



The Javelin:

Reach Out And Touch Someone

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Combat readiness groups will launch into a new era in fiscal year 1996 when a new weapon system designed to kill tanks at ranges greater than 2000 meters is fielded. The system, called the Javelin, is a man-portable "fire and forget" antitank missile with a tandem-shaped charge warhead. Designed to defeat all types of armor, including reactive armor, it will be a welcome addition to the engineer squad's arsenal. The system consists of two components, the command launch unit and the round.

Components

The command launch unit (CLU) controls all aspects of Javelin operation. It houses all the controls, indicators, and sights the gunner will use during surveillance and target engagement procedures. The Javelin has three sights that the gunner can select at the push of a button. They include one day sight, which has a 4X magnification, and two imaging infrared (IIR) night sights, which have a wide field of view at 4X and narrow field of view at 9X magnification. The IIR night sights allow the gunner to see enemy tanks at extended ranges in adverse weather conditions and times of limited visibility. The CLU's IIR night sights also make it a useful reconnaissance and surveillance tool. It will give readiness groups the ability to reconnoiter an area or objective from an over-watch position in hours of darkness or poor visibility conditions.

The second component, the round, consists of the missile and the launch tube assembly (LTA). The missile has an automatically self-guided, passive IIR seeker to lock on a target before it is launched. It has a two-stage solid propulsion system. The first stage is the launch motor, which is



SFC Copson tests a soldier on one of the 15 qualification exercises that can be used with the basic skill trainer (BST).

designed to burn for only 1/10th of a second. It propels the missile away from the gunner before the flight motor fires, and reduces the initial back blast, heat, flames, and debris that the gunner is exposed to with other antitank weapon systems. The soft-launch design of the Javelin allows the gunner to safely fire from inside buildings or from covered fighting positions. The second stage is the flight motor. After the launch motor propels the missile about 15 meters away from the gunner, the flight motor ignites to carry the missile to the target.

Operations

After the gunner has identified a target using the CLU, he can quickly attach it to the round and begin the engagement sequence. In the engagement sequence, the gunner views the target scene in the eyepiece, places the track gates over the selected target and locks the missile onto the target. Once locked on, the missile is ready to fire.

When firing, the gunner can pick

between two attack modes: the top attack and direct attack. The top attack, the primary attack mode, is used to engage targets in the open at up to 2000 meters. Using an arched trajectory, the Javelin climbs above its target for improved visibility and then strikes where the armor is weakest. The direct attack mode is used for targets within 1000 meters that have overhead cover, such as inside buildings or under bridges. The direct attack mode is also used for special targets such as helicopters, bunkers, and very short-range targets.

Training Devices

A key feature of the Javelin system is that two training devices, called the basic skill trainer (BST) and the field tactical trainer (FTT), come with the system.

The BST (shown above) is designed for classroom use. It consists of an instructor station and a simulated round attached to the CLU simulator. Computer-generated battlefield images are



A soldier tests the fully integrated, three-dimensional training (FTT) device during a field exercise.

displayed in the CLU to teach basic target identification, acquisition, and lock-on skills to gunners. The instructor can select one of 31 scenarios and any of 15 qualification exercises. After each engagement, the instructor immediately scores and critiques the gunner's performance.

The FTT (shown above) is a fully integrated, three-dimensional training device that is designed to

simulate the form, fit, and function of the real tactical Javelin system. It is configured either with or without the FTT instructor station. In either configuration, the FTT integrates the tactical CLU with a simulated round. The FTT allows the gunner to simulate war-fighting in a tactical environment (force-on-force). With the FTT instructor station installed, the instructor can tape the gunner's

engagement sequence on an 8mm video tape. This tape is used for review and critique after the exercise. A backpack is provided to help transport the instructor's equipment during the training exercise.

The simulated round is incorporated as a subsystem for the Multiple Integrated Laser Engagement System (MILES); it is used for use during force-on-force engagements. The FTT MILES subsystem enhances the soldier's learning experience during the training exercise by allowing simulated engagements of targets and immediate feedback concerning the success or failure of the engagement. Even without the FTT instructor station installed to record the engagement on video tape, the gunner's engagement actions are recorded as MILES events. The FTT MILES Event Recorder stores up to 300 of the gunner's events for later review and critique.

Fielding

Select units are scheduled to begin receiving the Javelin during fiscal year 1996. Due to production delays, other units will not receive the Javelin until the year 2000 or later. Therefore, units must retain their 90mm

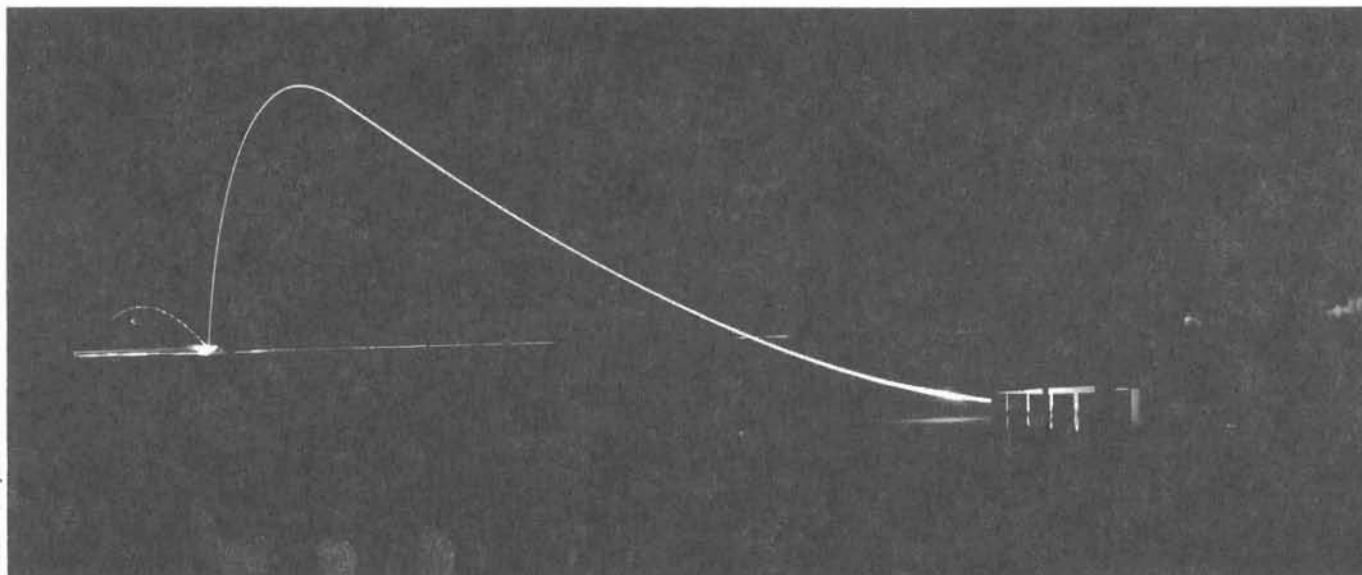
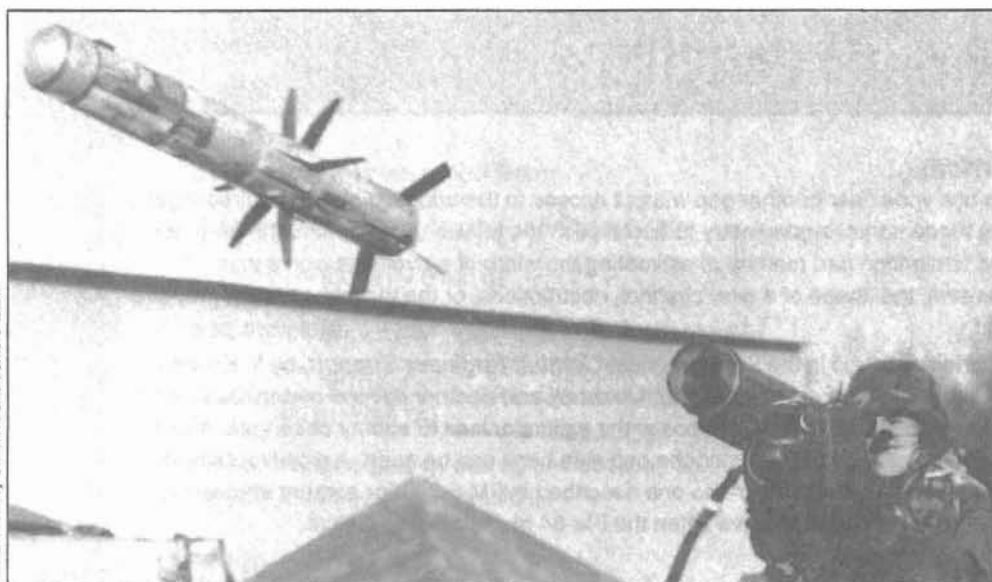


Photo courtesy Javelin Joint Venture team

This time-lapse night shot shows a Javelin missile being fired out of an enclosed building. The target is a T72 tank at approximately 500 meters.



A soldier launches a missile from the Javelin launch tube.

recoilless rifles until they receive the Javelin system for replacement.

The new Javelin system is designed to enhance the missile-launching skills of combat readiness groups. The high-tech characteristics and "fire and forget" capabilities of the Javelin will

thrust these groups forward into the 21st century and improve mission readiness for troop deployments Army-wide.

Sergeant First Class Daniel Copson, a senior writer/instructor for the Department Tactics and Leadership at the U. S. Army Engineer School, has

completed the Javelin subject-matter expert course. He previously served as a platoon sergeant with the 8th Infantry Division during Desert Storm. SFC Copson is a graduate of the Advance Non-Commissioned Officer Course (ANCOC) and holds an associate degree from Central Texas College.

Sergeant First Class Richard Kelley, a writer/instructor for the Department Tactics and Leadership at the U. S. Army Engineer School, has completed the Javelin subject-matter expert course. He previously served as a platoon sergeant with the 1st Armor Division. SFC Kelley is a graduate of the ANCOC.

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(Personal Viewpoint, continued)

helipad construction, communication tower construction, building demolition, and firing range construction. A conscious effort is made to match unit capabilities with mission requirements. Unit commanders working for JTF-6 have documented training on at least 85 percent of their METL tasks in their post deployment after-action reports.

During FY 93, engineer units repaired or constructed 362 miles of road (with accompanying culvert, fords and drainage), seven firing ranges, two helipads, and more than 14 miles of border fence. Other missions included power line relocation, fitness course and rappel tower construction, a drug-dog kennel, and structural demolitions.

Units also receive hands-on training in the requirements of environmental law. Units operate

under strict environmental constraints. To ensure compliance with laws and regulations, JTF-6 provides qualified environmental surveyors and monitors to constructing engineer units. Commanders plan and execute environmentally sound projects, and troops become familiar with environmental procedures and protection.

Join Us!

There is a vital mission for engineers on the southwest border, one that directly supports our national security. Training opportunities abound for engineer units that are aggressive and innovative. We must convince installation commanders and ourselves that counterdrug operations are a valid, vital military mission. They offer great opportunities to support law enforcement, provide service to the

American people, and conduct realistic training in a rugged environment, against a real threat.

Each quarter, the JTF-6 engineer branch publishes an electronic message addressed to corps, divisions, engineer brigades and groups, and individual units announcing missions available along the border. For information about engineer missions, call me or Major Brian Hearnberger at (915) 568-8209/8733 (DSN 978). Join us for some great engineer training!

Lieutenant Colonel DeHarde is the staff engineer for Joint Task Force Six, Fort Bliss, Texas. Previous assignments include instructor at the U.S. Army Command and General Staff College, battalion executive officer, USAREUR Engineer Plans officer, deputy resident engineer/operations officer in Riyadh, Saudi Arabia, and company commander. LTC DeHarde holds a masters degree in civil engineering from Texas A&M University.