Pinaka Missile System

Why in news?

The Ministry of Defence (MoD) signed contracts with three Indian companies for supply of six regiments of the Pinaka Rocket System.

What is the contract?

- The acquisition wing of MoD has signed contracts with,
    a. Bharat Earth Movers Ltd,
    b. Tata Power Company Ltd (TPCL) and
    c. Larsen & Toubro (L&T).
- The six regiments would be added to the Regiment of Artillery of the Indian Army at a cost of Rs 2,580 crore.
- These Regiments will be operationalised along the Northern and Eastern Borders of our country.
- They are long range artillery systems that comprise 114 launchers with,
    a. 45 Command Posts to be procured from L&T,
    b. Automated Gun Aiming and Positioning System from TPCL and
    c. 330 vehicles to be procured from BEML.
- The induction is planned to be completed by 2024.

What is the significance of this acquisition?

- India is facing hostilities on both fronts.
- So, the announcement enhancing the long range artillery capabilities can be looked as a strong signal to the adversaries.
- The ministry has called this step a major boost to ‘Make in India.’
- This flagship project showcases public private partnership under the aegis of Government of India (DRDO and MoD).
- [DRDO - Defence Research and Development Organisation]

What is the origin of Pinaka rocket system?

- Pinaka attacks the targets prior to the close quarter battles which involve smaller range artillery, armoured elements and the infantry.
- The development of the Pinaka was started by the DRDO in 1980s.
- It was developed as an alternative to the multi-barrel rocket launching systems of Russian make, called like the ‘Grad’.

- Pinaka Mark-1 was first used in the battlefield during the Kargil War of 1999, quite successfully.
- Subsequently multiple regiments of the system came up over the 2000s.

What are Pinaka's capabilities?

- Pinaka is primarily a multi-barrel rocket system (MBRL) system.
- It can fire a salvo of 12 rockets over a period of 44 seconds.
- One battery of Pinaka system consists of six launch vehicles.
- This is accompanied by the loader systems, radar and links with network based systems and a command post.
- One battery can neutralise an area one kilometre by one kilometre.
- The launchers have to 'shoot and scoot' to ensure that they themselves do not become the targets, especially due to its back blast.
- Thus the launcher vehicles should have a high degree of maneuverability.

What are its versions?

- **Mark-I version** of Pinaka has a range of around 40 kilometres.
- **Mark-II version** can fire up to 75 kilometres.
- Over late 2010s, multiple successful tests of the Mark-II version have been carried out by the DRDO.
- This version of the rocket has been modified as a guided missile system by integrating it with the navigation, control and guidance system.
- The navigation system of the missile is linked with the Indian Regional Navigation Satellite System (IRNSS).
- In comparison to artillery guns, rockets are less accurate, but with addition of guidance and navigation systems, this aspect is taken care of.
- With its upgrades, the Pinaka Mark-II can be a key element in the "network centric warfare".
- The rocket system can operate various modes.
- They can carry different types of warheads.

Source: The Indian Express