



# Vertical Launch Short Range Surface to Air Missile

## Why in News?

Recently, **Vertical Launch Short Range Surface to Air Missile (VL-SRSAM)** was successfully **flight-tested by Defence Research & Development Organisation (DRDO)** and the **Indian Navy** from an Indian Naval Ship at **Integrated Test Range (ITR), Chandipur** off the coast of Odisha.



## Key Points

- **About:**
  - **VL-SRSAM** has been designed and developed jointly by three facilities of the **Defence Research and Development Organisation** for **deployment of Indian Naval warships**.
  - The missile has the **capability of neutralizing various aerial threats** at close ranges including sea-skimming targets.
    - **Sea skimming** is a technique many anti-ship missiles and some fighter or strike aircraft use **to avoid radar and infrared detection**.
- **Design:**
  - The missile has been designed to strike high-speed airborne targets **at the range of 40 to 50 km and at an altitude of around 15 km**.
  - Its design is based on **Astra missile** which is a **Beyond Visual Range Air to Air missile**.
    - **Astra ("weapon")** is India's first air-to-air **all weather beyond-visual-range active radar homing air-to-air missile**, developed by the **Defence Research and Development Organization**.
    - A **Beyond-Visual-Range missile (BVR)** is an air-to-air missile that is **capable of engaging at ranges of 20 nautical miles** or beyond.
- **Features:**
  - **Cruciform wings:** They are four small wings arranged like a **cross on four sides** and give the **projective a stable aerodynamic posture**.

- **Thrust Vectoring:** It is the **ability to change the direction of the thrust** from its engine, control the angular velocity and the attitude of the missile.
  - **Thrust** is the **force which moves an aircraft through the air.**
- **Canisterised system:** The **inside environment is controlled**, thus making its transport and storage easier and improving the shelf life of weapons.

## Naval Warfare

- **It is a combat in and on the sea, the ocean**, or any other battlespace involving a major body of water such as a large lake or wide river.
- **Defence Mechanism:**
  - **Chaffs:**
    - It is a **countermeasure technology** used worldwide to protect naval ships from enemy's radar and **Radio Frequency (RF) missile seekers.**
  - **Missiles to counter Anti-Ship missiles:**
    - These systems have to have a swift detection mechanism and quick response to warships.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

**Q. What is "Terminal High Altitude Area Defense (THAAD)", sometimes seen in the news? (2018)**

- (a) An Israeli radar system
- (b) India's indigenous anti-missile programme
- (c) An American anti-missile system
- (d) A defence collaboration between Japan and South Korea.

**Ans: (c)**

**Exp:**

- Terminal High Altitude Area Defence (THAAD) is an American anti-missile system designed to intercept and destroy short and medium-range ballistic missiles during their "terminal" phase of flight when they are falling towards the target.
- They have the ability to intercept missiles inside and outside the atmosphere.
- It is interoperable with other ballistic missile defence systems and is highly mobile and deployable worldwide.
- Therefore, option (c) is the correct answer.

**Q. From which one of the following did India buy the Barak anti-missile defence systems? (2008)**

- (a) Israel
- (b) France
- (c) Russia
- (d) USA

**Ans: (a)**

**Exp:**

- Barak-8 is a supersonic, vertically-launched short range air defence system, with an operational range of about 5 to 100 km.
- It was designed and developed by Israel to protect its economic zones and strategic facilities from

various threats.

- Therefore, option (a) is the correct answer

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