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# समाचार पत्रों से चयित अंश
# Newspapers Clippings

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology


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Press Information Bureau
Government of India

**Ministry of Defence**

***Sun, 26 Dec 2021 3:16PM***

# Raksha Mantri lays foundation stone for Defence Technology & Test Centre and BRAHMOS Manufacturing Centre of DRDO in Lucknow

***Exudes confidence that they will play a pivotal role in bolstering national security, defence production & economy***

***The units will generate revenue, provide employment opportunities to the youth & help in achieving 'Aatmanirbhar Bharat': RM***

Raksha Mantri Shri Rajnath Singh laid the foundation stone for Defence Technology & Test Centre and BRAHMOS Manufacturing Centre, established by Defence Research & Development Organisation (DRDO) in Lucknow, Uttar Pradesh on December 26, 2021. The foundation for the two units was laid in the presence of Uttar Pradesh Chief Minister Shri Yogi Adityanath. A first of its kind Defence Technologies & Test Centre (DTTC), over approximately 22 acres is being set up to accelerate the growth of the defence and aerospace manufacturing clusters in Uttar Pradesh Defence Industrial Corridor (UP DIC). It will consist of the following six subcentres:

1. Deep-Tech Innovation & Startup Incubation Centre
2. Design & Simulation Centre
3. Testing & Evaluation Centre
4. Centre for Industry 4.0/Digital Manufacturing
5. Skill Development Centre
6. Business Development Centre

The BRAHMOS Manufacturing Centre, announced by BrahMos Aerospace, is a modern, state-of-art facility in the Lucknow node of UP DIC. It will cover over 200 acres and produce the new BRAHMOS-NG (Next Generation) variant, which carries forward the lineage of the BRAHMOS weapons system. This new centre would be ready over the next two to three years and will commence production at a rate of 80-100 BRAHMOS-NG missiles per year.

Congratulating the scientists and engineers of DRDO & BrahMos Aerospace, Shri Rajnath Singh exuded confidence that the two units will play a pivotal role in bolstering national security, defence production as well as the economy of Uttar Pradesh. He said, the state-of-the-art facilities will prove to be an important milestone in the defence sector. He added that the establishment of these units will generate revenue; provide employment opportunities to the youth and help in achieving 'Aatmanirbhar Bharat' envisioned by Prime Minister Shri Narendra Modi. He said that the message of Make in India, Make for India and Make for World has been sent out globally.

On the 'Defence Technology and Test Centre', the Raksha Mantri said, the Centre will provide the technological base to develop defence products keeping in mind the young innovators and startups in Amausi region of Uttar Pradesh. He added that the Centre will make all endeavours to fulfil the creative energy, capabilities and aspirations of the youth of Uttar Pradesh. It will help in bringing the MSMEs of Uttar Pradesh together and bring the state at the forefront in the field of defence and aerospace manufacturing, he said. He added that the Centre, through skill development, will create direct and indirect employment in the field of defence and aerospace manufacturing.

Recalling India's history, Shri Rajnath Singh said "we have never been an aggressor, but are ready to defend our people against any nation with hostile intentions". He added that the purpose of the BRAHMOS supersonic cruise missile system is to act as a deterrent. He said, the system not only reflects the technical cooperation between India and Russia, but also the long standing cultural, political and diplomatic ties. He termed BRAHMOS as the world's best and fastest precision-guided weapon which has strengthened India's credible deterrence in the 21st century.

The Raksha Mantri added that BRAHMOS has empowered the Armed Forces and raised India's military stature at the international level. On BRAHMOS-NG, he said, the more advanced missile system, which has proven its firepower in land, water and air will greatly strengthen the modern combat capability of the Indian Army in the coming years. He appreciated that the establishment of UP DIC has opened up new avenues for all-round technological progress of the state, besides providing employment opportunities for the youth of the region. "At the time of its inauguration, we had estimated an investment of Rs 3,732 crore. Investment of more than Rs 1,400 crore has already been received and the process is progressing rapidly," he informed.

Shri Rajnath Singh stated that India has attained a respectable position in areas of defence technologies, including the development of state-of-the-art missile systems in the last few years and has made commendable progress in building its defence industrial base. He applauded scientists of DRDO for their crucial role in increasing India's military stature by strengthening the Armed Forces and achieving 'Aatmanirbharta' in the development and production of modern missile systems. Shri Rajnath Singh ended his address by calling on all in attendance to resolve to raise the State of Uttar Pradesh to new heights.

The Rajnath Singh expressed confidence that the foundation stone laying of the two units heralds a new chapter in the defence of the nation as well as defence manufacturing and the economy of the state of Uttar Pradesh and the city of Lucknow. He applauded the state government under the leadership of Chief Minister Shri Yogi Adityanath for taking various initiatives for improving infrastructure and the welfare & progress of people from all sections of society.

Speaking on the occasion, UP Chief Minister Shri Yogi Adityanath thanked Raksha Mantri Shri Rajnath Singh for the initiatives of Ministry of Defence such as UP DIC, DefExpo-2020 and the establishment of a unt of Bharat Dynamics Limited in Jhansi. He said, the work had started in all six nodes of the UP DIC and that the foundation stone laying of the two units is a fulfilment of the vision of 'Aatmanirbhar Bharat' in the defence sector. The Chief Minister added that the units will provide avenues for employment for youth of the state and expressed confidence that the units will make a significant contribution to the progress of the state as also the nation. Shri Yogi Adityanath highlighted Uttar Pradesh's potential for progress in the defence sector due to the large number of Medium, Small Scale and Micro Enterprises (MSMEs) in the state. He assured all possible support of the state government to defence sector industries coming to the state.

In his opening address, Secretary Department of Defence R&D and Chairman DRDO Dr G Satheesh Reddy thanked the Raksha Mantri for making land available for the DTTC in Lucknow. He expressed gratitude to UP Chief Minister for providing 200 acres of land for the BRAHMOS manufacturing centre. He assured all support from DRDO to the industries coming up in the region.

The state-of-the-art Defence Technologies & Test Centre is being set up to implement the MoU exchanged between Uttar Pradesh Expressways Industrial Development Authority (UPEIDA) and DRDO during DefExpo-2020 at Lucknow in presence of the Raksha Mantri and the UP Chief

Minister. The DTTC, Lucknow will follow the design-build-test-learn cycle for technology consultancy & handholding of the Deep-Tech Startups & industries.

It will facilitate industries through establishing a centralized state of the art technology infrastructure which will accelerate the product development and reduce the induction time & the turnaround time for the futuristic systems development through its 6 subcentres. This unique setup will act as a bridge for Industries & Startups to grasp the DRDO's IPRs, Patents & ToTs. It will extend holistic handholding to Industries, Startups & Academia in UP DIC. It will promote the growth of Industries & Startups in UPDIC and Ease of Doing Business and contribute to building an AtmaNirbhar Bharat.

The BRAHMOS supersonic cruise missile system is one of the most successful missile programmes in the world. India has undertaken jointly in partnership with its closest strategic ally Russia. As the world's best and fastest precision-guided weapon, BRAHMOS has fortified India's deterrence power in 21st century. Designed and developed by India-Russia JV entity BrahMos Aerospace, supersonic cruise missile BRAHMOS has continued to evolve as the most versatile weapon in its genre. To carry forward this excellent lineage, BrahMos Aerospace has initiated work on a new, more advanced variant of the missile - BRAHMOS-NG. This new missile, having smaller, lighter and smarter dimensions, would be designed for deployment on a wider number of modern military platforms, including land, sea, underwater and air. It will hugely bolster Indian military's modern combat capability and flexibility in the next few years.

Union Minister of State for Housing & Urban Affairs Shri Kaushal Kishore, UP Industrial Development Minister Shri Satish Mahana; other Ministers of the state government; MPs, MLAs and public representatives from the state; officials of Ministry of Defence, DRDO and the state government were present on the occasion.

*https://pib.gov.in/PressReleasePage.aspx?PRID=1785316*

पत्र सूचना कार्यालय
भारत सरकार

**रक्षा मंत्रालय**

***Sun, 26 Dec 2021 3:16PM***

# रक्षा मंत्री ने लखनऊ में रक्षा प्रौद्योगिकी और परीक्षण केंद्र तथा डीआरडीओ के ब्रह्मोस विनिर्माण केंद्र की आधारशिला रखी

***उन्होंने विश्वास व्यक्त किया कि राष्ट्रीय सुरक्षा, रक्षा उत्पादन और अर्थव्यवस्था को मजबूत करने में इनकी महत्वपूर्ण भूमिका होगी***

***ये इकाइयाँ राजस्व का सृजन करेंगी, युवाओं को रोजगार के अवसर उपलब्ध करायेंगी और 'आत्मनिर्भर भारत' अर्जित करने में सहायता करेंगी: रक्षा मंत्री***

**रक्षा मंत्री श्री राजनाथ सिंह ने 26 दिसंबर, 2021 को उत्तर प्रदेश के लखनऊ, में रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) द्वारा स्थापित रक्षा प्रौद्योगिकी और परीक्षण केंद्र तथा ब्रह्मोस विनिर्माण केंद्र की आधारशिला रखी। उत्तर प्रदेश के मुख्यमंत्री श्री योगी आदित्यनाथ की उपस्थिति में इन दोनों इकाइयों की आधारशिला रखी गई। उत्तर प्रदेश डिफेंस इंडस्ट्रियल कॉरिडोर (यूपी डीआईसी) में रक्षा और एयरोस्पेस विनिर्माण कलस्टरों के विकास में तेजी लाने के लिए लगभग 22 एकड़ में फैले अपनी तरह के पहले रक्षा**

प्रौद्योगिकी और परीक्षण केंद्र (डीटीटीसी) की स्थापना की जा रही है। इसमें निम्नलिखित छह उपकेंद्र शामिल होंगे:

1. डीप-टेक इनोवेशन एंड स्टार्टअप इनक्यूबेशन सेंटर
2. डिजाइन और सिमुलेशन केंद्र
3. परीक्षण और मूल्यांकन केंद्र
4. उद्योग 4.0/डिजिटल विनिर्माण केंद्र
5. कौशल विकास केंद्र
6. व्यवसाय विकास केंद्र

ब्रह्मोस एयरोस्पेस द्वारा घोषित ब्रह्मोस विनिर्माण केंद्र, यूपी डीआईसी के लखनऊ नोड में एक अत्याधुनिक फैसिलिटी है। यह 200 एकड़ से अधिक क्षेत्र को कवर करेगी और नए ब्रह्मोस-एनजी (अगली पीढ़ी) संस्करण का उत्पादन करेगी, जो ब्रह्मोस हथियार प्रणाली को आगे बढ़ाएगी। यह नया केंद्र अगले दो से तीन वर्षों में तैयार हो जाएगा और प्रति वर्ष 80-100 ब्रह्मोस-एनजी मिसाइलों की दर से उत्पादन शुरू करेगा।

डीआरडीओ और ब्रह्मोस एयरोस्पेस के वैज्ञानिकों तथा इंजीनियरों को बधाई देते हुए, श्री राजनाथ सिंह ने विश्वास व्यक्त किया कि दोनों इकाइयां राष्ट्रीय सुरक्षा, रक्षा उत्पादन के साथ-साथ उत्तर प्रदेश की अर्थव्यवस्था को मजबूत करने में महत्वपूर्ण भूमिका निभाएंगी। उन्होंने कहा, अत्याधुनिक सुविधाएं रक्षा क्षेत्र में एक महत्वपूर्ण मील का पत्थर साबित होंगी। उन्होंने कहा कि इन इकाइयों की स्थापना से राजस्व सृजित होगा; युवाओं को रोजगार के अवसर उपलब्ध होंगे और प्रधानमंत्री श्री नरेन्द्र मोदी द्वारा परिकल्पित 'आत्मनिर्भर भारत' को अर्जित करने में मदद मिलेगी। उन्होंने कहा कि मेक इन इंडिया, मेक फॉर इंडिया और मेक फॉर वर्ल्ड का संदेश विश्व स्तर पर भेजा गया है।

रक्षा मंत्री ने 'रक्षा प्रौद्योगिकी और परीक्षण केंद्र' की चर्चा करते हुए कहा कि  केंद्र, उत्तर प्रदेश के अमौसी क्षेत्र में युवा नवोन्मेषकों और स्टार्टअप्स को ध्यान में रखते हुए रक्षा उत्पादों को विकसित करने के लिए प्रौद्योगिकी आधार उपलब्ध करायेगा। उन्होंने कहा कि केंद्र, उत्तर प्रदेश के युवाओं की रचनात्मक ऊर्जा, क्षमताओं और आकांक्षाओं को पूरा करने के लिए हर संभव प्रयास करेगा। उन्होंने कहा कि यह उत्तर प्रदेश के एमएसएमई को एकजुट करने और राज्य को रक्षा तथा एयरोस्पेस निर्माण के क्षेत्र में सबसे आगे लाने में सहायता करेगा। उन्होंने कहा कि केंद्र कौशल विकास के माध्यम से रक्षा और एयरोस्पेस निर्माण के क्षेत्र में प्रत्यक्ष और अप्रत्यक्ष रोजगार का सृजन करेगा।

भारत के इतिहास का स्मरण करते हुए, श्री राजनाथ सिंह ने कहा, "हम कभी भी हमलावर नहीं रहे हैं, लेकिन विद्वेषपूर्ण इरादों के साथ किसी भी राष्ट्र के विरुद्ध अपने नागरिकों की रक्षा करने के लिए तैयार हैं।" उन्होंने कहा कि ब्रह्मोस सुपरसोनिक क्रूज मिसाइल प्रणाली का उद्देश्य एक निवारक के रूप में कार्य करना है। उन्होंने कहा, यह प्रणाली न केवल भारत और रूस के बीच तकनीकी सहयोग को प्रतिबिम्बित करती है, बल्कि लंबे समय से चले आ रहे सांस्कृतिक, राजनीतिक और राजनयिक संबंधों को भी दर्शाती है। उन्होंने ब्रह्मोस को दुनिया का सबसे अच्छा और सबसे तेज सटीक-निर्देशित हथियार करार दिया, जिसने 21वीं सदी में भारत की विश्वसनीय प्रतिरोधक क्षमता को मजबूत किया है।

रक्षा मंत्री ने कहा कि ब्रह्मोस ने सशस्त्र बलों को सशक्त बनाया है और अंतरराष्ट्रीय स्तर पर भारत की सैन्य प्रतिष्ठा को बढ़ाया है। ब्रह्मोस-एनजी के बारे में उन्होंने कहा कि यह अधिक उन्नत मिसाइल प्रणाली है जिसने भूमि, पानी और हवा में अपनी मारक क्षमता साबित कर दी है तथा आने वाले वर्षों में भारतीय सेना की आधुनिक युद्ध क्षमता को काफी मजबूत करेगी। उन्होंने इस बात की सराहना की कि यूपी

डीआईसी की स्थापना ने प्रदेश के युवाओं को रोजगार के अवसर प्रदान करने के अलावा राज्य की चौतरफा तकनीकी प्रगति के लिए नए रास्ते खोले हैं। उन्होंने कहा कि, "इसके उद्घाटन के समय हमने 3,732 करोड़ रुपये के निवेश का अनुमान लगाया था। इसमें 1,400 करोड़ रुपये से अधिक का निवेश पहले ही प्राप्त हो चुका है और प्रक्रिया तेजी से आगे बढ़ रही है।

श्री राजनाथ सिंह ने कहा कि भारत ने पिछले कुछ वर्षों में अत्याधुनिक मिसाइल प्रणालियों के विकास सहित रक्षा प्रौद्योगिकियों के क्षेत्रों में एक सम्मानजनक स्थान प्राप्त किया है और अपने रक्षा औद्योगिक आधार के निर्माण में सराहनीय प्रगति की है। उन्होंने डीआरडीओ के वैज्ञानिकों की सशस्त्र बलों को मजबूत करके और आधुनिक मिसाइल प्रणालियों के विकास तथा उत्पादन में 'आत्मनिर्भर भारत' अर्जित करने के द्वारा भारत की सैन्य स्थिति को बढ़ाने में उनकी महत्वपूर्ण भूमिका के लिए सराहना की। श्री राजनाथ सिंह ने सभी उपस्थित लोगों से उत्तर प्रदेश राज्य को नई ऊंचाइयों पर ले जाने का संकल्प लेने का आह्वान करते हुए अपना संबोधन समाप्त किया।

राजनाथ सिंह ने विश्वास व्यक्त किया कि दो इकाइयों का शिलान्यास राष्ट्र की रक्षा के साथ-साथ रक्षा निर्माण और उत्तर प्रदेश राज्य तथा लखनऊ शहर की अर्थव्यवस्था में एक नया अध्याय है। उन्होंने मुख्यमंत्री श्री योगी आदित्यनाथ के नेतृत्व में राज्य सरकार की अवसंरचना में सुधार तथा समाज के सभी वर्गों के लोगों के कल्याण तथा प्रगति के लिए विभिन्न पहलों की सराहना की।

इस अवसर पर उत्तर प्रदेश के मुख्यमंत्री श्री योगी आदित्यनाथ ने यूपी डीआईसी, डेफएक्सपो-2020 और झांसी में भारत डायनेमिक्स लिमिटेड की स्थापना जैसी रक्षा मंत्रालय की पहलों के लिए रक्षा मंत्री श्री राजनाथ सिंह को धन्यवाद दिया। उन्होंने कहा, यूपी डीआईसी के सभी छह नोड्स में काम शुरू हो गया था और दो इकाइयों की आधारशिला रखना रक्षा क्षेत्र में 'आत्मनिर्भर भारत' के विजन को पूरा किया जाना है। मुख्यमंत्री ने कहा कि ये इकाइयां राज्य के युवाओं के लिए रोजगार के अवसर प्रदान करेंगी और विश्वास व्यक्त किया कि ये इकाइयां राज्य के साथ-साथ राष्ट्र की प्रगति में भी महत्वपूर्ण योगदान देंगी। श्री योगी आदित्यनाथ ने राज्य में बड़ी संख्या में मध्यम, लघु और सूक्ष्म उद्यमों (एमएसएमई) के कारण रक्षा क्षेत्र में प्रगति के लिए उत्तर प्रदेश की क्षमताओं को रेखांकित किया। उन्होंने राज्य में आने वाले रक्षा क्षेत्र के उद्योगों को राज्य सरकार के हर संभव सहयोग का आश्वासन दिया।

अपने उद्घाटन भाषण में रक्षा अनुसंधान एवं विकास विभाग के सचिव और डीआरडीओ के अध्यक्ष डॉ. जी सतीश रेड्डी ने लखनऊ में डीटीटीसी के लिए भूमि उपलब्ध कराने के लिए रक्षा मंत्री को धन्यवाद दिया। उन्होंने ब्रह्मोस निर्माण केंद्र के लिए 200 एकड़ भूमि उपलब्ध कराने के लिए उत्तर प्रदेश के मुख्यमंत्री का आभार व्यक्त किया। उन्होंने क्षेत्र में आने वाले उद्योगों को डीआरडीओ की ओर से हरसंभव सहायता का आश्वासन दिया।

रक्षा मंत्री और उत्तर प्रदेश के मुख्यमंत्री की उपस्थिति में लखनऊ में डेफएक्सपो-2020 के दौरान उत्तर प्रदेश एक्सप्रेसवे औद्योगिक विकास प्राधिकरण (यूपीईआईडीए) और डीआरडीओ के बीच आदान-प्रदान किए गए समझौता ज्ञापन को कार्यान्वित करने के लिए अत्याधुनिक रक्षा प्रौद्योगिकी और परीक्षण केंद्र की स्थापना की जा रही है। लखनऊ के डीटीटीसी, डीप-टेक स्टार्टअप्स और उद्योगों के प्रौद्योगिकी परामर्श तथा प्रारम्भिक सहायता के लिए डिजाइन-बिल्ड-टेस्ट-लर्न चक्र का अनुसरण करेगा।

यह एक केन्द्रीकृत अत्याधुनिक प्रौद्योगिकी अवसंरचना की स्थापना के माध्यम से उद्योगों को सुविधा प्रदान करेगा जो उत्पाद विकास में तेजी लाएगा और इसके 6 उपकेंद्रों के माध्यम से भविष्य की प्रणालियों के विकास के लिए समावेशन समय तथा टर्नअराउंड समय को कम करेगा। यह अनूठा सेटअप डीआरडीओ के आईपीआर, पेटेंट और टीओटी को समझने के लिए उद्योगों और स्टार्टअप के लिए एक सेतु का काम

करेगा। यह यूपी डीआईसी में उद्योगों, स्टार्टअप्स और शिक्षा क्षेत्र के लिए समग्र आरम्भिक सहायता प्रदान करेगा। यह यूपीडीआईसी में उद्योगों और स्टार्टअप्स के विकास तथा व्यवसाय करने की सुगमता को बढ़ावा देगा और एक आत्मनिर्भर भारत के निर्माण में योगदान देगा।

ब्रह्मोस सुपरसोनिक क्रूज मिसाइल प्रणाली दुनिया के सबसे सफल मिसाइल कार्यक्रमों में से एक है। भारत ने अपने निकटतम रणनीतिक सहयोगी रूस के साथ संयुक्त रूप से साझेदारी की है। दुनिया के सबसे अच्छे और सबसे तेज सटीक-निर्देशित हथियार के रूप में, ब्रह्मोस ने 21वीं सदी में भारत की प्रतिरोधक शक्ति को मजबूत किया है। भारत-रूस संयुक्त उद्यम इकाई ब्रह्मोस एयरोस्पेस द्वारा डिजाइन और विकसित, सुपरसोनिक क्रूज मिसाइल ब्रह्मोस अपनी शैली में सबसे बहुमुखी हथियार के रूप में विकसित हो चुकी है। इस उत्कृष्ट कार्य को आगे बढ़ाने के लिए, ब्रह्मोस एयरोस्पेस ने मिसाइल के एक नए, अधिक उन्नत संस्करण - ब्रह्मोस-एनजी पर काम शुरू किया है। छोटे, हल्के और स्मार्ट आयामों वाली इस नई मिसाइल को भूमि, समुद्र, पानी के भीतर और हवा सहित आधुनिक सैन्य प्लेटफार्मों की एक विस्तृत संख्या पर तैनाती के लिए डिज़ाइन किया जाएगा। यह अगले कुछ वर्षों में भारतीय सेना की आधुनिक युद्ध क्षमता और लचीलेपन को बेहद मजबूत करेगा।

इस अवसर पर केंद्रीय गृह राज्य मंत्री श्री कौशल किशोर, उत्तर प्रदेश के औद्योगिक विकास मंत्री श्री सतीश महाना; राज्य सरकार के अन्य मंत्री, सांसद, विधायक और राज्य के जनप्रतिनिधि, रक्षा मंत्रालय, डीआरडीओ तथा राज्य सरकार के अधिकारी उपस्थित थे।

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Press Information Bureau
Government of India

**రక్షణ మంత్రిత్వ శాఖ**

***Sun, 26 Dec 2021 3:16PM***

# లక్నోలో డి.టి.టి.సి., బ్రహ్మోస్ క్షిపణి తయారీ కేంద్రం!

# రక్షణమంత్రి చేతుల మీదుగా రెండు కేంద్రాలకు శంకుస్థాపన..

***జాతీయ భద్రత, రక్షణ ఉత్పాదనలో, దేశ ఆర్థిక వ్యవస్థ పటిష్టతలో***
***ఈ కేంద్రాలదే కీలకపాత్ర అని వ్యాఖ్య..***

***ఆదాయాన్ని సమకూర్చడంతోపాటు, యువతకు ఉపాధి కల్పనకు,***
***'ఆత్మనిర్భర భారత్' సాధనకు దోహదపడతాయన్న రక్షణ మంత్రి..***

ఉత్తరప్రదేశ్ రాజధాని లక్నోలో రక్షణ, పరిశోధన అభివృద్ధి సంస్థ (డి.ఆర్.డి.ఒ.) ఆధ్వర్యంలో, నిర్మించ తలపెట్టిన రక్షణ సాంకేతిక పరిజ్ఞాన, పరీక్షా కేంద్రానికి (డి.టి.టి.సి.కి), బ్రహ్మోస్ క్షిపణి తయారీ కేంద్రానికి రక్షణ మంత్రి రాజనాథ్ సింగ్ డిసెంబరు 26న శంకుస్థాపన చేశారు. ఉత్తరప్రదేశ్ ముఖ్యమంత్రి యోగీ ఆదిత్యనాథ్ సమక్షంలో రెండు కేంద్రాల శంకుస్థాపన కార్యక్రమం నిర్వహించారు. కేంద్ర హోమ్ శాఖ సహాయమంత్రి కౌశల్ కిశోర్, ఉత్తరప్రదేశ్ పారిశ్రామికాభివృద్ధి శాఖ మంత్రి సతీష్ మహానా,; ఉత్తరప్రదేశ్ రాష్ట్ర మంత్రులు, పార్లమెంటు సభ్యులు, శాసనసభ్యులు, ఇతర ప్రజాప్రతినిధులు; రక్షణ మంత్రిత్వ శాఖ అధికారులు, డి.ఆర్.డి.ఒ.కు, రాష్ట్ర ప్రభుత్వానికి చెందిన అధికారులు ఈ కార్యక్రమాల్లో పాల్గొన్నారు.

తాజాగా జరిగిన శంకుస్థాపనతో 22ఎకరాల విస్తీర్ణంలో లక్నోలో నిర్మించనున్న డి.టి.టి.సి. ఎన్నో రకాలుగా విలక్షణమైనది. ఉత్తరప్రదేశ్ రక్షణ పారిశ్రామిక కారిడార్ (యు.పి.డి.ఐ.సి.)లో రక్షణ గగనతల తయారీ విభాగాల సమూహ ప్రగతిని మరింత వేగవంతం చేసేందుకు ఈ కేంద్రాన్ని ఏర్పాటు చేస్తున్నారు. ఈ డి.టి.టి,సి. పరిధిలో ఈ కింద ఆరు ఉపకేంద్రాలు పనిచేస్తాయి.:

1. డీప్ టెక్ ఇన్నోవేషన్, స్టార్టప్ ఇంకుబేషన్ సెంటర్
2. డిజైన్, స్టిములేషన్ సెంటర్
3. టెస్టింగ్, ఎవాల్యుయేషన్ సెంటర్
4. సెంటర్ ఫర్ ఇండస్ట్రీ 0/డిజిటల్ మాన్యుఫ్యాక్చరింగ్
5. నైపుణ్యాభివృద్ధి కేంద్రం
6. వాణిజ్యాభివృద్ధి కేంద్రం

ఇక బ్రహ్మోస్ ఎయిరోస్పేస్ సంస్థ ప్రకటించిన బ్రహ్మోస్ తయారీ కేంద్రం, లక్నోలోని రక్షణ పారిశ్రామిక కారిడార్ పరిధిలో ఎంతో అధునాతన సాంకేతిక పరిజ్ఞానంతో కూడుకున్నది. 200 ఎకరాల విస్తీర్ణంలో విస్తరించి ఉండే ఈ సంస్థలో కొత్త తరహా బ్రహ్మోస్-ఎన్.జి. (తదుపరి తరం) రకం క్షిపణులను ఉత్పత్తి చేస్తారు. బ్రహ్మోస్ ఆయుధ వ్యవస్థకే ప్రత్యేకమైన ఆయుధాన్ని మోసుకెళ్లగలిగే క్షిపణులను ఈ కేంద్రంలో తయారు చేస్తారు. ఈ కేంద్రం రానున్న రెండు మూడేళ్లలో ఉత్పాదనకు సిద్ధమవుతుంది. సంవత్సరానికి 80నుంచి వంద బ్రహ్మోస్ ఎన్.జి. క్షిపణులను ఈ కేంద్రంలో తయారు చేస్తారు.

శంకుస్థాపన సందర్భంగా డి.ఆర్.డి.ఒ., బ్రహ్మోస్ ఎయిరో స్పేస్ సంస్థ శాస్త్రవేత్తలను, ఇంజనీర్లను రక్షణ మంత్రి రాజనాథ్ సింగ్ అభినందించారు. జాతీయ భద్రతను, రక్షణ ఉత్పాదనను, ఉత్తరప్రదేశ్ ఆర్థిక వ్యవస్థను బలోపేతం చేయడంలో ఈ రెండు కేంద్రాలు ప్రముఖ పాత్ర పోషించగలవన్న ఆశాభావాన్ని ఆయన వ్యక్తం చేశారు. ఈ రెండు కేంద్రాల్లో ఏర్పాటు కానున్న అధునాతన సాంకేతిక పరిజ్ఞాన సదుపాయాలు, మన రక్షణ రంగంలోనే ముఖ్యమైన మలుపుగా నిలిచిపోగలవన్నారు. ఆదాయాన్ని సమకూర్చడంతోపాటుగా, యువతకు ఉపాధి కల్పనకు, ప్రధానమంత్రి నరేంద్ర మోదీ కలలుగన్న 'ఆత్మనిర్భర భారత్' కలను సాకారం చేసుకునేందుకు ఈ కేంద్రాలు దోహదపడగలవన్న ఆశాభావాన్ని ఆయన వ్యక్తంచేశారు. మేక్ ఇన్ ఇండియా, మేక్ ఫర్ ఇండియా, మేక్ ఫర్ వరల్డ్ అనే సందేశాలు ఇప్పటికే ప్రపంచవ్యాప్తంగా పలు దేశాలకు చేరుకున్నాయని అన్నారు.

'రక్షణ సాంకేతిక, పరీక్షా కేంద్రం (డి.టి.టి.సి.)' గురించి ఆయన ప్రస్తావిస్తూ, రక్షణ ఉత్పాదనలను రూపొందించడానికి తగిన సాంకేతిక పరిజ్ఞానానికి తగిన పునాదిని ఈ కేంద్రం ఏర్పాటు చేయగలదన్నారు. ఉత్తరప్రదేశ్ రాష్ట్రం,.. అమౌసీ ప్రాంతానికి చెందిన యువజనులైన ఆవిష్కర్తలను, స్టార్టప్ సంస్థలను దృష్టిలో పెట్టుకుని ఈ కేంద్రాన్ని ఏర్పాటు చేసినట్టు కేంద్రమంత్రి తెలిపారు. ఉత్తరప్రదేశ్ రాష్ట్ర యువత ఆశయాలను నెరవేర్చేందుకు, సృజనాత్మక శక్తిని, సామర్థ్యాలను వినియోగించుకునేందుకు కేంద్ర ప్రభుత్వం అన్నివిధాలా కృషి చేయగలదని ఆయన చెప్పారు. ఉత్తరప్రదేశ్ రాష్ట్రంలోని సూక్ష్మ, చిన్న, మధ్యతరహా సంస్థలను సమీకృతం చేసేందుకు, రక్షణ, గగనతల రంగాలకు సంబంధించిన తయారీ ప్రక్రియలో ఉత్తరప్రదేశ్.ను ముందువరుసలో నిలిపేందుకు ఈ కేంద్రం దోహదపడుతుందన్నారు. నైపుణ్యాభివృద్ధి ద్వారా రక్షణ రంగంలో, గగనతల రంగంలో ప్రత్యక్షంగా, పరోక్షంగా ఉపాధి కల్పనకు కేంద్రం చర్యలు తీసుకుంటుందని రాజనాథ్ సింగ్ చెప్పారు.

భారతదేశ చరిత్రను ఆయన ఉటంకిస్తూ, ''మనం ఎప్పుడూ ఆక్రమణదారుగా వ్యవవహరించలేదు. అయితే, ఏదైనా దేశం శత్రుభావంతో వచ్చినపుడు మాత్రం ప్రజలను రక్షించుకునేందుకు ఎప్పుడూ సిద్ధంగానే ఉంటున్నాం.'' అని అన్నారు.

దాడులను ఎదుర్కొని దీటుగా ప్రతిఘటించడమే బ్రహ్మోస్ సూపర్ సోనిక్ క్రయిజ్ క్షిపణి వ్యవస్థ ప్రధాన ధ్యేయమని అన్నారు. బ్రహ్మోస్ క్షిపణి వ్యవస్థ భారత, రష్యా దేశాల సాంకేతిక సహకారాన్ని ప్రతిబింబించడమే కాక, దీర్ఘకాలంగా కొనసాగుతున్న ఉభయదేశాల సాంస్కృతిక, రాజకీయ, దౌత్య బంధాలకు సూచికగా నిలిచిందని అన్నారు. బ్రహ్మోస్ వ్యవస్థ అనేది, ప్రపంచంలోనే ఉత్తమమైన, వేగవంతమైన, కచ్చితత్వంతో కూడిన చోదకశక్తితో కూడిన ఆయుధమని, 21వ శతాబ్దంలో ఇది భారతీయ సాయుధబలగాల ప్రతిఘటనా శక్తిని మరింత బలోపేతం చేసిందని రాజనాథ్ సింగ్ అన్నారు.

బ్రహ్మోస్ వ్యవస్థ సాయుధ బలగాలకు సాధికారతను కల్పించిందని, అంతర్జాతీయ స్థాయిలో భారతీయ సైనిక ప్రతిష్టను మరింత ఇనుమడింపజేసిందని రక్షణమంత్రి అన్నారు. భూ ఉపరితలంపై, నీటిలో, గగనతలంలో ఇప్పటికే తన శక్తి సామర్థ్యాలను రుజువు చేసుకున్న బ్రహ్మోస్ ఎన్.జి. క్షిపణి వ్యవస్థ,.. రానున్న కాలంలో భారతీయ సాయుధ బలగాల అధునాతన యుద్ధ పటిమను మరింతగా బలోపేతం చేయగలదన్నారు. ఉత్తరప్రదేశ్.లో బహుముఖ సాంకేతిక పరిజ్ఞాన ప్రగతికి, ఆ ప్రాంతంలో యువతకు ఉద్యోగ, ఉపాధి అవకాశాలు కల్పనకు అనువుగా ఉత్తరప్రదేశ్ రక్షణ పారిశ్రామిక కారిడార్ (యు.పి. డి.ఐ.సి.) కొత్త మార్గాలను తెరిచిందని అన్నారు. "ఈ కారిడార్.తో రూ. 3,732కోట్ల పెట్టుబడులు రావచ్చని ప్రారంభోత్సవ సమయంలో అంచనా వేశాం. ఇప్పటికే, రూ. 1,400కోట్లకు పైగా పెట్టుబడులు వచ్చాయి. కారిడార్ ఏర్పాటు ప్రక్రియ వేగంగా ముందుకు సాగుతోంది." అని ఆయన అన్నారు.

గత కొన్నేళ్లలోనే రక్షణ సాంకేతిక పరిజ్ఞానరంగంలో భారతదేశం గౌరవనీయమైన స్థానాన్ని సాధించిందని, అధునాతన పరిజ్ఞానంతో కూడిన క్షిపణి వ్యవస్థను కూడా రూపొందించుకోగలిగిందని, రక్షణ పారిశ్రామిక పునాదుల నిర్మాణంలో ప్రశంసనీయమైన ప్రగతిని సాధించిందని ఆయన అన్నారు. సాయుధ బలగాలను బలోపేతం చేయడం, అధునాతన క్షిపణి వ్యవస్థల రూపకల్పన, ఉత్పాదనలో స్వావలంబనతో కూడిన 'ఆత్మనిర్భర భారత్' స్థాయిని సాధించడంలో డి.ఆర్.డి.ఓ. శాస్త్రవేత్తల కృషి అభినందనీయమని కేంద్రమంత్రి అన్నారు. ఉత్తరప్రదేశ్ ప్రగతిని కొత్త శిఖరాలకు చేర్చేందుకు ప్రతిన బూనాలని ఆహూతులందరికీ రాజనాథ్ సింగ్ విజ్ఞప్తి చేశారు. రక్షణ మంత్రిత్వ శాఖకు చెందిన రెండు కీలకమైన ప్రతిష్టాత్మక కేంద్రాలకు శంకుస్థాపన చేయడం దేశ రక్షణ రంగం, రక్షణ ఉత్పాదన రంగం, ఉత్తరప్రదేశ్ ఆర్థిక రంగంలో, లక్నో నగరాభివృద్ధిలో కొత్త అధ్యాయానికి నాంది పలికినట్టేనని అన్నారు. రాష్ట్రానికి చెందిన అన్ని సామాజిక వర్గాల ప్రగతి, సంక్షేమం, మౌలిక సదుపాయాలను మెరుగుపరచడమే లక్ష్యంగా అనేక చర్యలు తీసుకున్న ఉత్తరప్రదేశ్ ముఖ్యమంత్రి యోగీ ఆదిత్యానాథ్ నాయకత్వాన్ని ఆయన అభినందించారు.

ఈ సందర్భంగా ఉత్తరప్రదేశ్ ముఖ్యమంత్రి యోగీ ఆదిత్యానాథ్ మాట్లాడుతూ, రక్షణ మంత్రిత్వశాఖ చొరవతో తీసుకున్న అనేక కార్యక్రమాల నేపథ్యంలో, రక్షణమంత్రి రాజనాథ్ సింగ్.కు కృతజ్ఞతలు తెలిపారు. రక్షణమంత్రిత్వ శాఖ చొరవతో ఏర్పాటవుతున్న యు.పి. డి.ఐ.సి., రెండు కేంద్రాల నిర్మాణానికి శంకుస్థాపన వంటివి రక్షణ రంగంలో 'ఆత్మనిర్భర భారత్' సాకారం చేయడానికేనని ఆయన అన్నారు.

రక్షణమంత్రిత్వ శాఖ ఆధ్వర్యంలోని ఈ రెండు కేంద్రాలు ఉత్తరప్రదేశ్ యువతకు ఉపాధి కల్పనకు, మార్గాలను ఏర్పరుస్తాయని యోగీ ఆదిత్యానాథ్ అన్నారు. రాష్ట్రం ప్రగతికి, దేశాభివృద్ధికి ఈ రెండు కేంద్రాలు గణనీయమైన సేవలందించగలవన్నారు. ఉత్తరప్రదేశ్.లో రక్షణ రంగం ప్రగతికి గల అవకాశాలను గురించి ఆదిత్యానాథ్ ప్రధానంగా ప్రస్తావించారు. రాష్ట్రంలో మధ్య, సూక్ష్మ, చిన్న మధ్యతరహా (ఎం.ఎస్.ఎం.ఇ.) సంఖ్య భారీ సంఖ్యలో ఉన్నందున రక్షణ రంగం ప్రగతి సాధ్యమవుతుందని అన్నారు. రాష్ట్రానికి రక్షణ రంగం ద్వారా వచ్చే పరిశ్రమలకు రాష్ట్రప్రభుత్వం అన్ని విధాలా సహాయం అందిస్తుందన్నారు.

రక్షణ పరిశోధన, అభివృద్ధి శాఖ కార్యదర్శి, డి.ఆర్.డి.ఒ. చైర్మన్ డాక్టర్ జి. సతీశ్ రెడ్డి ప్రారంభోపన్యాసం చేస్తూ, లక్నోలో డి.టి.టి.సి. ఏర్పాటుకోసం భూమిని అందుబాటులోకి తెచ్చినందుకు రక్షణమంత్రికి కృతజ్ఞతలు చెప్పారు. బ్రహ్మోస్ క్షిపణుల తయారీ కేంద్రంకోసం 200 ఎకరాల స్థలాన్ని అందించినందుకు ఉత్తరప్రదేశ్ ముఖ్యమంత్రికి ఆయన కృతజ్ఞతలు తెలిపారు. ఆ ప్రాంతంలో వచ్చే అన్ని పరిశ్రమలకు డి.ఆర్.డి.ఒ.నుంచి తప్పనిసరిగా మద్దతు ఉంటుందని ఆయన హామీ ఇచ్చారు.

ఉత్తరప్రదేశ్ ఎక్స్‌ప్రెస్ రహదారులు, పారిశ్రామికాభివృద్ధి సంస్థ (యు.పి.ఇ.ఐ.డి.ఎ.), డి.ఆర్.డి.ఒ. మధ్య, డిఇఎఫ్ ఎక్స్.పో-2020 ప్రదర్శన సందర్భంగా కుదిరిన అవగాహనా ఒప్పందం అమలులో భాగంగా లక్నోలో అధునాతన సాంకేతిక పరిజ్ఞానంతో డి.టి.టి.సి.ని ఏర్పాటు చేస్తున్నారు. రక్షణమంత్రి, ఉత్తరప్రదేశ్ ముఖ్యమంత్రి సమక్షంలో ఈ అవగాహనా ఒప్పందం కుదిరింది. నమూనా రూపకల్పన, నిర్మాణం, ప్రయోగపరీక్ష, అధ్యయన పద్ధతిని డి.టి.టి.సి. అనుసరిస్తుంది. కేంద్రీకృత అధునాతన సాంకేతిక పరిజ్ఞాన మౌలిక సదుపాయాలను ఏర్పాటు చేయడం ద్వారా పరిశ్రమల ఏర్పాటుకు ఈ కేంద్రం తగిన వసతిని కల్పిస్తుంది. ఇది తన పరిధిలోని ఆరు ఉపకేంద్రాల ద్వారా ఉత్పాదనా ప్రక్రియ రూపకల్పనను వేగవంతం చేస్తుంది. పరిశ్రమలు, స్టార్టప్ కంపెనీల మధ్య అనుసంధానకర్తగా పనిచేస్తుంది. యు.పి. డి.ఐ.సి.లో,.. పరిశ్రమలను, స్టార్టప్ కంపెనీలను, విద్యా సంస్థలను సమీకృతం చేయడానికి, సులభతర వాణిజ్య నిర్వహణకు దోహదపడుతుంది. తద్వారా ఆత్మనిర్భర భారత్ లక్ష్యాన్ని సాధించేందుకు కృషిచేస్తుంది.

ఇక బ్రహ్మోస్ సూపర్ సోనిక్ క్రుయిజ్ క్షిపణి వ్యవస్థ ప్రపంచంలోనే విజయవంతమైన క్షిపణి కార్యక్రమాల్లో ఒకటిగా పేరుగాంచింది. తన సన్నిహిత వ్యూహాత్మక మిత్రదేశమైన రష్యా భాగస్వామ్యంతో భారతదేశం ఉమ్మడిగా ఈ క్షిపణి తయారీ వ్యవస్థను చేపట్టింది. 21వ శతాబ్దంలో భారతదేశపు పటిష్టమైన ప్రతిఘటనా శక్తిగా ఇది రూపుదాల్చింది. భారత, రష్యా ఉమ్మడి సంస్థ అయిన బ్రహ్మోస్ ఎయిరోస్పేస్ సంస్థ రూపకల్పనలో తీర్చిదిద్దిన సూపర్ బ్రహ్మోస్ సూపర్.సోనిక్ క్షిపణి క్రమంగా మనకు సర్వోత్కృష్టమైన విశేష ఆయుధంగా మారుతూ వస్తోంది. ఈ ఆయుధ వ్యవస్థ పరంపర ప్రాతిపదికగా, మరింత అధునాతన పరిజ్ఞానంతో బ్రహ్మోస్-ఎన్.జి. అనే మెరుగైన తదుపరి తరపు క్షిపణి వ్యవస్థ రూపకల్పనా ప్రక్రియను ప్రారంభించారు. విస్తృతమైన సంఖ్యలో అధునాతన సైనిక వేదికలపై మోహరించేందుకు వీలుగా ఈ కొత్త తరహా క్షిపణిని తీర్చిదిద్దనున్నారు. భూ ఉపరితలం, సముద్ర ఉపరితలం, జలంతర్భాగం, గగనతలంలో మోహరించేందుకు వీలుగా ఈ కొత్త క్షిపణి వ్యవస్థను తయారు చేస్తున్నారు. ఈ నేపథ్యంలో ఈ నూతన క్షిపణి వ్యవస్థ భారతీయ సైన్యం అధునాతన పోరాట సామర్థ్యాన్ని మరింత బలోపేతం చేసే అవకాశాలు ఉన్నాయి.

https://pib.gov.in/PressReleasePage.aspx?PRID=1785397

Business Standard

***Mon, 27 Dec 2021***

# Rajnath Singh inaugurates Brahmos missile manufacturing unit in Lucknow

***Asserts imperative of nuclear deterrent of India***

Defence Minister Rajnath Singh on Sunday reiterated that Russia was India's strategic partner. Further, Singh supported the nuclear and other military deterrents of India to preempt external threats on the Indian soil.

Addressing a gathering after laying the foundation of BrahMos Aerospace cruise missile manufacturing unit in Lucknow, Singh said the project was a testimony of the defence manufacturing cooperation between the two countries.

"Russia is our strategic partner, and the BrahMos missile project is the symbol of our partnership," he said adding the moniker of BrahMos was derived from Brahmaputra and Moskva rivers of India and Russia respectively.

BrahMos is a joint venture between the Defence Research and Development Organisation (DRDO) of India and NPOM, Russia to develop next-generation supersonic missiles for the Indian forces.

"BrahMos missile is not meant for attacking other nations but to equip India with capabilities to deter external forces from casting evil eyes on our territory," he noted.

**Defence Minister Rajnath Singh addressing the foundation stone laying programme of the Brahmos missile manufacturing unit and Defence Research and Development Organisation (DRDO) lab, in Lucknow. (Photo: ANI)**

Singh underlined India had never attacked other nations nor tried to encroach upon even an inch of their land. "However, we need to have a nuclear deterrent so that no other country could think of attacking us."

He recalled the Uri and Pulwama incidents, saying a neighbouring country had always exhibited nefarious designs and executed terrorist attacks in India.

"However, we responded by striking inside their territory and through airstrikes to give the message that if provoked, we have the capacity to go beyond our borders too," he said.

Meanwhile, Singh also laid the foundation of DRDO Defence Technology and Test Centre in the capital city of Uttar Pradesh. "The BrahMos plant is not only vital for India's defence sector but also propels UP in the league of leading states for defence manufacturing."

He thanked UP chief minister Yogi Adityanath for the speedy acquisition of 200 acres of land for the prestigious project.

Meanwhile, BrahMos project is estimated to create 5,500 fresh job opportunities, while the ancillary supply chain would create an additional 10,000 employment. All the three wings of the Indian defence forces viz. Army, Air Force and Navy, have already inducted BrahMos advanced weapon system.

*https://www.business-standard.com/article/current-affairs/rajnath-singh-inaugurates-brahmos-missile-manufacturing-unit-in-lucknow-121122600508_1.html*

जागरण

***Mon, 27 Dec 2021***

# राजनाथ सिंह बोले- आक्रमण के लिए नहीं, हमारी तरफ बुरी नजर उठाने वालों के लिए बना रहे ब्रह्मोस मिसाइल

***रक्षामंत्री राजनाथ सिंह ने लखनऊ में रविवार को ब्रह्मोस मिसाइल यूनिट और रक्षा प्रौद्योगिकी एवं परीक्षण केंद्र की लैब का शिलान्यास किया। इस दौरान मुख्यमंत्री योगी आदित्यनाथ भी मौजूद रहे। ब्रह्मोस यूनिट के लिए सरकार ने मात्र एक रुपये की लीज पर 80 हेक्टेयर से अधिक जमीन उपलब्ध कराई है।***

***By Umesh Tiwari***

**लखनऊ: ब्रह्मोस न्यू जनरेशन मिसाइल की उत्पादन इकाई और डीआरडीओ (रक्षा अनुसंधान एवं विकास संगठन) की रक्षा प्रौद्योगिकी व परीक्षण केंद्र का उपहार देते हुए रक्षामंत्री राजनाथ सिंह ने एक तीर से कई निशाने साधे। उन्होंने देश की बढ़ रही सामरिक क्षमता से पाकिस्तान और चीन को चुनौती दी तो यूपी में बढ़ रहे निवेश के साथ पिछली सपा सरकार पर भी हमले किए। कहा कि इतिहास देख लीजिए भारत ने किसी पर पहले आक्रमण नहीं किया न ही किसी की एक इंच जमीन कब्जा किया। हम ब्रह्मोस मिसाइल**

देश की धरती पर इसलिए बनाना चाहते हैं ताकि हमारे पास ऐसी ताकत हो कि दुनिया का कोई देश भारत की तरफ आंख दिखाने की हिम्मत न कर सके।


रक्षा मंत्री राजनाथ सिंह ने रविवार को अमौसी के चिल्लावां में ब्रह्मोस एनजी (न्यू जनरेशन) मिसाइल की उत्पादन यूनिट और डीआरडीओ की आधुनिक टेस्टिंग लैब शिलान्यास कार्यक्रम में कहा कि भारत के पास परमाणु डेटेरेंट होना जरूरी है। उन्होंने कहा कि ब्रह्मोस की उत्पादन यूनिट सुरक्षा में देश को विशेष स्थान दिलाएगी। इससे यूपी की अर्थव्यवस्था में नया अध्याय जुड़ेगा। आज यूपी देश ही नहीं, विदेशी निवेशकों के लिए पहली पसंद बन गया है। डिफेंस कारिडोर में 1400 करोड़ रुपये का निवेश हो चुका है, जबकि 2017 से पहले यूपी में आने से निवेशक डरते थे। राजनीति का अपराधीकरण हो गया था। दंगाइयों व माफिया के हौसले बुलंद थे। आज दूसरे राज्य वाले कहते हैं, यूपी की सरकार बहुत असरदार। योगी आदित्यनाथ एक काम में कंजूसी करते हैं। वह माफिया को रियायत नहीं देते हैं। सभी जगह माफिया पर बुलडोजर चल रहे हैं।

रक्षा मंत्री ने कहा कि हमारे पड़ोसी देश की भारत को लेकर नीयत खराब रहती है। उसने उरी और पुलवामा में आतंकी हमला किया। हमने उसकी धरती पर जाकर आतंक का सफाया किया। सर्जिकल स्ट्राइक भी की। हमारे ऊपर कोई बुरी नजर दिखाएगा तो हम इस पार ही नहीं, उस पार भी घुसकर मार सकते हैं। यूपी विभिन्न क्षेत्रों में ऊंचाइयों को हासिल कर रहा है। चार इंटरनेशनल एयरपोर्ट वाला यूपी देश का पहला राज्य बन गया है। राजनाथ सिंह ने पूर्व पीएम राजीव गांधी का भी जिक्र किया। कहा कि राजीव गांधी की नीयत पर सवाल नहीं उठाना चाहता हूं, लेकिन उन्होंने (राजीव गांधी) एक बार कहा था कि मैं दिल्ली से 100 पैसा भेजता हूं। नीचे (जनता तक) 15 पैसा ही पहुंचता है। भ्रष्टाचार पर चोट करने के लिए प्रधानमंत्री नरेंद्र मोदी सिस्टम में बदलाव कर रहे हैं। किसानों को हर साल छह हजार रुपये भेजते हैं तो पूरे उनके खाते में जाते हैं। देश की पहली सरकार है, जो विकास भी कर रही है और संस्कृति भी संभाल रही है। लखनऊ अटलजी की कर्मभूमि रही है। उन्होंने 1998 में परमाणु परीक्षण कर नए भारत की नींव रखी थी। पहले हम तीनों सेनाओं के जवानों के लिए हथियार मंगाते थे। हम भारत को हथियारों का निर्यातक देश बना रहे हैं। रक्षामंत्री ने कहा कि ब्रम्होस का नाम भारत की ब्रह्मपुत्र और रूस की मोस्कावा नदी मिलकर बना है।

दुश्मन देशों के सामने दहाड़ेगा लखनऊ : योगी

मुख्यमंत्री योगी आदित्यनाथ ने कहा कि यह नया भारत है, जो किसी को छेड़ता नहीं और कोई छेड़ दे तो फिर छोड़ता नहीं है। ब्रह्मोस उत्पादन इकाई पर उन्होंने कहा कि इससे रक्षा क्षेत्र में दुनिया के देशों के लिए हम प्रोडक्शन करेंगे। लखनऊ अब केवल मुस्कराएगा ही नहीं, दुश्मन देश के सामने दहाड़ेगा भी।

*https://www.jagran.com/uttar-pradesh/lucknow-city-defense-minister-rajnath-singh-and-cm-yogi-adityanath-lay-the-foundation-stone-of-brahmos-missile-unit-and-drdo-lab-in-lucknow-22327115.html*

The Tribune

*Mon, 27 Dec 2021*

# DRDO explores plant-based compounds to tackle muscular impairment at high altitude

***Climbing over 3,500 metres engenders severe oxidative muscle damage and decline in physical performance, which demands a promising therapeutic agent***

***By Vijay Mohan***

Chandigarh: The Defence Research and Development Organisation (DRDO) is exploring the feasibility of using plant-based compounds to counter skeletal muscle impairments individuals deployed in high altitude areas.

Known as polyphenols, certain plant-based compounds have shown anti-oxidative and anti-inflammatory properties and appear to mainly act by reversing oxidative stress and cell membrane dysfunction to eventually ameliorate skeletal muscle impairments.

**Many ITBP posts are located between 9,000-14,500 feet high. PTI file photo**

Polyphenols, abundantly available in edible plants, have shown great potential in therapeutics and are vital for health as they regulate metabolic disorders, chronic illness, obesity, cancer, etc. Recent research has also portrayed polyphenols as a performance enhancer.

"The available literature recommends that bio-active polyphenols with their potential anti-oxidative and anti-inflammatory properties could be a probable solution for high altitude induced skeletal muscle impairments and thereby improving performance," a study published recently by scientists at DRDO's Defence Institute of Physiology and Allied Sciences has suggested.

Pointing out that hypobaric hypoxia induced skeletal muscle responses show a dynamic feature that is dependent on the duration of hypoxic exposure and availability of oxygen percentage, the study observed that skeletal muscles are tolerant to hypoxia to a certain limit, that is, 2,000-3,000 metres. Climbing over 3,500 metres engenders severe oxidative muscle damage and decline in physical performance, which demands a promising therapeutic agent, the study said.

Hypobaric hypoxia is explained as a medical condition resulting from deficiency in the amount of oxygen reaching the body tissues in an environment where the atmospheric pressure is low due to the increase in altitude. Apart from naturally occurring compounds, synthetic or laboratory produced therapeutic agents to mitigate such muscular degeneration are also under investigation.

Extreme environmental conditions prevailing in extreme environmental conditions at high altitude induce skeletal muscle atrophy in unacclimatised persons, impair skeletal muscle physiology, decrease regeneration and decelerate physical activity. This is because of lower levels of atmospheric oxygen, which is a very essential ingredient for cellular aerobic respiration, enzyme activity and protein synthesis.

Turmeric, red grapes, berries, peanuts, rhodiola and green tea are some of the examples listed in the study which contain significant amounts of polyphenols, like curcumin, catechins, resveratrol, quercetin, salidroside which are believed to have significant therapeutic potential.

*https://www.tribuneindia.com/news/nation/drdo-explores-plant-based-compounds-to-tackle-muscular-impairment-at-high-altitude-354675*

rissadiary.com

*Sat, 25 Dec 2021*

# Raksha Rajya Mantri Ajay Bhatt reviews DIBER, DRDO, Haldwani

New Delhi: Raksha Rajya Mantri Ajay Bhatt, visited DRDO's Defence Institute of Bio-Energy Research (DIBER) laboratory, Haldwani and its Field station Pithoragarh, Uttarakhand. He reviewed the progress of various Research & Development efforts by DIBER. The efforts of DIBER to generate energy from Pine Forest waste, are directed towards finding solutions for space heating and electricity generation in remote areas where grid supply is frequently interrupted due to adverse climatic conditions. Since pine forest waste causes thousands of forest fire incidents; utilization of pine forest waste towards energy generation is a win-win situation.

The Biodiesel prepared by DIBER, is matching IS 15607 standards. It has been rigorously tested, found suitable and recommended in Army vehicles and Gen Sets at a blend of 20% in Petro – diesel. Another mission mode activity of DIBER is to transfer advanced technologies for cultivation of native and exotic vegetables to farmers located in remote border villages of Uttarakhand. More than 4,000 farmers are registered with DIBER and are being benefited. The enhanced income and socio-economic status are understood to have long term effects on curtailing migration from borders.

Shri Ajay Bhatt highly appreciated the Hydroponics (soilless cultivation) and suggested to spread this technology in those areas where cultivable land is in scarcity. The herbal medicine produced by DIBER for treating leukoderma has already been used by nearly one lakh patients. He urged that this medicine should reach to the larger population for benefit of mankind.

The technology to grow *Ophiocordyceps*, an endangered high value medicinal mushroom, by tissue culture, has far-reaching implications in providing nutritional benefits to larger population and also in improving the economy.

The Raksha Rajya Mantri also inaugurated Container-based BSL-III facility at Haldwani. This is the first container-based BSL-III facility of Uttarakhand. Being a container-based facility, it can be easily deployed in hills, wherever there is a space crunch. The capacity of the facility is 96 samples per shift. This facility operates at negative pressure and therefore, offers higher protection to the frontline health workers.

*https://orissadiary.com/raksha-rajya-mantri-ajay-bhatt-reviews-diber-drdo-haldwani/*

REPUBLICWORLD.COM

*Sat, 25 Dec 2021*

# Atul Dinkar Rane appointed as BrahMos Aerospace's CEO; Sanjeev Kumar Joshi named Dy CEO

***DRDO scientist Atul Dinkar Rane has taken charge as the new CEO and CMD of BrahMos Aerospace Limited after the recent approval of his appointment.***

***By Harsh Vardhan***

DRDO scientist Atul Dinkar Rane has been appointed as the new chief executive officer (CEO) and chief managing director (CMD) of the Indo-Russian multinational aerospace and defence corporation, BrahMos Aerospace Limited on Friday, December 24. Earlier on December 20, DRDO informed that Rane will be taking up the charge as the Director General (DG) of the company that produces the world-class BrahMos supersonic cruise missile system. In addition to this, Senior DRDO Scientist Dr Sanjeev Kumar Joshi also was also appointed as the Deputy CEO of BrahMos Aerospace Limited.

Image: ANI

**Who is Atul Dinkar Rane?**

Dr Rane has risen to prominence owing to his contributions towards decades of sustained Research and Development (R&D) for the development of mission-critical Onboard computers (OBC), hardware in loop simulation studies and systems analysis. In addition to this, Rane's contribution towards the development of mission software and defence-oriented avionics technologies have been associated with the prestigious BrahMos (PJ-10) missile programme, as per DRDO. Acknowledging his efforts to strengthen India's defence capabilities, DRDO lauded Rane in a press release stating-

“His pioneering contributions and techno-managerial leadership has been transformative for successful development and induction of the formidable BRAHMOS weapon system into the Indian Armed Forces.”

A graduate in Electronics and Communication Engineering and a post-graduate in Guided Missiles, Rane joined DRDO in the year 1987 started his career at Defence Research and Development Laboratory (DRDL) as System Manager. Besides, he also led the development of Onboard Mission Software for the Agni-I missile and established unique integrated testbed facilities for testing and evaluation of various missile projects. Rane has also been a core team member of BrahMos Aerospace and is remembered for his immense contributions to conceptual design, planning, development, testing, integration and certification of BrahMos, the world’s fastest supersonic cruise missile system.

*https://www.republicworld.com/india-news/general-news/atul-dinkar-rane-appointed-as-brahmos-aerospaces-ceo-sanjeev-kumar-joshi-named-dy-ceo.html*

The EurAsian Times

*Sat, 25 Dec 2021*

# DRDO ends 2021 on high note; will equip Indian Military with 'Game-Changing' Missiles, Drones & Precision Kill System

***By Sakshi Tiwari***

India conducted a spate of successful test launches of indigenous defense equipment and systems in 2021. With the possible threat of a two-front war looming, New Delhi is looking to prepare for the worst.

**High-Speed Expendable Aerial Target 'Abhyas' (via Wikipedia Commons)**

The latest to join the list is an aerial expendable target called 'Abhyas'.

From the Integrated Test Range (ITR) in Chandipur off the coast of Odisha, the Defence Research and Development Organisation (DRDO) successfully flight-tested Abhyas, an indigenously produced, pilotless, high-speed expendable aerial target (HEAT).

The Bengaluru-based Aeronautical Development Establishment (ADE) is working on Abhyas.

This test conducted on December 23 comes just a day after DRDO tested the 'Pralay' surface-to-surface missile, followed by a test of the nuclear-capable 'Agni Prime' ballistic missile. It also test-fired the Vertical Launch Short Range surface-to-air missile earlier this month.

The unmanned aerial vehicle, 'Abhyas' achieved a high subsonic speed trajectory at a very low altitude with a long endurance during the test flight. During the launch, two boosters supplied initial acceleration, and a small turbojet engine was employed to maintain a high subsonic speed with long endurance.

ADE's Bengaluru-based industrial partner's indigenous data link was also successfully flown and tested throughout the flight.

The operation of the system over the full flight period was validated by data acquired by the numerous range devices positioned along the shore, according to a DRDO spokesperson.

Abhyas is guided by a ground-based controller and an indigenously built micro electro mechanical system (MEMS) based inertial navigation system, which works in tandem with the flight control computer to follow a pre-determined path in completely autonomous mode. This allows the system more precision and easier maneuverability.

Earlier this month, ADE had placed an order with the state-owned Hindustan Aeronautics Limited (HAL) for the manufacturing, assembly, integration, testing, and supply of the High-Speed Expendable Aerial Target (HEAT) System, Abhyas, as previously reported by Economic Times.

HAL stated in a statement that after this initial order is completed, it would be designated as a Development-cum-Production Partner (DcPP) for the provision of this target system with a private enterprise (50 percent of the volume).

According to HAL, the platform is expected to have a high demand from the tri-services and DRDO laboratories for missile program evaluation trials in the coming days.

The platform that was successfully test-fired off the Odisha coast was tested for the first time ever in May of 2019.

"Raksha Mantri [defense minister] Shri Rajnath Singh said the successful test is a testament to the collaboration between scientists and industry. Secretary DD R&D and Chairman DRDO

praised the laboratory's Scientists, team members, and industrial partners for their successful research efforts," according to the Defense Ministry.

**The 'Abhyas' Aerial Target**

Abhyas provides a realistic danger environment for weapon system training. The project is being developed for autonomous flying. For weapon practice, Abhyas possesses RCS, visual, and infrared augmentation systems.

Using two 68-mm boosters that are separated after the initial burnout, Abhyas can be launched from a mobile launcher. During the cruising phase, the aerial vehicle is powered by a tiny gas turbine. It has a Mach 0.5 speed and can reach altitudes of more than 5 kilometers.

The 75-kg drone, which has a length of 2,385 mm and a diameter of 180 mm, is anticipated to support the pilotless target aircraft Lakshya-I and Lakshya-II, which have already been recruited into the armed forces.

The vehicle has been programmed to fly on its own. A laptop-based Ground Control Station (GCS) is used to monitor and track the drone, according to the statement.

The order given to HAL for manufacturing these systems is set to give a boost to the flagship 'Aatmanirbhar Bharat' (self-reliant India) program. It is in consonance with the enhanced focus on furthering R&D as well local production of defense systems.

**Indian Army on the Hunt for Precision Kill Systems**

The Indian Army has been on the lookout for better equipment for its troops for a while, with the latest in line being precision kill systems. All three services of the Indian military have signed major upgrade and acquisition deals after the conflict with China broke out last year.

The Army has now expressed its intention to buy 10 medium-range precision kill systems (MRPKS) — each with 120 loitering munitions — to help its artillery units locate, engage, hit, and destroy static and moving targets with pinpoint accuracy.

Loitering weapons are unmanned combat aerial vehicles (UCAVs), often known as drones that may loiter in the air near a selected target and then strike it by self-destructing into it when instructed.

According to the Army's Request for Information (RFI), the MPRKS weapon systems, which are also supposed to include 10 launchers and 30 forward observation stations, should be designed, developed, and manufactured in India under the Defense Acquisition Procedure (DAP) 2020.

This decision is in consonance with India's renewed push towards indigenization and is reminiscent of the deal signed for Sky Striker loitering munitions that have also been decided to be built in the country.

The DAP 2020 is the sole manual guiding all capital procurements for the Indian military. The Expression of Interest (EOI) published by the Directorate General of Artillery stated that "the current and future battlefield ethos makes it imperative to acquire precision-guided munitions in order to achieve the benefit of first strike and psychological warfare against the adversary."

The EOI also hints at the security situation and military threat that it faces from China and Pakistan. It says, "The requirement for these weapon systems is amplified due to wide spectrum of conflict ranging from sub-conventional operations to full-scale war".

It is worth noting that the Indian military had a faceoff with each of the two adversaries, in the form of post-Balakot aerial skirmishes with Pakistan and the 2020 Galwan Valley clash with the Chinese PLA that resulted in the death of 20 Indian soldiers. The latter led to a prolonged border standoff in eastern Ladakh.

The latest RFI states that the weapons should be able to "loiter" in the air after being launched, providing real-time imagery of the target to the ground operator. The loitering munitions carrying a warhead should be able to strike the target with precision once it is detected, minimizing collateral damage.

The RFI also states that the MRPKS should be able to attack targets with pinpoint accuracy in both day and night operations, as well as in all weather conditions.

Indian vendors who meet the EOI's technical, commercial, and project requirements would be given a project sanction order to build a system prototype.

**Eliminating Static & Moving Targets**

The new kill systems, according to the RFI, will represent a huge capability upgrade for the Army's artillery units, allowing them to detect and destroy static and moving targets across all terrains, including deserts and high altitude zones.

The systems that the Army seeks to purchase would be capable of destroying Command, Control, and Intelligence systems at headquarters, signal center, and command posts, as well as strategic and long-range vector weapon system platforms.

These requirements indicate that the Indian Army is looking for drones that could give it an absolute precision-based targeting edge over its adversaries.

The RFI further states that the systems should also be able to engage static targets such as enemy vehicles and troops, as well as radar sites such as weapon locating radar, air defense systems, and communication centers, logistics storage depots, and special ammunition storage.

The systems must have a range of 40 kilometers and also have a minimum endurance of two hours and the ability to hover in the air at a minimum height of one kilometer.

Apart from the kill systems, the need for loitering missions has been stressed upon. India has been deploying drones for Intelligence, Reconnaissance and Intelligence (IRS) operations along the Line of Actual Control (LAC) with China for the purpose of tracking the movement of Chinese troops and preventing any more incursions.

**The Sky Striker Deal**

The Indian Army also signed a deal for another set of loitering munitions called Sky Strikers in September this year. Under emergency procurement powers, the Indian army had inked a deal for over 100 explosive-laden drones, which would be produced in Bengaluru and employed as force multipliers in Balakot-style missions.

It is expected to have a range of approximately 100 kilometers. These drones can track and kill and had been extensively used by Azerbaijan against Armenia in the Nagorno-Karabakh conflict in 2020.

The Indian Air Force (IAF) also operates the Israeli Harop drones and in 2019, approved the purchase of 54 more loitering munitions of this class. The Harop is an anti-radiation drone developed by Israel Aerospace Industry. It can locate radio emissions on its own. Instead of carrying a separate high-explosive warhead, the drone serves as the primary weapon. This has lent high credence to these drones.

A large fleet of Israeli-made Heron medium-altitude long-endurance (MALE) drones has also been monitoring the LAC in the hilly terrain and relaying vital data and photographs to command and control centers.

India's willingness to acquire precision kill systems as well as loitering munitions point to its resolve at using modern technology to counter the threat faced at the borders.

*https://eurasiantimes.com/drdo-ends-2021-on-high-equip-indian-military-with-missiles-drones/*

THE HINDU

***Fri, 24 Dec 2021***

# Use of robots, AI in defence applications rising: official

***He calls enginnering graduates to join defence sector***

Madurai: With the wide use of different types of robots in the defence sector, there is good scope for engineering graduates in this sector, said S. Krishna Kumar, Technical Officer, DRDO/CVRDE, (Defence Research and Development Organisation/Combat Vehicles Research and Development Establishment), Avadi, here on Wednesday.

Delivering a lecture at Velammal College of Engineering and Technology, as part of 'Azadi Ka Amrit Mahotsav' initiative, on role of DRDO in self-reliance and defence technologies, he said that application of Aritificial Intelligence (AI) and Machine Learning and use of robots was increasing. Sustained research had led to launch of robotic dogs, mules, snakes with Artificial Intelligence - suited all climatic and geographical conditions. He explained the different types of robots and the way they are trained.


**S. Krishna Kumar of DRDO Avadi addressing students of Velammal Engineering College in Madurai.**

For example, the dog robot can acclamatise itself to any region. It is trained in such a way that it would have walking practice in the morning and join a parade if used in defence applications. There are robots of all sizes, starting from the size of a mosquito. Such small-size robots are employed as a group to monitor a place. If they detect something wrong, it will pass the message to the control room. Mule robots are used to lift weights. It can even lift a car. Then there are robots in the shape of a scorpion and birds. Bird robots can track the path taken by a person, he said.

An interaction followed in which how robots would operate cars in the future so as to prevent accidents by minimising human error was discussed. Robots that can dance or cook or guard were also discussed. While crreating robots, the main thing to take under consideration is whether it will work in a particular temperature, the gathering was told.

Velammal Educational Trust vice-chairman Ganesh Natarajan presided. Principal N. Suresh Kumar offered felicitations. S.Vasuki, HOD, Department of ECE, welcomed.

*https://www.thehindu.com/news/cities/Madurai/use-of-robots-ai-in-defence-applications-rising-official/article38025507.ece*

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***Mon, 27 Dec 2021***

# Explained: The Pralay Missile and its Quasi Ballistic Trajectory

Unprecedented back-to-back tests were conducted on successive days to add more teeth to India's missile arsenal last week with DRDO trialling two versions of Pralay, the country's newest surface-to-surface missile. The tests met "all the mission objectives". Here's what you need to know.

**WHAT IS THE MISSILE?**

Described by the Defence Ministry as an "indigenously developed conventional surface-to-surface missile", Pralay is powered by a solid propellant rocket motor and features many new technologies, including a state-of-the-art navigation system and integrated avionics. It has a range of 150-500 km and can be launched from a mobile launcher.

According to ministry statements, Defence Research and Development Organisation (DRD)) chief Dr G Satheesh Reddy said Pralay is "a new generation surface-to-surface missile equipped with modern technologies" and proves India's "strong design and development capabilities in defence R&D".

**WHY WERE TWO TESTS CONDUCTED?**

The two test launches, on December 22 and 23, were made from the Dr APJ Abdul Kalam Island off the coast of Odisha to assess the performance of separate configurations of the missile. The ministry said both the tests were successful. After the first of the tests, the ministry had said that "all the sensors deployed near the impact point across the eastern coast, including the down range ships, tracked the missile trajectory and captured all the events".

The second launch the day after tested Pralay for a heavier payload and different range "to prove the precision and lethality of the weapon". This launch, the ministry said, was monitored by range sensors and instruments, including telemetry, radar and electro-optic tracking systems.

The first test, which had seen the missile find its target with "high degree accuracy, validating the control, guidance and mission algorithms", involved a "quasi ballistic trajectory". According to a report in ThePrint, a quasi ballistic trajectory means the missile flew relatively lower than would a normal ballistic missile. Further, it was said that Pralay would also be manoeuvrable during flight, which would present a distinct advantage over ballistic missiles, making it hard to intercept by missile defence systems. It quoted former DRDO scientist RK Gupta as saying that Pralay is a "game-changer", giving India "two conventional missiles with long range".

"The BrahMos will be a cruise option and this one will be the ballistic option," he said. BrahMos, developed jointly by India and Russia, is a supersonic cruise missile. It has a range of between 300-500 km, says Washington DC-based think tank the Centre for Strategic and International Studies (CSIS).

**WHAT'S THE DIFFERENCE BETWEEN CRUISE, BALLISTIC MISSILES?**

Reports say that based on the launch method, there are two types of missiles: ballistic and cruise. According to the Centre for Arms Control and Non-Proliferation (CACNP), ballistic missiles are powered initially by a rocket or series of rocket stages "but then follow an unpowered trajectory that arches upwards before descending to reach its intended target". Cruise missiles, on the other hand, "are unmanned vehicles that are propelled by jet engines, much like an airplane".

Ballistic missiles can carry larger payloads, both nuclear or conventional. They also travel faster than cruise missiles, but unlike these missiles, they do not have the advantage of manouevrability. At launch, a ballistic missile heads straight up into the higher layers of the Earth's atmosphere borne by a rocket before the payload, or warhead, detaches to fall towards the target. The use of gravity for reaching its target is what gives a ballistic missile its name.

Cruise missiles "remain within the atmosphere for the duration of their flight and can fly as low as a few meters off the ground". While the disadvantage of that is higher fuel use, the low trajectory also makes a cruise missile "very difficult to detect".

"Cruise missiles are self-guided and use multiple methods to accurately deliver their payload, including terrain mapping, GPS and inertial guidance", CACNP said, adding that "as advanced cruise missiles approach their target, remote operators can use a camera in the nose of the missile to see what the missile sees", enabling manual navigation of the missile.

*https://www.news18.com/news/explainers/explained-the-pralay-missile-and-quasi-ballistic-trajectory-4594088.html*

TIMESNOWNEWS.COM

*Sat, 25 Dec 2021*

# India test-fires Pralay missile for second day in a row: Why the indigenously developed weapon is being hailed as a gamechanger for the Army

***Developed by the Defence Research and Development Organisation (DRDO), the Pralay missile is, reportedly a derivative of the Prithvi Defence Vehicle (PDV) exo-atmospheric interceptor missile, capable of intercepting enemy targets at high altitudes.***

***Key Highlights***

- ***What distinguishes Pralay from its predecessors is its speed, accuracy and increased strike range***
- ***The missile, which weighs roughly 5 tonnes, can travel between 350 and 500 km. With a payload of 1000 kg, it can travel 350 km, however, if the weight of the payload is halved it can reach distances of and strike targets as far as 500 km***
- ***The Pralay project was sanctioned in March 2015 at a budget of Rs 333 crore***

India's indigenously developed 'Pralay' conventional ballistic missile took to the skies from the APJ Abdul Kalam Island in Odisha for the second consecutive day on Thursday. The trial was, reportedly, successful with the missile reaching a range of 500 km.

Following Wednesday's trial, a statement from the Defence Ministry read, “The new missile followed the desired quasi ballistic trajectory and reached the designated target with high degree accuracy, validating the control, guidance and mission algorithms. All the sub-systems performed satisfactorily.”

“All the sensors deployed near the impact point across the eastern coast, including the down range ships, tracked the missile trajectory and captured all the events,” it added.

**What are Pralay's capabilities?**

Developed by the Defence Research and Development Organisation (DRDO), the Pralay missile is, reportedly a derivative of the Prithvi Defence Vehicle (PDV) exo-atmospheric interceptor missile, able to intercept enemy targets at high altitudes.

However, what distinguishes Pralay from its predecessors is its speed, accuracy and increased strike range. The missile, which weighs roughly 5 tonnes, can travel between 350 and 500 km. With a payload of 1000 kg, it can travel 350 km, however, if the weight of the payload is halved it can reach distances of and strike targets as far as 500 km.

Integrated with advanced avionics and fuelled by composite propellant, the Pralay missile uses an inertial navigation system that facilitates mid-course manoeuvrability. India currently has a significant missile arsenal comprising BrahMos, Prahaar, and Nirbhay platforms, however, these missiles lack the range capabilities of Pralay.

Alongside BrahMos, which is a cruise missile, Pralay will “completely change the tactical battlefield dynamics,” The Print quotes former DRDO scientist RK Gupta as saying. While cruise missiles are known for their agility, stealth and loitering capabilities, the speed at which ballistic missiles travel make them extremely difficult to intercept or counter even by the most advanced air defence systems. The Pralay project was sanctioned in March 2015 at a budget of Rs 333 crore. According to a report in The New Indian Express, the missile is comparable to China's Dongfeng 12 and Russia's 9K720 Iskander, both of which are also short-range tactical ballistic missiles.

Following its successful trial, Defence Minister Rajnath Singh congratulated the DRDO and associated teams for the feat. Once trials are complete, the missile will be inducted into the Army's Artillery regiment.

*https://www.timesnownews.com/india/article/india-test-fires-pralay-missile-for-second-day-in-a-row-why-the-indigenously-developed-weapon-is-being-hailed-as-a-gamechanger-for-the-army/843382*

# DRDO on Twitter



Rajnath Singh @rajnathsingh · 10h
Speaking at the foundation stone laying ceremony of Defence Technologies & Test Centre and BrahMos Manufacturing Centre in Lucknow
26:26 12K viewers
Rajnath Singh @rajnathsingh
Speaking at the foundation stone laying ceremony of Defence Technologies & Test Centre and BrahMos Manufacturing Centre in


ANI UP/Uttarakhand
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Uttar Pradesh: Chief Minister Yogi Adityanath and Defense Minister Rajnath Singh lay the foundation stone of BrahMos Missiles production unit and DRDO Lab in Lucknow
ANI
BRAHMOS
1:12 अपराह्न · 26 दिस॰ 2021


ANI
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Joint Management Board of India and Russia today approved the appointment of Atul Dinkar Rane as the CEO & CMD of BrahMos Aerospace Limited. Senior DRDO Scientist Dr Sanjeev Kumar Joshi appointed as the Deputy CEO: BrahMos officials
4:53 PM · Dec 24, 2021

# Defence News

## Defence Strategic: National/International

Press Information Bureau
Government of India

**Ministry of Defence**

***Fri, 24 Dec 2021 5:59PM***

# Vice Admiral Tarun Sobti, VSM assumed charge as Director General, Project Seabird

Vice Admiral Tarun Sobti, VSM assumed charge as Director General, Project Seabird/ IHQ MoD (Navy) from Vice Admiral Puneet K Bahl, AVSM, VSM on 24 Dec 21.

Vice Admiral Tarun Sobti was Commanding Eastern Fleet prior assuming his present appointment and was commissioned into the Indian Navy on 01 Jul 1988. He is an alumnus of the 72nd Course, National Defence Academy, Khadakvasla, and was awarded the President's Gold Medal on passing out. He was the recipient of the 'Binoculars' during Sea Cadet Training, Sword of Honour during Midshipmen training and Adm RD Katari Trophy for standing first during Sub Lt Courses. The Flag Officer is a Navigation and Direction specialist, where he stood first in the Course and was adjudged the Best All-round Trainee.

He has undergone the Command and Staff Course from France during 2002-2003 and the Naval Higher Command Course in 2009-2010, where he has awarded the CNS Gold Medal for Best Op Paper.

His afloat appointments include Navigating Officer of INS Kirpan, commissioning Navigating Officer of INS Mysore, Direction Officer, INS Viraat and Executive Officer, INS Delhi. The Flag Officer has commanded INS Nishank, INS Kora and was the commissioning CO of INS Kolkata.

His other important staff appointments include Instructor, Project-15 Training Team, Joint Director of Staff Requirements and Joint Director of Personnel at Naval Headquarters and Captain Work Up at Local Workup Team (East), the Naval Attaché at the Embassy of India, Moscow Deputy Commandant and Chief Instructor at Indian Naval Academy, Ezhimala.

*https://pib.gov.in/PressReleasePage.aspx?PRID=1784930*

INDIA TODAY

*Sat, 25 Dec 2021*

# Developing nuclear-hardened facilities for armed forces in forward areas: Army's Engineer-in-Chief

***"Tunnels for ammunition storage for Army and Air Force are being taken up in a major way," said Indian Army's Engineer-in-Chief Lieutenant General Harpal Singh.***

***By Manjeet Negi***

New Delhi: In a major boost for the defence forces in forward areas, the Corps of Engineers of the Indian Army are getting the latest equipment to build tunnels for ammunition storage and nuclear-hardened facilities, Engineer-in-Chief Lieutenant General Harpal Singh said on Sunday.

Lt Gen Harpal was speaking at a function of the Institution of Engineers where he was conferred with the 'Eminent Engineering Personality Award' for his contributions in the field of engineering in the Defence forces and Border Roads Organisation (BRO).

File photo of Engineer-in-Chief Lieutenant General Harpal Singh

**Tunnels for Ammunition Storage for Indian Army, Air Force**

Speaking at the event, Singh said, "Combat engineers are escorting road connectivity to forward areas, ensuring that local communities and villages, which are included as waypoints in our plans aligned with Gati Shakti efforts of the Prime Minister. Micro Tunnelling is the flavour of the time, ensuring hardened defences and operational logistics Infrastructure. Tunnels for ammunition storage for Army and Air Force are being taken up in a major way."

**Nuclear-Hardened Facilities**

He further added that nuclear-hardened facilities are being developed in forward areas to enhance the capabilities of boots on the ground.

The Engineer-in-Chief shared his experiences in tackling various engineering problems of complex nature, including success stories and achievements during his long and illustrious professional career with the Defence Forces. Singh informed that the BRO is at the help of strategic road construction not only along the borders but also in neighbouring countries, as part of our strategic outreach.

**Force Multiplier**

"The dual-use BRO Infrastructure of roads, tunnels and bridges is a force multiplier not only for our strategic needs but also towards the development of communities along with Pristine remote border locations. The most challenging Infrastructure landmark to illustrate my point would be the Atal Tunnel. We faced major challenges during construction," Lt Gen Harpal said.

"As part of the 'Atmanirbhar Bharat' initiative, we are guiding young minds and engineers towards innovative research Internship at our Centre of Excellence at the College of Military Engineering, Pune. In a short span of time it has pioneered in the field of Nano Technology, by developing India’s first Nano Material, Silicon Nano Tube and Graphene-based Concrete Less cement," he added.

The general officer has competently tackled multi-faceted engineering challenges over the last 39 years, including under conditions of adverse terrain and operating environment. The vast spectrum of engineering challenges includes the domains of combat engineering, habitat and training infrastructure, roads and airfields, complex tunnelling projects, construction equipment management, marine infrastructure, etc.

*https://www.indiatoday.in/india/story/developing-nuclear-hardened-facilities-for-armed-forces-1892533-2021-12-27*

TIMESNOWNEWS.COM

***Sun, 26 Dec 2021***

# Indian jawan to get improved night-fighting capabilities

***Defence Procurement Board clears purchase of indigenously developed image intensifiers and fire control radars.***

***By Srinjoy Chowdhury***

New Delhi: For the front-line Indian soldier, there is a high-quality assault rifle, the German-American SIG-Sauer 716G2. Now, to help the Indian soldier fight at night will come a high-quality image intensifier for locating the enemy. And the image intensifier, as just cleared by the Defence Procurement Board or DPB which is headed by Defence Secretary Ajay Kumar and including the vice chiefs of the Army, Navy and Indian Air Force, will be designed and made in India as part of the Atmanirbhar or self-reliance process.

**Representational Image | Photo Credit: IANS**

The DPB has cleared the purchase of 29, 760 image intensifiers to go with the Sig Sauers for the jawan on the line of control, fighting terrorists in Jammu and Kashmir or even in Ladakh. on the line of actual control. The image intensifier deal will be worth Rs 1410 crore.

To replace the INSAS rifle and the still effective AK-47 Kalashnikovs, India had initially purchased 72,400 SIG Sauer assault rifles for frontline troops. Thereafter, an additional 72,000 were bought. The image intensifiers are likely to be very useful for night fighting.

Also cleared by the DPB were 40 fire control radars for the Army's air defence. The Rs 1600 crore deal involves the development, testing and production of these radars indigenously, again as part of the Atmanirbhar process. This is part of a slightly long-term process that aims to build defence production capability, including in the private sector.

*https://www.timesnownews.com/india/article/indian-jawan-to-get-improved-night-fighting-capabilities/843741*

The Indian EXPRESS

***Mon, 27 Dec 2021***

# Pune: Indigenous Multi-terrain Artillery Gun launched

***Defence Minister Rajnath Singh launched the gun developed by Bharat Forge during the recently concluded multinational military exercise of BIMSTEC.***

Pune: Pune-headquartered multinational engineering major Bharat Forge has launched the indigenous Multi-terrain Artillery Gun (MArG) 155 – BR during the recently concluded multinational military exercise of BIMSTEC (Bay of Bengal Initiative for Multi Sectoral Technical and Economic Cooperation) countries.

A three-day multilateral and multi-agency exercise for the BIMSTEC countries focusing on humanitarian assistance and disaster relief (HADR) operations was held in Pune between December 20 and 22. On the sidelines of the exercise, various products of the Indian defence industry were launched. The Multi-terrain Artillery Gun was launched by Defence Minister Rajnath Singh in presence of Indian Army Chief General Manoj Mukund Naravane while reviewing the exercise held at College of Military Engineering, Pune.

The Multi-terrain Artillery Gun is a one of its kind 155-mm, 39-calibre gun system mounted on 4×4 high mobility vehicle (HMV) in the world. The vehicle weighs 18 tonnes and has the capability to be deployed even in mountain regions. The gun system is equipped with shoot and scoot capability, providing advanced technical performance and high integration.

A press statement from Bharat Forge quoted its chairman and managing director Baba N Kalyani as saying: "MArG 155 – BR is our endeavour to develop advanced artillery gun defence systems in India. We are grateful for the cooperation, guidance and inspiration provided to us by the Indian defence forces to create best-in-class defence solutions made to face futuristic challenges."

**Various products of the Indian defence industry were launched at the multi-agency exercise for the BIMSTEC countries held in Pune.**

Various other features of the gun system, as quoted in the statement, are: "Gradient negotiation:30 making it a go-anywhere gun, capable of firing complete NATO standard and in-service ammunition, on-board ammunition carrying capacity of 18 rounds, coming into action time of 1.5 minutes during the day and 2 minute in the night."

*https://indianexpress.com/article/cities/pune/pune-indigenous-multi-terrain-artillery-gun-launched-7690927/*

Press Information Bureau
Government of India

**Ministry of Defence**

***Fri, 24 Dec 2021 5:38PM***

# INS Sudarshini deployment to Gulf countries

INS Sudarshini is presently on its culmination phase of deployment to Gulf region as part of Indian Navy's efforts towards familiarising friendly foreign navies on various facets of operations and training on board sail training platforms and extending 'Bridges of Friendship'.

The ship was escorted by IRIS Zereh to Port Sahid Bahonar, Bandar Abbas (Iran) on 22 December 21. The ship was accorded a warm welcome by the Naval band of IRI Navy at the jetty. A delegation of the IRI Navy 1st Naval Region and Naval Attaché Indian embassy received the ship.

The reception was followed by an onboard visit by His Excellency Mr. Gaddam Dharmendra, Ambassador of India to Iran. He along with his team were provided a guided tour of the ship. The ship's staff were hosted at a banquet lunch on invitation of the Ambassador. Personnel from IRI Navy were also invited for the event. A joint cake cutting ceremony was held to mark the visit.

The Commanding Officer accompanied by Naval attaché India called on Commander IRI Navy 1st District. Historical maritime linkages, mutual co-operation between both the Navies on the subject of training cadets and young officers and various aspects of sail training were discussed during the call-on.

Capt. Hamza, Director of Training (IRI Navy) visited the ship with a team of Officers from IRI Navy. They were provided an in-depth overview of the functioning and features of the ship during harbour training of IRI Navy Cadets.

IRI Navy Trainee officers (Sea Riders) designated to undergo sail training visited the ship for a familiarisation tour of the ship. Practical knowledge on subjects of seamanship, sail arrangement, rope work and the technicalities of sail training were shared. Hands-on practical knowledge and experience on sail rigging of both sides was also imparted during this visit.

The ship would be staying at Bandar Abbas for three days which includes a visit to Naval Base (Bandar Abbas) and embarkation of Sea Riders from the IRI Navy to provide sail training experience over a day's sortie.


https://pib.gov.in/PressReleasePage.aspx?PRID=1784907

Press Information Bureau
Government of India

**Ministry of Defence**

***Fri, 24 Dec 2021 5:38PM***

# INS Khukri decommissioned after 32 years of glorious service to the nation

INS Khukri, the first of the indigenously built Missile Corvettes, was decommissioned after 32 years of glorious service on Thursday, 23 Dec 2021. The ship solemn ceremony was held at Visakhapatnam wherein the national flag, naval ensign, and the decommissioning pennant were lowered at sunset in the presence of Vice Admiral Biswajit Dasgupta, Flag Officer Commanding-in-Chief Eastern Naval Command the Chief Guest for the ceremony and some serving and retired former commanding officers of the ship.

The corvette was built by the Mazagaon Dock Shipbuilders on 23 August 1989 and had the distinction of being part of both the Western and Eastern Fleets. The ship was commissioned in Mumbai by Shri Krishna Chandra Pant, the then Hon'ble Raksha Mantri and Mrs Sudha Mulla, wife of late Capt Mahendra Nath Mulla, MVC with Commander (now Vice Admiral Retired) Sanjeev Bhasin as her first Commanding Officer.

During her service, the ship was commanded by 28 Commanding Officers and traversed a distance of over 6,44,897 nautical miles, which is equivalent to navigating around the world 30 times or 3 times the distance between the Earth and the Moon.

The ship was affiliated with the Gorkha Brigade of the Indian Army and Lt General PN Ananthanarayan, SM, President Gorkha Brigade, attended the solemn ceremony.


https://pib.gov.in/PressReleasePage.aspx?PRID=1784779

*Mon, 27 Dec 2021*

# China launches three warships; one vessel for Pakistan Navy, another for Thai Navy

***Story highlights***

***According to reports, Pakistan's Tughril-class warship built by China is fitted with 3D multifunction radar including long-range metric wave radar.***

Beijing: China this week launched three warships with one meant for the Pakistan **Navy** and another for the Royal Thailand Navy as it continues on its grand shipbuilding projects.

The warships were launched from China's Hudong Zhonghua shipyard located near Shanghai.

The Type 054AP Tughril-class warship was meant for the Pakistan Navy. The Pakistan government had signed the agreement for two warships in 2017 and an additional contract for two more ships three years ago.

**The Type 054AP Tughril-class warship is meant for the Pakistan Navy (Representative Image) Photograph:( AFP )**

PNS Tughril was commissioned into the Pakistan Navy last month. The first warship was launched in August last year with the other two warships launched this year.

According to reports, the Type 054AP is fitted with 3D multifunction radar including long-range metric wave radar. The Tughril-class warship is the final ship which was delivered to Pakistan completing the order.

The third vessel was meant for the Chinese Navy. The Type 054A warship is fitted with surface-to-air missiles, torpedo launchers and anti-ship missiles. PNS Tughril also possesses air and surface surveillance systems including anti-air and anti-submarine missiles including HHQ-16 SAMs.

The Chinese technicians also delivered the Type 071E LPD to the Thailand Navy. The landing platform dock reportedly cost $200 million.

It is the first time China has delivered the Type 071-class amphibious vessel to Thailand which is also part of the Chinese Navy. The warship can reportedly carry 800 marines and 20 amphibious vehicles.

*https://www.wionews.com/world/china-launches-three-warships-one-vessel-for-pakistan-navy-another-for-thai-navy-440100*

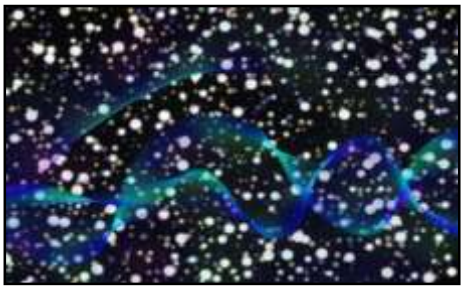
## Science & Technology News

*Thu, 23 Dec 2021*

# Using magnets to toggle nanolasers leads to better photonics

A magnetic field can be used to switch nanolasers on and off, shows new research from Aalto University. The physics underlying this discovery paves the way for the development of optical signals that cannot be disturbed by external disruptions, leading to unprecedented robustness in signal processing.

Lasers concentrate light into extremely bright beams that are useful in a variety of domains, such as broadband communication and medical diagnostics devices. About ten years ago, extremely small and fast lasers known as plasmonic nanolasers were developed. These nanolasers are potentially more power-efficient than traditional lasers, and they have been of great advantage in many fields—for example, nanolasers have increased the sensitivity of biosensors used in medical diagnostics.



Credit: CC0 Public Domain

So far, switching nanolasers on and off has required manipulating them directly, either mechanically or with the use of heat or light. Now, researchers have found a way to remotely control nanolasers.

"The novelty here is that we are able to control the lasing signal with an external magnetic field. By changing the magnetic field around our magnetic nanostructures, we can turn the lasing on and off," says Professor Sebastiaan van Dijken of Aalto University.

The team accomplished this by making plasmonic nanolasers from different materials than normal. Instead of the usual noble metals, such as gold or silver, they used magnetic cobalt-platinum nanodots patterned on a continuous layer of gold and insulating silicon dioxide. Their analysis showed that both the material and the arrangement of the nanodots in periodic arrays were required for the effect.

**Photonics advances towards extremely robust signal processing**

The new control mechanism may prove useful in a range of devices that make use of optical signals, but its implications for the emerging field of topological photonics are even more exciting. Topological photonics aims to produce light signals that are not disturbed by external disruptions. This would have applications in many domains by providing very robust signal processing.

"The idea is that you can create specific optical modes that are topological, that have certain characteristics which allow them to be transported and protected against any disturbance," explains van Dijken. "That means if there are defects in the device or because the material is rough, the light can just pass them by without being disturbed, because it is topologically protected."

So far, creating topologically protected optical signals using magnetic materials has required strong magnetic fields. The new research shows that the effect of magnetism in this context can be unexpectedly amplified using a nanoparticle array of a particular symmetry. The researchers believe their findings could point the way to new, nanoscale, topologically protected signals.

"Normally, magnetic materials can cause a very minor change in the absorption and polarization of light. In these experiments, we produced very significant changes in the optical response—up to 20 percent. This has never been seen before," says van Dijken.

Academy Professor Päivi Törmä adds that 'these results hold great potential for the realization of topological photonic structures wherein magnetization effects are amplified by a suitable choice of the nanoparticle array geometry."

The results are published in *Nature Photonics*.

These findings are the result of a long-lasting collaboration between the Nanomagnetism and Spintronics group led by Professor van Dijken and the Quantum Dynamics group led by Professor Törmä, both in the Department of Applied Physics at Aalto University.

**More information:** *Nature Photonics*, DOI: 10.1038/s41566-021-00922-8

**Journal information:** *Nature Photonics*

*https://phys.org/news/2021-12-magnets-toggle-nanolasers-photonics.html*