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THE ECONOMIC TIMES
WWW.ECONOMICTIMES.COM

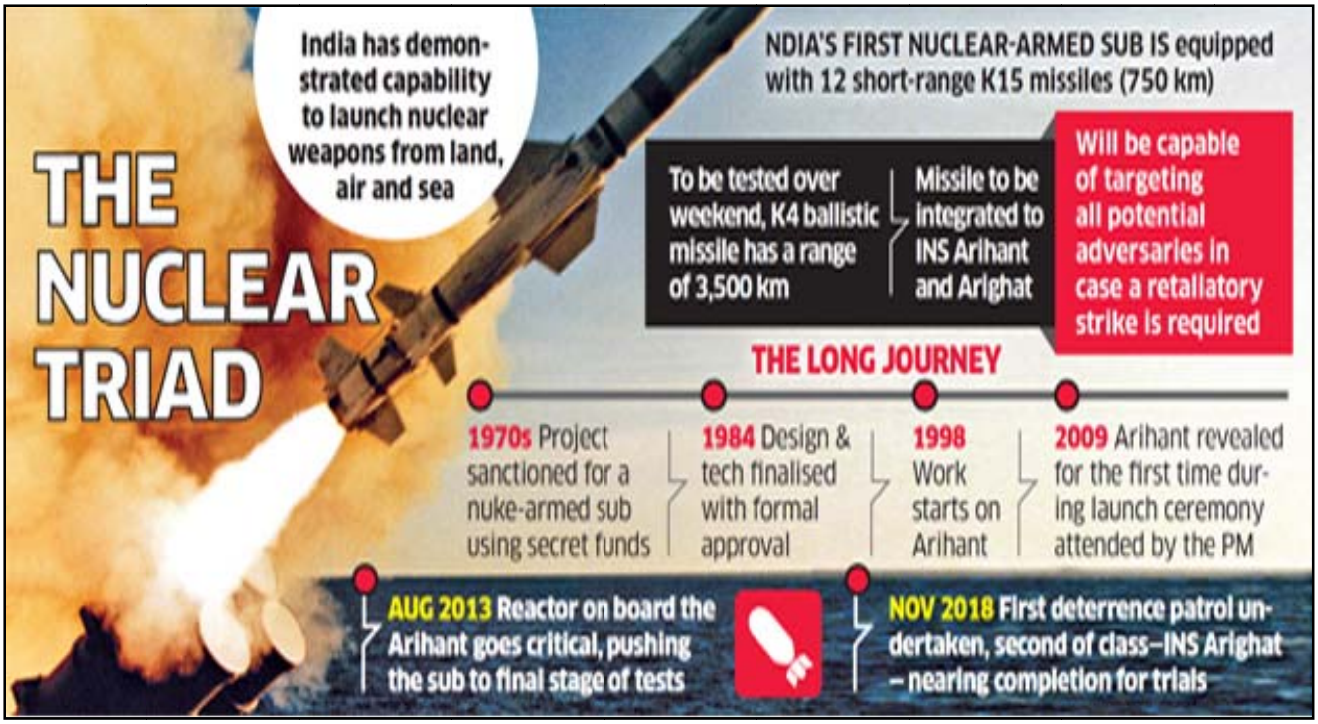
Fri, 29 Nov 2019

Critical test for submarine-launched nuclear missile this weekend

The 3,500-km range missile, designed for the Arihant class of nuclear submarines, will be tested from a fixed underwater pontoon as part of the developmental trials being conducted by the Defence Research and Development Organisation (DRDO)

By Manu Pubby

New Delhi: India is set to test fire its most potent nuclear deterrence missile over this weekend in the Bay of Bengal, which will demonstrate a survivable second strike capability to target all potential adversaries. The test of the K4 submarine-launched nuclear capable missile is scheduled to take place from the eastern coast, provided the weather holds up, sources told ET.



The 3,500-km range missile, designed for the Arihant class of nuclear submarines, will be tested from a fixed underwater pontoon as part of the developmental trials being conducted by the Defence Research and Development Organisation (DRDO).

If the test goes through—an earlier window in November had to be cancelled as cyclone Bulbul hit the eastern coast—it would mark a significant step towards operationalising the nuclear capable missile. The last test of the K4 was attempted in 2017 and there has been an urgency to expedite the developmental process, given that India's second nuclear submarine, the INS Arighat, is nearing completion and would be ready for trials soon.

India has already notified seafarers and sent out a notice to airmen blocking a flight path of close to 3,000 km that stretches to the Indian Ocean in preparation for the test. The K4 has undergone three tests in the past and is considered to be the real game changer that would give India a second strike option.

While India does have an operational SLBM (the K15) onboard the INS Arihant, its range is capped at 750 km, limiting second strike options and with that, the effectiveness of the nuclear triad. Though

land-based Agni series of missiles have proved their worth with multiple tests over the past years and India has its Mirage 2000 fighters rigged to deliver strategic warheads, an underwater launched missile is widely considered to be the most potent second strike weapon.

Given India's no first use policy, the only time the country would launch strategic weapons would be if it comes under a nuclear strike from an adversary. In this situation, a submarine that is hidden deep in the sea, with the ability to target all potential enemies is considered to be the most effective tool. DRDO has also started work on the K5, a 5,000 km range SLBM that would be fitted onboard nuclear powered submarines as well, to match the range of the Agni V, India's longest range land-based missile.

A successful integration of the K5 would demonstrate that India has a credible triad in place – the ability for a strike by land, sea or air.

The most recent landmark on the strategic front was the first deterrence patrol by INS Arihant that was carried out in November last year.

https://economictimes.indiatimes.com/news/defence/critical-test-for-submarine-launched-nuclear-missile-this-weekend/articleshow/72286330.cms

Fri, 29 Nov 2019

DRDO BrahMos supersonic cruise missile successfully fired by Indian Navy

On November 28, 2019, the Indian Navy successfully test-fired a DRDO (Defence Research and Development Organisation) developed BrahMos supersonic cruise missile in the Arabian Sea, news agency ANI reported.

BrahMos medium-range supersonic missile is a major force multiplier on the battlefield with impeccable multi-role and multi-platform (ships, aircraft or land) launch capabilities.

The BrahMos missile with pinpoint accuracy can be launched as far as 290 km from the target in either inclined or verticle configuration based on the type of the ship or user requirements.

In September this year, the missile featuring Indian propulsion system, airframe, power supply, and other major indigenous components, was successfully test-fired from ITR, Chandipur in Odisha.

In May this year, the IAF successfully fired the BrahMos air version missile from its frontline Su-30 MKI fighter aircraft. The IAF became the first Air Force in the world to have successfully fired an air-launched 2.8 Mach surface attack missile of this category on a sea target on November 22, 2017.

The integration of the weapon on the aircraft was a very complex process involving mechanical, electrical and software modifications on aircraft. The IAF has been involved in the activity from its inception. The software development of the aircraft was undertaken by the IAF engineers while HAL carried out mechanical and electrical modifications on the aircraft.

https://www.navyrecognition.com/index.php/news/defence-news/2019/november/7726-drdo-brahmos-supersonic-cruise-missile-successfully-fired-by-indian-navy.html

Devdiscourse
Discourse on Development

Fri, 29 Nov 2019

Defence Ministry to discuss projects worth over Rs 30,000 crore for light chopper, DRDO's AWACS

New Delhi: The Defence Ministry is likely to take on Thursday a decision on the first "Make in India" project under Prime Minister Narendra Modi government's strategic partnership policy for manufacturing of naval utility helicopters for the Navy. In a meeting today, the Defence Ministry will also discuss a DRDO-Indian Air Force project to develop two Airborne Early Warning and Control Systems (AWACS). The project would be worth over Rs 6,000 crore with almost equal funding from both the organisations.

"The first project under the Strategic Partnership policy is scheduled to be taken up for discussion by the Defence Acquisition Council headed by the Defence Minister today," government sources said here. Under the strategic partnership policy, the Modi government wants to promote indigenous industry in manufacturing world class military hardware and the manufacturing of naval choppers is the first project to have been undertaken as part of it.

Sources said the Navy has decided on the four strategic partners for the project and the DAC will take a final call on names of shortlisted vendors. The Indian vendors shortlisted for the project by the Navy include Tata, Adani, Bharat Forge and Mahindra Defence Systems who will have to tie up with French Airbus Helicopters, American Sikorsky and Russian Rosoboronexport.

The European firm has offered two of its choppers for the programme. Along with the chopper programme, the Defence Ministry is also likely to discuss an Army project to acquire around 20,000 night sighting devices for assault rifles of Army troops, the sources said.

The Defence Acquisition Council is the apex body in the Defence Ministry for deciding on acquisition projects of the three services and the Indian coast guard (ANI)

https://www.devdiscourse.com/article/national/761775-defence-ministry-to-discuss-projects-worth-over-rs-30000-crore-for-light-chopper-drdos-awacs

The Indian EXPRESS

Fri, 29 Nov 2019

DIAT plans to make Pune hub of quantum technology in country

Quantum technology concerns the study, control and manipulation of quantum principle-based systems with the goal of achieving information processing, secure communication and superior sensors beyond the limits of classical systems

Pune: The Defence Institute of Advanced Technology (DIAT) is planning to make Pune a hub for quantum technology in the country. “The plan is to make Pune a hub for quantum technology. There is a big talent pool available in and around Pune and we thought it apt to take the lead and project Pune as a hub for quantum technology. The focus is on security and defence application of quantum technology, along with other areas, too,” said DIAT Vice Chancellor Dr CP Ramanarayanan on Thursday.

He was speaking at an event to announce the International Symposium on Quantum Information Technology (ISQIT 2019), being jointly organised by DIAT, DRDO, NTRO and JATC of IIT-Delhi between December 2 and 5 in Pune. DIAT is a city-based deemed university under the Department of Defence Research and Development of the Ministry of Defence.

Ramanarayanan said the aim is to make DIAT the nodal agency in the country for research in quantum technology.

“The idea behind this conference is that at the end of each session, we want to identify the area where there is a technology gap and the areas in which foreign universities are willing to work with us. We will be the nodal agency in this regard. This conference is being hosted by our parent organisation DRDO supported by NTRO, IIT Delhi, IIT Bombay, TIFR and many key academic institutions in India. 40 scientists from DRDO, 15 from NTRO, 10 from IIT Delhi and more along with delegates from Army, Navy, Air Force and the joint Cyber Command. The plan is to make Pune a hub for quantum technology. We want to make this conference a yearly affair and plan to invite the Google chief for the event next year.”

Quantum technology concerns the study, control and manipulation of quantum principle-based systems with the goal of achieving information processing, secure communication and superior sensors beyond the limits of classical systems. It is a deeply interdisciplinary field, lying in the crossover of areas such as quantum physics, condensed matter physics, computer science, mathematics and electrical and electronics engineering.

Elaborating on the plan, Ramanarayanan said, “The first aim will be to pool the talent in this country. We will enable academic institutions where this talent is available to work together. Being affiliated to the central ministry, we will be able to bring these institutions together to work on common goals.”

The conference will be attended by DRDO Chairman G Satheesh Reddy, NTRO Chairman Satish Chandra Jha, Director General of Sudhir Kamath, Director General (Micro Electronic Devices and Computational Sciences) M H Rahaman, experts from various DRDO laboratories like ANURAG, SAG, CAIR and DYSL-QT, experts from DIAT, C-DAC Pune, TIFR Mumbai, IIT Delhi, IIT Madras and IIIT Pune.

Manisha Nene of DIAT, who is the co-convener for the event, said, “The four verticals that the conference will focus on are quantum computations and algorithms, quantum communication, quantum sensing and post-quantum cryptography. We hope that the knowledge and research shared by the experts in these areas will benefit all stakeholders. This event will help to formulate the roadmap to bring India to the forefront of progress in quantum technologies applicable to defence, medical and other civilian applications.”

MTech in quantum technology at DIAT Ramanarayanan said, “We have an MTech programme in artificial intelligence and from the coming academic year, we are starting an MTech course in quantum technology also. Maybe, we will be first to do so in the country. Foreign faculty will be also roped in for the course. The students will be from both services and civilian backgrounds.”

Nene added, “The course aims to develop skill sets on utilising quantum computing capabilities. The global IT giants have already put in efforts toward development of this technology. The course will also focus on the physics aspect as sensing and communication depends a lot on it.”

Ramanarayanan said DIAT has recently signed MoUs with several foreign agencies, including one with French aviation major Dassault. “They want our students to work with Dassault. Once the students complete the two-year postgraduation course here, they will continue with a one year course in France and move to work for the company either in France or at its design centre in Pune,” he said.

https://indianexpress.com/article/cities/pune/diat-plans-to-make-pune-hub-of-quantum-technology-in-country-6141984/

hindustantimes

Fri, 29 Nov 2019

International symposium on quantum information technology in Pune from December 2

Pune: An international symposium on Quantum Information Technology (ISQIT 2019) is being jointly organised by the Defence Institute of Advanced Technology (DIAT), Defence Research and Development Organization (DRDO) and Joint Advanced Technology Centre (JATC-IITD) from December 2 to December 5 in the city.

The event will be attended by Dr G Satheesh Reddy, Secretary DD (R&D), Chairman DRDO and Satish Chandra Jha, Chairman NTRO. Dr Sudhir Kamath, Director General (MED, COS and CS), MH Rahaman, Director JATC-IIT Delhi and Dr CP Ramanarayanan, vice-chancellor, DIAT, will also be present as patrons of the event.

Academic and industry experts from India and all over the world will assemble to discuss the worldwide progress and effectiveness of the current initiatives of India through invited talks, technology tutorials and closed-door panel discussions during the four days of the event. Accordingly, the future road map of India will be discussed upon to make India one of the world leaders in quantum technologies.

Quantum technologies concerns the study, control and manipulation of quantum systems with the goal of achieving information processing, secure communication and superior sensors beyond the limits of the classical world.

It is an interdisciplinary field, lying in the crossover of areas such as quantum physics, condensed matter physics, computer science, mathematics or electrical engineering. Having a genesis that can be traced back to the origins of quantum theory itself —with the discovery of quantum features as quantum superposition, entanglement and no-cloning, the field of quantum technology is the new

technology frontier. Quantum technologies support entirely new modes of computation, provably secure communications, simulation capabilities unattainable with classical processors, sensors and clocks with unprecedented sensitivity and accuracy, or the pioneering generation of certified genuine randomness.

The organising committee has experts from various DRDO laboratories, including ANURAG, SAG, CAIR and DYSL-QT, experts from DIAT, C-DAC Pune, TIFR-Mumbai, IIT-Delhi, IIT-Madras and IIIT-Pune.

The co-convenor of the event Dr Manisha J Nene, DIAT, Pune and the director of DRDO lab, DYSL-QT, on quantum technology are hopeful that the event will help India in formulating the future road map to bring India to the forefront of progress in quantum technologies applicable to defence, medical and other civilian applications.

https://www.hindustantimes.com/pune-news/international-symposium-on-quantum-information-technology-in-pune-from-december-2/story-E1iKvpEvoWm0apSvb2DmIK.html

Business Standard

Fri, 29 Nov 2019

Far better than DRDO missile: Israel's Rafael makes strong pitch for Spike

In January 2018, India had cancelled a $500-million purchase of Spike LR missiles just two weeks before Prime Minister Benjamin Netanyahu was to ink the deal on a visit to New Delhi

By Ajai Shukla

New Delhi: On Wednesday, the Indian Army successfully test-fired the Israeli Spike LR anti-tank guided missile (ATGM), which can home in on, and destroy, enemy tanks at ranges up to 4 km.

On Thursday, Rafael Advanced Defense Systems, which builds the Spike, boldly stated: “With confidence in the Spike missile established, the Indian Army may need to revisit their plans” to develop an Indian anti-tank missile.

This is an unusually bold statement, since foreign vendors usually tread softly around New Delhi’s sensibilities and avoid giving procurement advice.

In January 2018, India had cancelled a $500-million purchase of Spike LR missiles just two weeks before Prime Minister Benjamin Netanyahu was to ink the deal on a visit to New Delhi. Army chief General Bipin Rawat said at that time that the purchase was cancelled because the Defence Research and Development Organisation (DRDO) was going to develop and supply an indigenous ATGM.

Since the DRDO missile would be ready only by 2022, “the Indian Army procured a limited quantity of Spike LR missiles, so as to meet the urgent operational requirement”, said Rafael in a press release on Thursday.

Two of these ATGMs were fired at Mhow on Wednesday. Witnessed by top infantry generals, including Rawat, both struck their targets.

Encouraged by that success, Rafael now claims the DRDO’s missile will be only a ‘third-generation’ ATGM, while the Spike LR is a fourth-generation missile.

"Both the DRDO's ATGM programme, as well as the invitation to Indian industry to develop a 3rd Gen missile will need a rethink, as having a 4th Gen missile will put the plan for development of a 3rd Gen missile questionable," stated Rafael's unusually forthright statement.

The Israeli firm explained why its ATGM was better than what the DRDO is developing. "Spike LR is a 4th Gen missile, which (has) fire and forget capability (that does not require the firer to keep the enemy tank in his cross hairs until impact). The missile also has the ability to… switch to a different target mid-flight, should he want to do so."

Rafael argued that the Spike LR's inbuilt seeker allows the firer to engage tanks by both day and night. "The dual seeker adds to the missile's reliability, already established at more than 90 per cent during the field evaluation by the Indian Army in 2011. As of date, more than 5000 Spike missiles have been fired so far worldwide, with the overall hit percentage being more than 95 per cent", claimed Rafael.

India is the 33rd country to have the Spike missile as part of its inventory.

For decades now, the army's infantry (foot-soldiers) units have been equipped with 2nd Gen missiles like the French MILAN, which had a range of under 2.5 km.

In 2011, the defence ministry floated a tender for 321 ATGM launchers and 8,356 missiles worth an estimated $500 million (~3,600 crore).

Rafael was required to discharge offsets worth 30 per cent of that value and to transfer technology to Bharat Dynamics for building 30,000 more Spike missiles in India.

Over the preceding two years, Rafael has strengthened its case by putting in place the tools to manufacture the Spike LR in India, in a joint venture (JV) with the Kalyani Group in Hyderabad. "The JV is capable of manufacturing Spike missiles in India, and will also look at export opportunities from India", stated Rafael on Thursday.

By 2016, Spike LR had cleared user trials and the defence ministry had completed price negotiations. At the last minute, however, the government decided in favour of indigenous manufacture.

Now, with the DRDO programme under way and reportedly making good progress, Rafael has moved boldly to make its case for the Spike.

https://www.business-standard.com/article/defence/far-better-than-drdo-missile-israel-s-rafael-makes-strong-pitch-for-spike-119112801630_1.html

THE ECONOMIC TIMES
WWW.ECONOMICTIMES.COM

Fri, 29 Nov 2019

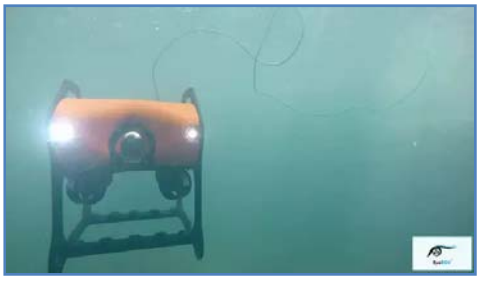
From DRDO to BPCL, India's first underwater drone, EyeROV Tuna, finds many takers

Kerala-based startup develops India's first commercial portable drone that can be used for underwater inspections. Today, the robot comes very handy for location scouting for search and rescue mission, surveillance for the defence sector and for r..

By Pranbihanga Borpuzari & Geetha Jayaraman

When the Defence Ministry started the Innovations for Defence Excellence (iDex) programme last year, one startup stood out. An underwater robotic drone called EyeROV could spot a crack in the hull of a ship or damage to an oil pipeline and seemed like a great fit for the defence organisations.

iDex was started to create an ecosystem to foster innovation and technology development in Defence and Aerospace by engaging with innovators and startups to deliver technologically advanced solutions for modernizing the Indian Military. A passion for robotics and to innovate something path-breaking was the driving force behind the development of EyeROV – India's first commercial underwater robotic drone by two IIT post graduates. It was a match, waiting to happen.



Co-founder of IROV Technologies – Kannappa Palaniappan P was working as an on-board scientist with the National Institute of Ocean Technology, Chennai, when he came across a Herculean task to survey the ocean floor and inspect the ship's hull with an enormous drone weighing a tonne. This got him thinking that when we have the resources to develop a cost efficient satellite like Chandrayan, we can surely develop a portable drone that can be used for underwater inspection, surveillance and for search and rescue operations.

"When Kannappa suggested the idea of developing a simple machine to inspect the ship hull as compared to the many sophisticated bulkier equipment available in the market, we thought of developing a miniature version that can go up to 300 meters," shares Johns T Mathai, CEO and co-founder, IROV Technologies, who worked in Samsung R&D Institute India and Grey Orange Pvt Ltd before foraying into the entrepreneurial venture.

In 2016, they pitched the idea to the Maker Village in Kochi, Kerala. Mathai says, "The idea got selected for the incubator program and we started working on the initial proof of concept and prototype."

Finding depth

Their product EyeROV TUNA is India's first commercial remotely operated underwater drone, which can send real-time video of ships and other underwater structures to help with their repair and maintenance. "The drone can navigate up to a depth of 50 meters to take real-time HD video images to examine underwater, thus eliminating the need for costly and riskier manual inspection by divers," explains Mathai.

He adds that the rover is very light, which can be easily accessed and controlled with the supporting tether and connected to a laptop or a joystick. "A camera is fitted on the ROV (remotely operated vehicle) to give live video feed of the harsh and critical underwater environment. The drone moves at a speed of two knots, has a 6000 lumens LED lamps and a three hour plus battery life," says Mathai.

The EyeROV TUNA weighs less than 10 kg and can be used to inspect ship hulls, ports, dams and nuclear power plants. Talking about the significance of EyeROV, Mathai says, "This product comes very handy for location scouting for search and rescue mission, surveillance for the defence sector and for research sectors like fishery and oil & gas."

For a hardware startup finding funding is usually the biggest problem, unlike a software startup states Mathai and adds, "Designing a prototype is way different from designing an actual product. The costing can go exponentially high."

They developed the first prototype within seven months of inception, but failed because of various reasons. "The water environment is generally very hostile compared to the environment in space. You have various challenges like very high currents, zero visibility, so it is very tough for a normal prototype to survive in such hostile conditions," points out Mathai.

The company got initial funding from BPCL project Ankur Startup Scheme and Kerala Startup Mission Idea Grant Scheme. They also received their first order from the Naval Physical and Oceanographic Lab under DRDO. "We received the order based on the second prototype. Though the prototype was not as per their requirement, but they gave us the order along with their requirement.

Our idea was to develop a commercially viable product and since there was a demand for the same we had an advantage. That propelled us to a great extend."

A sea of opportunities

Oil and gas industry is another major sector that the company is trying to capture as they have many underwater structures and pipelines that connects the refinery and the dock. "These pipelines and offshore structures are to be inspected on a regular interval for any kind of damages."

This four year old company has also worked with the Mumbai Port Trust for identifying wreckage of ships. "We used our technology to find out sunken ship near the port. Within 3 days we were able to spot seven wrecked ships in the surrounding, which divers could have taken around a month or so to complete," expresses Mathai.

Apart from cameras, EyeROV also use sonar technology to inspect the water environment. "The portable micro-class ROV can be used for underwater survey and visual inspection of submerged structures at depths up to 100 meters. We use sonar technology because in India the water bodies are generally very murky and sometimes it is very difficult to capture anything underwater, even in a close range. There are two types of sonar – imaging sonar and side scan sonar. Imaging sonar provides data of what is in-front while the side-scan sonar shows the bottom area."

The startup has successfully completed numerous projects like surveying dams for the Kerala State Electricity Board, oil pipeline bridge for BPCL and are working with the Fire and rescue department of Karnataka and Kerala state amongst others.

With a specialised data analytics platform, EyeROV aims to spread their wings outside India capturing the global market and compete with the existing products. "Most of the companies that currently operate just collect the data and share it with the client. Generally, these videos are about six to eight hours long. So, it is very difficult for a person to sit and analyse. What we do is, we make the findings into a 3D image or a user intrusive platform where they can click and see. We focus on data analytics and present to the client a user friendly result. We are also working on image enhancement. We have an expertise in data analytics," states Mathai.

https://economictimes.indiatimes.com/small-biz/startups/features/from-drdo-to-bpcl-indias-first-underwater-drone-eyerov-tuna-finds-many-takers/articleshow/72271519.cms

THE TIMES OF INDIA

Fri, 29 Nov 2019

Government okays Rs 23k crore defence buy but trims Navy's wishlist

By Rajat Pandit

HIGHLIGHTS

- ***Navy to get six more Poseidon-8I 'submarine-hunting' aircraft***
- ***Nod for the indigenous design, development and manufacture of twin-engine heavy-duty helicopters for the Coast Guard***
- ***Fresh DAC approval was taken to resolve funding issues for two AWACS, under which 360-degree coverage indigenous radars will be mounted on Airbus-330 wide-body jets***

New Delhi: The government on Thursday gave preliminary approval to defence procurement projects worth Rs 22,800 crore, but slashed the Navy's long-standing proposal to acquire 10 more Poseidon-8I "submarine-hunting" aircraft to just six planes amidst the severe fund crunch being faced by the armed forces.

Apart from the six P-8I aircraft, the Rajnath Singh-led defence acquisitions council (DAC) also gave the nod for the indigenous design, development and manufacture of "thermal imaging night sights" for assault rifles of the Army and 14 twin-engine heavy-duty helicopters for the Coast Guard.

It also revalidated the "acceptance of necessity (AoN)" for the procurement of two indigenously-developed Airborne Warning and Control Systems (AWACS) aircraft, which were first approved at a cost of Rs 5,113 crore way back in March 2015.

TOI was the first to report on Tuesday that the cash-strapped armed forces had been directed to curtail their operational requirements due to budgetary constraints, which included the Navy being told to halve its requirement for the 10 Boeing manufactured P-8I aircraft at a cost of over $3 billion from the US.

Sources said the DAC had now decided the Navy will get only six more P-8Is for around $1.8 billion to add to the 12 such longrange maritime patrol aircraft, which are packed with radars and weapons for anti-submarine warfare, already ordered from the US at a cost of over $3.1 billion. Of the earlier dozen P-8Is, eight have been inducted at the naval air station INS Rajali at Arakkonam (Tamil Nadu), while the next four are slated for delivery by 2021-2022.

As for the two AWACS, under which 360-degree coverage indigenous AESA (active electronically scanned array) radars will be mounted on Airbus A-330 wide-body jets, the fresh DAC approval was taken to resolve funding issues. IAF and DRDO will now almost equally share the costs, said sources.

India currently has just three "Phalcon" AWACS and one "Netra" AEW&C aircraft, which act as "eyes in the sky" in detecting and tracking hostile fighters, cruise missiles and drones much before ground-based radars. In sharp contrast, Pakistan already has seven such aircraft, including Chinese Karakoram Eagle ZDK-03 and Swedish Saab-2000, with another three on the way. "Pakistan effectively used such aircraft during the aerial skirmish along the LoC a day after the Balakot bombing on February 26," said a source.

MoD officials said the 14 helicopters cleared for the Coast Guard will help the force "undertake missions to prevent maritime terrorism, infiltration of terrorists by sea routes as well as search and rescue operations".

The Coast Guard's earlier attempt to get such choppers, equipped with the requisite weather-cum-surveillance radars, electrooptical/infrared devices, rescue hoists and the like, was scrapped amid allegations of wrongdoings and leak of classified information.

The MoD said the thermal imaging sights will be manufactured under "Make in India" by the Indian private industry. "Assault rifles equipped with these night sights will enable troops deployed on the frontline to undertake long-range accurate engagements in dark and all weather conditions, thereby enhancing their night-fighting capabilities," he said.

https://timesofindia.indiatimes.com/india/initial-nod-for-military-projects-worth-rs-22800-cr-but-navy-to-get-less-sub-killing-planes/articleshow/72282109.cms

नवभारत टाइम्स

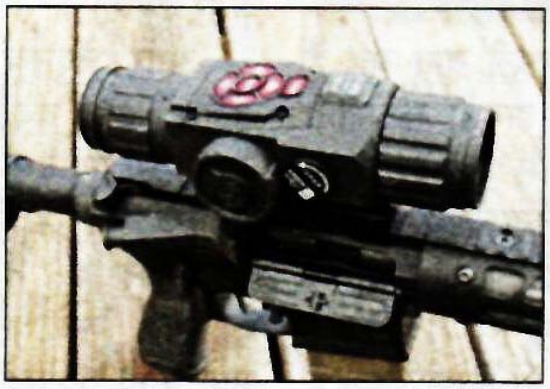
Fri, 29 Nov 2019

अब रात में दूर तक निशाना लगा सकेगी हमारी आर्मी

■ विशेष संवाददाता, नई दिल्ली

रक्षा मंत्रालय की डिफेंस एक्युजिशन काउंसिल (डीएसी) ने असॉल्ट राइफल्स के लिए थर्मल इमेजिंग नाइट साइट की खरीद को मंजूरी दी। रक्षा मंत्री राजनाथ सिंह की अध्यक्षता में हुई इस मीटिंग में सशस्त्र सेना और कोस्ट गार्ड के लिए 22800 करोड़ रुपये से ज्यादा के सामान की खरीद को मंजूरी दी गई।

असॉल्ट राइफल्स के लिए थर्मल इमेजिंग नाइट साइट देसी डिजाइन और देसी कंपनियों से ही तैयार करने को मंजूरी मिली। इन्हें फ्रंट लाइन पर तैनात सेना के जवान इस्तेमाल करेंगे। थर्मल इमेजिंग नाइट साइट से जवान रात के अंधेरे में भी ज्यादा दूर तक सही निशाना लगा सकेंगे।



डीएसी ने नेवी के लिए 10 और मिडियम रेंज एंटी सबमरीन पी8आई एयरक्राफ्ट की खरीद को भी मंजूरी दी। इन एयरक्राफ्ट से नेवी की सर्विलांस क्षमता के साथ ही एंटी सबमरीन वॉरफेयर और एंटी सर्फेस वेसल स्ट्राइक की क्षमता भी बढ़ेगी। इंडियन कोस्ट गार्ड के लिए दो इंजन वाले हेवी हेलिकॉप्टर की खरीद को भी मंजूरी दी गई।

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VOICE OF THE PEOPLE

Fri, 29 Nov 2019

Restructuring the military

Appointment of CDS will come with its challenges that must be thought through

By Shyam Saran

On August 15 this year, PM Modi announced the creation of the post of Chief of Defence Staff (CDS). This decision was long overdue but had been held up because of a lack of consensus among serving chiefs of armed forces, who feared a loss of status and authority. Civilian bureaucracy and political leaders harboured fears of a more powerful military. It is hoped that the incumbent is selected judiciously and for his leadership qualities. His authority over the service chiefs should be unambiguous and he should be the single point of military advice to the government. It would be preferable that he is a 5-star officer who outranks service chiefs. Appointing the senior most retiring service chief to the post for a fixed tenure of two to three years is a less effective option. First among equals rarely works in military hierarchies.

The CDS will have several key and sensitive responsibilities which go beyond ensuring 'jointedness' among the three wings of the armed forces. Modern warfare spans a wide threat spectrum, encompassing land, air, sea and nuclear domains which are integrated with cyber and space-based assets. Security challenges are further complicated by sub-conventional threats such as cross-border terrorism and non-traditional threats such as climate change. Integrated planning, coordination and command will be indispensable in responding to such threats and the CDS should be enabled through adequate resources and empowered with appropriate authority to undertake this urgent mission. The Integrated Defence Staff (IDS) provides a rudimentary structure to support the CDS but will need to be significantly strengthened with qualified personnel drawn from multiple military and civilian domains. The current head of the IDS should become a deputy to the CDS. The IDS currently has skeletal capabilities in the new areas of cyber and space but these require significant enhancement. Each service has its own separate cyber centre in parallel and the Ministry of Defence (MoD) has a Defence Cyber Ops Group. It may need to be examined how these separate entities should be brought under the overall authority of the CDS. There are proposals for the setting up of an integrated cyber and space command. In the interest of integrated planning and operations, these may need to be brought under the purview of the CDS but this needs further deliberation. It is also envisaged that the Defence Intelligence Agency will operate under the authority of the CDS.

There is some controversy over whether the setting up of the CDS should lead to the reorganisation of the military into integrated theatre commands reflecting the jointedness which is the objective of military reform. It is difficult to see how this can be avoided but it is possible that a transition period may be necessary to modify/augment the force structure. The CDS should be tasked to oversee this transition.

Lack of jointedness is not only a feature of the current military structure. There is also a serious lack of jointedness between civilian and military arms of governance. This also leads to civil-military tensions which may undermine national security. For this reason, recommendations have been made for the cross-posting of civilian and military officers in the MoD and in Service headquarters, so as to increase mutual familiarity and understanding. The IDS should also have a mix of civilian and military professionals in its ranks to support the CDS.

The CDS will be a key functionary in the national security architecture and will have to work in close coordination with other components of the architecture. His relationship with the NSA will be particularly important because both will be influential advisers to the political leadership on security issues. An immediate issue will be the relationship between the Defence Planning Committee (DPC)

set up in 2018 under the chairmanship of the NSA, and with the membership of the foreign, defence and expenditure secretaries and the service chiefs. The IDS chief is its member secretary. The committee is tasked with formulating a national security strategy, drafting a 15-year defence capability plan, work on creating a defence manufacturing eco-system and engage in defence and foreign policy diplomacy. Would such an entity be necessary once the CDS is in place? If the DPC remains in place, would the CDS be a member and subordinate to the NSA, and would the service chiefs continue to be its members? These are important issues to sort out in advance.

The CDS will have a critical role as the head of the Strategic Forces Command. He will be the custodian of India's nuclear weapons and delivery systems and oversee its further development and qualitative improvement. He will undertake a regular review of the evolving regional and global nuclear environment and how this will impact the country's security. This is one of the most important reasons to have a CDS because it will fill a gap in the smooth functioning of the Nuclear Command Authority. A Chairman of the Chiefs of Staff Committee who is in office by rotation for just a few months before retirement as a service chief precludes long term planning and the framing of an appropriate nuclear doctrine. The role of the CDS as the head of the strategic forces and his relationship with the NSA, who is secretary of the Nuclear Command Authority, needs to be spelt out to avoid any ambiguity in the chain of command.

The role and functions of the CDS is being deliberated upon in a committee headed by the NSA and with the same membership as the DPC. It is likely to deliver its recommendations in December. It is hoped that some of these issues will be taken into account.

https://www.tribuneindia.com/news/restructuring-the-military/867526.html

MAIL TODAY

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Defence Industrial Corridor to create thousands of jobs

Earlier, the Prime Minister had announced Defence industrial corridor worth Rs 20,000 crore in UP during investors' summit at Lucknow, in 2018. In recent months, the UP government took the step to quickly set up a Defence Industrial Corridor in the state to speed up industrial development. Agra, Aligarh, Chitrakoot, Lucknow, Jhansi and Kanpur have been identified for the project. Around 5,071.19 hectare land has been proposed for all these six nodes.

Prime Minister Narendra Modi laid the foundation stone of the project in Jhansi. It has rolled out avenues for companies willing to invest and set up big defence and aerospace units under the Defence Industrial Corridor scheme. These districts have strong ancillary base to support the needs of defence manufacturing and ensure continuous supply of raw materials, labour, etc. The corridor is likely to create thousands of job opportunities in units to be set up in the corridor.

The state government is also coming up with three 'defence parks' in Kanpur, Agra and Jhansi and three 'aerospace parks' at Lucknow, Agra and Kanpur of 100-150 acre each on the defence corridor. The process for acquiring land for all these six nodes of the Defence Industrial Corridor has already started. In Jhansi, 92.48 percent

land has been acquired while 89.41 percent land has been acquired in Chitrakoot. In Aligarh, 100 percent land has been acquired. So far, 43 defence equipment manufacturers have shown interest in the project so far.

An investment of more than Rs 4,000 crore was announced during the UP Defence Industrial Corridor Investors' Summit held in Aligarh. A number of other proposals were received from the defence sector manufacturers at the 'DEFENSCO' exhibition organised in Kanpur between November 14 and 16, last year. To begin with, the Hindustan Aeronautics Limited has announced an investment of Rs 1,200 crore, along with Rs 1,077 crore by Ordnance Factory Board, Rs 900 crore by M K Udyog, Rs 240 crore by Bharat Electronics Limited, Rs 200 crore by Bharat Forge Limited and Rs 200 crore by PTC.

Defence Expo 2020 is also scheduled to be held in Lucknow on 5-8 February, 2020.

UP government will act as a facilitator and will provide 'plug-and-play' industrial infrastructure like manufacturing areas, testing centres, other concessions like interest reimbursements (50-60%) on loans taken by units to buy land, creating infrastructure or building common facilities for these parks. Each park will have at least five units in it.

The biggest advantage of investment, given to the companies investing over Rs 300 crore and creating around thousands of job opportunities in the notified areas of the defence corridor, is the reimbursement of 25% of the cost of land units. The reimbursement will also be given to the 'anchor units' which can be Indian or global equipment manufacturing companies that can design and manufacture defence and aerospace platform with an investment over Rs 200 crore as well as bringing in a minimum of 10 vendor units. The vendor units are to supply a minimum 75% of its end product to the anchor unit and have to be located in the same cluster as anchor unit.

Mail Online

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Astronomers discover supermassive black hole in the Milky Way galaxy 70 times larger than the Sun that according to current scientific understanding should not exist

- ***Black hole, dubbed LB-1, has a mass that is 70 times greater than the sun***
- ***Experts say it's impossible for something this size to form in the Milky Way***
- ***It couldn't have bee formed by a supernova, but by another physical mechanism***

Astronomers have discovered a black hole in the Milky Way so massive that it challenges existing models of how stars evolve.

Called LB-1, this black hole is 15,000 light years from Earth and has a mass 70 times greater than the Sun.

LB-1's large mass falls into a range known as the 'pair instability gap' where supernovae should not have produced it, leading experts to believe this is a new kind a black hole, formed by another physical mechanism.

The Milky Way is estimated to contain 100 million stellar black holes but LB-1 is twice as massive as anything scientists thought possible, said Liu Jifeng, a National Astronomical Observatory of China professor who led the research.

'Black holes of such mass should not even exist in our galaxy, according to most of the current models of stellar evolution,' he added.

Scientists generally believe that there are two types of black holes.

The more common stellar black holes -up to 20 times more massive than the Sun -- form when the center of a very big star collapses in on itself.

Supermassive black holes are at least a million times bigger than the Sun and their origins are uncertain.

But researchers believed that typical stars in the Milky Way shed most of their gas through stellar winds, preventing the emergence of a black hole the size of LB-1, Liu said.

'Now theorists will have to take up the challenge of explaining its formation.'

David Reitze, a physicist at the California Institute of Technology who was not involved in the discovery, told AFP: 'Astronomers are still only beginning to grasp 'the abundance of black holes and the mechanisms by which they form.'

Stellar black holes are usually formed in the aftermath of supernova explosions, a phenomenon that occurs when extremely large stars burn out at the end of their lives.

'LB-1's large mass falls into a range 'known as the 'pair instability gap' where supernovae should not have produced it,' Reitze said.

'That means that this is a new kind a black hole, formed by another physical mechanism!'

LB-1 was discovered by an international team of scientists using China's sophisticated LAMOST telescope.

Additional images from two of the world's largest optical telescopes -Spain's Gran Telescopio Canarias and the Keck I telescope in the United States -confirmed that the size of LB-1, which the National Astronomical Observatory of China said was 'nothing short of fantastic'.

WHAT ARE BLACK HOLES?

Black holes are so dense and their gravitational pull is so strong that no form of radiation can escape them - not even light.

They act as intense sources of gravity which hoover up dust and gas around them. Their intense gravitational pull is thought to be what stars in galaxies orbit around.

How they are formed is still poorly understood. Astronomers believe they may form when a large cloud of gas up to 100,000 times bigger than the sun, collapses into a black hole.

Many of these black hole seeds then merge to form much larger supermassive black holes, which are found at the centre of every known massive galaxy.

Alternatively, a supermassive black hole seed could come from a giant star, about 100 times the sun's mass, that ultimately forms into a black hole after it runs out of fuel and collapses.

When these giant stars die, they also go 'supernova', a huge explosion that expels the matter from the outer layers of the star into deep space.

https://www.dailymail.co.uk/sciencetech/article-7732399/Scientists-spot-black-hole-huge-shouldnt-exist-galaxy.html