Akash Prime Surface-to-Air Missile: DRDO

Why in News

Recently, the **Defence Research and Development Organisation** (DRDO) tested a new version of the Akash Missile – **'Akash Prime'** – from the Integrated Test Range (ITR), Chandipur, Odisha.

- Earlier, DRDO launched the **Akash-NG** (New Generation) and the **Man Portable Anti Tank Guided Missile** (MPATGM).

Defence Research & Development Organisation

- It is the **Research & Development wing of the Ministry of Defence,** Govt of India, with a vision to empower India with cutting-edge defence technologies.
- It was **established in 1958** after combining the Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO).

Key Points

- **About:**

  - In comparison to the existing Akash system, it is equipped with **indigenous active RF (Radio Frequency) seeker** for improved accuracy, which makes sure that the target at which the missile is fired is hit.
  - Other improvements were also incorporated in Akash Prime like ensuring **reliable performance** under a **low-temperature** environment at **higher altitudes.**
- **Development & Production:**
  - Developed by Defence Research & Development Laboratory (DRDL), Hyderabad in collaboration with other DRDO laboratories under the Missiles and Strategic Systems (MSS).
- **Akash missile:**

- Akash is India's first indigenously produced **medium range SAM** that can engage multiple targets from multiple directions and it can be **launched from mobile platforms like battle tanks or wheeled trucks.** It has nearly 90% kill probability.
    - The development of the Akash SAM was started by the DRDO in the late 1980s as part of the **Integrated Guided Missile Development Programme.**
- It is unique in the way that It can simultaneously engage **multiple targets in group mode or autonomous mode.**
- It has **built-in Electronic Counter-Counter Measures** (ECCM) features, which means that it has mechanisms on-board that can **counter the electronic systems** that deceive the detection systems.
- The missile is **supported by the indigenously developed** radar called **'Rajendra'.**
- It can **engage targets at a speed 2.5 times more than the speed of sound** and can detect and destroy targets flying at low, medium and high altitudes.
- The missile is reportedly **cheaper and more accurate** than US' Patriot missiles due to its solid-fuel technology and high-tech radars.

Integrated Guided-Missile Development Programme

- It was **conceived by Dr. A.P.J. Abdul Kalam** to enable India **attain self-sufficiency** in the field of missile technology. b
- The **5 missiles (P-A-T-N-A)** developed under this program are:
    - **P**rithvi: Short range surface to surface ballistic missile.
    - **A**gni: Ballistic missiles with different ranges, i.e. Agni (1,2,3,4,5)
    - **T**rishul: Short range low level surface to air missile.
    - **N**ag: 3rd generation anti-tank missile.
    - **A**kash: Medium range surface to air missile.

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