

Close Combat Weapon Systems



JAVELIN



TOW



ITAS



LOSAT



Systems in Combat



February 2005



Mission Statement

**Provide the Soldier with
Superior Technology and Logistic
Support to Meet the Requirement
for Close Tactical Fires**



Javelin



Javelin

System Description

The Javelin is a Medium Range, Man Portable, Shoulder-Launched, Fire-and-Forget Anti-Armor Weapon System.

Javelin Uses Fire-and-Forget Technology Which Allows the Gunner to Lock on to the Target, Fire the Missile, and Immediately Take Cover.



In Addition to its High Lethality, the Javelin is Ideally Suited to Rapid Deployment Due to its Size, its High Reliability, and its Very Small Logistics Tail.

System Characteristics

The Total System Weight is 49.5 lbs with the Round Weighing 35 lbs. The Round has a Length of 47.2 inches and an Endcap Diameter of 11.75 inches. The Missile Contained Inside the Launch Tube Assembly (LTA) has a Diameter of 5 inches. The Missile is Sealed in a Disposable Launch Tube Assembly. Missile Range is in Excess of 2000 meters.



Javelin Round



**Javelin Missile
Cutaway**

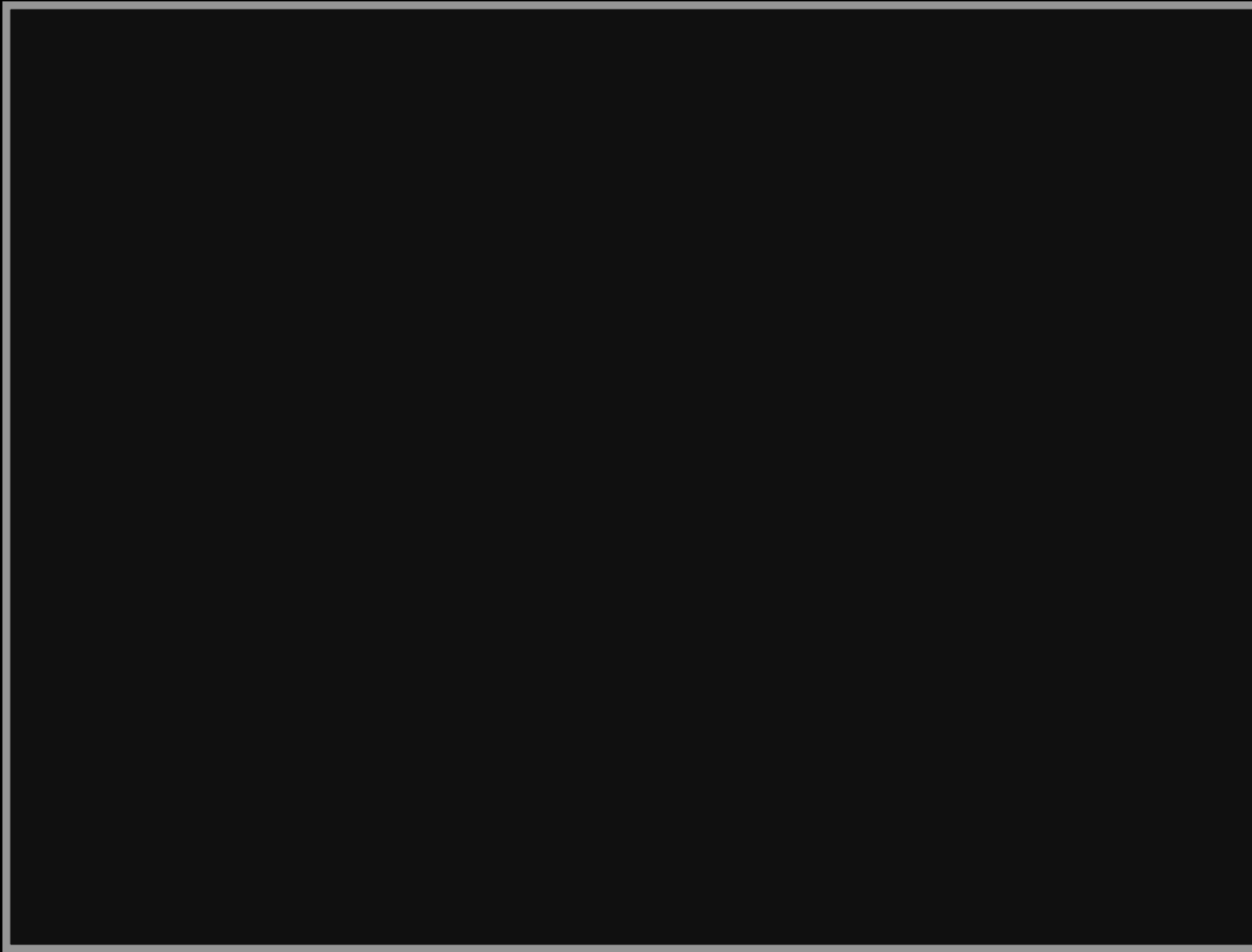


Javelin in Iraq





Javelin in Iraq



“Without the Javelin Weapon System, 30 Americans never would have left that pass alive.” U.S. Army Special Forces Sergeant



Javelin in Iraq

One Javelin Missile was Fired from this Bridge and it Destroyed Two T-72 Tanks Due to the Explosion from the First Tank.

Broadcast on Fox News and CNN



Javelin Missiles Fired in Iraq

**Total Number of Javelin Missiles Fired by
U.S. Army Forces in Operation Iraqi
Freedom and Operation Enduring
Freedom as of Jan 2005**

607



TOW



TOW

Tube-Launched, Optically-Tracked, Wire-Guided (TOW) Heavy Anti-Tank / Assault Weapon System



TOW is the world's premier Heavy Anti-Tank/Assault Weapon System. TOW provides the long range, highly lethal anti-armor and precision assault fires capabilities for the Infantry Forces of the U.S. Army, U.S. Marine Corps, and over 30 Allied Nations. TOW provides the capability to defeat a broad range of targets from the most modern main battle tanks to urban structures and field fortifications. TOW is integrated on a wide variety of combat systems including helicopters, fighting vehicle systems, and both light tracked & wheeled vehicles.

TOW 2A



- Added Precursor Charge to Defeat Reactive Armor
- Produced 1987-1992 for U.S. Army
- Produced 1987-Present for FMS

TOW 2B



- Fly Over Shoot Down Warhead
- Dual Mode Sensor
- Produced 1991-1997 for U.S. Army
- Produced 1991-Present for FMS

TOW 2B Aero



- 4,500 Meter Maximum Range
- Fly Over Shoot Down Warhead
- Dual Mode Sensor
- No Platform Modifications Required
- Production FY04-11 for U.S. Army & USMC

Bunker Buster



- High Explosive Blast-Frag Warhead
- Supports U.S. Army's Stryker Brigade Combat Teams
- Defeats Bunkers and Building Structures - Ideal for MOUT Operations
- Produced 2003



TOW in Iraq



Curious Civilians Crowd Around a HMMWV with a TOW Guided Missile Launcher, and Attempt to Converse with a Soldier from 1st Brigade, 101st Airborne Division



TOW in Iraq



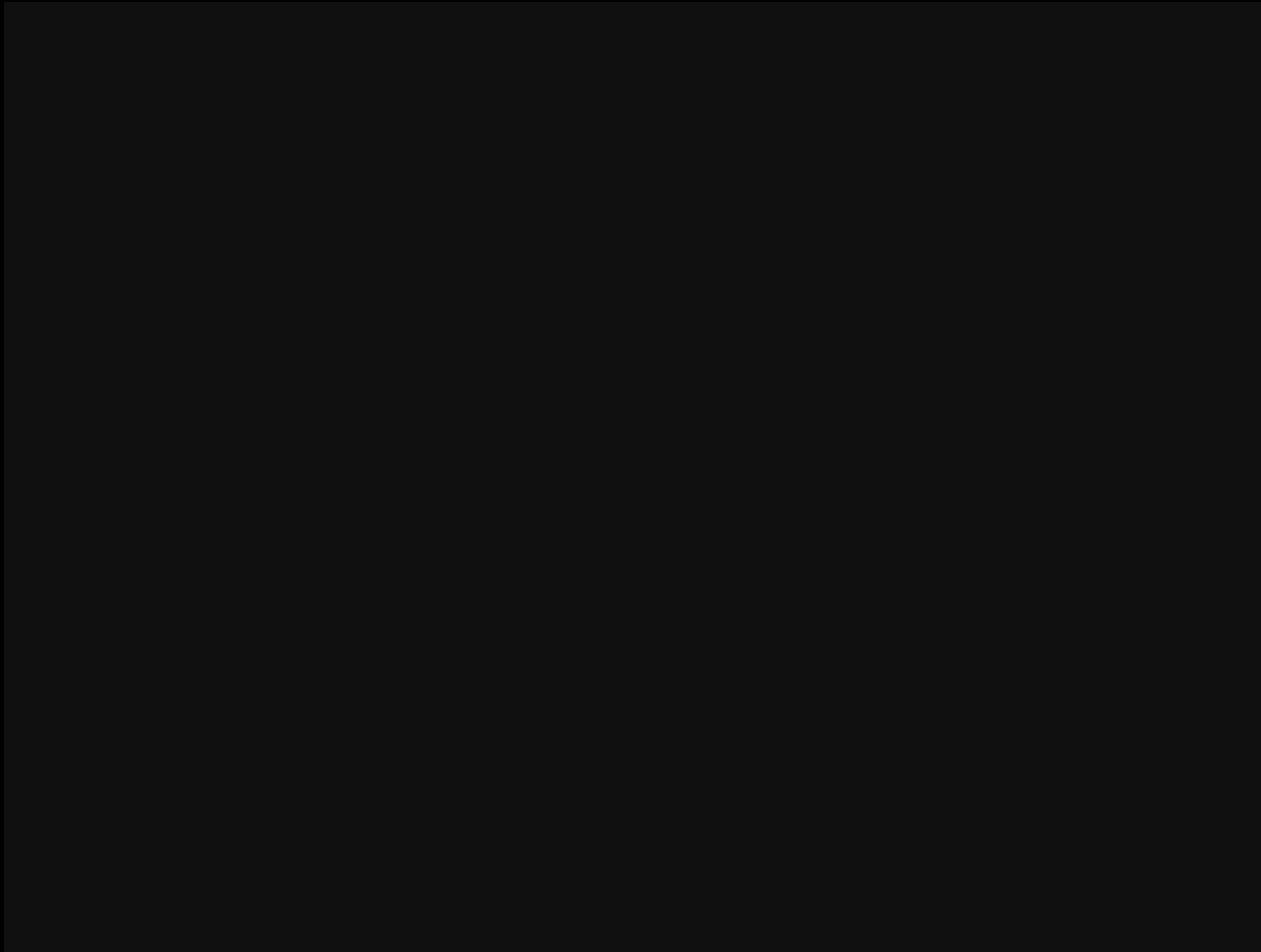
Attack on Uday and Qusay Hussein

23 July 03 - CENTCOM Briefing - "At 1300 hours, we continued the preparation using our 50-caliber machine guns, using our Mark-19s, and at this point we began to employ humvee-mounted TOW missiles. We fired 10 TOW missiles into the house. During this period, we considered employing out Apache helicopters and A-10s to come in and finish the preparation and the neutralization of the target; however, the decision was made not to employ the air power because of the high risk of collateral damage, given the neighborhood density that we were faced with.

At the end of this preparation, we believe that it is likely that the TOW missile attack was what wound up killing three of the adults."



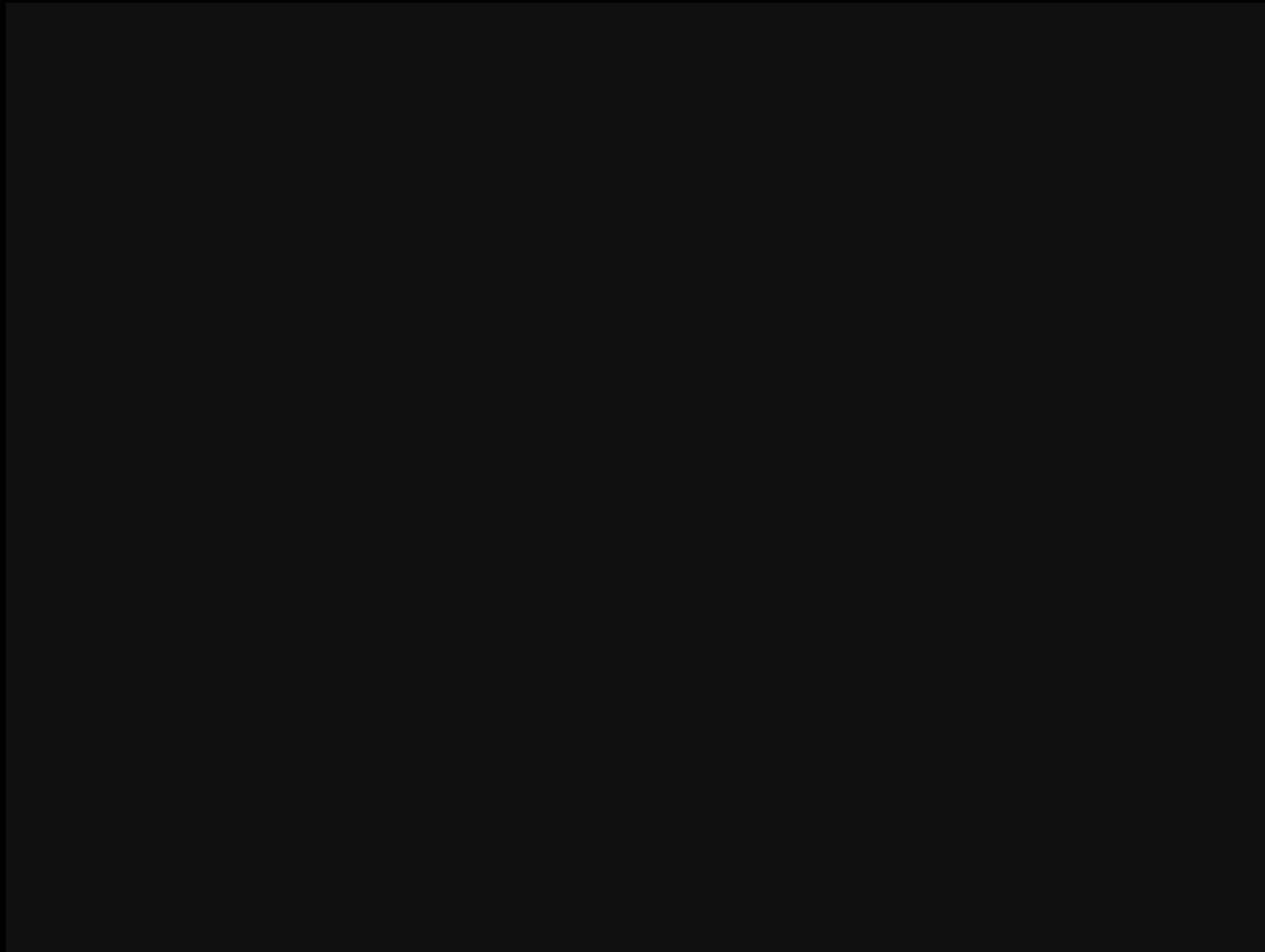
Attack on Uday and Qusay



23 July 03 - CENTCOM Briefing – “At the end of this preparation, we believe that it is likely that the TOW missile attack was what wound up killing three of the adults.”



TOW in Iraq



TOW 2B Missile Fired from a Stryker at a Sniper Located in a Mosque at the Top of a Minaret.



TOW in Iraq



Two TOW Missiles are Fired from the Stryker ATGM Platform into a Building



TOW Missiles Fired in Iraq

**Total Number of TOW Missiles Fired by
U.S. Army Forces During Operation Iraqi
Freedom and Operation Enduring Freedom
as of Jan 2005**

TOW 2A	-----	846
TOW 2B	-----	3205
TOW BB	-----	<u>175</u>
		4226

Improved Target Acquisition Subsystem (ITAS)



Traversing Unit



Target Acquisition Subsystem



Fire Control Subsystem



Lithium ION Power Source



System Description

ITAS Provides Long-Range, Lethal Anti-Armor and Precision Assault Fires Capabilities for U.S. Army Light Infantry Forces and Stryker Brigade Combat Teams. ITAS Doubles Target Acquisition Ranges Over 1st Generation Systems and Enables Maximum Range Engagements with TOW Missiles Thus Significantly Enhancing System Lethality and Soldier Survivability. ITAS' Superior Surveillance Capability Enables the Soldier to Shape the Battlefield by Detecting Targets at Long Range and Either Engaging with TOW Missiles or Directing the Employment of Other Weapon Systems to Destroy Those Targets.



ITAS



Deployed in OIF/OEF Currently/Formerly Deployed

- 10 MTN
- 3/2 ID SBCT1
- 25th ID
- 501st INF BN
- 82nd ABN
- 39th SIB AR NG
- 3-116th VA NG

Recently Fielded to 172d SBCT3

36 Systems

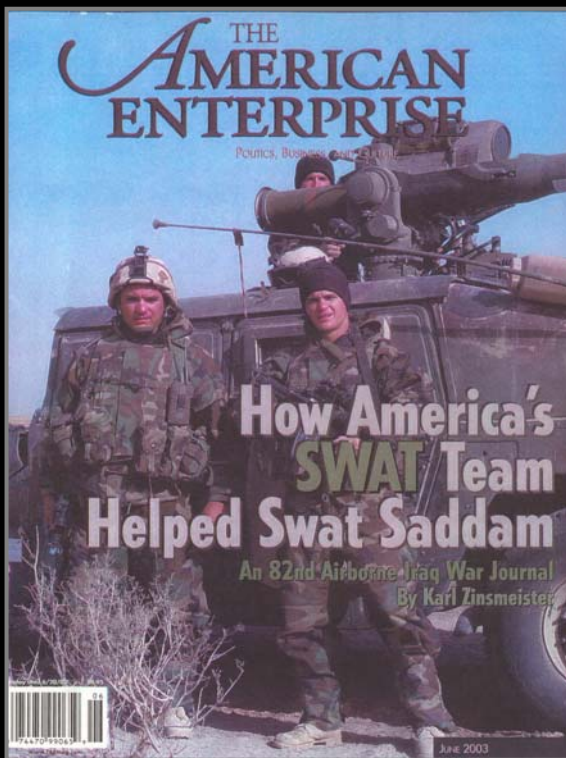


Lithium-Ion Qualification Completed

- First Li-Ion Batteries Fielded
- Ongoing Production Deliveries



82nd Airborne With ITAS In Iraq



Superior, Long-Range Surveillance

"...the magical optics (ITAS) reveal, that the desert still crawls with suspicious men."

"This crew values the optical sight of the TOW (the ITAS) at least as much as the weapon itself."

"...we can see a guy smoking a cigarette miles out"

Laser RF Assists in Target Location for Direct and Indirect Fire

"I've also got four dismounted individuals climbing up on some buildings..."

"Now they're climbing up on the roof of the buildings."

"They're out at 5153 meter..."

"Give me a grid and I'll call those dudes in to Gillespie's mortar crew."





Afghanistan Operation Enduring Freedom



Situational Awareness

Combat Patrol Overlooking Pakistani Border

- 9 Men Observed Walking Across Desert
 - Nearly Half Mile Away
 - Carrying No Weapons
- ... But in a Tent Farther Away
 - Recoilless Rifle Barrel Sticks Out

"It's very possible to know exactly where someone is"



"ITAS is an Incredible Thermal Sight," CPT Miller, CDR D/2/504 PIR



101st Airborne with TOW in Iraq

Battle at An Najaf

Assault/Precision Fire

- Enemy Paramilitary Infantry had Occupied a Series of Apartment Complexes, Heavy Machinegun Fire from Windows
- Tanks Drew Enemy Fire while ITAS Gunners Engaged Targets from Safe Standoff Ranges
- ITAS Gunners Fired Over 45 TOW Missiles into the Apartment Complex, Almost All of them Going Directly Through Windows



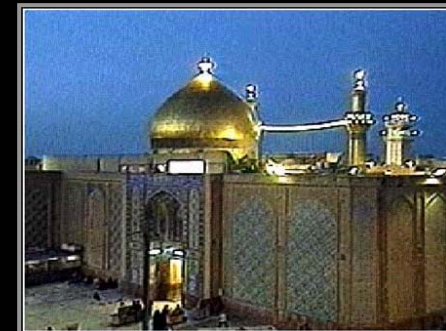
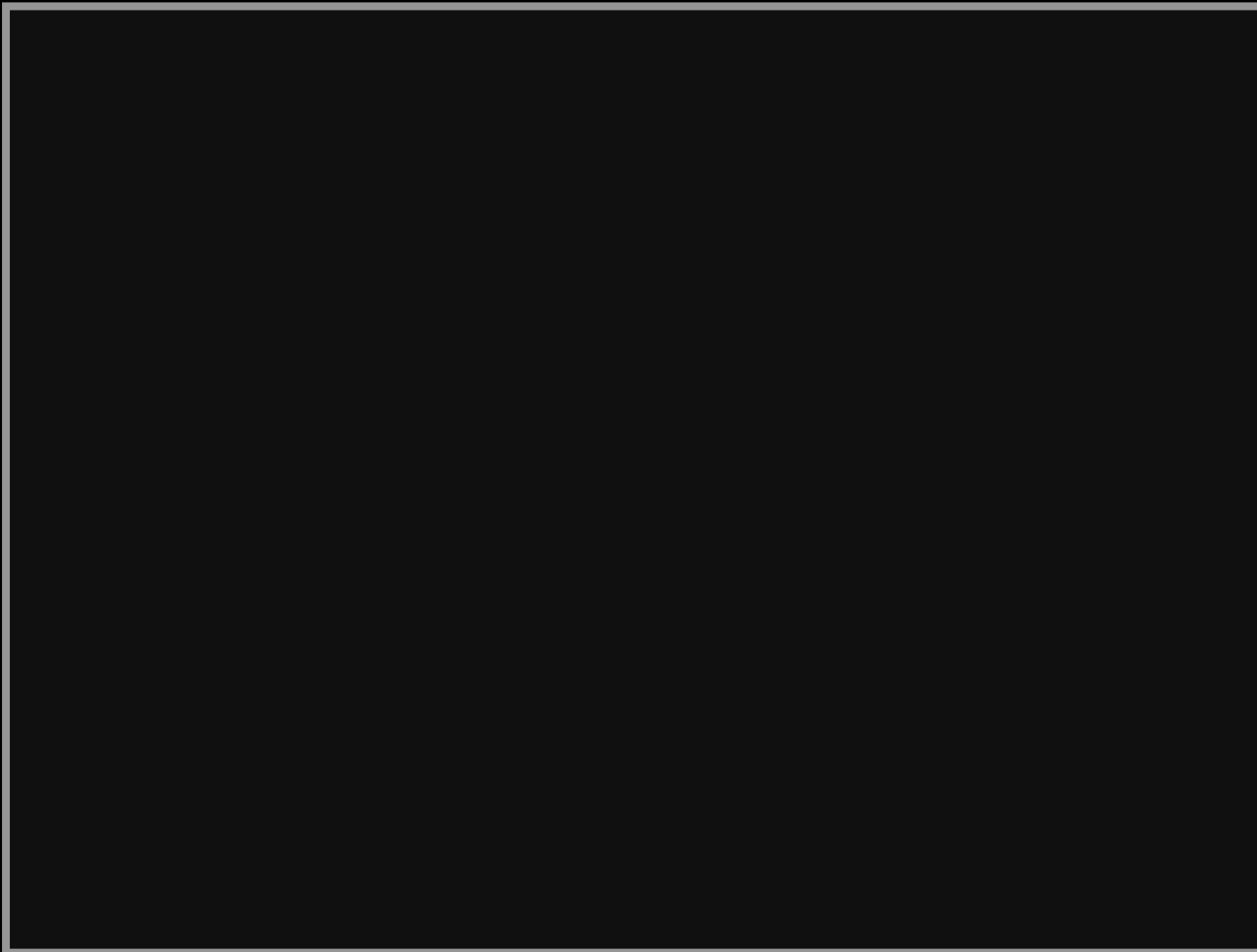
Anti-Artillery

- ITAS Gunner Observed 3 Artillery Pieces Being Rolled into Position
 - Close Air Support Could Not Locate
 - Commanders Could Not Find Using Binoculars
 - Gunner “Marked” One with a TOW Sending it 500 ft in the Air
 - CAS then Saw and Took Out Remaining Two



UNCLASSIFIED

LTC Hughes Briefs the Battle of An Najaf





Improved Bradley Acquisition Subsystem (IBAS)



Target Acquisition Subsystem



TOW Missile Launcher



Second Generation Common Electronics Unit



Missile Control Subsystem



System Description

BFVS A3 IBAS Provides Long-Range, Lethal Anti-Armor and Precision Assault Fires Capabilities for U.S. Army Mechanized Infantry Forces. IBAS Doubles Target Acquisition Ranges Over 1st Generation Systems and Enables Maximum Range Engagements with TOW Missiles Thus Significantly Enhancing System Lethality and Soldier Survivability. IBAS' Superior Surveillance Capability Enables the Soldier to Shape the Battlefield by Detecting Targets at Long Range and Either Engaging with TOW Missiles or Directing the Employment of Other Weapon Systems to Destroy Those Targets.



IBAS in Iraq





Total Number of CCWS Missiles Fired in Iraq by U.S. Army

As of Jan 2005

TOW 2A	-----	846
TOW 2B	-----	3205
TOW BB	-----	175
Javelin	-----	<u>607</u>
		4833



The Future



Assault Weapon System (AWS)

Today's Capability



- No Multipurpose Direct Fire Weapon System for Infantry Forces
- Combat Solution: Units in Combat Added SAW MG to TOW Turret for Immediate Suppressive Fires... Employed By 10th Mtn in OEF & the 101st AA and USMC in OIF

Tomorrow's Solution



- Multipurpose Direct Fire Weapon System for Infantry Brigade Combat Teams...
- Increased Survivability (Remote Weapon Console with Crew Under Armor)
- 3 Ready Weapons for Scaleable Effects
- ITAS Based Reconnaissance and Fire Control System
- Strategic Deployability and Tactical Mobility

UNCLASSIFIED



LOSAT





Line-of-Sight Anti-Tank (LOSAT)



System Description

The Line-of-Sight Anti-Tank (LOSAT) is an Anti-Tank Weapon System Which Provides Overwhelming Accuracy, Lethality and Rapid Rate of Fire at Ranges Exceeding Tank Main Gun Range. The System is Comprised of a Hypervelocity Kinetic Energy Missile (KEM) and a Modified IBAS Target Acquisition System Mounted on a Modified Expanded Capacity M1113 HMMWV Chassis. The Army has Selected the LOSAT Program as One of the Programs for Acceleration to Lead Our Army to the Future.

Missile

- Army's First Fielded Kinetic Missile
- Long Rod, Tungsten Alloy Penetrator
- Delivers 5 Times the Kinetic Energy of Current Tank Rounds

Missile Weight:	175 lbs
Max Speed:	5000 Ft Per Second
Maximum Range:	4+ km

- Overwhelming Lethality, Kills All Threats From Any Aspect Angle
- Lethal Against Present and Future Reactive Armor and Active Protections Systems
- Multiple Target Engagement Capability and High Rate of Fire
- On Board Resupply Capability



- C-130 Transportable and Air-Droppable
- UH-60L and CH-47 Slingload Capability



Line-of-Sight Anti-Tank (LOSAT)

