A crew of two soldiers remotely controls all.

Implications For India

Lt Gen HS Panag (Retd), a former Northern Army Commander, agreed that the concepts posed a threat to the Indian Army in Ladakh while speaking to the EurAsian Times. “Like UAVs can be controlled, so can unmanned tanks and guns,” he said. “The issue is cost,” he said when asked what India needed to look out for. Panag is probably referring to the heavy costs involved in such modernization, which will possibly fumble given India’s current economic dire straits. China’s techno-industrial efforts and rapid industrialization involving high-tech manufacturing automatically afforded it the economic wherewithal and technical capability to modernize its armed forces. India meanwhile pursues only one-off efforts in defense indigenization. Moreover, such heavy usage of unmanned ground vehicles is in line with the “mechanization” goals of the PLA envisaged in its 2019 Defense White Paper.

<https://eurasianimes.com/threat-for-indian-army-china-displays-all-terrain-vehicles/>

Fri, 11 Nov 2022

China's 'Chameleon' Missile Launchers could Change the Future of Combat

China will use Artificial Intelligence (AI) technology for the launchers of its Dongfeng series of road-mobile missiles which will make them more tactical and invisible. It is claimed by the Chinese that they could evade satellite detection as well as the infrared rays of drones and radars, turning them into chameleon-like objects and keeping them hidden in any terrain. They are believed to be part of a plan to come up with new-generation weapons for future warfare.

The DF-17 medium-range missile is supposedly the world's first active hypersonic glide vehicle weapon and has the capability to penetrate US missile shields in the region. A camouflage launch vehicle has been designed for the missile. A source revealed that the launch vehicle is a modified version of the one that was used for the DF-16B ballistic missiles. The DF-16B as well as DF-17 designed as offensive weapons for a Taiwan contingency are medium-range missiles aimed at restricting foreign military intervention in the Taiwan Strait. State broadcaster CCTV showed footage of the camouflage missile launchers, including the DF-41 intercontinental road-mobile solid-fuel ballistic missile. The DF-41 has an estimated range of over 12,000km, which enables it to easily hit a target on the US mainland.

SCMP citing state broadcaster CCTV report states that the design and camouflage of the missile launchers were a key part of battlefield tactics. In all warfare situations, the protection of weapons and troops is the top priority, especially given China's 'no first use' nuclear policy, which correlates to better protection while preparing for a second strike. The policy is for China to use its nuclear weapons only as retaliation to a nuclear strike against it. Almost all the missiles in the Dongfeng series are dual-capable weapons that can carry both conventional as well as nuclear warheads. The same TV channel also showed footage that suggested a new fighter jet was in the works for the Fujian aircraft carrier that was launched a few months back, along with tanks with AI capabilities, new equipment, and warships. Currently, the PLA has the China-made J-15 which is a one carrier-based fighter jet, based on a prototype of the Soviet-designed Su-33. A modified version of it was developed for Fujian, which is accompanied by electromagnetic catapults.

<https://www.financialexpress.com/defence/chinas-chameleon-missile-launchers-could-change-the-future-of-combat/2806428/lite/>

Business Standard

Sun, 13 Nov 2022

36 Chinese Fighter Jets, Bombers Fly Near Island: Taiwan Defense Ministry

China's military flew 36 fighter jets and bombers near Taiwan, the Taiwanese defence ministry announced, part of a long-running campaign of intimidation against the self-ruled island democracy that Beijing claims as part of its territory. Ten of the aircraft on Saturday flew across the median line in the Taiwan Strait that separates the island from the mainland, the ministry said. It said they included six Shenyang J-11 and four J-16 aircraft. Taiwan and China split in 1949 following a civil war that ended with the Communist Party in control of the mainland.

The island never has been part of the People's Republic of China, but Beijing says it is obliged to unite with the mainland, by force if necessary. Chinese President Xi Jinping's government stepped up efforts this year to intimidate Taiwan. It has sent fighter planes and bombers to fly near the island and fired missiles into the sea. On Saturday, Taiwan's military also spotted four Chengdu J-10 fighters, a Y-8 antisubmarine warfare plane and three H-6 bombers southwest of the island, the Ministry of Defence said on its website. It said three Chinese drones also were detected.

https://www.business-standard.com/article/international/36-chinese-fighter-jets-bombers-fly-near-island-taiwan-defense-ministry-122111300232_1.html

THE ECONOMIC TIMES

Sun, 13 Nov 2022

US, Japan, S Korea Vow Unified Response to North Korea Threat

US President Joe Biden and the leaders of Japan and South Korea on Sunday vowed a unified, coordinated response to North Korea's threatening nuclear and ballistic missile programmes, with Biden declaring that the three-way partnership is "even more important than it's ever been" when North Korea is stepping up its provocations. Biden met separately with Japanese Prime Minister Fumio Kishida and South Korean President Yoon Suk Yeol before all three sat down together on the sidelines of the East Asia Summit in Cambodia. The US president began by offering condolences for a crowd surge during Halloween festivities in Seoul that killed more than 150 people, saying the US had grieved with South Korea.

The meeting was heavily focused on North Korean leader Kim Jong Un's recent escalations, although Biden said the three leaders would also discuss strengthening supply chains and preserving peace across the Taiwan strait, while building on the countries' support for Ukraine in the face of Russian aggression. Biden had also planned to seek input from Kishida and Yoon on managing China's assertive posture in the Pacific region on the eve of his face-to-face with

President Xi Jinping. "We face real challenges, but our countries are more aligned than ever, more prepared to take on those challenges than ever," Biden said. "So I look forward to deepening the bonds of cooperation between our three countries."

Both Yoon and Kishida discussed the ongoing displays of aggression by North Korea, which has fired dozens of missiles in recent weeks. The launches include an intercontinental ballistic missile 10 days ago that triggered evacuation alerts in northern Japan, and as the allies warn of a looming risk of the isolated country conducting its seventh nuclear test in the coming weeks. Referring to the crowd surge that occurred in the Itaewonneighbourhood in Seoul, Yoon said, through an interpreter: "At a time when South Koreans are grieving in deep sorrow, North Korea pushed ahead with such provocations which lays bare the Kim Jong Un regime's true inclinations." US National Security Adviser Jake Sullivan told reporters on Saturday that Biden would use the meetings to strengthen the three countries' joint response to the dangers posed by North Korea, officially known as the Democratic People's Republic of Korea.

"What we would really like to see is enhanced trilateral security cooperation where the three countries are all coming together," he said. "That's acutely true with respect to the DPRK because of the common threat and challenge we all face, but it's also true, more broadly, about our capacity to work together to enhance overall peace and stability in the region." Tensions on the Korean peninsula have skyrocketed in recent months as the North continues its weapons demonstrations and the US and South Korea launched stepped-up joint defence exercises.

Earlier this month, the South Korean military said two B-1B bombers trained with four US F-16 fighter jets and four South Korean F-35 jets during the last day of "Vigilant Storm" joint air force drills. It was the first time since December 2017 that the bombers were deployed to the Korean Peninsula. The exercise involved a total of roughly 240 warplanes, including advanced F-35 fighter jets from both countries.

North Korea responded with its own display of force, flying large numbers of warplanes inside its territory. The Biden administration has said it has sent repeated requests to negotiate with North Korea without preconditions on constraining its nuclear and ballistic missile programmes, but that Kim Jong Un's government has not responded. Biden has said he plans to press Xi to use China's unique sway over North Korea to curtail its aggressive behavior, as part of what is expected to be a wide-ranging meeting between the leaders on the margins of the Group of 20 gathering in Bali, Indonesia. China "has an interest in playing a constructive role in restraining North Korea's worst tendencies", Sullivan said on Saturday. "Whether they choose to do so or not is, of course, up to them." Biden told reporters on Sunday that he's "always had straightforward discussions" with Xi, and that has prevented either of them from "miscalculations" of their intentions.

Their meeting comes weeks after Xi cemented his grip on China's political system with the conclusion of the Community Party congress in Beijing that gave him a norm-breaking third term as leader. "His circumstances changed, to state the obvious, at home," Biden said of Xi. Biden maintained that his own have as well, saying that after Democrats retained control of the Senate in the midterm elections, "I know I'm coming in stronger." Monday's meeting will be the first in-person sit-down between the leaders since Biden was elected. US officials in the past have expressed frustration that lower-level Chinese officials have proven unable or unwilling to speak for Xi, and are hoping the face-to-face summit will enable progress on areas of mutual concern - and, even more critically, a shared understanding of each others' limitations.

"I know him well, he knows me," Biden said. "We've just got to figure out where the red lines are and what are the most important things to each of us, going into the next two years." As president, Biden has repeatedly taken China to task for human rights abuses against the Uyghur people and other ethnic minorities, Beijing's crackdowns on democracy activists in Hong Kong, coercive trade practices, military provocations against self-ruled Taiwan and differences over Russia's prosecution of its war against Ukraine. Xi's government has criticized the Biden administration's posture toward Taiwan - which Beijing looks eventually to unify with the communist mainland - as undermining China's sovereignty and territorial integrity. The Chinese president also has suggested that Washington wants to stifle Beijing's growing clout as it tries to overtake the US as the world's largest economy. Biden also spoke briefly with Australian Prime Minister Anthony Albanese, who has sought out his own meeting with Xi this week in an effort to ease Chinese sanctions against his country.

<https://economictimes.indiatimes.com/news/defence/us-japan-s-korea-vow-unified-response-to-north-korea-threat/articleshow/95489382.cms>



Delegation of the European Union
to Montenegro

Fri, 11 Nov 2022

Cyber Defence: EU Boosts Action against Cyber Threats

The Commission and the High Representative put forward a Joint Communication on an EU Cyber Defence policy and an Action Plan on Military Mobility 2.0 to address the deteriorating security environment following Russia's aggression against Ukraine and to boost the EU's capacity to protect its citizens and infrastructure. With its new cyber defence policy, the EU will enhance cooperation and investments in cyber defence to better protect, detect, deter, and defend against a growing number of cyber-attacks. Cyberspace has no borders. Recent cyber-attacks on energy networks, transport infrastructure and space assets show the risks that they pose to both civilian and military actors. This calls for more action to protect citizens, armed forces, as well as the EU's civilian and military missions and operations, against cyber threats.

The EU Policy on Cyber Defence aims to boost EU cyber defence capabilities and strengthen coordination and cooperation between the military and civilian cyber communities (civilian, law enforcement, diplomatic and defence). It will enhance efficient cyber crisis management within the EU and help reduce our strategic dependencies in critical cyber technologies, while strengthening the European Defence Technological Industrial Base (EDTIB). It will also stimulate training, attracting, and retaining cyber talents and step up cooperation with our partners in the field of cyber defence. The EU Policy on Cyber Defence is built around four pillars that cover a wide range of initiatives that will help the EU and Member States:

- **Act together for a stronger EU cyber defence:** The EU will reinforce its coordination mechanisms among national and EU cyber defence players, to increase information exchange and cooperation between military and civilian cybersecurity communities, and further support military CSDP missions and operations.

- **Secure the EU defence ecosystem:** Even non-critical software components can be used to carry out cyber-attacks on companies or governments, including in the defence sector. This calls for further work on cybersecurity standardisation and certification to secure both military and civilian domains.
- **Invest in cyber defence capabilities:** Member States need to significantly increase investments in modern military cyber defence capabilities in a collaborative manner, using the cooperation platforms and funding mechanisms available at the EU level, such as PESCO, the European Defence Fund, as well as Horizon Europe and the Digital Europe Programme.
- **Partner to address common challenges:** Building on existing security and defence as well as cyber dialogues with partner countries, the EU will seek to set up tailored partnerships in the area of cyber defence.

Next steps

The Commission and the High Representative, including in his capacity as Head of the European Defence Agency (EDA), will present an annual report to the Council of the EU to monitor and assess the progress of the implementation of the actions in the Joint Communication on the EU Policy on Cyber Defence. Member States are encouraged to contribute with their inputs on the progress of the implementation measures taking place in national or in cooperation formats. An implementation plan could be set up in cooperation with Member States.

Background

The 2020 EU Cybersecurity Strategy highlighted the need for a review of the EU's cyber defence policy framework. Furthermore, President von der Leyen called for the development of a European Cyber Defence Policy in her 2021 State of the Union address. This is also an ambition of the Strategic Compass for Security and Defence approved by the Council in March this year. In May, in the Council conclusions on the development of the European Union's cyber posture, Member States invited the High Representative together with the Commission to table an ambitious proposal for an EU Cyber Defence Policy in 2022.

https://www.eeas.europa.eu/montenegro/cyber-defence-eu-boosts-action-against-cyber-threats_en



Fri, 11 Nov 2022

UK Defence Cyber Skills to be Boosted through Industry Partnership

- Defence personnel to be upskilled in tackling cyber threats
- Industry collaboration to increase UK's cyber resilience
- Work follows National Audit Office praise for the department's approach to conflict digitisation

The Ministry of Defence will collaborate with Immersive Labs, an industry leader in cyber resilience, to support the department's new Digital Skills for Defence programme to build stronger digital skills, and follows a successful trial by the British Army. Tested against industry benchmarks, the collaboration will see personnel from the Army, Royal Navy, Royal Air Force, Strategic Command and Civil Service engaged, with access to 1,800 realistic simulations and hands-on cybersecurity labs to evaluate individual and teams in decision-making against the latest threats. As the recent National Audit Office (NAO) report on the MOD's Digital Strategy noted, the Department is showing good practice when it comes to the challenge of modern conflict rapidly digitising, affecting Defence work and how the Armed Forces operate in the battlefield.

Minister for Defence Procurement, Alex Chalk said:

The NAO has rightly highlighted our focus on remaining at the forefront of digital capability, which is crucial as the shape of the modern battlefield continues to change at unprecedented speed. Utilising the best technology and brightest minds in industry will only serve to bolster the rank of cyber experts focused on protecting the UK.

Exploiting digital capabilities and data is fundamental to our success in modern military operations and to the effective running of Defence. Building on the feedback from the NAO report, the department is striving to build a workforce with the digital skills it needs to deliver the digital transformation of defence. The report acknowledged positive progress being made by the department on bringing together and aligning such digital practitioners across Defence. However, with a shortfall of homegrown talent and a very competitive market across the public and private sectors, the collaboration with Immersive Labs will also help identify cybersecurity talent to fill open roles and bolster the ranks of UK cyber experts.

Director of Functional Integration, Claire Fry said:

The Digital Skills for Defence programme is crucial in our drive to provide the right digital skills and capabilities across Defence to take advantage of the opportunity brought about by the ever-increasing pace of technological change. Immersive Labs is one of a number of organisations we are working with to deliver training that will upskill our workforce. This will enable us to champion our One Defence Mindset and create an environment where our digital skills can flourish in a unified, connected and digitally integrated way. MOD established the Digital Skills for Defence programme to deliver critical digital skills for Defence Leaders, Digital Professionals, and the whole Military and Civilian workforce. The programme is fundamental in building and retaining operational and business advantage. MOD's ambition goes beyond education, seeking to transform to a learning culture where teams work collaboratively across the organisation.

<https://www.gov.uk/government/news/uk-defence-cyber-skills-to-be-boosted-through-industry-partnership>

Iran Opens UAV Factory in Tajikistan; Its Booming Drone Industry Endangers the Entire Middle East & Central Asia

By KN Pandita

The Syrian Rights Monitor reported on October 23 that an airstrike near Damascus destroyed an Iranian-backed drone manufacturing and weapons storage site. Israel is believed to have undertaken the strike in the darkness of the night. It targeted equipment used for assembling Iranian drones at Dimas military airport near the Lebanese border, the Rights Monitor claimed. A radar and runway were also apparently damaged. Hezbollah, the proxy sponsored and backed by Iran, has used the Dimas military airport as a base of operations throughout much of the Syrian civil war. In January, the Syrian Observatory sources reported that Iran and Hezbollah were expanding the site and excavating underground storage sites.

Al Arabiya, a Saudi newspaper, reported that Hezbollah's Unit 4400 was assigned to transfer military equipment to Hezbollah in cooperation with the Iranian Revolutionary Guards operating the targeted facilities. There are varying reports about the number of casualties. The Syrian state news says five soldiers were killed in the Israeli airstrike, whereas other sources put the number at eighteen.

New War Weapon

The conflict in Syria has been witnessing drone attacks for quite some time. The Syrian Observatory said that though this was the first such attack in over a month, there were no human casualties. The Observatory, monitoring violence in Syria since 2011, added that the target was an arms shipment heading for Iranian proxy militias. Nevertheless, it reported that the picture of drone manufacturing and weapons storage sites close to Lebanon and the Israeli border is too complicated. Unmanned aerial vehicles (UAVs), commonly known as drones, have been widely used in recent armed conflicts, particularly in the Middle East. This low-cost but very effective machine has become popular in battle and surveillance.

Its efficacy was realized in the Azerbaijan-Armenia war in which the former country's military used the Turkish Bayraktar drones in their attacks on Armenian tanks and military hardware. Many countries in the region, including Israel, Turkey, Iran, and Saudi Arabia, have been aggressively using and marketing drones. It is a new weapon used by countries and organizations that do not have access to advanced fighter jets. They are also used by wealthy countries, which find them a valuable alternative to sophisticated but costly human-crewed fighter jets.

Turkey-made Bayraktar drone has invited the attention of military observers as a new weapon in modern warfare. Many countries are trying to access Turkey's machine. At the same time, many countries are trying to upgrade their drone technology to float a very effective lethal weapon. Pakistan is one of the countries to acquire the Turkish drone and deploy these for dropping arms, ammunition, medicines, and even Indian currency notes at identified places on

the Indian side of the LoC in J&K. Numerous instances of arms dropping have come to the notice of Indian authorities, and some of the drones have been shot down by the Indian security forces. Only a few days ago, the J&K Police captured three persons assigned to collect the arms and ammunition dropped by the Pakistani drones at an identified place close to the border in the Samba district of Jammu Division.

Middle East And The Drone

But the real competition in manufacturing and deploying drones of far more power and functionalities compared to what is available now is between Iran and Israel, two countries hostile to each other for several decades. In the words of Jack Khoury, the columnist for Haaretz, “While Iran tries to compensate for its isolation from military suppliers and high technology weaponry by developing drones and supplying them to its proxies around the Middle East, Israel boasts a highly advanced repertoire of drones that are being marketed around the world, and to some Arab countries. This competition is slowly but surely changing the nature of warfare and thereby altering the region’s geopolitical map.”

Groups like Hamas and Islamic Jihad in Gaza, Hezbollah in Lebanon, the Houthis in Yemen, and pro-Iran militias in Iraq assemble the machine from the drone kits smuggled or otherwise sent to them by Iran. Last July, Israeli intelligence agencies were reported to have known and destroyed an Iranian drone assembly factory in Syria, which was used to distribute the UAVs to allies in the region. What is more alarming is that the non-state actors such as the Houthis, Hezbollah, Lashkar-i-Tayyaba, and Jaish-e-Muhammad — the last two based in Pakistan — also use drones armed with missiles (including guided missiles in the case of the former two groups) against targets such as Israel, US bases or tankers in and around the Middle East, and Gulf Cooperation Council countries. Between 2015 and 2021, the Houthis are reported to have fired 430 ballistic missiles and launched 851 armed drones into Saudi Arabia, killing 59 Saudi civilians, according to the Saudi-led coalition in Yemen’s spokesperson, who also said that Iran and Hezbollah supplied the drones.

Israel Vs. Iran & Proxies

Why have drones become famous as a war weapon with the Third World countries, and in some cases, with non-state actors in particular? Firstly, the non-state actors — from bona fide liberation movements to terrorist organizations — do not have the necessary funding or the operational capacity to purchase expensive fighter jets. Secondly, many drones can evade radar. They are generally small in size, can fly at low altitudes, and, as such, are not detectable by the radar. Their targets may possess highly advanced anti-aircraft and anti-missile defense, but the drones go undetected.

Drones are usually not sound-producing machines. As aerial spies, they are helpful to countries and organizations not having the human resource to do the spying with many risks to human intelligence operatives. In the aftermath of the Arab-Israeli war of 1973, Israel found it necessary to develop drones to gather real-time intelligence on its enemies. Israel has had operational drones for decades now and shows no sign of slowing its pace of development. ET reported in 2019 that roughly 50 local Israeli start-up companies were working on drone prototypes, with the country’s drone industry worth billions of dollars. And according to a study by a specialist firm, Israel was the world’s leading exporter of drones between 2005 and 2013. Iran’s proxies have used drones for military purposes

ranging from surveillance and reconnaissance to carrying bombs and guided missiles. They have also focused on improving their drone technology and expanding its uses.

Israel has not deviated from its policy of pre-empting the attacks from either Iranian or Iranian proxy drone attacks. In 2019, when Israel attacked and destroyed a drone complex, Prime Minister Netanyahu tweeted, “I reiterate: Iran has no immunity anywhere. Our forces operate in every sector against Iranian aggression. If someone rises to kill you, kill him first.” Iran has half a dozen primary proxies in the Middle East and the Gulf. They have used drones for military purposes ranging from surveillance and reconnaissance to carrying bombs and guided missiles. These proxies cannot purchase fighter jets; therefore, they want to improve drone technology.

Iranian Drones In Tajikistan

Israeli military planners consider Iranian drones a real threat. They justified the action of the July attacks by stating that its troops shot down three drones used by Hezbollah in an attempted attack on an Israeli gas exploration rig in contested maritime waters with Lebanon. The Iranian drone industry is also spreading to other countries. In May 2022, Iran opened a drone factory in Tajikistan that produces the Ababil-2 drone capable of reconnaissance and combat. In September 2022, the Iranian Navy seized two US naval drones, which the United States persuaded it to hand back after a show of force.

The incident has stoked US fears regarding the increasing armament of Iran and its proxies with aerial and naval drones, in addition to their tried-and-true use of ballistic missiles. Tajikistan is the only Central Asian Republic where a sister language of Iranian, namely Tajik, is spoken. Moreover, both Tajikistan and Iran are in unison in opposing the rise of the Taliban in Afghanistan. While Tajikistan supports the warriors of Panjshir Valley, the Iranians have demonstrated fraternal ties with the Hazara of Afghanistan. The two countries have thus made a common cause against the Taliban of Afghanistan.

Iran has also provided its proxies with the drones manufactured by Hamas, Hezbollah, and possibly the Houthis to build their drone factories, usually copies of Iranian drones, but are given new names to distance Iran from their actions. Hamas has engaged Israel with its drones over the past several years, so Hamas drones have even managed to enter Israel and return safely to Gaza.

Imagine when these proxies can manufacture their drones. What would it mean for the security of the vast region called the Middle East? Because the proxies are not answerable to anybody, they care least for human rights. Hamas and Hezbollah have been developing and operating drones targeting Israel since 2004. Their drone technologies originated in Iran, which has maintained an active military drone program since its war with Iraq. And reports also indicate that Iran has dramatically increased the military capabilities of its drones in recent years and has been exporting drones to countries in Africa and Central America. Iran’s most recent drone transaction is with Russia, reportedly deploying these in the war against Ukraine.

Escalation

Iran’s urge to develop drone technology and operate drones comes from her belief that Israel has superior air power and capability. Israel has been attacking her production centers, and thus, drone attacks escalated. In a television broadcast of May 2022, Iran showed footage of

a drone base beneath its Zagros mountain range that reportedly contained “more than 100 combat, reconnaissance and attack drones.”

Haaretz reported that In July 2022, Russian President Vladimir Putin visited Iran to meet with Turkish President Recep Tayyip Erdogan and Iranian President Ebrahim Raisi to discuss coordination strategies in Syria. Iran wanted Russia to flex its aerial military superiority over Syria by refusing to allow Israel the freedom to attack Syrian, Iranian, and Hezbollah targets on Syrian soil. Putin’s visit was also intended to ensure that Iran provides Russia with as many weaponized drones as possible since Putin and his generals have realized that they are behind in developing and manufacturing what a valuable and inexpensive field weapon is. Concluding this analysis, it must be remembered that we are now in the drone era of modern warfare. Drone technology is perhaps going to be a critical and comprehensive technology.

Drones’ effectiveness and popularity, as we find in the Middle East, have sent military strategists and arms producers a clear signal that inexpensive drones have the potential to confront armies and wreak havoc on unsuspecting targets miles away. Should good sense prevail on world leaders, drones might be put to positive use instead of making a war machine. Due to drones’ negative capability, humans might change their mentality and consider putting it to constructive and beneficial use.

<https://eurasianimes.com/iran-opens-uav-factory-in-tajikistan-its-booming-drone-industry/>



Mon, 14 Nov 2022

Ka-52 Helicopters ‘Hog Limelight’ at Chinese Airshow; UK MoD Says Russia Lost 25% of Its Fleet in Ukraine War

China’s biggest airshow, currently underway in Zhuhai, is giving the world a look at Beijing’s state-of-the-art military technology. At the same time, the exhibition offers global military firms a platform to showcase their innovations and attract new customers. Russia, which is also showcasing a variety of armaments, disclosed that its combat helicopters, particularly the Ka-52, are attracting significant interest from participants and visitors. The Russian Embassy in China stated on November 11 that the attendees had expressed a ‘keen interest in the Russian combat helicopters displayed by the government-run arms dealer Rosoboronexport.

The embassy noted that in addition to the Ka-52, other Russian combat helicopters, such as the Mi-28NE and Mi-171Sh rotorcraft, had drawn attention in the exhibition due to their impressive fighting prowess in actual combat situations. Rosoboronexport is displaying a wide variety of Russian military aircraft at its booth at Airshow China 2022, including the Su-57E fifth-generation fighter, the Su-35 multirole fighter aircraft, the Su-34E fighter-bomber, and the MiG-35 multirole fighter in single- and dual-pilot specifications. While Russia’s helicopter fleet has virtually remained unchanged since the Cold War’s end, the nation has taken significant steps to upgrade its helicopter force. A noteworthy inclusion was

the Kamov Ka-52 Alligator attack helicopter. The aircraft went into service with the Russian armed forces in 2011. It is an updated two-seat variant of the Ka-50 Black Shark attack helicopter, unveiled in 1995 and known to NATO as the “Hokum B.” The Ka-52 can operate at a top speed of 186 mph and has a ceiling of 18,000 feet. Cockpit seats that are side by side and ejection seats for the pilots are some of its other remarkable features. Its six wing-mounted hardpoints can hold more than 4,000 pounds of weapons, including rockets, missiles, or guns and ammunition. The right side of the fuselage has a 30mm autocannon. Some variants include a forward-looking infrared (FLIR) camera positioned on the nose.

The Ka-52 is available in different variants and is constantly being upgraded with new cameras, electronics, and cockpit and helmet configurations that work with night vision. On October 28, state-run media outlet Tass reported that a new sighting system would improve the combat capabilities of the Ka-52 and allow the helicopter to employ weapons efficiently at night.

Ka-52 Attack helicopters In Ukraine War

The battlefield performance of the Ka-52, which suffered heavy losses in the ongoing Ukraine War, directly contradicts Russia’s claims that the chopper can operate efficiently in modern war zones. In the early stages of the Russian aggression, Ka-52 attack helicopters stormed the Hostomel airport in an attempt to take control of the landing strip. However, the Russians eventually retreated from Hostomel Airport, and the attack inflicted an early and devastating setback to Russia’s elite VDV paratrooper corps. According to the Oryx, a team of experts tracking the destroyed weaponry in the Ukraine war based on visual evidence, Russia has so far lost 25 Ka-52 assault helicopters in its war on Ukraine. Likewise, the British Defense Ministry said that Moscow had lost a quarter of its operational fleet of Ka-52 Alligator attack helicopters in the Ukraine war. The ministry noted that Russian combat helicopters have been particularly vulnerable to Ukrainian man-portable air defense systems (MANPADS). Multiple videos of Ka-52 and other Russian helicopters being shot down have been widely shared on social media platforms. Nevertheless, the Russian government is still deploying this helicopter in Ukraine.

On November 10, the Russian MoD released a video of Russian Ka-52 “Alligator” attack helicopters “on the hunt” in Ukraine. The caption for the video read, “Crews of Ka-52 attack helicopters destroy strongholds and armored vehicles of the Armed Forces of Ukraine.” According to the MoD, army aviation pilots fired missiles toward the strongholds of the Ukrainian Armed Forces units. The command post and armored vehicles of the Ukrainian Armed Forces were damaged during this operation. The MOD highlighted that army aviation is responsible for escorting columns, destroying armored vehicles, delivering troops and military supplies, and providing air support for units engaged in special operation-related activities.

This is not the first time Russia has published such footage. In October, the Russian Ministry of Defense posted a video of a Ka-52 attack helicopter engaged in action in Ukraine. With that said, Russia is attempting to export this helicopter while also looking to give it advanced capabilities that would allow it to survive in modern combat environments.

<https://eurasianimes.com/russia-foreign-customers-interested-in-ka-52-attack-helicopter/>

The Tribune

Sun, 13 Nov 2022

Indian Startup Skyroot Aerospace's Rocket Launch put off by 3 days

Inclement weather has put off the launch of India's first privately manufactured rocket that was to take off on November 15 from Indian Space Research Organisation's (ISRO) port Sriharikota for suborbital flight. The launch has been postponed by three days, said Skyroot Aerospace, the Hyderabad-based manufacturer of the rocket. Anything lofted above the "Karman Line" (100 km above sea level) is considered a foray into space. Objects that remain below it are considered to have made suborbital flights for upper-atmospheric experiments.

"Due to the inclement weather forecast, we have been given a new launch window from November 15 to 19 for our Vikram-S rocket from Sriharikota, with the most likely date being November 18 at 11.30 am," said a spokesperson for Skyroot, a space startup. Expectations were building up for the launch on November 15 as Skyroot had tweeted on Friday, stating, "It all points to 15 Nov '22 for launch." The maiden mission of Skyroot, named "Prarambh" (the beginning), will carry three payloads, including one from a foreign customer. The mission will help Skyroot validate the technologies that will be used in the next Vikram series rocket (Vikram-1) planned for commercial launch in 2023.

"One of the key areas that we will be monitoring closely during the November 18 flight will be the performance of our solid-fuelled rocket engine," the Skyroot spokesperson said. With this mission, Skyroot is set to become the first private space company in India to launch a rocket into space, heralding a new era for the space sector which was opened to private players in 2020. The ISRO is also hand-holding "Agnikul Cosmos", another startup working to provide launch services for satellites.

<https://www.tribuneindia.com/news/nation/indian-startups-rocket-launch-put-off-by-3-days-450723>

ThePrint

Sun, 13 Nov 2022

US Space Plane Lands after 908 Days in Orbit

An unmanned US space plane has set its new endurance record after spending 2.5 years in orbit before landing on Saturday, the developer of the spacecraft, Boeing, said. "The Boeing-built X-37B Orbital Test Vehicle (OTV) set a new endurance record after spending 908 days in orbit

before landing at NASA's Kennedy Space Center in Florida at 5:22 a.m. ET, November 12, 2022. This surpasses its previous record of 780 days in-orbit," the company said in a statement. The solar-powered spacecraft resembles the retired space shuttle, but is several times smaller, about 9 meters (29 feet) long. Its five previous missions in orbit lasted from 224 to 780 days. "Autonomous orbital test vehicle spent 908 days on orbit before landing at NASA's Kennedy Space Center," the company said.

This time, the spacecraft hosted a service module, which conducted experiments for the US Naval Research Laboratory, the US Air Force Academy and others, the company said. With the successful completion of its sixth mission the reusable spaceplane has now flown over 1.3 billion miles and spent a total of 3,774 days in space where it conducts experiments for government and industry partners with the ability to return them to Earth for evaluation. For the first time, the vehicle carried a service module to augment the number of payloads it can haul. The module separated from the Orbital Test Vehicle (OTV) prior to de-orbiting ensuring a safe and successful landing. "This mission highlights the Space Force's focus on collaboration in space exploration and expanding low-cost access to space for our partners, within and outside of the Department of the Air Force (DAF)," said Gen. Chance Saltzman, Chief of Space Operations.

The sixth mission was launched atop a United Launch Alliance Atlas V rocket from Cape Canaveral Space Force Station in May 2020. "Hosted experiments included a solar energy experiment designed by the Naval Research Lab, as well as a satellite designed and built by cadets at the U.S. Air Force Academy in partnership with the Air Force Research Laboratory. The satellite, dubbed FalconSat-8, was successfully deployed in October 2021 and remains on orbit today," the company said. "This mission also hosted multiple NASA experiments including the Materials Exposure and Technology Innovation in Space (METIS-2), which evaluated the effects of space exposure on various materials to validate and improve the precision of space environment models. This was the second flight for this type of experiment," it added. Mission 6 also hosted a NASA experiment to evaluate the effects of long-duration space exposure on seeds. This experiment informs research aimed at future interplanetary missions and the establishment of permanent bases in space.

<https://theprint.in/world/us-space-plane-lands-after-908-days-in-orbit/1213729/>



Sun, 13 Nov 2022

Space as a Service: Over 100 Indian Firms Now Eyeing Space-Related Activities: ISRO Chairman

India's tryst with its cosmic neighbourhood has always had spin-offs well beyond those for the national space agency- the Indian Space Research Organisation (ISRO). This month, nine years ago, when ISRO launched its first rocket toward Mars at a fraction of cost than was possible globally, dozens of its local component suppliers rejoiced seeing their contributions propel India to new possibilities in its space programme. Now, on November 15th at 11.30 am, weather Gods permitting, India will witness its first privately developed launch vehicle takeoff and this is to be

by a Hyderabad-based space tech startup Skyroot Aerospace. Financial Express Online spoke to ISRO chairman S Somanath on the significance of the first endeavour by a private sector company in rocket services and the bigger picture of the changing landscape and how the government's plans to open up space activities directly for the private sector were panning out and what to expect.

“Today, over 100 Indian private sector companies have evinced interest in space-related activities with bulk of them working on either applications or in technology development,” says S Somanath, who has had a busy innings since he took charge in January this year. An expert in the area of system engineering of launch vehicles with notable contributions in PSLV and GSLV Mk-III, he says, of the remaining 100, three are into launch vehicles (read: Skyroot, Agnikul and Bellatrix) and about 10 into satellites. While there is lot of glamour and media coverage devoted to rocket launches, he reminds that if this is to be sustained, it is crucial that we retain the focus on what triggers the demand for launch vehicles and satellites. “After all, the end goal of every endeavour is to provide a service. This could be for medicine, for agriculture or say for navigation and therefore it is important that there is expansion in various space-related applications using satellites which can act as the driver for people to take up satellite launching.

Upbeat with the response from the private sector after the government's decision to open up this arena for direct involvement of the private sector, he says, “what we are seeing today is a great deal of enthusiasm which we hope, will in future, translate into a large volume of work.” It is the downstream processes or applications that will eventually play a critical role and these, he says, could include work in areas such as image processing, business intelligence, communication support, navigation data and providing some application services. All of these across sectors – agriculture, weather forecasting, insurance, vehicle tracking, fire detection or say analytics. It the expansion in these areas that will increase the demand for satellites and in turn leading to more business for launch vehicles. It is a virtuous chain of events which will get triggered.

“Downstream work is less intensive in terms of cost and time whereas launch vehicle is highly intensive in terms of both cost and time so we have expand the downstream work so that the demand for upstream activities increase,” he says. On its part, the government was clear with the policy which, he says, “we are only executing. It is driven with a goal to enable non-governmental entities and the private sector to come into space-related activities. This was being done earlier too by the private sector but they were facing some challenges and wherever support is required, we are trying to help address be it by way of our consultancy or facilities backed by set of policies that will help in this.”

Much of this, he says, emanates from the understanding that the space sector can really grow if there is good private sector participation. The rocket launch on the 15th is in this scheme of things one small step in that direction but hugely significant from the point that it has all been done by a private sector start up backed completely by its own resources and knowledge with off course guidance by people at ISRO and with appropriate authorisations wherever required. On some of the newer technologies like 3D printing being used by some of the private sector players, he says, 3-D printing is an emerging technology in space and now world over 3-D printed rocket engines are being designed and manufactured, albeit still on a small scale.

“Even we at ISRO are using 3-D printing though we do not talk a lot about it or go around advertising it. This helps makes engines in a much faster manner than the time taken to make regular engines.” He also refers to efforts by an Indian company in this (read: Chennai-

headquartered spacetechnology start-up AgniKul Cosmos which has successfully tested its rocket engine developed using 3-D printing). Also, in the downstream applications arena, there are several companies. For instance, in image processing there are companies like Bengaluru-based SatSure Analytics or location-based service provider MapmyIndia.

In terms of ISRO's own initiatives, projects and path-breaking initiatives like for instance the runway landing of an India-made space shuttle which takes ISRO into the realms of reusable launch vehicles arena, Somanath says, "it is not a new project and we have been trying to do this for sometime now but could not because of climate and weather conditions and we are now trying to schedule it by this year-end." As far as the newer areas and focus for ISRO, he says it is looking at "newer areas of research and development and as a national space agency looking at what the nation's demands are in terms of both civilian and other strategic services and the new technologies that we, as a nation, need to bring forth be it quantum technologies, surveillance requirements, encrypted medication systems, navigation services and other areas." Apparently, enough and more reasons to keep tracking this space.

<https://www.financialexpress.com/lifestyle/science/space-as-a-service-over-100-indian-firms-now-eyeing-space-related-activities-isro-chairman/>



Fri, 11 Nov 2022

ISRO Increases the LVM3 Rocket's Carrying Capacity by 450kg

Indian space agency has increased the carrying capacity of its LVM3 (GSLV MkIII) rocket by 450 kg with additional propellant loading of its cryogenic engine CE20, Indian Space Research Organisation (ISRO) said. According to ISRO, the CE20 cryogenic engine indigenously developed for LVM3 has been subjected to successful hot test at an uprated thrust level of 21.8 tonne for the first time on November 9. This will enhance the LVM3 payload capability up to 450 kg with additional propellant loading. Currently, the LVM3 rocket has a capacity to carry four ton to geo transfer orbit and 10,000 ton low earth orbit.

The cryogenic upper stage of the LVM3 vehicle (C25 stage) is powered by a CE-20 engine working with liquid oxygen and liquid hydrogen (LOX-LH2) propellants combination. The Indian space agency said the major modifications carried out on this test article compared to the previous engines was introduction of Thrust Control Valve (TCV) for thrust control. In addition to this 3D printed LOX and LH2 turbine exhaust casings were inducted in the engine for the first time, ISRO said. During this test the engine operated with about 20t thrust level for first 40s, then thrust level was increased to 21.8t by moving the thrust control valve.

ISRO said the engine and facility performance was normal and required parameters were achieved. The LVM3 rocket is the one that is used by ISRO to launch third party satellites on commercial terms. ISRO would launch another batch of 36 small satellites of UK based OneWeb

in January 2023. On October 23, the first batch of 36 satellites of OneWeb was put into orbit by the LVM3 rocket.

<https://www.news18.com/news/tech/isro-increases-the-lvm3-rockets-carrying-capacity-by-450kg-6358153.html>

DECCAN Chronicle

Sat, 12 Nov 2022

Aviation Enthusiast Propels Atmanirbhar Bharat, Builds Miniature Jet Engine Model

Hyderabad resident Khaled Bakhtiar built a miniature gas turbine jet engine. Construction of the engine, which necessitates complex engineering, is difficult because it must withstand high rotational speeds, temperatures and wind speeds. Its construction also requires metal alloys that are stronger than steel. "I've always been fascinated by planes. As a child, I used to build model planes out of foam and wood. This engine project, which I began three years ago, required a significant amount of time and effort. My main sources of information to build the model was YouTube, jet engine forums, and associations", Bakhtiar explained.

Miniature gas turbine jet engines run on a variety of fuels, including aircraft fuel, diesel, kerosene, compressed natural gas (CNG), among others. The majority of the components are manufactured in India. Such engines have a thrust of about 8kg and run at about 1,20,000 RPM. Bakhtiar, who took part in the Dare 2 Dream - DRDO Innovation Contest at the Mahatma Mandir Convention and Exhibition Centre, received an award from defence minister Rajnath Singh at the DefExpo 2022 in Gujarat's Gandhinagar in October. He also won a cash prize of `3 lakh.

'Dare To Dream' is an open competition that encourages individuals and start-ups to submit innovative and unimaginative ideas that can strengthen defence and aerospace technology, resulting in the realisation of Atmanirbhar Bharat. "Most miniature jet engines are made using the sand-casting method. I built the model using a high accuracy five Axis CNC machine. The best part is that it can be changed and scaled up at any time. By making changes to the CAD model, and later the CNC machine, it eliminates the need for expensive mold making. As far as I know, no one else in the country has built such an engine," Khaled said.

<https://www.deccanchronicle.com/technology/in-other-news/111122/aviation-enthusiast-propels-atmanirbhar-bharat-builds-miniature-jet-e.html>

इस साल वैश्विक सीओ2 उत्सर्जन का अनुमान सर्वोच्च स्तर के करीब: रिपोर्ट

मिस्र में संयुक्त राष्ट्र जलवायु सम्मेलन के मौके पर शुक्रवार को जारी एक नयी रिपोर्ट में कहा गया है कि पूरी दुनिया में 2022 में वातावरण में 40.6 अरब टन कार्बन डाईऑक्साइड का उत्सर्जन हो सकता है जिसके घटने का कोई संकेत नहीं दिख रहा। यह अनुमान 2019 में वातावरण में जमा हुई 40.9 अरब टन कार्बन डाईऑक्साइड (जीटीसीओ2) के करीब ही है जो अब तक का सर्वाधिक सीओ2 उत्सर्जन है। वैज्ञानिकों के एक समूह द्वारा जारी रिपोर्ट 'ग्लोबल कार्बन बजट 2022' के अनुसार यदि मौजूदा उत्सर्जन स्तर बना रहता है तो इस बात की 50 प्रतिशत आशंका है कि वैश्विक तापमान वृद्धि बढ़ जाएगी जिसे अभी 1.5 डिग्री सेल्सियस तक रखने का लक्ष्य रखा गया है।

गौरतलब है कि 2015 के पेरिस जलवायु समझौते में वैश्विक तापमान वृद्धि की सीमा 1.5 डिग्री सेल्सियस रखने का लक्ष्य तय किया गया था। देशों ने उम्मीद जताई कि जलवायु परिवर्तन के खराब परिणामों से बचने के लिए यह सीमा पर्याप्त होगी। पृथ्वी की सतह का वैश्विक तापमान पूर्व-औद्योगिक काल के औसत की तुलना में करीब 1.1 डिग्री सेल्सियस बढ़ गया है और दुनियाभर में सूखा, जंगलों में आग तथा बाढ़ की बड़ी संख्या में आने वाली आपदाओं के लिए इसी तापमान वृद्धि को एक वजह माना जाता है। रिपोर्ट के अनुसार 2021 में दुनिया का आधे से अधिक कार्बन डाईऑक्साइड उत्सर्जन तीन देशों- चीन (31 प्रतिशत), अमेरिका (14 प्रतिशत) और यूरोपीय संघ (आठ प्रतिशत) से था। वैश्विक सीओ2 उत्सर्जन में भारत की भागीदारी 7 प्रतिशत रही।

रिपोर्ट के अनुसार चीन और यूरोपीय संघ में उत्सर्जन में कमी का अनुमान लगाया गया है जो क्रमशः 0.9 प्रतिशत और 0.8 प्रतिशत की कमी हो सकती है, लेकिन अमेरिका, भारत तथा बाकी दुनिया में कार्बन उत्सर्जन में वृद्धि का अनुमान है जो क्रमशः 1.5 प्रतिशत, 6 प्रतिशत तथा 1.7 प्रतिशत रह सकता है। भारत में 2022 में उत्सर्जन छह प्रतिशत बढ़ने का अनुमान है जिसमें सर्वाधिक पांच प्रतिशत वृद्धि कोयले से होने वाले उत्सर्जन से हो सकती है। भारत में प्राकृतिक गैस से उत्सर्जन चार प्रतिशत कम हो सकता है लेकिन इससे बहुत कम असर होगा क्योंकि देश में ऊर्जा मिश्रण में गैस की हिस्सेदारी बहुत कम है। हालांकि इन आंकड़ों के साथ यह नहीं बताया गया कि समस्या के लिए जिम्मेदारी किसकी है।

वर्ल्ड रिसोर्सेस इंस्टीट्यूट में जलवायु कार्यक्रम की निदेशक उल्का केलकर ने कहा, "मौजूदा दर को देखें तो दुनिया 10 साल से भी कम समय के भीतर वैश्विक तापमान वृद्धि को 1.5 डिग्री सेल्सियस के अंदर

रखने की संभावना से भटक सकती है। इसमें आधे से अधिक नुकसान 1990 से पहले हो चुका था जब भारत जैसी अर्थव्यवस्थाओं ने विकसित होना शुरू ही किया था।” उन्होंने कहा, “अब भी, भारत का उत्सर्जन अन्य बड़ी अर्थव्यवस्थाओं की तुलना में धीमी रफ्तार से बढ़ रहा है और भारत का औसत उत्सर्जन यूरोपीय देशों या अमेरिका का छोटा हिस्सा है। भविष्य के लिहाज से भारत के लिए यह सुखद है कि उसके पास पर्याप्त अक्षय ऊर्जा होगी लेकिन इस ऊर्जा के भंडारण और पारेषण के लिहाज से अवसंरचना बनाने के लिए समय पर वित्तपोषण जरूरी है।”

<https://navbharattimes.indiatimes.com/business/business-news/global-co2-emissions-estimates-close-to-highest-level-this-year/articleshow/95452219.cms>



Sun, 12 Nov 2022

Include Military Emissions in COP27

A lot seems to be happening at the COP27 at Sharm el-Sheikh, Egypt. There are various stakeholders in this conference on Climate Change with the US, EU, the UK, and finally the 'most polluting' 'BASIC' countries (Brazil, South Africa, India and China). The agenda of “loss and damage” has been discussed for the first time since the talks began around 30 years ago. Estimates indicate that the world's militaries produce between 1 to 6 per cent of all the greenhouse gas emissions worldwide. However, most international institutions have deliberately chosen to ignore the fact that wars and conflicts have their own carbon footprints. As reporting military emissions is purely voluntary, the lack of transparency results in a 'military emissions gap'.

Almost all the developed countries jointly push the burden of 'guilt' towards the developing ones, especially the rising powers such as India. Numerous reports outline the environmental costs of wars and different military missions for various non-operational activities such as securing the sea lanes, carrying out regular sorties, military exercises, etc. Further, both activities require massive energy fuels to withstand their duration and intensity. Lastly, the emissions caused during the post-war reconstructions are another largely ignored aspect. Thus, military carbon emissions or footprints are entirely outside the scope of discussions at an international level.

The Gulf, Iraq and Afghanistan wars have been the most cited case studies of environmental damage on climate. For instance, a 1992 study in the journal Science reported that the oil field fires of the Second Gulf War contributed to two per cent of the global emissions that year. In its 2008 report, an international organisation, Oil Change International, published that the Iraq War was the cause of 141 million tonnes of carbon dioxide equivalent emissions (CO₂e). Another report by Brown University assessed that since the invasion of Afghanistan in 2001, the US military had emitted 1,212 million metric tons of greenhouse gases. In 2017 alone, CO₂ emissions added up to 59 million tons. It also estimated that from 2001 to 2017 are estimated to be about 766 million metric tons of CO₂e.

Interestingly, not only wars but also non-military activities have a rogue role to play in environmental damage. For example, the air force conducts sorties that also have a profound

environmental impact. The report mentioned above also highlighted that, on average, a B-2 bomber of the US Air Force consumes 4.28 gallons of fuel per mile and produces 251.4 Metric tons of CO₂e. In its 2021 report, Green Peace said that most of the EU military missions have interconnectivity with protecting oil and gas imports. Thus, there are potentially dangerous connections between the supply chain management of fossil fuels, military missions, and war that need to end. Well, that's how the world pays for great power geopolitics, and the developing countries are expected to remain silent.

The statistics above are just one aspect of the problem. The other side relates to the continuous arms production and the military supply chain maintained by the major weapons suppliers. The countries of the developed world rarely have norms of transparency about the percentage of weapons supplies contributing to their GDP and job creation. Stockholm International Peace Research Institute (SIPRI) in 2019 estimated that sales by the largest 25 arms-producing companies increased to \$361 billion, an increase of 8.5 per cent compared to 2018.

SIPRI, in its Report, 'Environment of Peace: Security in a New Era of Risk' (2022), took the Russian-Ukrainian conflict and the disruptions in the wheat supplies in the picture and expressed its fear that "energy poverty" would henceforth a standard feature for developing countries as the food prices have reached "highest level in at least 30 years". Regarding decreased land fertility, about one-third of the world's soil is currently degraded, which the Report predicted could rise to 90 per cent by 2050. Additionally, the demand for food is set to increase by a sharp 60 per cent. Even seafood would not be spared, as oceanic warming, acidification, and de-oxygenation would drastically lead to fluctuations in the supply chain. The same thoughts have been echoed in the 2022 Security Report of the Munich Security Conference.

Thus, the above-mentioned problems can give rise to new forced migrations, demographic changes and violent conflicts over the resources, obviously involving the geopolitical interests of the military suppliers. Small Island Developing States (SIDs) and the Least Developed Countries (LDCs) are at immediate risk, which needs to be addressed at a multilateral level. Each possible conflict would be met with resistance requiring more weapons, wars and human rights violations to settle it out. There is ample evidence to substantiate this argument. The SIPRI report has also highlighted that in 2021, global military spending surpassed \$2.1 trillion, which has been the highest since the end of the cold war. Further, the Institute for Economics and Peace study, 'Why United Nations Peace Operations Cannot Ignore Climate Change' (2021), highlighted that 10 out of the 21 ongoing UN peace operations were located in countries ranked as most exposed to climate change. Thus, there is an urgent need to sensitise the security agencies of developed countries to climate change.

Finally, the developed countries might argue that IPCC (2006) has supported inventory standards focusing on fuel for waterborne navigation and aviation and other machines not used in military operations. But this needs to be expanded too, because of established military carbon footprints. Narrow interpretations of military carbon emissions should be ended for the betterment of future generations. Developing countries, particularly India, should initiate discussions and debates on the vicious circle of arms production, supplies, wars and climate change, for there can be no better platform than COP27. It is here that India can take a possible lead as the world looks upon India, and PM Modi has reiterated on many platforms that violence and wars should come to a halt. India stands committed to international multilateral cooperation, and concepts on climate change and climate finance should be revisited in light of the above discussion.

The militaries worldwide, including that of China, should firmly adhere to PM Modi's mantra of LiFE which invariably aims to substantially impact the planet's health and well-being. The developed countries should not let down the coming generations. The new collective quantified goal on climate finance (NCQG) and climate financing should include the calculations of the military carbon emissions. It is the inclusion of these military carbon emissions into climatic change consequences that might change the inevitable catastrophe. The developed and the rich countries should contribute the most in technology, finance and capacity-building initiatives as they have contributed more to the "loss and damage" to the environment. Lastly, a leading futurist Jamais Cascio had said "preventing global warming from becoming a planetary catastrophe may take something even more drastic than renewable energy, superefficient urban design and global carbon taxes".

<https://www.dailypioneer.com/2022/columnists/include-military-emissions-in-cop27.html>

