

INTEGRATED GUIDED MISSILE DEVELOPMENT PLAN

WHY IN NEWS?

Recently several missiles, such as **Agni V**, **Dhanush**, **Prithvi-II** and **Nag**, being developed under **IGDMP** were successfully test fired at various locations.

Integrated Guided Missile Development Plan



It was **envisioned** in **1983** by former President **Dr. A P J Abdul Kalam** to help India attain self-sufficiency in the field of missile technology.

Five missile systems have been developed under this programme namely **Agni**, **Akash**, **Trishul**, **Prithvi** and **Nag**.

In **2008** DRDO announced the **successful** completion of the program.

Defence Research & Development Organisation (DRDO)



It was formed in **1958** by the merger of the **Technical Development Establishment** and the **Directorate of Technical Development & Production** with the Defence Science Organisation.



It is under the administrative control of the **Ministry of Defence**.



It works for enhancing **self-reliance** in defence systems and production of world class weapon systems and equipment in accordance with the expressed needs and the qualitative requirements laid down by the three services.



AGNI- I (2002)

AGNI- II (2013)

AGNI- III (2017)

AGNI- IV (2018)

AGNI- V (2012)



It is an **intercontinental surface-to-surface**, **nuclear capable** ballistic missile.

6

At present, US, China, Russia, UK, France and Israel are known to have **ICBMs**.



It has been equipped with very high accuracy **Ring Laser Gyro based Inertial Navigation System (RINS)** and **Micro Navigation System (MINS)**.

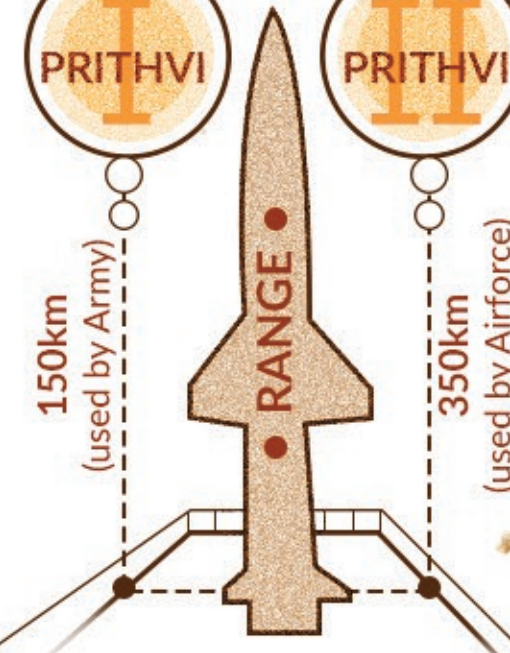


India has reportedly also been working on **multiple independently targetable reentry vehicles (MIRV)** for the Agni-V in order to ensure a credible second strike capability or credible minimum deterrence.

AGNI- I	AGNI- II	AGNI- III	AGNI- IV	AGNI- V
Single stage engine powered by solid fuel	Two stage solid propellant engine	Two stage solid propellant engine	Two stage solid propellant engine	Three stage solid all composite rocket motors
Short range Ballistic Missile	Medium range Ballistic Missile	Intermediate range Ballistic Missile	Intermediate range Ballistic Missile	Intercontinental Ballistic Missile
700 km Coverage	2000 km Coverage	3000 km Coverage	4000 km Coverage	5000 km Coverage



Short range Surface-to-Surface Ballistic Missile



Dhanush (also known as **Prithvi III**), a Naval Variant of this **Prithvi** missile, has a **range** of **350 km**.

PRITHVI- I

PRITHVI- II

PRITHVI- III



It is a **third generation "fire and forget"** anti-tank guided missile

It can be launched from **land** and **air-based** platforms

The helicopter-launched configuration, designated as **helicopter-launched NAG (HELINA)**, can be fired from **Dhruv advanced light helicopter (ALH)** and **HAL Rudra** attack helicopter

The **land based version (NAMICA)** has maximum range of **4 km** while **air based** version has a maximum range of **7 km**



It is a **Supersonic Surface-to-Air** Missile



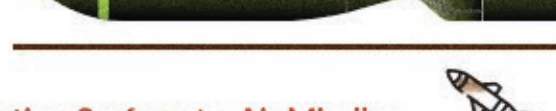
It has a **strike range** of about **30 km** and can carry a **55- kg fragmentation** warhead



It's designed to **neutralise multiple aerial targets** attacking from several directions simultaneously



The system is **autonomous** and its operation is fully automated



It is a **Quick Reaction Surface-to-Air** Missile

It can be used as an **anti-sea skimmer** from a ship **against low flying** attacking missiles

It employs **dual thrust** propulsion stage using **high-energy solid propellant**

RELATED INFORMATION

(Types of Missile)

Cruise Missile

Ballistic Missile

A cruise missile is an unmanned self-propelled guided vehicle that sustains flight through aerodynamic lift for most of its flight path. They fly within the Earth's atmosphere and use jet engine technology.

A ballistic missile is a missile that has a **ballistic trajectory** over most of its flight path, regardless of whether or not it is a weapon-delivery vehicle.

Classification on the basis of **SPEED**

0.8

Subsonic Cruise Missile flies at a speed lesser than that of sound. It travels at a speed of around **0.8 Mach**

2-3

Supersonic Cruise Missile travels at a speed of around **2-3 Mach**. The combination of supersonic speed and warhead mass provides high kinetic energy ensuring tremendous lethal effect

5

Hypersonic Cruise Missile travels at a speed of more than **5 Mach**. Many countries are working to develop hypersonic cruise missiles