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2023

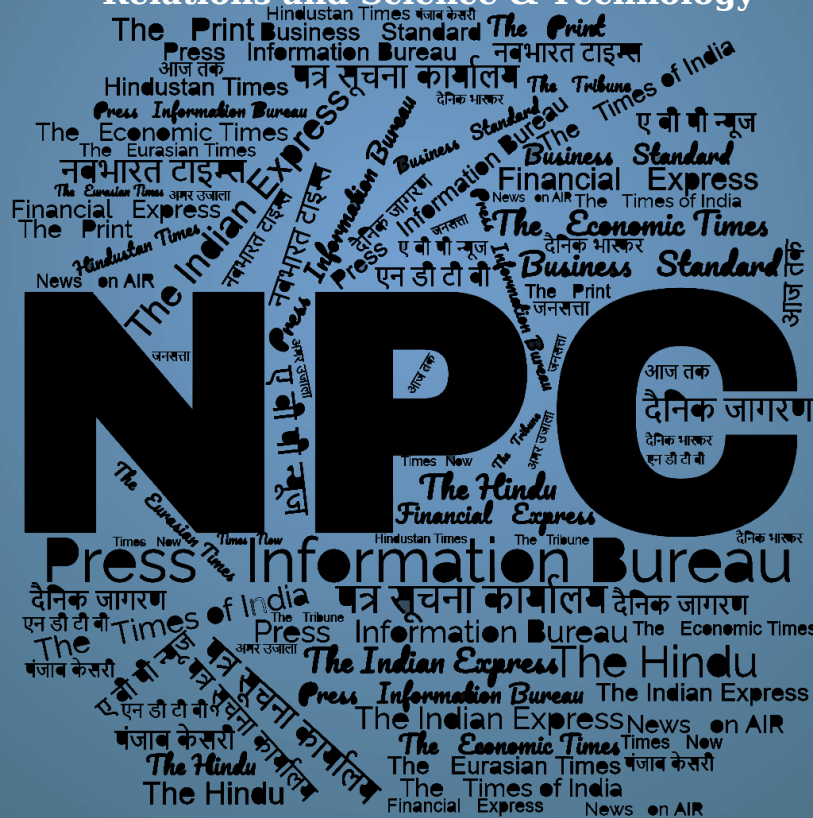
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समाचार पत्रों से चयित अंश Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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THE TIMES OF INDIA

Wed, 28 Jun 2023

DRDO: Tapas UAV Ready for User Evaluation Trials

In a key milestone, the indigenously developed Tapas-201 MALE (medium-altitude long-Endurance) unmanned aerial vehicle (UAV) is now ready for user evaluation trials, the Defence Research and Development Organisation (DRDO) said on Wednesday.

The UAV has been designed and developed by Bengaluru-based Aeronautical Development Establishment (ADE).

Stating that Tapas was demonstrated to the tri services team for the first time at Aeronautical Test Range in Chitradurga, some 200 km from Bengaluru, on June 27, DRDO said on Wednesday: “The 200th flight of Tapas UAV was demonstrated to the tri services team for the first time at ATR Chitradurga. The team appreciated indigenous efforts for development of the UAV. Tapas is now ready for user evaluation trials.”

Tapas-201 is a multi-mission UAV that can perform intelligence, surveillance and reconnaissance roles for the three armed forces. It has an endurance of 24-30 hours.

As reported by TOI earlier, the DRDO and the Indian Navy, on June 16, had successfully demonstrated transferring of command and control capabilities of the UAV from a distant ground station to onboard INS Subhadra — 148 km from Karwar Naval Base.

According to DRDO, Tapas has an operating altitude of 30,000 ft, endurance of more than 24 hours with earth observation and SAR (synthetic aperture radar) payloads and a range of more than 250 km. It is enabled to carry a variety of payloads up to a maximum of 350 kgs and its mission requirements are to provide continuous wide area coverage and yet be able to identify small targets. “It is comparable in the same class as Israeli HERON UAV,” DRDO had said earlier.

Tapas can carry different combinations of payloads like medium-range electro optic, long-range electro optic, SAR, electronic intelligence, communication intelligence and situational awareness payloads and operate both during day and night.

This vehicle was earlier called the Rustom and DRDO is hopeful of customers outside of the tri services to make use of the UAV. State police forces, paramilitary forces and the Coast Guard are pegged as prospective customers.

<https://timesofindia.indiatimes.com/india/drdo-tapas-uav-ready-for-user-evaluation-trials/articleshow/101333105.cms>

बालटाल व चंदनबाड़ी में DRDO के 100-100 बिस्तर की क्षमता वाले अस्थायी अस्पतालों का उद्घाटन

श्री अमरेश्वर धाम के दोनों प्रमुख आधार शीविरों बालटाल और चंदनबाड़ी में स्थायी अस्पताल बनाए जाएंगे। यह अस्पताल न सिर्फ यात्रा के दौरान टिकाऊ स्वास्थ्य सेवा उपलब्ध कराने में मददगार साबित होंगे बल्कि स्थानीय लोगों के लिए चिकित्सा एवं स्वास्थ्य सेवाओं के सालभर सुलभ बनाएंगे।

यह घोषणा उपराज्यपाल मनोज सिन्हा ने बुधवार को बालटाल व चंदनबाड़ी में डीआरडीओ द्वारा 100-100 बिस्तर की क्षमता वाले बनाए गए अस्थायी अस्पतालों का उद्घाटन करते हुए की। यह अस्पताल श्री अमरेश्वर धाम की तीर्थ यात्रा के दौरान देश विदेश से आने वाले श्रद्धालुओं और यात्रियों के लिए विभिन्न प्रकार की सेवा प्रदान करने वालों को स्वास्थ्य एवं चिकित्सा सुविधा प्रदान करेंगे।

चिकित्सा न मिलने के कारण होते हैं मृत्यु के शिकार

समुद्रतल से करीब 3888 मीटर की ऊंचाई पर स्थित श्री अमरेश्वर धाम की तीर्थ यात्रा के लिए पहला जत्था पहली जुलाई 2023 को बालटाल और चंदनबाड़ी के रास्ते खाना होगा। यह तीर्थयात्रा अत्यंत कठिन है और कई श्रद्धालुओं व सेवा प्रदाताओं को यात्रा के दौरान विभिन्न प्रकार की स्वास्थ्य संबंधी दिक्कतें हो जाती हैं। समय पर चिकित्सा न मिलने के कारण उनमें से कई मृत्यु का शिकार हो जाते हैं।

यात्रा अवधि के दौरान श्रद्धालुओं को यथासंभव बेहतर चिकित्सा एवं स्वास्थ्य सेवाएं उपलब्ध कराने के लिए प्रदेश सरकार ने श्री अमरनाथ श्राइन बोर्ड के सारा मिलकर पूरे यात्रा मार्ग पर स्वास्थ्य शिविर भी स्थापित किए हैं। इसके अलावा बालटाल और चंदनबाड़ी में सभी जीवन रक्षक चिकित्सा उपकरणों व दवाओं से लैस डीआरडीओ ने दो अस्पताल बनाए हैं।

उपराज्यपाल मनोज सिन्हा ने डीआरडीओ व उसके इंजीनियर व अन्य कर्मियों को 15 दिन के रिकार्ड समय में बालटाल व चंदनबाड़ी में अस्पताल तैयार करने के लिए बधाई दी। उन्होंने कहा कि यह दो अस्पताल श्री अमरनाथ की यात्रा पर आने वाले श्रद्धालुओं व यात्रा प्रबंधन से जुड़े लोगों को चौबीस घंटे चिकित्सा एवं अन्य स्वास्थ्य सेवाएं प्रदान करने में सहायक सिद्ध होंगे।

उन्होंने इन दोनों अस्पतालों के लिए सभी आवश्यक संसाधन और सुविधाएं प्रदान करने के लिए प्रधानमंत्री नरेन्द्र मोदी और स्वास्थ्य मंत्रालय का आभार जताते हुए कहा कि इन दोनों अस्पतालों में अत्याधुनिक चिकित्सा उपकरण हैं, डॉक्टरों व नर्सिंग स्टाफ के ठहरने की अलग अलग सुविधा है। आईसीयू वार्ड, ऑक्सीजन की सुविधा वाले वार्ड और ट्राएज एरिया भी है।

स्वच्छता का पूरा ध्यान रखा जाए- मनोज सिन्हा

उपराज्यपाल ने कहा कि प्रदेश सरकार ने शुरु से ही श्रद्धालुओं व स्थानीय लोगों के लिए बेहतर चिकित्सा सुविधाओं को सुनिश्चित बनाने के लिए प्रयासरत रही है। उन्होंने संबंधित अधिकारियों को दोनों आधार शीविरों और पूरे यात्रा मार्ग पर स्वास्थ्य संबंधी निर्धारित एसओपी के अनुपालन को सुनिश्चित बनाने का निर्देश देते हुए कहा कि अस्पतालों के भीतर व आस पास के क्षेत्र में स्वच्छता का पूरा ध्यान रखा जाए।

उन्होंने डॉक्टरों व नर्सिंग स्टाफ को श्रद्धालुओं व अन्य लोगों के साथ पूरी करुणा और प्रेम के साथ पेश आने पर जोर देते हुए कहा कि तीर्थयात्रियों के लिए तीर्थ यात्रा को सुगम और आरामदायक बनाना हम सभी की सामूहिक जिम्मेदारी लें।

उन्होंने इस अवसर पर स्वास्थ्य एवं चिकित्सा शिक्षा विभाग के अधिकारियों को बालटाल व चंदनबाड़ी में दो स्थायी अस्पतालों के निर्माण के लिए जल्द प्रस्ताव तैयार करने का निर्देश देते हुए कि आधार शीविरो पर टिकाऊ और मजबूत स्वास्थ्य ढांचा होना जरूरी है।

उन्होंने कहा कि यह अस्पताल यात्रा अवधि में जहां श्रद्धालुओं को चिकित्सा सुविधा प्रदान करने में सहायक होंगे वहीं वर्ष के शेष हिस्से में स्थानीय लोगों को चिकित्सा व स्वास्थ्य सेवा उपलब्ध कराएंगे। इसके अलावा मेक शिफ्ट अस्पताल तैयार करने व अन्य सुविधाओं को जुटानेपर हर वर्ष होने वाले धनराशि को भी बचाया जा सकेगा।

<https://www.jagran.com/jammu-and-kashmir/jammu-inauguration-of-drdo-temporary-hospitals-with-capacity-of-100-beds-each-in-baltal-and-chandanbari-23455266.html>

Defence News

Defence Strategic: National/International



Press Information Bureau
Government of India

Ministry of Defence

Wed, 28 Jun 2023

IAF Conducts Capstone Seminar for the Second ‘Warfare & Aerospace Strategy Program’

The Indian Air Force today conducted a Capstone Seminar at the Air Force Auditorium, New Delhi, marking the culmination of the No. 2 Warfare & Aerospace Strategy Program (WASP). The seminar was conducted under the aegis of the College of Air Warfare and Centre for Air Power Studies.

WASP is a strategic education programme of 15 weeks duration which was started in 2022 and is structured to provide the participants with a deep understanding of strategy. The broader aim is to nurture critical thinkers who can blend cross-domain knowledge to generate policy-driving ideas at the strategic level. For the No 2 WASP, eight officers underwent intensive training in the fields of Strategy, Military History, Civil-Military relations, Higher Defence Organisation, Aerospace Power, Information Warfare, Technology and Hybrid Warfare.

Air Chief Marshal VR Chaudhari, Chief of the Air Staff (CAS), delivered the keynote address of the Seminar which was attended by senior officers from all three services, Defence Attaches, senior bureaucrats, aerospace power scholars, academia and established defence correspondents. He stated that the endeavour of programmes such as the WASP is to prepare future military leaders in the cerebral domain by promoting the habit of reading. The knowledge thus gained must lead them to the question of ‘How to think’, rather than ‘What to think’. It is this self-learning that will equip tomorrow’s leaders to think creatively to continuously evolve strategy as the strategic environment changes around them.

The CAS stated that human capital will always be supreme and should therefore be nurtured. Emerging technologies would however remain symbiotic with human intellect, thereby necessitating the need to absorb and adapt with it continuously. He added that he was glad to note the performance of the officers who had undergone the WASP last year. He said that he was looking forward to the current graduates and those following them, filling key posts in the Indian Air Force.

Finally, the CAS complimented the mentors who had guided the student officers through the programme and expressed a desire that they continue with the same zeal in the forthcoming editions of the WASP.

In the first session of the Seminar, the participants presented their papers on the topic of 'India and the Emerging New World Order: Future role of IAF towards India's Regional and Global Aspirations'. This was followed by the second session, which saw them discussing 'Advantages of Application of Airpower towards an integrated Indian Continental & Maritime Approach'.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1935955>

ThePrint

Wed, 28 Jun 2023

Army, Navy, IAF Finally '99%' in Agreement over Structure of Proposed Theatre Commands

After months of dithering, multiple plans and objections, the Army, Navy and Indian Air Force (IAF) are "99 per cent" on board the broad contours of the theatre commands being given shape by Chief of Defence Staff (CDS) Gen Anil Chauhan, it is learnt.

"One per cent is still out there but this is a work in progress. It will take some more time," said a top source in the defence and security establishment.

Asked what apprehensions still remain, the source told ThePrint the issue was more administrative than operational.

Theatre commands are being set up with the hope that they will lead to better planning and a joint military response to any future conflict. According to the plan currently under formulation — one different from what was envisaged earlier — there will be three theatre commands based on geographical boundaries.

Of the three, two will be land-based and one will be maritime, sources said.

It is likely that the three theatre commands will be headed by four-star officers, like the service chiefs and the CDS.

Other joint commands, like those for logistics, training, cyber and space, missiles and intelligence, will be headed by three-star officers.

All the theatre commanders will report to the CDS with the service chiefs being responsible for raise and sustenance issues, sources said.

While it was claimed in February 2020 that the theatre commands will be ready in three years, ThePrint had reported that strong differences among the armed forces over the basic structure of theatre commands would be a delaying factor.

The CDS, as secretary, Department of Military Affairs, has been tasked with the “facilitation of restructuring of military commands for optimal utilisation of resources by bringing about jointness in operations including through establishment of joint/theatre commands”.

This envisages a unified military under specific commanders with area of responsibility, similar to Americans and the Chinese.

Former CDS late Gen Bipin Rawat was keen to roll out two theatres first — the Maritime Theatre Command and the Air Defence Command.

While the nearly 17-lakh strong Indian armed forces have 19 individual commands as of date, only two of them are tri-service commands — the Andaman and Nicobar Command (ANC) and the Strategic Forces Command, the latter looking after nuclear assets.

The original idea was to cut down these different service commands to five theatres and functional commands — the Northern Land Theatre (Jammu and Kashmir, Ladakh and Central sector), the Western Land Theatre (Pakistan centric), the Eastern Land Theatre, the Maritime Theatre Command and the Air Defence Command.

It is expected that the final contours of the theatre command structure will be formalised over the next few months, and will then go through a formal approval process.

<https://theprint.in/defence/army-navy-iaf-finally-99-in-agreement-over-structure-of-proposed-theatre-commands/1646390/>



Wed, 28 Jun 2023

IAF to Hold Multilateral 'Exercise Tarang Shakti' with World's Top Air Powers this Year

In a major step towards proving its ability to hold large-scale aerial operations, the Indian Air Force is going to hold a major multilateral exercise codenamed 'Exercise Tarang Shakti' in October-November this year in which 10-12 top air powers of the world would participate.

"The Indian Air Force would hold a multinational aerial exercise codenamed Exercise Tarang Shakti in which 10-12 top air forces of the world. The participation would be through direct participation or as an observer," government officials told ANI.

The mega exercise is planned to be held in the October-November time frame this year in the desert sector and would be the first such major event for the force.

The exercise will provide a unique learning experience for Indian pilots. Over the years, India has actively participated in similar aerial exercises, the officials said.

India has participated in many such exercises including the French Orion exercise held at the Mon De Marsan air base in France.

Shivangi Singh, the IAF's first woman pilot to fly the Rafale fighter aircraft, had also participated in the exercise. France is a likely participant in the upcoming Indian War games.

The Indian Air Force is expected to participate in the multinational aerial exercise with its Rafale and Su-30 fighter planes. The IAF had sent its Rafale aircraft for the exercise in France and Su-30s for Exercise INIOCHOS-23, a multi-national air exercise hosted by the Greece Air Force.

The Rafale is the most potent aircraft in the Indian Air Force stable while the Su-30s are the mainstay of the force, making up for almost 50 per cent of the combat aircraft fleet.

The Rafales are also going to France for taking part in their national day parade next month.

<https://www.aninews.in/news/world/asia/iaf-to-hold-multilateral-exercise-tarang-shakti-with-worlds-top-air-powers-this-year20230628211808/>



Thu, 29 Jun 2023

10 Facts about India's MQ9B Predator Drones Deal

India is set to negotiate with the United States on the acquisition of MQ9B HALE drones, with New Delhi seeking a competitive deal in the procurement through a foreign military sale process, sources in the defence ministry said.

As India goes ahead to acquire the Predator drones, here are 10 things to know about this deal.

1. According to sources, the ministry has only accorded the Acceptance of Necessity to acquire 31 MQ 9B HALE Drones, and no serious negotiations have begun now.
2. As of now, only the United States has these drones. China has been trying to acquire it but has not been able to do so. Once procured, these drones will give India new capabilities. The country's adversaries are worried and may try to scuttle the acquisition process, sources added.
3. The next step in the process includes Letter of Request to the Biden administration and getting the Letter of Offer and Acceptance from US govt. This letter will be granted by the US government after approval from the US Congress.
4. Following this, the Contract Negotiation Committee (CNS) will finalise the terms of agreement before it goes for approval by the Cabinet Committee for Security (CCS). Only then the actual price and terms of the contract will be known, sources added.
5. US defence firm General Atomic has offered India 31 MQ9B drones at a price of \$ 3.072 billion, which is subject to negotiations. Some of them will be bought off the shelf and some made in India.
6. According to sources, the requirement of 31 drones for the three Services is based on a scientific study of India's needs and requirements while taking into consideration the geographical and maritime neighbourhood and recommended by Integrated Defence Services.
7. The procurement will involve some transfer of technology (ToT). New Delhi is looking at a minimum of 15-20 per cent ToT. The government will negotiate more and will get some critical technologies.
8. The sources added that the acquisition is not against 'Aatmanirbhar Bharat' as the Defence Research Development Organisation (DRDO) is developing Tapas, a drone in MALE category. The MQ9B is a high altitude drone and has long endurance.
9. The Indian Navy is already working with ADE and DRDO on TAPAS and the technology also has applications in civilian use – in developing unmanned flights.
10. This agreement will help establish India as a hub for manufacturing drones, sources added.

<https://www.hindustantimes.com/india-news/india-mq9b-predator-drone-deal-defence-ministry-united-states-china-101688039452428.html>

Drones Deal: Indian MQ9Bs to have 'Weapons and Anti-Submarine Capability'

The Indian deal for MQ9B drones includes a weapons package and anti-submarine capabilities and the offer is considerably cheaper than the one made to the UAE by the US in 2020. It is also learnt that most of the drones being procured under the Foreign Military Sales (FMS) route with the US will be assembled in India and critical parts for engines, radar processor, landing gear and avionics will be sourced from domestic companies.

While the US has not sold armed versions of the MQ9B to other nations, the only comparable offer to the Indian deal is with the UAE, which has been negotiating a contract for 18 armed versions of the MQ9B since 2020. As per available information, the indicated price to the UAE for 18 drones was \$2.9 billion, significantly higher than the offer to India for \$3 billion to procure 31 drones. Out of these, 15 are for maritime roles while the rest are for the Air Force and Army.

The price quoted by Congress that has raised questions over the deal is for a different version of the drone. At its press conference, Congress had alleged that the US Air Force had paid \$56.5 million for each drone. However, these are not the MQ9A version - an older drone of 2001 vintage that was procured in 2011. As a bulk of the cost of a drone deal - 60-70%-- is for weapons, sensors and ground control equipment, a price comparison can only be made with the UAE offer, insiders said.

Sources said while the Navy was initially moving the case for the acquisition of drones, in 2022, the government tasked the Integrated Defence Staff, headed by the Chief of Defence Staff, to project a joint tri-services requirement. After a study undertaken by DRDO's Institute of System Studies and Analysis, a total projection of 31 drones was reached to meet immediate operational requirements. The process to sign the deal could take up to a year, as it is being done under the FMS route. India will send a formal letter of request to the US in July, following which a techno-commercial offer will be received and negotiated. After deep deliberations on pricing and technology will the proposal be sent for clearance to CCS.

It may be recalled that the FMS route has been used to procure major weapon systems from the US in the past, including P8I maritime aircraft, C17 transport aircraft and helicopters.

<https://economictimes.indiatimes.com/news/defence/drones-deal-indian-mq9bs-to-have-weapons-and-anti-submarine-capability/articleshow/101374361.cms>



Government Sources Clarify after Congress Questions MQ-9B Drone Deal with US

In response to questions raised by Congress about the MQ9B drone deal, government sources outlined the specifics of technology transfer, highlighting a comparative analysis of similar deals

executed by the United States, and emphasized the positive impact on domestic manufacturing capabilities.

Transfer of Technology

The technology includes multi-remotely piloted aircraft, simultaneous flights and ground handling, safe integration of unmanned aircraft in civilian airspace, centralized mission intelligence station design, and multi-sensor data fusion techniques for actionable intelligence, sensors and weapons integration on unmanned platforms.

The transfer of technology will help Defense Research and Development Organization (DRDO) and provide the platform for indigenous design and development of Remotely Piloted Aircraft Systems (RPAS).

Indigenous manufacturing

To boost indigenous manufacturing, India will assemble 21 out of the 31 High Altitude Long Endurance Remotely Piloted Aircraft Systems within the country.

Major components and subsystems, such as engines, radar processor units, landing gear, titanium forgings, avionics, sensors, and software, will be manufactured and sourced from Indian companies in partnership with General Atomics, the supplier.

Maintenance and repair

‘A depot-level Maintenance Repair and Overhaul (MRO) facility will be established in India. This facility will be responsible for repairing and maintaining all components of the MQ-9B drones, ensuring self-sufficiency and reducing turnaround time.

Global sustainment hub

India will also set up the Sea Guardian Global Sustainment Hub (SGSS) to support over 60 Sea Guardian drones throughout their operational life. This hub, located in India, will provide maintenance and support services for Sea Guardian drones operating in the Asia-Pacific region, bringing in additional revenue for the country.

Response to cost and pricing

Sources say pricing for the India configuration of MQ-9B is significantly lower compared to other countries. While the average cost for MQ-9B in other nations is approximately Rs 1275 crore per aircraft, India's estimated cost is around Rs 812 crore for one drone. The cost includes the aircraft, sensor systems, weapons, Ground Control Stations, Satellite and C-Band Ground Data terminals, Ground Handling Equipment, spares, and contractors' logistics support. The finalized costs will be determined during the Letter of Offer and Acceptance (LOA) development and approval process.

Sources say the pricing quoted by Congress for the US Air Force MQ9A drones, at 56.5 MUSD, is outdated as it pertains to an older version from 2011. The US Air Force is currently upgrading these assets to MQ-9B level capability.

Explaining the benefits, sources said the deal holds several advantages for India. It will foster the development of a state-of-the-art Unmanned Aerial System (UAS) ecosystem, generating employment opportunities and revenue.

With this procurement deal, India is taking a significant step forward in strengthening its defense capabilities, enhancing its technological know-how.

<https://www.indiatoday.in/india/story/government-sources-clarify-after-congress-questions-mq-9b-drone-deal-with-us-2399784-2023-06-29>

Fri, 30 Jun 2023

Average Cost Offered by US for MQ-9B Drones 27 per cent Less for India, Negotiations yet to Begin: Sources

A senior government functionary claimed on Thursday that the average estimated cost of MQ-9B long endurance drones for India would be 27 per cent lower than the price incurred by other countries which have bought it from the US, asserting that it will most likely go further down during negotiations unless India seeks additional features.

He also categorically underlined that so far negotiations on the pricing issue have not begun as the latest official development towards the proposed acquisition of 31 of these drones has been the “acceptance of necessity” accorded by the Defence Acquisition Council, which happened on June 15. The pricing issue is not part of this, he added. The indicative cost of the drones made by the US government is USD 3,072 million.

This works out to be USD 99 million for each drone, he said, adding that it cost the UAE, one of the few countries to have it, USD 161 million a piece. The MQ-9B India is looking to acquire is comparable with the UAE’s but with a better configuration, he said.

Sixteen of these drones purchased by the US cost it USD 69 each but it was only a “green aircraft” without sensors, weapons and certification. Features like sensors, weapons and payloads make up for 60-70 per cent of the total cost, he said, adding that even the US acquired five of them at USD 119 million each.

Due to the size of India’s deal and the fact that the manufacturer might have recovered a big part of its initial investment from earlier deals, the price for the country is working out to be less than others, he said, speaking on the condition of anonymity. He, however, added that India may need to integrate some of its own radars and missiles with these drones, which may prompt a price revision.

The remarks came a day after the Congress demanded complete transparency in the multi-crore India-US drone deal, while alleging that the 31 MQ-9B predator drones were being procured at a higher price. Sources said such a statement might have been made out of “ignorance”.

Reacting to reports that the Air Force had raised some questions about the drones, they said it is expected that all these wings of defence forces will make their points during consultation. However, the Air Force, the Army and the Navy have supported their acquisitions at all levels, they added. India is looking to 15-20 per cent technological know-how as part of transfer of technology, and major components and subsystems, including engines, radar processor units, avionics, sensors and software, will be manufactured and sourced from here, they said. Once a final nod is given to the deal from both governments, India is looking to buy 11 of these drones off-the-shelf to meet its immediate needs and the rest will be assembled in the country, they said.

There may be attempts to “scuttle” the deal by floating false news and propaganda as the advanced weapons are bound to cause fear and consternation among India’s rivals, they claimed. These advanced drones will help India to surveil its enemies effectively. “It will hugely reduce the prospect of our enemies surprising us,” one of them asserted. These drones will help India’s defence forces monitor the country’s land and maritime boundaries with greater capabilities, they said.

With the deal set to be between the Indian and the US governments, it is bound to be transparent and fair, they said. India and the US firmed up the drone deal during Prime Minister Narendra Modi's high-profile visit to Washington, in what is being seen as part of his efforts to make India a hub for drone manufacturing.

The high-altitude long-endurance (HALE) drones are capable of remaining airborne for over 35 hours and can carry four Hellfire missiles and around 450 kg of bombs. In 2020, the Indian Navy had taken on lease two MQ-9B Sea Guardian drones from General Atomics for a period of one year for surveillance in the Indian Ocean. The lease period has been extended subsequently.

<https://www.financialexpress.com/business/defence/average-cost-offered-by-us-for-mq-9b-drones-27-per-cent-less-for-india-negotiations-yet-to-begin-sources/3148758/>



Wed, 28 Jun 2023

Predator Drones will Set the Ground for Manufacturing HALE Drones in India: Navy Chief

While questions have been raised over indigenisation and 'Make-in-India' for the proposed drones, Navy Chief Admiral R Hari Kumar highlighted that 21 aircraft are going to be assembled here which will provide opportunities for smaller companies, MSMEs and startups.

Further, on the capabilities of the proposed Predator drone deal with the US, Admiral R Hari Kumar on Wednesday said the drone has got long endurance and can stay in the air for 33 hours.

In an interview with ANI on the capabilities of these drones, the Navy Chief said that the drones can help in keeping a large area under surveillance beyond 2500 nautical miles.

Navy Chief explained that the Indian armed forces has operated these drones on lease for over 12,000 hours to keep an eye on adversaries.

India leased two predator drones from US based General Atomics for intelligence, surveillance and reconnaissance (ISR) in maritime areas.

"Indian Navy has been operating these drones. They fall in the category of the HALE (high-altitude and long endurance drones). So, we realised there is a need for having these drones for better surveillance and increased maritime domain awareness," Kumar said.

He further added, "So we had taken two of these on lease from November 2020 onwards. And since then we have been operating it."

The navy chief outlined the vast operational maritime geography of the Indian Ocean Region (IOR).

He said to guard the Indian Ocean region, one has to go 2500 to 3000 miles for various requirements like knowing who is operating in these waters, why are they there and what are they doing there.

"There is a possibility of using these drones for detecting, tracking and targeting also," he added.

The navy chief explained that the drone helps to know who all are operating in the area of interest of the Indian Navy.

He said, “The Predator unmanned system, has got long endurance, almost 33 hours. It can stay in the air and it can reach the far reaches of the ocean and areas that you want to keep under constant surveillance, which is not really possible by a satellite”.

While questions have been raised over indigenisation and ‘Make-in-India’ for the proposed drones, the Admiral said that right now, “We don’t have the technology for these HALE UAVs. They are in the high-end category because of their endurance and altitude, they can fly above 40,000ft and so on.”

The navy chief also highlighted the transfer of technologies which will benefit Indian defence entities. The key areas include radar processing, sensor fusion, then some of the composites that are part of the aircraft, then titanium alloy castings for the undercarriage and so many others, and payloads integration of the weapons.

As per the contract, 21 aircraft are going to be assembled here which will provide opportunities for smaller companies, MSMEs and startups.

As per the announcement, GE also plans to set up an MRO (Maintenance repair and overhaul) which includes the engine components for repairs and overhaul.

“It will generate an entire ecosystem and facilitate the transformation of India into a global, say, unmanned aerial system hub for innovation like it was envisioned by our honourable Prime Minister,” he stated.

In fact, India’s Defence Research and Development Organisation (DRDO) is also developing TAPAS 201 Medium Altitude Long Endurance (MALE) UAV which has recently achieved a flight test lasting 18 hours at Aeronautical Test Range. The technology transfer through the Predator might add impetus to the indigenous program.

The Predator drone is equipped with a laser, synthetic aperture radar, COMINT (Communication Intelligence) and ELINT (Electronic Intelligence).

<https://www.financialexpress.com/business/defence-predator-drones-will-set-the-ground-for-manufacturing-hale-drones-in-india-navy-chief-3146606/>



Thu, 29 Jun 2023

IAF Elated over F-414 Engine Deal, Poses Questions on Chinese Jet Engines

The armed forces and national security planners are elated with GE-HAL F-414 engine manufacturing deal as the proven high-performance engine is said to be technologically much superior to the Chinese indigenously produced jet engine WS-10, which itself is a derivative of the Russian AL-31 series engine that powers the SU-30 MKI fighters.

After talking to national security planners, former Indian Air Force chiefs and fighter pilots, the Hindustan Times has learnt that though the Chinese fighters including the J-20 are flying on derivatives of Shenyang WS-10 engines, intelligence reports and assessments indicate that the PLA Air Force is struggling with serviceability, downtime, and performance of the engine. China is now testing WS-15 engine on its J 20 aircraft, which will give the fighter a “super cruise (flying at supersonic speeds without use of afterburner and hence lowering the heat signature of the platform)” capability which is a must for a stealth fifth generation fighter.

“It is quite evident that the Chinese reverse-engineered the Russian AL-31 engine to produce the WS-10 series of jet engines. The Indian assessment based on performance of Chinese aircraft in Pakistan inventory and PLAAF aircraft shows that the engine is facing issues albeit it is flying and performing. The Chinese are prone to overstating the performance of their fighters through the state owned media,” said a former IAF chief. The PLAAF brought in the J-20 fighters into the western theatre command at the height of the stand-off in East Ladakh to counter the newly acquired Indian Rafales but the so-called fifth generation fighter did little flying and was only used to deter the IAF from any adventure.

While India too has been unsuccessfully trying to develop its own indigenous engine since 1996, the national security planners are pleased with GE's offer to produce F-414 engines in India under transfer of technology to power Tejas Mark II and perhaps upgrade it to manufacturing a higher thrust engine at a later stage. With the Tejas Mark II demonstrator with GE-414 engine ready to take to the skies next year, the IAF, DRDO and the HAL are on the same page on the high-performance capability of the American GE-414 engine.

“While there is no doubt that the Chinese capability on jet engine manufacturing is growing by the day, no neutral air force would buy a WS-10 engine as its first choice. Even though the Chinese system is opaque, the jet aircraft of Chinese origin with the Pakistan Air Force are facing downtime and serviceability issues. Although the proof of the pudding lies in eating, the Chinese engine would be 60 percent of what the PLAAF is projecting as they still rely on Russian fighters to show their muscle against Taiwan,” said a top fighter pilot.

With India planning to manufacture some 500 GE-414 engines to power six squadrons of Mark II fighters, the IAF should be in fighting fit condition towards the end of the decade as aircraft of Russian origin like MiG-29 fighters are phased out and the indigenous Tejas series of fighters inducted.

While India has been negotiating with the US on manufacture of F-414 jet engines under 100 per cent TOT since 2012, it was only effort by former DRDO, IAF chiefs led by National Security Advisor Ajit Doval under the guidance of Prime Minister Narendra Modi that clinched the deal with Biden administration this month. No wonder it is called the Doval Deal in Washington.

<https://www.hindustantimes.com/india-news/iaf-related-over-f-414-engine-deal-poses-questions-on-chinese-jet-engines-101688015832851-amp.html>



Wed, 28 Jun 2023

Dhruv Advanced Light Helicopter Safety Flaws Identified, being Addressed, Says Report

Dhruv Advanced Light Helicopter (ALH), which faced scrutiny due to a series of accidents earlier this year, has identified and addressed its flaws to prioritise flight safety, senior officials with knowledge of the matter revealed on Wednesday, media reports said.

The indigenously designed and developed Advanced Light Helicopter (ALH-DHRUV) is a twin-engine, multi-role, multi-mission new-generation helicopter in the 5.5-tonne weight class.

Reports said that the process of fixing the flaws is underway. While investigating recent incidents involving the Indian-made helicopter, certain design and metallurgy issues came to light.

The ALH is operated by the Indian army, air force, navy, and coast guard, with over 330 helicopters in service. Following safety concerns and a series of accidents, the helicopter was temporarily grounded and then cleared for flying, only to be grounded again between March and May.

Hindustan Aeronautics Limited, a state-owned company, is responsible for designing and developing these helicopters. They are now being cleared for urgent missions in batches after comprehensive checks.

12 accidents in the past five years

In the past five years, the ALH has been involved in 12 accidents, including a crash-landing in Jammu & Kashmir's Kishtwar on 4 May, resulting in the death of a soldier and injuries to two pilots.

Prior to that, a coast guard ALH made a forced landing in Kochi on 26 March, and a navy ALH performed an emergency landing in the Arabian Sea on March 8.

Government's measures for resumption of flights

According to a government letter dated May 22, urgent flights were allowed to resume after conducting an independent maintenance flight safety audit and ensuring compliance with safety-related technical instructions and alert notices, as per media reports.

The letter specified that critical items and systems had undergone satisfactory checks.

Design review of safety-critical system

Dhruv is certified for military operations by the Centre for Military Airworthiness Certification (CEMILAC) and civil operations by the Directorate General of Civil Aviation (DGCA). CEMILAC, a government regulatory body responsible for certifying the airworthiness of military aircraft, suggested a design review of a safety-critical system on the ALH.

CEMILAC, a part of the Defence Research and Development Organisation (DRDO), ordered the review of booster control rods to enhance the ALH's airworthiness.

An expert committee formed after the navy ALH incident on 8 March found that the failure in the assembly of serrated washers in the booster control rods was the most probable cause of the incident. These rods are crucial for controlling the helicopter's motion, and any failure can lead to accidents.

CEMILAC recommended short-term and long-term measures to improve the ALH's safety.

Expedited design, development, and qualification

CEMILAC emphasised the need for expedited design, development, and qualification of steel booster control rods that are tolerant to assembly errors. The new design should aim to be implemented within six months to one year. In a letter dated April 23, CEMILAC instructed HAL, the three services, and the coast guard to focus on these safety measures.

Prescribed measures for resumption of operations

CEMILAC provided specific measures for the resumption of operations of the ALH, Rudra (the armed version of ALH), and the Light Combat Helicopter (LCH).

It mandated inspections before granting clearance for these platforms, with a limit of 100 flight hours each. Further clearance for up to 500 flight hours or one year, whichever is earlier, would be contingent upon the successful completion of two critical tests conducted by HAL.

<https://www.wionews.com/india-news/india-dhruv-advanced-light-helicopter-safety-flaws-addressed-says-report-609658>

Thu, 29 Jun 2023

India and Tanzania to Boost Defence Cooperation

The second edition of the Joint Defence Cooperation Committee (JDCC) meeting between India and Tanzania was held in Arusha on June 28 and 29. The Indian delegation was led by Joint Secretary Amitabh Prasad and included senior officials from the Ministry of Defence and the Armed Forces.

During the meeting, the two sides discussed a wide range of opportunities for collaboration with a view to enhancing security in the Indian Ocean Region.

India is looking at defence cooperation with Tanzania which shares a vibrant relationship with India.

The Indian delegation highlighted the growing prowess of Indian Defence manufacturing to export to friendly countries.

Both countries worked out a five-year roadmap for defence cooperation which covers initiatives ranging from customised training & capacity building to maritime cooperation, infrastructure building and collaboration in defence equipment and technology.

Indian Defence PSUs were also part of the Indian delegation. They held discussions with the stakeholders from the Tanzanian Forces on the sidelines of the JDCC meeting.

<https://www.financialexpress.com/business/defence-india-and-tanzania-to-boost-defence-cooperation-3148216/>

THE ECONOMIC TIMES

Fri, 30 Jun 2023

India, Philippines to Upgrade Defence Partnership; Boost Maritime Security

India and Philippines on Thursday decided to expand their defence partnership through upgraded official level interaction among defense agencies, opening of the resident Defense Attaché office in Manila, and consideration of India's offer for concessional Line of Credit to buy defence equipment.

This was decided at the fifth meeting of the Joint Commission on Bilateral Cooperation (JCBC) co-chaired by External Affairs Minister S Jaishankar and his Philippines counterpart Enrique A. Manalo who is on an official visit to India from June 27-30.

Defence has emerged as a key pillar of Indo-Philippines partnership amid China's territorial claims along the LAC and the South China Sea region. Both Ministers at the JCBC expressed keen interest to continue to work together in this sector, including through the regular or upgraded official level interaction among defense agencies, opening of the resident Defense Attaché office in Manila, consideration of India's offer for concessional Line of Credit to meet Philippines' defense requirements, acquisition of naval assets, and expansion of training and joint exercises on maritime security and disaster response, among others, an official informed.

It may be recalled that the Philippines is the first destination for export of Brahmos missiles.

Acknowledging the growing importance of the maritime sector for both countries, both Ministers welcomed the bilateral Maritime Dialogue and the increased cooperation on hydrography.

Both Ministers emphasized the utility of maritime domain awareness, and in this context called for early operationalization of the Standard Operating Procedure (SOP) for the White Shipping Agreement between the Indian Navy (IN) and the Philippines Coast Guard (PCG). The two sides will sign the MoU on Enhanced Maritime Cooperation between the Indian Coast Guard (ICG) and Philippines Coast Guard (PCG).

It was also decided to have early negotiations for a bilateral Mutual Legal Assistance Treaty on Criminal Matters and a Treaty on Transfer of Sentenced Persons. It was agreed that the first round of talks would be held in the Philippines in August 2023.

Recognizing Terrorism and Transnational Crimes as common security threats, the two Ministers also directed that the 2nd Joint Working Group (JWG) on Counter-Terrorism meet in the Philippines in 2023 and discuss forging a Memorandum of Understanding on Cooperation in Preventing and Combating Terrorism and Transnational Crime.

The growing pace of bilateral trade, which had for the first time crossed the level of USD 3 billion in 2022-23, was also discussed by the two Ministers. It was agreed to commence negotiations on a bilateral Preferential Trade Agreement. There have been nearly thirty business-to-business meetings held over the past three years in different sectors.

<https://economictimes.indiatimes.com/news/defence/india-philippines-to-upgrade-defence-partnership-boost-maritime-security/articleshow/101374489.cms>

The Tribune

Fri, 30 Jun 2023

PM Modi's France Visit Critical for Indian Navy

By Rahul Bedi

Prime Minister Narendra Modi's upcoming trip to France to attend the Bastille Day parade as its chief guest is, much like his recent US visit, widely expected to result in the announcement of some critical deals for the Indian Navy. There is widespread speculation in domestic and overseas military and security circles that PM Modi was invited for the celebratory July 14 event in Paris in anticipation of the two sides proclaiming government-to-government (G2G) defence contracts that have long been under negotiation.

These included the procurement of 26 Dassault Rafale-Maritime (M) fighters and at least three add-on Scorpene-class diesel-electric 'killer-hunter' conventional submarines or SSKs to supplement six similar boats, which were licence-built by Mazagon Dock Shipbuilders Limited (MDL) in Mumbai 2006 onwards. The Paris visit could also result in India agreeing to France's involvement, via a technology transfer, in the Navy's incipient programme to indigenously build six nuclear-powered attack submarines or SSNs at the secretive Ship Building Centre in Visakhapatnam.

An analysis of these three putative agreements is instructive. Firstly, the Navy is believed to have recently shortlisted the twin-engine, canard delta-wing Rafale-M over Boeing's F/A-18 Block III 'Super Hornet' naval fighter following trials at the Navy's shore-based test facility in Goa in 2022,

for possible deployment aboard INS Vikrant, the newly commissioned aircraft carrier. It had reportedly informed the Ministry of Defence recently of its preference for Rafale-Ms, given their overall operational performance in flight trials compared to the F/A-18s, but particularly due to the French fighter's 'commonality' with the 36 in-service Rafales that the Indian Air Force (IAF) had acquired in 2016 for \$8.98 billion, completing their induction six years later.

Furthermore, the IAF's Rafale buy had included Dassault establishing a maintenance and flight training facility at Ambala for the fighters which, the Navy rationally reasoned, would support its prospective \$5-6 billion Rafale-M purchase by not only reducing procurement costs but hastening platform induction. Besides, the Navy needed to urgently firm up its fighter purchase for Vikrant, as the Russian MiG-29K/KUB naval fighters, of which the service had acquired 45 between 2004 and 2010 for \$2.29 billion, had proven operationally problematic. In its July 2016 report, the Comptroller and Auditor General had rapped the Navy for technically accepting these Russian platforms despite them being "riddled with problems, discrepancies, and anomalies".

Secondly, the follow-on deal for MDL to licence-build three more Scorpene-class submarines is the other prospective contract on the anvil during PM Modi's visit, following the Navy's botched-up and continually-delayed 16-year-old Project 75-India (P-75I) programme, to locally build six SSKs in collaboration with a foreign original equipment manufacturer.

A follow-on tender for these three boats would notably obviate a re-run of the 'lost decade' between 1995 and 2005 when MDL's submarine construction facilities remained idle following a corruption scandal involving the import of four German HDW Type 209/1500 SSKs for the Navy, that ultimately remained unresolved.

Under this contract, MDL had licence-built two of these German boats, but the alleged wrongdoing in the deal led to all submarine-building activity in the Mumbai shipyard being halted for 10 years. Thereafter, around 2005-06, new dockyard facilities were resurrected for the Scorpene programme at great expense, and skilled engineers, mechanics and underwater welders were hired afresh. Senior MoD officials who visited MDL in 2022 disclosed that large areas of the dockyard's submarine-building facilities lay deserted, as the six Scorpene-class submarines had already been completed, and groups of idle workers drifted aimlessly around. These officials collectively concurred that the Navy could not afford to repeat such a folly.

Lastly, France has expressed its willingness to partner the Defence Research and Development Organisation, the Department of Atomic Energy, the Navy and related organisations in locally building six SSNs. The Navy's SSN project was initially approved by the government in early 2015, with the first such 6,000-tonne boats scheduled for completion by 2032-33. The SSNs were intended to supplement and operationally support the Navy's four locally designed and constructed 7,000-tonne Arihant-class nuclear powered missile submarines (SSBNs), built with Russian knowhow and technical assistance, especially with regards to miniaturising their 82.5-MW pressurised light water reactors.

The SSBN programme is presently proceeding apace in seclusion at Visakhapatnam, with the third such platform — simply designated as S4 — being launched in late 2021, after INS Arighat, the second analogous boat, was undergoing further fitment. These SSBNs comprise a vital component of India's strategic triad aimed at sustaining New Delhi's credible nuclear deterrent and no-first-use posture.

In early 2023, France had offered to jointly develop SSNs with India under the aegis of its atmanirbharta initiative designed to enhance self-sufficiency in materiel requirements, by transferring technology based on its Barracuda-class SSNs, the first of which, INS Suffren, was commissioned into the French Navy in mid-2022. Designed by the Naval Group, which is also

responsible for the developing the Scorpene boats, the 4.765-tonne Suffren is the first of six SSNs, all of which are scheduled for commissioning by 2030 at a cost of over \$2 billion each.

The French remain eager for this deal with India to compensate for Australia summarily scrapping, in late 2021, Naval Design's tender to supply the Royal Australian Navy 12 conventional diesel-electric Attack-class submarines for over \$60 billion. Instead, Australia entered into a \$368-billion deal with the US and the UK for eight SSNs under the AUKUS trilateral pact featuring all three countries. India too is amenable to such cooperation with France, as continued Russian assistance in its nuclear submarine programme remains uncertain, considering extensive punitive sanctions imposed on Moscow for invading Ukraine.

Hence, like PM Modi's successful US tour in which several landmark defence buys were confirmed by the Pentagon, his Paris visit could, via the G2G route, boost the long-deferred modernisation and operational capabilities of India's military.

<https://www.tribuneindia.com/news/comment/pm-modis-france-visit-critical-for-indian-navy-521376>

THE ECONOMIC TIMES

Thu, 29 Jun 2023

Will be Left with No Option but to go for Counter Measures, Says Pakistan on US-India Defence Ties

Following the deepening defence cooperation between India and US, Pakistan has conveyed its strong reservations to the US and has stated the development as a direct threat to the country's security interests.

The US was informed through diplomatic channels that the transfer of advanced military hardware to India without taking into account Pakistan's legitimate concerns would undermine the strategic stability and conventional balance in the South Asian region, according to official sources, The Express Tribune reported.

According to the sources familiar with the development, Islamabad told Washington that acquisitions of the technologies would invigorate India, therefore putting the country's security interests in jeopardy.

Pakistan hinted that it will be left with no other option but to go for counter measures in case of such a cooperation between India and the US which will raise concerns about its national security.

The recent state visit of Prime Minister Modi to the US concluded in various agreements between the two countries in sectors like defence, trade among others.

General Electric and India's state-owned Hindustan Aeronautics Limited will make in India advanced fighter jet engines for the country's indigenous light combat aircraft.

The US also agreed to set up a facility in India to produce battle-tested armed drones.

As for India, Russia remained the major supplier of arms to India with 65 percent share for several years. With US' defence deals with India, it has already raised alarm bells in Pakistan, with the indication that the US is not only willing to sell arms to India but is not averse to the idea of transferring technology.

The US arms sale and transfer of technologies to India may be aimed at China but the development will certainly upset the military balance in South Asia, The Express Tribune reported.

<https://economictimes.indiatimes.com/news/defence/pakistan-hints-at-counter-measures-after-us-defence-deals-with-india/articleshow/101360976.cms>

The Tribune

Thu, 29 Jun 2023

In a Year, Global Inventory of N-Warheads Rises by 86

Global inventory of nuclear warheads has increased over the past year. China, India and Pakistan are among nine countries that have nuclear weapons and have added numbers to their respective arsenal.

As on January 2023, the world has 9,576 weapons in military stockpiles for potential use. That is 86 more than the number in January 2022. Of this stockpile, an estimated 3,844 warheads were ‘deployed’ with missiles and aircraft.

Around 2,000 of these ‘deployed’ weapons — nearly all of which belonged to Russia or the USA— were kept in a state of high operational alert, meaning that they were fitted to missiles or held at airbases hosting nuclear bombers.

These are the findings of Sweden-based think tank Stockholm International Peace Research Institute (SIPRI) which today released its annual assessment of ‘state of armaments, disarmament and international security’.

“The number of operational nuclear weapons started to rise as countries’ long-term force modernisation and expansion plans progressed,” the SIPRI said. Nine nuclear-armed states — the United States, Russia, the United Kingdom, France, China, India, Pakistan, North Korea and Israel — continue to modernise their nuclear arsenals and deployed several new nuclear-armed or nuclear-capable weapon systems in 2022, the think-tank said.

“The estimate of the size of China’s nuclear arsenal increased from 350 warheads in January 2022 to 410 in January 2023 and it is expected to keep growing,” said the SIPRI. Depending on how it decides to structure its forces, China could potentially have at least as many intercontinental ballistic missiles (ICBMs) as either the USA or Russia by the turn of the decade.

India was estimated to have a growing stockpile of about 164 nuclear weapons, up from 160 the previous year. “These weapons were assigned to a maturing nuclear triad of aircraft, land-based missiles and nuclear-powered ballistic missile submarines (SSBNs),” the SIPRI said.

According to SIPRI estimates, Pakistan possessed approximately 170 nuclear warheads as of January 2023 — up from 165 from the previous year. These weapons were assigned to Pakistan’s nascent triad of aircraft, ground-launched ballistic and cruise missiles, and sea-launched cruise missiles.

<https://www.tribuneindia.com/news/nation/in-a-year-global-inventory-of-n-warheads-rises-by-86-521112>

Cabinet Approves Bill for National Research Foundation to Make Research More Equitable

The Union Cabinet on Wednesday approved the National Research Foundation (NRF) Bill, 2023, in the Parliament. The Bill, after approval in the Parliament, will establish NRF, as an apex body to provide “high-level strategic direction” to scientific research in the country as per recommendations of the National Education Policy (NEP), at a total estimated cost of ₹50,000 crore from 2023-28, a press statement from the Department of Science and Technology (DST) noted.

The DST would be an “administrative” department of NRF that would be governed by a Governing Board consisting of eminent researchers and professionals across disciplines. The Prime Minister will be the ex-officio President of the Board and the Union Minister of Science & Technology and Union Minister of Education will be the ex-officio Vice-Presidents. NRF’s functioning will be governed by an Executive Council chaired by the Principal Scientific Adviser to the Government of India, the statement added.

The proposed Bill also repeals the Science and Engineering Research Board (SERB) established by Parliament in 2008 and subsumes it into the NRF.

Science Minister Jitendra Singh briefed reporters on Wednesday and said that, among other things, the NRF was meant to ensure that scientific research was conducted and funded equitably and greater participation from the private sector was forthcoming. “Right now, we have eminent institutions like the IITs and IISc that get a bulk of research funding but State universities get very little... about 10% of the research funds. The NRF will correct this,” he said on Wednesday. He added that when the NRF begins to function, close to ₹36,000 crore is expected to come from private sector (as investments into research). “The IITs do not need to depend on NRF because they have the infrastructure and the resources. But an innovative person, in a village, who wants to establish a start-up needs the money. The NRF will prioritise research funding and the Executive Council will decide on what areas need support,” said Mr. Singh.

The government will contribute ₹10,000 crore over five years, he added. The DST, the main source of funds for several autonomous research bodies, will continue to get the budget they annually receive. “The DST also funds several scholarships and capacity building programmes. They will continue doing so,” he added. The DST this year was allotted Rs 6,000 crore.

A senior official in the DST said that a Bill was necessary because current laws made it hard for private research organisations to contribute to a funding body such as the NRF.

NRF will forge collaborations among the industry, academia, and government departments and research institutions, and create an interface mechanism for participation and contribution of industries and State governments in addition to the scientific and line Ministries. It will focus on creating a policy framework and putting in place regulatory processes that can encourage collaboration and increased spending by the industry on R&D, the press statement noted.

“The decision by the Union Cabinet to introduce the NRF Bill in Parliament is a most welcome step. The efforts made by higher education institutions to enhance the research ecosystem on their campuses will get an impetus. NRF will provide an excellent opportunity for academia, industry, and research institutions to work together on the most pressing challenges of our country to make India the frontrunner in research and innovation,” said Mamidala Jagadesh Kumar, Chairman, UGC.

<https://www.thehindu.com/news/national/cabinet-nod-to-set-up-national-research-foundation-to-boost-r-and-d/article67019297.ece>

