

Arrow ATBM: Lethal Evolution



Israel faces the grim prospect of potential Tactical Ballistic Missile (TBM) strikes with Nuclear, Biological or Chemical (NBC) warheads not only from its adversary nations but also from 'sub-states' (read terrorist groups). To tackle such threats, the Israeli Defence Force (IDF) deploys combination of Ballistic Missile Defences (BMD) systems with IAI/Boeing Arrow 2 Anti-Tactical Ballistic Missiles (ATBM) developed by MLM Division of Israel Aerospace Industries (IAI) presently forming the centre piece of Israel's layered system of strategic missile defence called *Homa*. The first battery at Palmachim airbase, near Tel Aviv became operational in 2000 followed by one at Ein Shemer airbase to the south of Haifa in 2002. They are deployed in such a manner that coverage of the systems overlaps vital military, commercial installations and concentrated civilian population. The system practically forming National Missile Defence (NMD) in Israeli context, is stand alone yet integrated with national

command & control, and has the capability to provide early warning for itself and of dealing with multiple threats. In Israel, Arrow 2 Block 4 and Arrow 3 function as the upper-tier of the multi-tier combined air defence/ATBM network. The middle tier comprises of United States-origin and Israeli Patriot PAC-2/PAC-3 and United States Navy (USN) ship-borne AEGIS systems in addition to the IDF David's Sling Weapon System (DSWS) providing the mid-tier and lower tiers, defending against tactical missiles, long range rockets, cruise missiles and attack aircraft. The low-level is protected by Rafael's Iron Dome countering short-range rockets (C-RAM) and 155 mm artillery shells.

The refined and leaner (1,300-kg) Arrow 2, was first tested in 1995 being derived from the *Chetz* (Arrow) 1, a project initiated by the United States Strategic Defence Initiative (SDI) to be developed by IAI. The Arrow 2 is meant to intercept tactical ballistic missiles just as they begin

re-entering atmosphere after reaching the highest point in their flight trajectory.

In February 2003, IAI signed an agreement with Boeing to establish the production infrastructure to manufacture components of the Arrow missile in the United States with Boeing responsible for the production and co-ordination of approximately 50% of the missile components in United States while IAI undertook integration and final assembly of the missile in Israel. Under the Arrow System Improvement Programme (ASIP), being carried out jointly by Israel and United States Ballistic Missile Defence Organisation (BMDO), a real (as against simulated) Scud-B Short-Range Ballistic Missile (SRBM) was successfully intercepted and destroyed at an altitude of 40-km at Point Mugu naval test range in California in July 2004. In December 2005, an Arrow 2 Block 3 missile successfully intercepted a target at an unspecified but reported record low altitude. In February 2007, the system