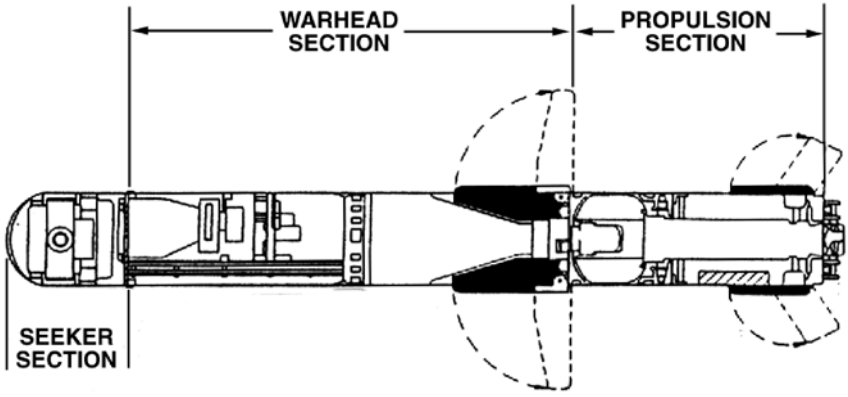
Army Plans to Buy Tank Busting Missiles from US

July 21, 2010

The Indian Army intends to buy the US-designed Javelin anti-tank guided missile to equip its troops with the capability to defeat enemy armour systems. The defence ministry is expected to issue a letter of request (LOR) to the US government for a potential sale of the weapon system used by the US Marine Corps, the US Army and 11 other nations. India plans to buy Javelin under the foreign military sales (FMS) programme, a government-to-government transaction between the US and friendly countries. The fire-and-forget weapon system is a joint venture between US aerospace and defence giants Raytheon Company and Lockheed Martin.

Javelin

Javelin is the world's first manportable, fire-and-forget, mediumrange missile system. The compact, lightweight missile is designed for one-soldier operations in all environments. It enhances direct-fire capability against armored vehicles, buildings and field fortifications. The system consists of a missile in a disposable



launch tube and a reusable Command Launch Unit (CLU) with a trigger mechanism and the integrated day/night sighting device for surveillance, and target acquisition and built-in test capabilities and associated electronics. The CLU, powered by a disposable battery, provides the capability for battlefield surveillance, target acquisition, missile launch, and damage assessment.

The Javelin's CLU provides battlefield surveillance and target acquisition capabilities. The Javelin night vision sight (NVS) is a passive I2R system. The NVS enables observation of things that are not normally visible to the human eye. It receives and measures IR light emitted by the environment. The NVS converts the IR light into an image for the gunner. The IR image also allows the gunner to identify enemy armor targets, his first priority to engage and destroy.

The round consists of a disposable launch tube assembly, battery coolant unit (BCU), and the missile. Missile range is 2000 meters. The missile locks on to the target before launch using an infrared focal plane array and on-board processing, which also maintains target track and guides the missile to the target after launch. Javelin missile's tandem warhead is a HEAT type. This round utilizes an explosive shaped charge to create a stream of superplastically deformed metal formed from trumpet-shaped metallic liners. The result is a narrow high velocity particle stream that can penetrate armor.

Salient features

Weight	28 kg
Length	1.76 meters
Range	2000 m (max) 75 m (min)
Warhead Type	Heat
Warhead Weight	8.4 kg
Armor Penetration	600+ mm
Launching Platforms	man portable crew of 2

Advantages of Javelin

The portable system is easy to separate into main components and easy to set up when needed. The Javelin (although still very heavy) is lighter than the other missiles and their necessary parts. Although the CLU's thermal imaging may hinder aiming, its thermal targeting allows the Javelin to be a fire-and-forget system. This gives the firer an opportunity to be out of sight and possibly moving to a new angle of fire, or out of the area by the time the enemy realizes they are under attack. This is much safer than using a wire-guided system where the firer

must stay stationary to guide the missile into the target. Another advantage is the Javelin's power at impact. The missile's tandem shaped charge warhead is made to penetrate reactive armor. The soft launch capability of the Javelin allows it to have only a minimal backblast area. In addition to reducing the visible launch signature from the enemy, this enables the Javelin to be fired from inside a wide variety of structures, which gives the Javelin advantages in urban fighting.

Disadvantages

The main drawback of the complete system is its 22.3 kg total weight. Another drawback of the system is the reliance on a thermal view to acquire targets. The thermal views are not able to operate until the refrigeration component has cooled the system. The manufacturer estimates 30 seconds until this is complete, but depending on the ambient temperature, this process may take much longer. The next issue is cost. A single Javelin unit costs about $125,000, and a missile costs about $80,000. Also, the operator has no opportunity to correct the flight of the rocket after launch (when the target contrasts poorly with the terrain, the missile can miss).

Source: Federation of American Scientists, http://www.fas.org/man/dod-101/sys/land/javelin.htm
Designation Systems http://www.designation-systems.net/dusrm/m-148.html
Hindustan Times http://www.hindustantimes.com/Army-plans-to-buy-tank-busting-missiles-from-US/Article1-575705.aspx