Agni-Prime (Agni-P) missile

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Why in news?

Recently, Defence Research and Development Organization (DRDO) in collaboration with the Strategic Forces Command (SFC) has successfully test-fired the Agni-P missile from a rail-based mobile launcher for the first time.

- It is a ***nuclear-capable*** new-gen advanced variant of the Agni class of missiles.
- **Developed under –** Integrated Guided Missile Development Program (IGMDP).
- **Type –** Medium range, surface to surface ballistic missile.
- **Designed by –** Defence Research and Development Organization (DRDO).
- **Manufacturer –** Bharat Dynamics Limited.
- **Mass** - 11,000 kg (lighter than all the earlier Agni series of missiles).
- **Length -** 10.5 m
- **Diameter -** 1.15 m
- **Propulsion -** Two stage, canisterised, solid propellant.
- **Operational range –** Between 1,000 km to 2,000 km.
- **Warhead –** Maneuverable Multiple independently targetable reentry vehicle (MIRV) (high explosive, thermobaric and nuclear)
- **Warhead weight -** 1,500 kg – 3,000 kg
- **Guidance system -** Advanced ring laser gyro-based inertial navigation system (INS) (more accurate) + GPS and NaVIC satellite navigation systems.
- **Road-mobile version of Agni-P** – It has already been inducted into the armed forces after a series of successful trials.

Rail-based Mobile Launcher

- India has roughly 70,000-km railway route can carry missiles to all corners of the country without the need for preparation, like fixing

potholes or widening bottlenecks.

- **Reduced time –** It allows user to have a cross-country mobility and launch within a short reaction time with reduced visibility.
- **Hiding from target -** Tunnels can be used by rail-based launchers to hide from enemy satellite surveillance, that the launcher can be kept in hiding till the very last moment before the missile is deployed.
- **Cheaper & Efficient –** It is cheaper and more efficient to construct and maintain, when compared with submarine launched ballistic missiles (SLBMs).
- **Second-strike capabilities -** This can boost country's second-strike capabilities, that is, a country's ability to survive a nuclear attack and then launch its own counterattack.

*So far, only **Russia, the US, China, and possibly North Korea** had the capability of launching from rail-based platforms.*

Reference

Indian Express | Agni-P missile test