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भारत ने सतह से हवा में मार करने वाली त्वरित प्रतिक्रिया

मिसाइल का सफल परीक्षण किया

बालासोर (ओडिशा), (भाषा) भारत ने सोमवार को ओडिशा तट के पास एक परीक्षण स्थल से सतह से हवा में मार करने वाली त्वरित प्रतिक्रिया मिसाइल (क्यूआरएसएम) प्रणाली का सफल परीक्षण किया जिसके 2021 तक सशस्त्र बलों के आयुध भंडार में शामिल होने की संभावना है रक्षा विभाग के एक बयान में कहा कि रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) द्वारा विकसित इस मिसाइल का परीक्षण पूर्वाह्न 11:45 बजे चांदीपुर स्थित एकीकृत परीक्षण केंद्र (आईटीआर) से किया गया।

बयान में कहा गया कि परीक्षण में क्यूआरएसएम ने लक्ष्य को हवा में ही मार गिराया और मिशन उद्देश्य पूरे कर लिए गए इसमें कहा गया कि मिसाइल के दागे जाने और लक्ष्य को निशाना बनाने जैसी पूरी प्रक्रिया पर ग्राउंड टेलीमेट्री सिस्टम, रेंज रडार सिस्टम और इलेक्ट्रो ऑप्टिकल ट्रैकिंग सिस्टम द्वारा नजर रखी गई। परीक्षण के दौरान महानिदेशक (मिसाइल एवं रणनीतिक प्रणाली), एमएसआर प्रसाद मौजूद थे। बयान में कहा गया कि इस



मिशन के साथ ही संबंधित अस्त्र प्रणाली के विकासात्मक परीक्षण सफलतापूर्वक पूरे हो गए हैं। और इसके 2021 तक सशस्त्र बलों के आयुध भंडार में शामिल होने के लिए तैयार हो जाने की उम्मीद है।

India successfully test-fires quick reaction surface-to-air missile system

By Rajat Pandit

New Delhi: The indigenous quick-reaction surface-to-air missile (QRSAM) system - which is designed to intercept hostile fighters, helicopters and drones at a range of up to 30km - was successfully tested from the Chandipur integrated test range off the Odisha coast on Monday.

The QR-SAM, with the latest test completing its developmental trials, is "expected to be ready" for induction by 2021, said Defence Research and Development Organization (DRDO) officials. The QR-SAM project was sanctioned in August 2014 at an initial development cost of Rs 476 crore, with the first test being conducted in June 2017. The armed forces have inducted some Israeli Spyder QR-SAM units in the absence of such indigenous systems.

In the test on Monday, the single-stage missile was flight-tested with "full configuration in deployment mode" and successfully intercepted the target un mid-air to meet the mission objectives. The QR-SAM system, which operates on the move, includes a fully-automated command and control system, an active array battery surveillance Radar, an active array battery multi-function radar and the launcher.

"Both radars are four-walled having 360-degree coverage with search on move and track on move capability. The system is compact with minimum number of vehicles for a firing unit. The solid-propellant missile has mid-course inertial navigation system with two-way data link and terminal active seeker developed indigenously by DRDO," said an official.

The QR-SAMs, which are stored in canisters and mounted on trucks, are also equipped with electronic counter-measures to prevent jamming by hostile aircraft. "The entire test on Monday was monitored by ground telemetry systems, range radar systems and electro-optical tracking systems," he added.

<https://timesofindia.indiatimes.com/india/india-successfully-test-fires-quick-reaction-surface-to-air-missile-system/articleshow/72941111.cms>



DRDO's quick-reaction missile test successful

"The missile (Quick Reaction Surface to Air Missile) was flight-tested with full configuration in deployment mode intercepting the target mid-air, meeting the mission objectives. The entire event was monitored by Ground Telemetry Systems, Range Ra..

New Delhi: The Defence Research and Development Organisation (DRDO) successfully flight-tested indigenously developed Quick Reaction Surface to Air Missile (QRSAM) system from Chandipur off the Odisha coast on Monday.

"The missile was flight-tested with full configuration in deployment mode intercepting the target mid-air, meeting the mission objectives. The entire event was monitored by Ground Telemetry Systems, Range Radar Systems and Electro Optical Tracking System," said DRDO in a statement.

The weapon system, which operates on the move, comprises fully automated command and control system, active array battery surveillance radar, active array battery multifunction radar and launcher.

Both radars are four-walled having 360-degree coverage with search-on-move and track-on-move capability.

The system is compact with a minimum number of vehicles for a firing unit. The single stage solid propelled missile has midcourse inertial navigation system with two-way data link and terminal active seeker developed indigenously by DRDO.

"The missile successfully engaged the aerial target, establishing its capability," DRDO said. Director General (Missiles and Strategic Systems) M.S.R. Prasad was present during the trial.

The developmental trials of the weapon system are successfully completed and the weapon system is expected to be ready for induction by 2021.

<https://economictimes.indiatimes.com/news/defence/drdo-quick-reaction-missile-test-successful/articleshow/72939402.cms>

ब्रह्मोस की ताकत पर दुनिया की मुहर

जयप्रकाश रंजन • नई दिल्ली

भारत और रूस के सहयोग से निर्मित दुनिया की सबसे तेज सुपर सोनिक क्रूज मिसाइल ब्रह्मोस को खरीदने की चाहत रखने वाले देशों की एक तरह से लाइन लग गई है। बहुत संभव है कि पहली बार इस मिसाइल को किस देश को बेचा जा रहा है, इसकी घोषणा अगले वर्ष कर दी जाए। वर्ष 2020 भारत और रूस के रणनीतिक रिश्तों के लिए बहुत ही महत्वपूर्ण साबित होने जा रहा है, जब दोनों देशों की तरफ से रक्षा सहयोग से जुड़ी कुछ बड़ी परियोजनाओं का एलान किया जाएगा। ऐसे में दोनों देश ब्रह्मोस मिसाइलों के लिए किसी खरीदार देश का चयन कर वैश्विक स्तर पर एक बड़ा संदेश देने की कोशिश करेंगे।

नई दिल्ली में रूस के दूतावास के उप प्रमुख रोमन बाहुशकिन ने यह जानकारी दी कि ब्रह्मोस मिसाइल सिस्टम को लेकर दुनिया के तमाम देशों में कितनी उत्सुकता है। फिलीपींस, थाईलैंड, इंडोनेशिया समेत तकरीबन 12 देश इसे खरीदने की इच्छा जता चुके हैं। लेकिन, अभी तक किसी देश के साथ बातचीत को अंतिम रूप नहीं दिया गया है। ब्रह्मोस ने भारत व रूस के रणनीतिक रिश्तों को जो गहवाई दी है, उसे अगले वर्ष और पुख्ता किया जाएगा। दोनों देश मिलकर ब्रह्मोस जैसी दूसरी युद्ध प्रणाली भी विकसित कर रहे हैं। दोनों देशों के बीच मेक इन इंडिया कार्यक्रम के तहत कई रक्षा उपकरणों को विकसित करने पर बात हो रही है। रूस चाहता है कि भारत के साथ विकसित होने वाले रक्षा उपकरणों की मार्केटिंग तीसरे देशों में भी की जाए। भारत और रूस अगर ब्रह्मोस को किसी तीसरे देश को बेचने में सफल हो जाते हैं तो यह हथियारों के अंतरराष्ट्रीय बाजार में एक बड़ी धमक होगी। साथ ही यह भी ध्यान रखना होगा कि फिलीपींस जैसे पड़ोसी देशों में मिसाइल सिस्टम बेचने पर चीन की तरफ से क्या प्रतिक्रिया दिखाई जाती है।



ऐसी है ब्रह्मोस मिसाइल

ब्रह्मोस मिसाइल ऐसी सुपरसोनिक क्रूज मिसाइल है, जिसे पनडुब्बी, जलपोत, वायुयान या जमीन से प्रक्षेपित किया जा सकता है। भारत और रूस के संयुक्त उपक्रम से तैयार इस प्रक्षेपास्त्र को दोनों देशों की ब्रह्मपुत्र और मोरक्वा नदी के नामों के शुरुआती अक्षरों को जोड़कर रखा गया है।

वजन	3,000 किग्रा
लंबाई	8.4 मीटर
व्यास	0.6 मीटर
मुखास्त्र	300 किग्रा
क्षमता	290 किमी
रफ्तार	2.8-3.0 मैक

खूबी

- जमीन पर 10 मीटर की ऊंचाई पर स्थित लक्ष्य को सटीकता से भेदने में कुशल। इससे सीमापार के क्षेत्रों में बिना तबाही मचाए आतंकी कैपों को समाप्त किया जा सकता है
- पहाड़ी और ऊबड़-खाबड़ सतहों पर भी इसका प्रभावी उपयोग किया जा सकता है

सबसे तेज : इस मिसाइल की 2.8-3.0 मैक की रफ्तार अमेरिका की हार्पून सबसोनिक मिसाइल की रफ्तार से साढ़े तीन गुना अधिक है

हाइपरसोनिक : ब्रह्मोस परियोजना के तहत हाइपरसोनिक संस्करण भी तैयार किया जा रहा है, जिसकी चाल 5-7 मैक होगी। ब्रह्मोस-द्वितीय नामक यह मिसाइल तब अपना ही रिकॉर्ड तोड़ते हुए दुनिया की सबसे तेज क्रूज मिसाइल बन जाएगी

ब्रह्मोस खरीदने में दक्षिण एशियाई देश दिखा रहे ज्यादा रुचि

जयप्रकाश रंजन • नई दिल्ली

दुनिया की सबसे तेज सुपर सोनिक क्रूज मिसाइल ब्रह्मोस को खरीदने में अभी तक जितने देशों ने रुचि दिखाई है, उनमें से ज्यादातर दक्षिण एशियाई देश हैं। भारत और रूस साथ मिलकर तीसरे देशों में आणविक ऊर्जा प्लांट लगाने के लिए भी करार कर चुके हैं, जिस पर चीन की तरफ से पहले ही प्रतिक्रिया जताई जा चुकी है। भारत व रूस बांग्लादेश में एक आणविक ऊर्जा संयंत्र लगाने के लिए वहां की सरकार से बात कर रहे हैं।

रूस के राजदूत निकोलाय कुदाशेव ने बताया कि अगले वर्ष भारत और यूरोशियन इकोनॉमिक यूनियन के बीच होने वाली मुक्त व्यापार समझौते को

अंतिम रूप दिए जाने के आसार हैं। यह व्यापार समझौता भारत और केंद्रीय व उत्तरी यूरोशिया क्षेत्र के देशों (अर्मेनिया, बेलारूस, कजाखस्तान, किर्गिस्तान व रूस) के बीच होगा। भारत की योजना आगे चलकर इसमें अफगानिस्तान, ईरान जैसे दूसरे देशों को भी शामिल करने की है। इस समझौते को और ज्यादा कारगर बनाने के लिए रूस और भारत के बीच होने वाली स्ट्रेटिजिक इकोनॉमिक डायलॉग का और विस्तार किया जा रहा है। यह भी कोशिश की जा रही है कि ज्यादा से ज्यादा द्विपक्षीय कारोबार दोनों देशों की मुद्राओं में हो सके। अभी भारत व रूस के द्विपक्षीय कारोबार में 30 फीसद लेन देन स्थानीय मुद्रा यानी रूपये और रूबल में होता है। इसे और बढ़ाने के लिए बात हो रही है।

‘Dozens of countries keen to buy BrahMos’

Babushkin also said Russia has independent strategic ties with both India and China and that the two relationships are independent of each other

By Sridhar Kumaraswami

New Delhi: Top Russian diplomats on Monday said “dozens of countries”, including the Philippines have expressed interest in acquiring the BrahMos supersonic cruise missile — developed jointly by both India and Russia — but that there are several “considerations” involved before granting permission for the sale including “political and economic” factors.

In response to a question about reported interest by the Philippines to acquire the 290 km-range missile at an interaction with reporters at the Russian Embassy, Russian Deputy Chief of Mission (DCM) Roman Babushkin said, “Not only Philippines but dozens of countries are interested”.

He added that there are many factors like “political, economic and technical” to be taken into account first before the green signal for sale is given and that “no decision has been taken” on sale to any third country.



Mr Babushkin also said Russia has independent strategic ties with both India and China and that the two relationships are independent of each other. But the Russian Deputy Chief of Mission (DCM) Babushkin clarified, “There is no military alliance with China. We (Russia) don't plan to create one.”

<https://www.asianage.com/india/all-india/241219/dozens-of-countries-keen-to-buy-brahmos.html>

Revamp DRDO, plan on reducing dependance on foreign vendors: Par panel

The panel also recommended that an environment might be created where the public sector and the private sector could work in collaboration

New Delhi: The Parliamentary Standing Committee on Defence has recommended a "complete revamp" of the Defence Research Development Organisation (DRDO) by involving the private sector and academic institutions for its resurgence and chalking out of a plan to reduce dependance on foreign vendors for military hardware.

The recommendations were made by the standing committee, headed by former Union minister and BJP MP Jai Oram, in its report on 'Demands for Grants of the Ministry of Defence for the year 2019-20'.

The report has already been submitted to the Lok Sabha speaker and was also tabled in the Rajya Sabha during the winter session of Parliament.

Recommendations and observations of the committee were released by the Lok Sabha Secretariat on Monday.

"The Committee stressed on the need for a complete revamp and re-orientation of DRDO functions and one of the major initiatives suggested by the committee in this regard was to facilitate the active involvement of the private sector, universities, IITs and the Indian Institute of Science, which could play a major role in the resurgence of DRDO," the secretariat said in the statement.

The panel also recommended that an environment might be created where the public sector and the private sector could work in collaboration so that the research and development activities could be synergised and better coordination achieved.

Noting that dependence on the foreign vendors for military hardware has been rising all these years, the panel said the Defence Ministry should "chalk out a plan in consultation with the services, Indian industry, Defence Public Sector Undertakings (DPSUs), educational institutes and other stakeholders to reduce this dependance."

The rising reliance on foreign vendors for hardware required by defence forces has led to very little procurement from the Indian sources, it said.

"This led to very little procurement from the Indian sources as it is inversely proportional to procurement from foreign vendors and would affect our indigenous industry in long run," the panel said.

The committee also felt that a level playing field needs to be provided to the Indian private industry and they might be allowed to tie up with foreign manufacturers to develop certain equipment based on the requirements of users.

(Only the headline and picture of this report may have been reworked by the Business Standard staff; the rest of the content is auto-generated from a syndicated feed.)

https://www.business-standard.com/article/pti-stories/revamp-drdo-by-involving-pvt-sector-make-plans-to-reduce-dependance-on-foreign-vendors-par-panel-119122301259_1.html

Non-contact warfare will help in gaining advantage over adversary in future: Army Chief

New Delhi: Asserting that the Army must lead in embracing technology, Army Chief General Bipin Rawat on Monday said non-contact warfare will help in gaining advantage over the adversary in future.

Addressing a defence seminar here, he said necessity was no longer the need for invention and innovations were driving technological advancement.

The Indian Army has to remain at the forefront of technological embrace, he said.

"Non-contact warfare is gaining relevance in future wars. That is not to say that the man on the ground...with a rifle in his hand will no longer remain relevant. They will remain relevant all through the ages," he said.

"Non-contact warfare will help us in gaining advantage over the adversary in future. Therefore, it is important to understand the context in which we need to move forward in this direction," General Rawat said.

Quantum technology, cyberspace and above all artificial intelligence, all these need to be leveraged, he said.

The seminar on the theme "Technologies for Non Contact Warfare" at Manekshaw Centre here was attended by Rawat, Principal Scientific Advisor to Government of India K Vijay Raghavan, Vice Chief of Army Staff Lieutenant General MM Naravane, President Society of Indian Defence Manufacturers Jayant Patil along with other dignitaries from the Ministry of Defence, three Services, the DRDO, leading academic institutions and industry.

The seminar brought the military, academia and industry together on a single platform to provide an in depth perspective on the available and emerging technologies, which could have an impact on war fighting in the non contact domain.

Rawat also stressed on the need of dual use technologies for the future. Towards this, the Indian Army has endeavoured to be more open towards the industry and has converted stringent military specifications for a number of its equipment into commercial grade specifications, he said.

Four achievers from varied background were facilitated during the seminar for the exceptional work in their fields of excellence.

The Chief of the Army Staff also released the Compendium of Problem Definition Statements.

The seminar also provided a platform to the selected start ups to put forward their research work and achievements.

Think tanks from varied fields in industry, academia, subject matter experts, users and policy makers also expressed their views during the seminar.

A display showcasing select military innovations developed by the Army, DRDO, academia and industry was also organised as part of the ARTECH Seminar. PTI ASK AAR

(Disclaimer :- This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: PTI

<https://www.outlookindia.com/newscroll/noncontact-warfare-will-help-in-gaining-advantage-over-adversary-in-future-army-chief/1692789>

Army officer develops bulletproof jacket against sniper rifle bullets

Indian Army is expected to issue a tender for these full-body protection bullet-proof jackets, which would be produced by one of the selected Indian defense industry partners

New Delhi: In a step that can make Pakistan Army snipers ineffective on the Line of Control, an Indian Army officer Major Anoop Mishra has developed a bullet-proof jacket named 'Sarvatra' which can provide protection to troops from lethal sniper rifle bullets as well.

"We have developed the level four bullet-proof jacket that has been developed at the College of Military Engineering in Pune and can provide full-body protection against sniper rifle bullets," Major Anoop Mishra told ANI here.

The officer was awarded the Army Design Bureau Excellence Award by Army Chief General Bipin Rawat at the Army Technology Seminar on Monday for indigenously developing a bullet-proof jacket, which can provide protection against sniper rifle bullets.

Asked why was the need felt for developing such a jacket, Mishra said that after the sniper attacks on the Line of Control and Kashmir valley, the need was felt that full-body protection should be provided to the soldiers.

He said the jacket has been tried and tested by the Infantry at their test facilities.

Indian Army is expected to issue a tender for these full-body protection bullet-proof jackets, which would be produced by one of the selected Indian defense industry partners.

<https://www.newindianexpress.com/nation/2019/dec/23/army-officer-develops-bulletproof-jacket-against-sniper-rifle-bullets-2080000.html>

Defence ministry should ‘strongly press’ for more funds, says Parliamentary panel

The panel has underlined need to provide budgetary support to the armed forces

By Rahul Singh

New Delhi: A parliamentary panel has asked the defence ministry to “strongly press” for additional funds from the finance ministry to enable the military to buy new equipment and also pay for weapons and systems it has already contracted to purchase, at a time when the armed forces have projected a combined requirement of almost Rs 1 lakh crore more under the capital head for 2019-20.

In a series of reports on demands for grants of the defence ministry for 2019-20, the Parliamentary standing committee on defence on Monday underlined the need to provide adequate budgetary support to the armed forces for powering different modernisation programmes and also pay for committed liabilities or procurements already made in the previous years.

India’s defence budget for 2019-20 stands at Rs 3.18 lakh crore. This includes a capital outlay of just Rs 1,03,394 crore that is not enough to upgrade capabilities and more money is required to avoid a funding crisis, said three senior military officers asking not to be named. The additional money sought by the army, navy and air force almost equals this year’s capital expenditure.

Measured against the country’s GDP, India’s defence spending currently stands at around 1.5% of the GDP, the lowest in decades. Several experts have argued that India should spend 3% of its GDP to build military capabilities to counter a combined threat from China and Pakistan. In written submissions to the parliamentary panel, the defence ministry said the requirements projected by the three services had been forwarded to the finance ministry for “favourable consideration”.

“While allocating funds, the ministry of finance analysed past absorption capacity of the services and the pace of expenditure in the current financial year. The committee understood that if this logic was applied, there was no reason not to allocate requisite budget for the forces as for the past few financial years they had been able to fully utilise the funds allocated to them at the revised estimates stage,” the panel said.

The armed forces have so far spent over 90% of funds on modernisation and committed liabilities, said the first senior officer. “Under the defence services estimates, committed liabilities constitute a significant element in respect of the capital acquisition segment, since one project may span several financial years. As such, it is important to track the element of committed liabilities, which hold first charge on budget allocation. The committee found the shortage baffling, as these are payments towards procurements made in previous years,” the panel said, recommending that allocation as promised should be disbursed for committed liabilities. On December 3, navy chief Admiral Karambir Singh highlighted that the navy needed funds for pursuing modernisation programmes as its share of the defence budget had declined from 18% to 13% during the last five years. The capital expenditure of Rs 23,156 crore earmarked for the navy isn’t sufficient to meet requirements and the service needs at least Rs 20,000 crore more, said the second officer.

Likewise, the capital expenditure of Rs 39,300 crore earmarked for IAF in this year’s budget is not enough and it requires an additional Rs 40,000 crore to upgrade capabilities, he added.

The army is seeking additional funds as the Rs 29,461 crore earmarked for the force fall short of its needs, said the third officer. Experts agree that the military needs more money. “A higher outlay is necessary for the armed forces to start becoming future-ready. While it is axiomatic that this will need

more capital funding, the services too need to invest these and future funds more imaginatively,” said military affairs expert Rear Admiral Sudarshan Shrikhande (retd).

<https://www.hindustantimes.com/india-news/parliamentary-panel-seeks-additional-funds-for-forces/story-1vmon5ScLc6nYGxWu2KWBK.html>

INDIAN DEFENCE RESEARCH WING

Tue, 24 Dec 2019

Air Chief Marshal RKS Bhadauria leaves for Egypt, to hold talks with top military brass

In line with the overall policy to step up the military outreach to Africa, a continent where China has made strategic inroads, Air Chief Marshal RKS Bhadauria on Monday left for a visit to Egypt to boost defence cooperation. The IAF chief, during his official tour till December 28, will hold talks with the top military brass of the Egypt, a country which links northeast Africa to the middle-east, as well as visit various military operational and training establishments.

The Egyptian Air Force, incidentally, also operates the French-origin Rafale fighter jets. India, in turn, is gearing up to induct the 36 Rafales it has ordered from France in the Rs 59,000 crore deal inked in September 2016.

“The visit will provide an impetus towards enhancing defence cooperation between the Indian and Egyptian Air Forces as well as strengthen the long standing bilateral relations between the two countries,” said an official. The visit comes after the Indian Army conducted the first Africa-India military field training exercise-2019 (AFINDEX-19), which included Egypt and 17 other countries from the continent, at the Aundh military station at Pune in March this year, as was first reported by TOI.

Moreover, defence minister Rajnath Singh went to Mozambique in his first foreign visit as the country’s defence minister, while Army chief General Bipin Rawat had earlier visited Tanzania and Kenya. India has also been holding defence cooperation talks with countries like Botswana, Egypt, Kenya, Lesotho, Morocco, Namibia, Nigeria, Rwanda, Tanzania, Uganda and Zambia. The defence engagement with South Africa is, of course, at a much higher level, with warships and aircraft from the two nations along with Brazil regularly holding the IBSAMAR naval exercise.

<https://idrw.org/air-chief-marshal-rks-bhadauria-leaves-for-egypt-to-hold-talks-with-top-military-brass/#more-217238>

'Coolest LEGO ever may help develop quantum computers'

London: In a first, scientists have cooled LEGO to the lowest temperature possible in an experiment which reveals a new use for the popular toy, and may be useful in the development of quantum computing.

LEGO is a line of construction toys consisting of colourful interlocking plastic bricks accompanying an array of gears, figurines and various other parts.

The pieces can be assembled and connected in many ways to construct objects, including vehicles, buildings, and working robots.

The researchers from the Lancaster University in the UK decided to place a LEGO figure and four LEGO blocks inside their "record-breaking" dilution refrigerator.

This machine is the most effective refrigerator in the world, capable of reaching minus 273.15 degrees Celsius -- about 200,000 times colder than room temperature and 2,000 times colder than deep space, said Dmitry Zmeev, who led the research published in the journal Scientific Reports.

"Our results are significant because we found that the clamping arrangement between the LEGO blocks causes the LEGO structures to behave as an extremely good thermal insulator at cryogenic temperatures," Zmeev said.

"This is very desirable for construction materials used for the design of future scientific equipment like dilution refrigerators," he said.

Researchers said the dilution refrigerator, invented 50 years ago, is at the centre of a global multi-billion dollar industry and is crucial to the work of modern experimental physics and engineering, including the development of quantum computers.

The use of plastic structures, such as LEGO, instead of the solid materials currently in use, means that any future thermal insulator could be produced at a significantly reduced cost.

Researchers said the next step is to design and 3D print a new thermal insulator for the next generation of dilution refrigerators.

<https://timesofindia.indiatimes.com/home/science/coolest-lego-ever-may-help-develop-quantum-computers/articleshow/72939059.cms>