

# Integrated Missile Development Program (IGMDP)

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## What is the Integrated Missile Development Program (IGMDP)?

The Integrated Guided Missile Development Programme (IGMDP) was an Indian Ministry of Defence programme for the research and development of the comprehensive range of missiles.

The programme was managed by the Defence Research and Development Organisation (DRDO) and Ordnance Factories Board in partnership with other Indian government political organisations

## More about IGMDP

- **IGMDP was conceived by renowned scientist Dr. A P J Abdul Kalam to enable India attain self-sufficiency** in the field of missile technology. Dr. Kalam, the then Director of Defence Research & Development Laboratory (DRDL), headed a Missile Study Team to weigh the feasibility of the programme.
- The team included members from the Defence Research and Development Organisation (DRDO), the Army, Navy and Air Force, and Defence Production
- Keeping in mind the requirements of various types of missiles by the defence forces, the team recommended development of five missile systems
- **The IGMDP finally got the approval from the Government of India on July 26, 1983.**
- The ambitious, time-bound project brought together the country's scientific community, academic institutions, R&D laboratories, industries and the three Services in giving shape to the strategic, indigenous missile systems.
- After achieving the goal of making India self-reliant in

missile technology, DRDO on January 8, 2008, formally announced successful completion of IGMDP.

### **The missiles developed under the programme were:**

1. Short-range surface-to-surface ballistic missile Prithvi
2. Intermediate-range surface-to-surface ballistic missile Agni
3. Short-range low-level surface-to-air missile Trishul
4. Medium-range surface-to-air missile Akash
5. Third generation anti-tank missile Nag

### **Prithvi Missile**

The Prithvi missile is a family of tactical surface-to-surface short-range ballistic missiles (SRBM) and is India's first indigenously developed ballistic missile. Development of the Prithvi began in 1983, and it was first test-fired on 25 February 1988 from Sriharikota, SHAR Centre, Potti sreeramulu Nellore district, Andhra Pradesh. It has a range of up to 150 to 300 km. The land variant is called Prithvi while the naval operational variant of Prithvi I and Prithvi III class missiles are code named Dhanush (meaning Bow). Both variants are used for surface targets.

### **Agni missile**

A technology demonstrator for re-entry technology called Agni was added to IGMDP as Prithvi was unable to be converted to a longer ranged missile. The first flight of Agni with re-entry technology took place in 1989

The Agni, which was initially conceived as a technology demonstrator project in the form of a re-entry vehicle, was later upgraded to a ballistic missile with different ranges.

Dr. Kalam played a major role in the development and operationalisation of Agni and Prithvi missiles.

### **Trishul missile**

It is the name of a short range surface-to-air missile developed by India as a part of the Integrated Guided Missile Development Program. It has a range of 12 km and is fitted with a 5.5 kg warhead. Designed to be used against low-level (sea skimming) targets at short range, the system has been developed to defend naval vessels against missiles and also as a short-range surface-to-air missile on land.

### **Akash missile**

It is a medium-range surface-to-air missile developed as part of India's Integrated Guided Missile Development Programme to achieve self-sufficiency in the area of surface-to-air missiles. It is the most expensive missile project ever undertaken by the Union government in the 20th century.

Akash is a medium-range surface-to-air missile with an intercept range of 30 km. It has a launch weight of 720 kg, a diameter of 35 cm and a length of 5.8 metres. Akash flies at supersonic speed, reaching around Mach 2.5. It can reach an altitude of 18 km.

### **Nag missile**

Nag is India's third generation "Fire-and-forget" anti-tank missile. It is an all weather, top attack missile with a range of 3 to 7 km.

The missile uses an 8 kg high-explosive anti-tank (HEAT) tandem warhead capable of defeating modern armour including Explosive Reactive Armour (ERA) and composite armour. Nag uses Imaging Infra-Red (IIR) guidance with day and night capability.