

PRESS INFORMATION BUREAU (DEFENCE WING)  
GOVERNMENT OF INDIA

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BACKGROUNDER

THE MISSILE DEVELOPMENT PROGRAMME

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The Defence Research & Development Organisation (DRDO) in the Ministry of Defence undertook the Integrated Missile Development Programme in 1983. It was with the twin objectives: (a) to design, develop and produce weapon systems for introduction into services in near future, and (b) to devise new systems needed beyond the year 2000 AD making use of the technologies being developed at present.

The programme was initiated by Shri R. Venkataraman, the President of India, when he was the Defence Minister. The Programme has the distinction that development, development fabrication and limited series production were all sanctioned at the beginning of the programme itself so as to cut down time for transfer of technology to production agencies after completing development.

IGMDP consists of development of four missile systems, PRITHVI (medium range surface-to-surface missile system), TRISHUL (quick reaction short-range surface-to-air missile), AKASH (medium-range surface-to-air missile system) and NAG (anti-tank missile). In addition to the above the programme includes a technology demonstration project, AGNI, for development of technologies relating to re-entry, closed-loop control and guidance aspects of missile technology.

PRITHVI: It is a medium-range surface-to-surface tactical battle-field missile system with a range of 150 to 250 kms depending on the type of warhead. The first flight test of PRITHVI was successfully conducted on February 25, 1988. The success of PRITHVI, a total indigeneous effort, enabled the country to join a select group of nations which have developed this class of missiles. So far, seven flight trials of Prithvi have been carried out successfully. The missile is likely to be productionised in 1993, after completion of user trials.

PRITHVI can also be launched from a mobile launcher on an eight-wheeled truck.

TRISHUL: It is a low level quick-reaction short-range surface-to-air missile. It has a range of nine km. Twenty-one flight tests of TRISHUL have already been carried out proving effectiveness of various sub-systems. The missile can fit a number of roles and thus finds applications in all the three defence services.

AKASH: It is a medium-range (25 km) surface-to-air missile system having multi-target handling capability. It uses integrated RAM jet rocket to achieve high specific impulse. RAM principle utilises atmospheric air to obtain enormous energy from a low volume and weight. A phased-array radar, also developed by DRDO, is used to handle multiple targets. Three flight tests of AKASH have been carried out so far, the first one on August 14, 1990.

NAG: It is a third generation anti-tank missile with 'fire and forget' and 'top attack' capabilities. Starting with the first flight test on November 29, 1990, nine tests have been successfully carried out so far. NAG is designed to defeat all futuristic armour including reactive armour upto a range of 4 kms. The missile system can be deployed on tracked/wheeled vehicles and helicopters. A dedicated missile carrier has also been developed to transport 4 missiles in a 'ready to fire' state. NAG's target acquisition system includes thermal, laser and day-light vision devices.

AGNI: The first demonstration flight test of AGNI was carried out on May 22, 1989 and the second on May 29, 1992. The flight test of AGNI has demonstrated India's capabilities in the frontline technology areas of (a) 2-stage propulsion with a solid stage booster followed by a liquid one, (b) close-loop guidance system to ensure pin-point accuracy, and (c) technology for materials which can withstand very high temperature and speed encountered during re-entry.

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