

Ballistic Missile Interceptor

April 23, 2023 • vajiramandravi.com



Why in news?

- **India entered an elite club of nations with the capability to fire a Ballistic Missile Defense (BMD) interceptor from a naval platform.**
- Prior to this, DRDO has successfully demonstrated land-based ballistic missile defence system with capability to neutralize ballistic missile threats, emerging from adversaries.

India's Ballistic Missile Defence Programme:

- India launched the BMD program **after Kargil war in 1999** to counter the enemy nation's widening spectrum of ballistic missiles that usually **delivered both conventional and nuclear warheads.**

Two-tiers of BMD system

- **Prithvi Air Defence missile**
 - It was originally tested in 2006 and is capable of intercepting and destroying missiles at exo-atmospheric altitudes ranging from 50 to 180 kilometres.
 - The Pradyumna interceptor has already replaced the Prithvi Air Defence BMD.

- Exo-atmospheric missiles are capable of completing missions in the Earth's upper atmosphere.

- **Advanced Air Defence Missile**

- The second layer is Advanced Air Defence (AAD) Missile for lower altitude interception.
 - It was first tested in 2007 and designed to knock down hostile missiles in the endo-atmosphere at **altitudes of 15-40 KM.**
 - The endo-atmospheric missiles are the ones that operate within the earth's atmosphere that covers an altitude below 100 KM.
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Q1) What is a nuclear warhead?

A nuclear warhead is a type of explosive device that uses nuclear reactions to release an enormous amount of energy in the form of a nuclear explosion. Nuclear warheads are generally designed to be mounted on ballistic missiles or other delivery systems.

Source: [India successfully tests sea-based ballistic missile interceptor, joins elite club](#)

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