



## DRDO & Research & Development:

### Missile and Air Defence Systems

**Astra Missile Test:** DRDO and the Indian Air Force (IAF) successfully flight-tested the indigenous Astra Beyond Visual Range Air-to-Air Missile (BVRAAM) from a Su-30 MKI platform. This version of the missile is equipped with an indigenously developed Radio Frequency (RF) Seeker, a major technological milestone for India. The tests, conducted off the coast of Odisha, successfully destroyed high-speed unmanned aerial targets with "pin-point accuracy," according to the Ministry of Defence.

**Pralay Missile Trials:** DRDO also conducted two consecutive successful flight-tests of the Pralay missile from Dr. APJ Abdul Kalam island off the coast of Odisha. These tests, part of User Evaluation Trials, were carried out to validate the missile system's maximum and minimum range capabilities before its induction into the Armed Forces. Pralay is an indigenously developed solid-propellant quasi-ballistic missile.

**Operation Sindoor:** The DRDO chairman, Samir V. Kamat, highlighted the successful use of indigenous systems in "Operation Sindoor," a retaliatory strike following a terrorist attack. The BrahMos missile was identified as the primary offensive weapon, while the Akashteer automated air defense system served as the main defensive system, demonstrating India's growing capability to use domestically produced technology in complex military operations.

### Future Projects and Technological Advancements

**Zorawar Light Tank:** The DRDO chief announced that developmental trials for the indigenous Zorawar Light Tank have been completed. This 25-tonne tank, designed for high-altitude warfare, is set to begin user trials with the Indian Army in September 2025, with a full induction expected by 2027.

**Quantum Technology Research:** DRDO continues to invest in emerging technologies. An ex-DRDO chief has called for developing advanced defense systems that adversaries don't possess. DRDO has also previously inaugurated a Quantum Technology Research Centre and demonstrated quantum secure communication, showcasing its focus on next-generation warfare technologies.

**Increased Defense Production and Exports:** DRDO's R&D efforts have contributed to India's record high defense production, which soared to ₹1,50,590 crore in the financial year 2024-25. Defence exports have also hit a record high of ₹23,622 crore, with DRDO-developed systems like BrahMos, Akash, and Pinaka attracting global interest. The DRDO chairman is confident that defense exports will reach ₹50,000 crore by 2028-29.

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## MCQS

1. Which indigenous missile was successfully flight-tested from a Su-30 MKI platform with a new indigenously developed Radio Frequency (RF) Seeker?

- a) BrahMos
- b) Pralay
- c) Astra BVRAAM
- d) BARAK-1

**Answer:** c) Astra BVRAAM

The text explicitly states that "DRDO and the Indian Air Force (IAF) successfully flight-tested the indigenous Astra Beyond Visual Range Air-to-Air Missile (BVRAAM) from a Su-30 MKI platform" and that it was equipped with a new indigenous Radio Frequency (RF) Seeker.

2. What was the purpose of the recent Pralay missile trials conducted by the DRDO?

- a) To test its new RF Seeker.
- b) To use it as an offensive weapon in "Operation Sindoor".
- c) To validate its maximum and minimum range capabilities.
- d) To assess its performance on a Su-30 MKI platform.

**Answer:** c) To validate its maximum and minimum range capabilities.

The document mentions that the Pralay missile trials were conducted as "part of User Evaluation Trials... to validate the missile system's maximum and minimum range capabilities before its induction into the Armed Forces."

3. According to the DRDO chairman, which indigenous system served as the main defensive system during "Operation Sindoor"?

- a) BrahMos missile
- b) Pralay missile
- c) BARAK-1 Point Defence Missile System
- d) Akashteer automated air defense system

**Answer:** d) Akashteer automated air defense system

The text states, "...the Akashteer automated air defense system served as the main defensive system" during Operation Sindoor.







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**4. What is the projected timeline for the induction of the Zorawar Light Tank into the Indian Army?**

- a) 2026
- b) 2027
- c) 2028
- d) 2029

**Answer: b) 2027**

The text specifies that the Zorawar Light Tank is expected to begin user trials in September 2025, with "a full induction expected by 2027."

**5. How much did India's defense production soar to in the financial year 2024-25?**

- a) ₹67,000 crore
- b) ₹23,622 crore
- c) ₹50,000 crore
- d) ₹1,50,590 crore

**Answer: d) ₹1,50,590 crore**

The document provides the figure: "India's defense production, which soared to ₹1,50,590 crore in the financial year 2024-25." The other figures mentioned are for procurement proposals and defense export targets.



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