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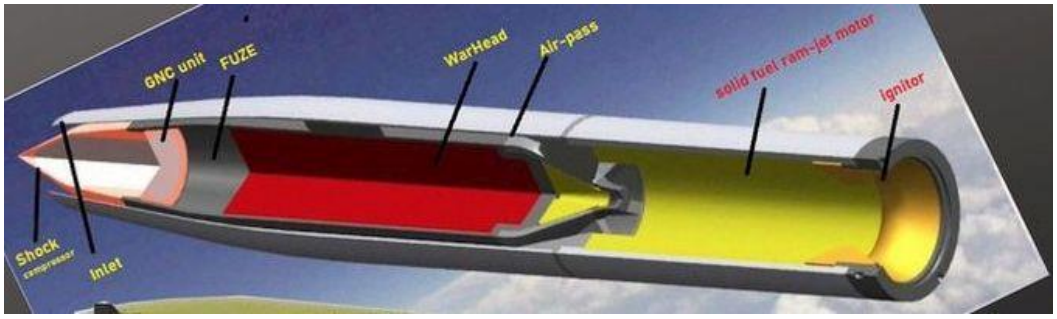
Indian Army To Be World's First To Use Ramjet-Powered 155 Mm Artillery Shells

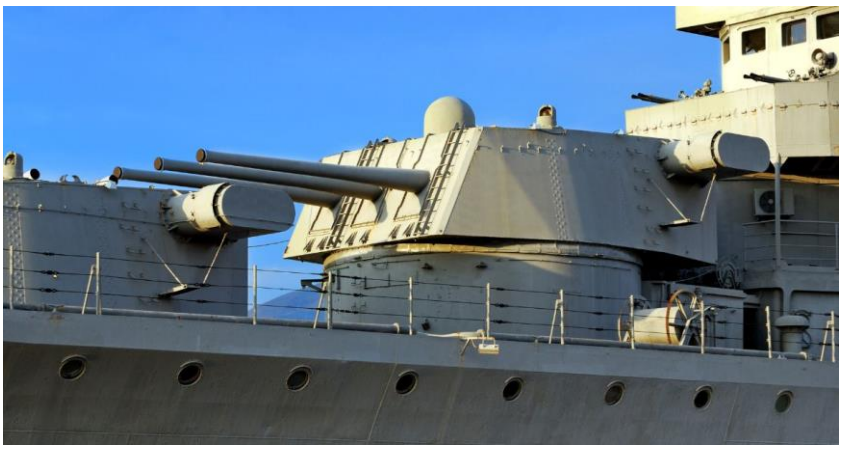
- The Indian Army stands on the cusp of a ground breaking milestone in artillery technology, poised to become the world's first military force to deploy ramjet-powered 155 mm artillery shells.
- This ambitious endeavour underscores India's 'Atmanirbharta' or self-reliance initiative, spearheaded in collaboration with IIT-Madras. The innovation promises to extend the range of existing shells by 30-50 per cent, all without diminishing their lethal impact on targets.
- Central to the Indian Army's artillery modernisation drive has been a focus on enhancing rocket ranges, precision, and munition performance. Longer reach and pinpoint accuracy represent key priorities amid evolving battlefield demands. The ramjet-assisted 155 mm shell emerges as a pivotal advancement in this domain, leveraging proven missile technology for artillery applications.
- Development of the shell is underway through a partnership between IIT-Madras and the Indian Army, facilitated by the Army Technology Board (ATB). This project has already secured formal approval, signalling strong institutional backing. Trials are progressing apace, with successful tests conducted at Rajasthan's Pokhran field firing ranges, a critical proving ground for indigenous munitions.
- The Indian Army's artillery inventory spans multiple calibres, reflecting a legacy of diverse acquisitions. Russian-origin 130 mm M-46 medium guns and 122 mm field guns remain in service alongside 105 mm light pieces. The 155 mm category dominates modernisation efforts, embodying NATO-standard precision and range.
- Artillery classification delineates roles by calibre and purpose. Up to 105 mm qualifies as 'light', tailored for infantry close support with rapid fire rates. The

106-155 mm 'medium' bracket excels in bombardment, striking enemy positions at standoff distances.



Kalyani’s Indigenous 76mm, 30mm Naval Guns Set For Testing In 2026

- Kalyani Strategic Systems, a wholly owned subsidiary of Bharat Forge, stands poised to commence proof testing of its two new indigenous naval cannons—a 76mm and a 30mm variant—in 2026.
- This development marks a significant stride in India's push for self-reliance in naval artillery, with the 30mm gun potentially ready as early as August 2026. These cannons represent fully Indian-designed systems, tailored for maritime applications and distinct from prior land-based artillery efforts by the firm.
- Bharat Forge has built substantial expertise in artillery systems, evidenced by its recent Letter of Intent with US firm AM General to supply advanced cannons, marking the first such export from an Indian manufacturer to the United States.
- This deal, signed at IDEX 2025 in Abu Dhabi, underscores global confidence in Kalyani's capabilities, particularly in 105mm and 155mm calibres, which form the foundation for smaller naval adaptations. The company's Chairman, Baba Kalyani, hailed it as pathbreaking, highlighting battle-proven solutions for modern warfare.
- The 30mm naval cannon builds on Bharat Forge's successful trials of modular turrets for infantry combat vehicles, featuring the 30×173mm calibre—a NATO standard balancing firepower and versatility.



DRDO Tests PARLAY Tactical Ballistic Missile

- DRDO) has achieved a significant milestone with the successful salvo user trials of the Pralay tactical short-range ballistic missile off the Odisha coast.
- Conducted on 31 December 2025 at the Integrated Test Range (ITR) in Chandipur, the trials involved two cannisterised missiles launched in quick succession from the same launcher around 10:30 am. These back-to-back tests validated the missile's reliability, paving the way for its early induction into the Indian armed forces.
- The Pralay missile, weighing five tonnes, carries a one-tonne payload over 350 km, extending to 500 km with a halved payload. This solid-propellant quasi-ballistic missile employs advanced guidance and navigation systems for high precision, including mid-air manoeuvres and hit-to-kill capability.
- It precisely followed intended trajectories during the trials, demonstrating maximum and minimum range performance while meeting all mission objectives.
- Senior DRDO scientists, representatives from the Indian Air Force (IAF) and Indian Army, and industry partners witnessed the event.
- Systems integration was handled by development-cum-production partners, with terminal events confirmed via onboard ship telemetry near impact points. Defence Minister Rajnath Singh commended DRDO, the armed forces, defence public sector undertakings, and industry for establishing the missile's salvo-launch reliability.

Dehradun's BSS Materiel Launches Indigenous FPV Drone

- BSS Materiel Limited, based in Dehradun, Uttarakhand, has unveiled an indigenous line-up of first-person view (FPV) drones tailored for tactical roles in the Indian Army's operations.
- These drones feature zero Chinese components, adhering to India's military procurement restrictions aimed at bolstering supply chain security and reliability.
- They also comply with US National Defence Authorization Act (NDAA) standards, paving the way for potential exports and interoperability with allied forces.
- The company specialises in designing and manufacturing military materials under the Make in India and Start-Up India initiatives, with a focus on unmanned aerial vehicles (UAVs), counter-UAV systems, and weaponised drones.
- BSS Materiel collaborates with foreign original equipment manufacturers and local engineering talent to develop these platforms, prioritising locally sourced subsystems for greater operational resilience. This FPV series supports intelligence, surveillance, and reconnaissance (ISR) missions, equipped with accessories optimised for frontline deployment.
- Key specifications of the FPV drones encompass a range of 8 km, a top speed of 120 km/h, a total weight of 3.6 kg, and a payload capacity of up to 2 kg, alongside endurance suited to tactical engagements. These attributes render the drones agile for short-range, high-manoeuvrability tasks, surpassing battery-dependent alternatives in challenging environments. The exclusion of Chinese components mitigates geopolitical risks and sanctions vulnerabilities, fostering a sturdy domestic ecosystem.

India, Pakistan Exchange List of Nuclear Installations

- India and Pakistan have exchanged lists of their nuclear installations and facilities on 1 January 2026, marking the 35th consecutive annual exchange under a longstanding bilateral agreement. This ritual persists despite ongoing tensions between the two nuclear-armed neighbours, underscoring a rare channel of communication amid frosty diplomatic relations.
- The Ministry of External Affairs (MEA) confirmed the simultaneous transmission through diplomatic channels in New Delhi and Islamabad.
- The Agreement on the Prohibition of Attack against Nuclear Installations and Facilities forms the basis of this practice. Signed on 31 December 1988 by then Indian Prime Minister Rajiv Gandhi and Pakistani Prime Minister Benazir Bhutto, it entered into force on 27 January 1991.
- The pact mandates that both nations inform each other annually on 1 January about the nuclear sites protected from attack, fostering a minimal deterrent stability.
- This exchange originated in the shadow of regional military escalations during the 1980s. India's Operation Brasstacks in 1986 heightened Pakistani concerns over potential strikes on facilities like Kahuta, echoing Israel's 1981 Osirak raid on Iraq. Such fears prompted negotiations leading to the agreement, available in Hindi and Urdu versions to ensure mutual comprehension.
- Over three decades, the mechanism has endured multiple crises, including the 1999 Kargil conflict, the 2001-2002 standoff, the 2016 Pathankot and Uri attacks, the 2019 Balakot airstrikes, and hostilities in May 2025. Exchanges continued uninterrupted, even as broader ties froze over Kashmir and cross-border terrorism. The 2026 iteration reaffirms its resilience as a confidence-building measure (CBM).

- While the lists remain classified, past disclosures hint at India's coverage of sites like Bhabha Atomic Research Centre (BARC) in Trombay, Kakrapar and Tarapur reactors, and Kalpakkam facilities.
- Pakistan typically lists Chashma, Karachi Nuclear Power Plant, and Kahuta Research Laboratories. Neither side comments publicly on additions or omissions, preserving strategic ambiguity.

REVIEW QUESTIONS

1. The ramjet-powered 155 mm artillery shell being developed for the Indian Army aims to primarily enhance which capability?

A. Rate of fire
B. Shell payload capacity
C. Firing range without loss of lethality
D. Barrel life of artillery guns

ANSWER: C

2. The development of the ramjet-assisted 155 mm artillery shell is being carried out in collaboration with which institution?

A. IIT Kanpur
B. DRDO
C. IIT Madras
D. BHEL

ANSWER: C

3. **Which organisation is responsible for the successful user trials of the Pralay tactical ballistic missile?**

A. Indian Army
B. Indian Air Force
C. Bharat Dynamics Limited
D. DRDO

ANSWER: D

4. **Kalyani Strategic Systems Limited is set to test which indigenous naval gun calibres in 2026?**

A. 105 mm and 155 mm
B. 76 mm and 30 mm
C. 130 mm and 122 mm
D. 40 mm and 57 mm

ANSWER: B

5. **Under which agreement do India and Pakistan annually exchange lists of their nuclear installations?**

A. Shimla Agreement
B. Lahore Declaration
C. Agreement on the Prohibition of Attack against Nuclear Installations and Facilities
D. Nuclear Non-Proliferation Treaty (NPT)

ANSWER: C

6. **Full Form of 'SAMAR' is**

A. System for Advance Manufacturing Assessment and Rating
B. System for Array Manufacturing Assessment and Rating
C. System for Advance Manufacturing Assessment and Rate
D. None

ANSWER: A

7. **Where is the world's highest battlefield, Siachen Glacier, located?**

A. Near the Indo-Pak Line of Control
B. On the Indian Peninsula
C. In the Southern Naval Command (SNC) region
D. In the Indian Search and Rescue Region (ISRR)

ANSWER: A

8. Manufacturing Facility For Production Of Airbus C295 Aircraft To Come Up In___.

A. New Delhi
B. Chennai
C. Vadodara
D. Noida

ANSWER: C

9. On 1 Apr 1954, the President's Colours Were Presented To The IAF By Which President Of India?

A. Rajendra Prasad
B. V.V. Giri
C. Radhakrishanan
D. Pratibha Singh Patil

ANSWER: A

10. Ex GARUDA SHAKTI, IND-INDO CORPAT, IND-INDO BILAT Conducted b/w India &

A. Qatar
B. Sri Lanka
C. Indonesia
D. Maldives

ANSWER: C

11.SIMBEX Series Of Exercises Began In 1994 And Were Initially Known As

A. Exercise Lion King
B. Exercise Asia King
C. Exercise Jungle King
D. None of the above

ANSWER: A

12. Northrop Grumman Is The Defence Manufacturing Company of Which Nation?

A. USA
B. UK

C. Israel
D. Russia
ANSWER: A

13. The Unending Game Book Written By
A. Vikram Sood
B. Shivshankar Menon
C. Ravi Shastri
D. Salman Rushdie
ANSWER: A

14. What Is The Capital Of Andorra?
A. Maseru
B. Andorra la Vella
C. Yamoussoukro
D. Addis Ababa
ANSWER: B

15. "The School for Good Mothers " Book Written By
A. Jessamine Chan
B. Beatrice Hitchman
C. Hew Strachan
D. Nikki May
ANSWER: A

16. Lal Bahadur Shastri National Academy of Administration Is In
A. H.P
B. U.P
C. U.K
D. M.H
ANSWER: C

17. "Discipline and united action are the real sources of strength for the nation." Said By
A. Gandhi Ji
B. Lal Bahadur Shastri
C. Pt. Nehru
D. Gopal Krishna Gokhale

ANSWER: B

18. Commodore Rank Of Indian Navy Is Equivalent To Which Rank of IAF?

A. Air Commodore
B. Air Marshal
C. Wing Commander
D. Major

ANSWER: A

19. Ex GARUDA Conducted b/w India &

A. Qatar
B. Sri Lanka
C. France
D. Maldives

ANSWER: C

20. Ex Desert Eagle Conducted b/w India &

A. Qatar
B. Sri Lanka
C. UAE
D. Maldives

ANSWER: C