



M26 Less-Lethal EMD Weapon

and M26A dual less-lethal / lethal integrated M16 platform weapon

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Terminology

- **Less-Lethal = Non-Lethal**

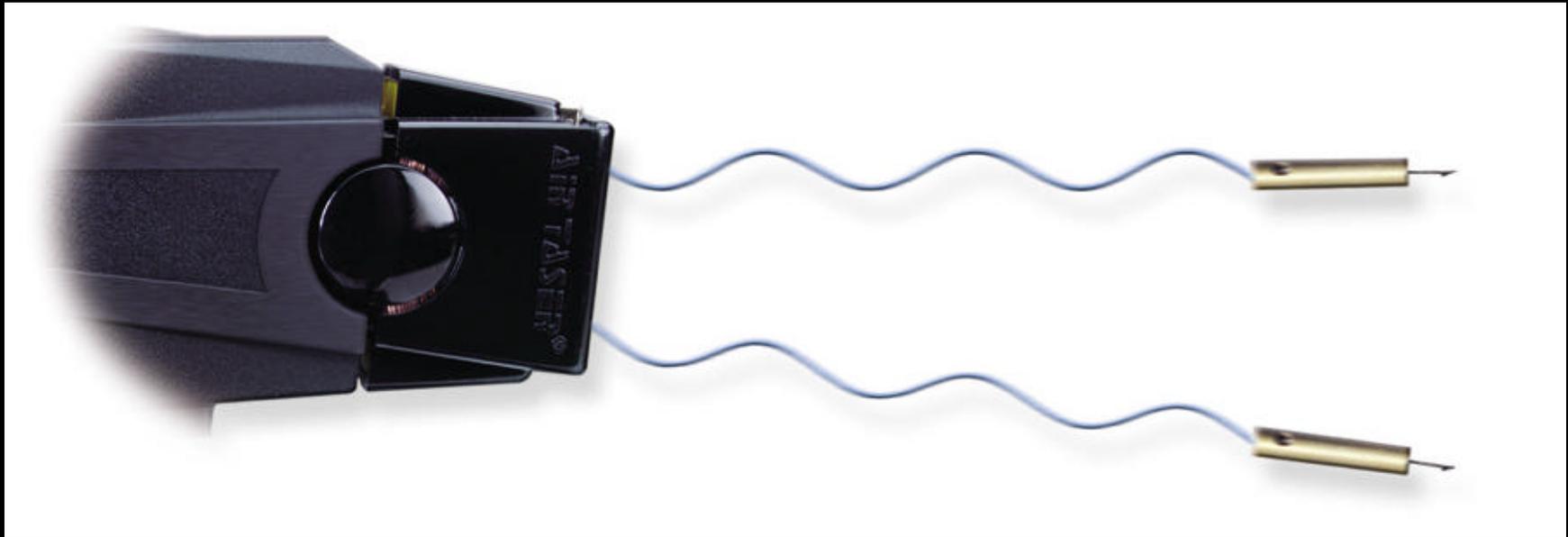
Most law enforcement associations and agencies are adopting the term “less-lethal,” hence, we use “less-lethal” to describe these weapons. However, if your department or agency uses “non-lethal” it is appropriate to designate the M26 as “non-lethal.”



(Click on image above to start video)



System Overview

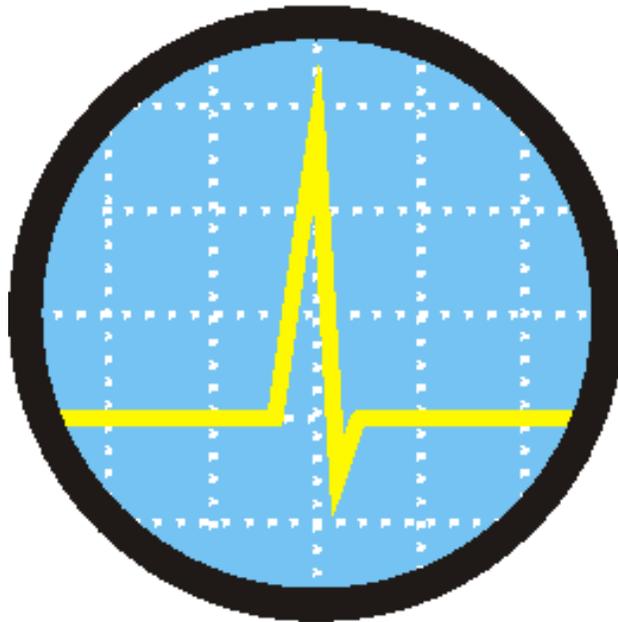


Probes launched at approximately 160 feet per second by 1800 psi compressed nitrogen.

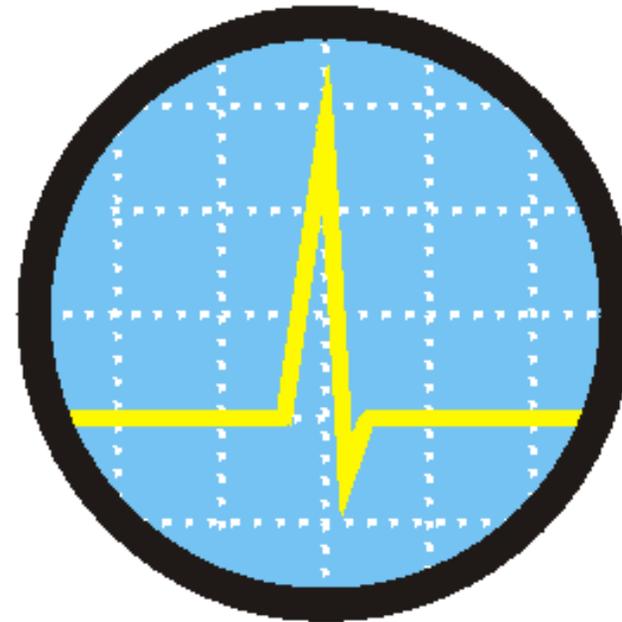


TASER Technology

Jamming the Nervous System



Nerve Signal or
"Brain Wave"



Taser Wave or
"T-Wave"



Take Out Command & Control

- In the Gulf War, jamming technology immobilized the Iraqi forces, allowing the Allies to obtain victory with minimal loss of life.
- Conducted Energy Weapons work with the same concept by jamming the central nervous system and overriding neuromuscular control of the body.
- The officer gains control of the situation with minimum injuries to the suspect and minimum risk to the officer.



Stun Vs. EMD

- **STUN** systems jam the central nervous system with electrical noise. The AIR TASER 34000 is a stun system. This only affects only the sensory nervous system.

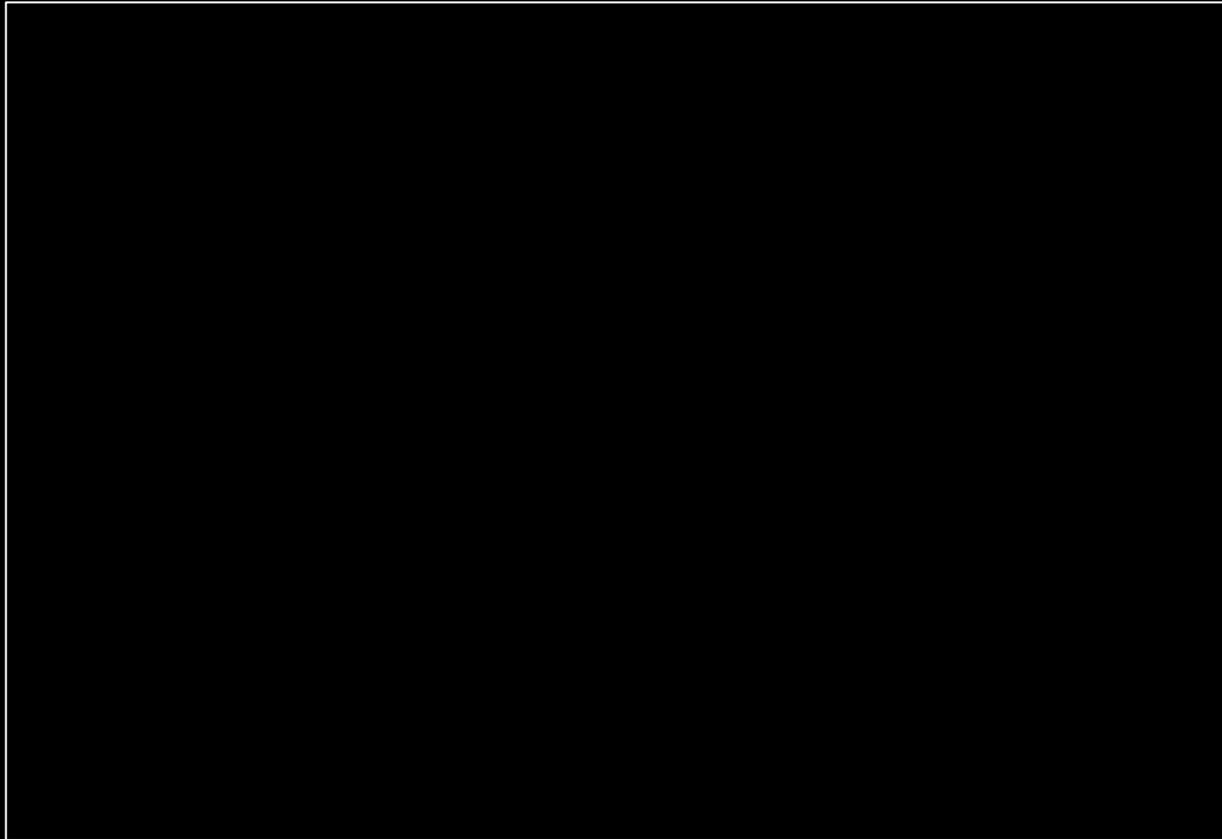
Power: 5-15 Watts

- **EMD** (Electro-Muscular Disruption) systems override the central nervous system and take direct control of the skeletal muscles. The ADVANCED TASER is an EMD system and affects the sensory AND motor nervous system.

Power: 16-26 Watts



Stun vs. EMD

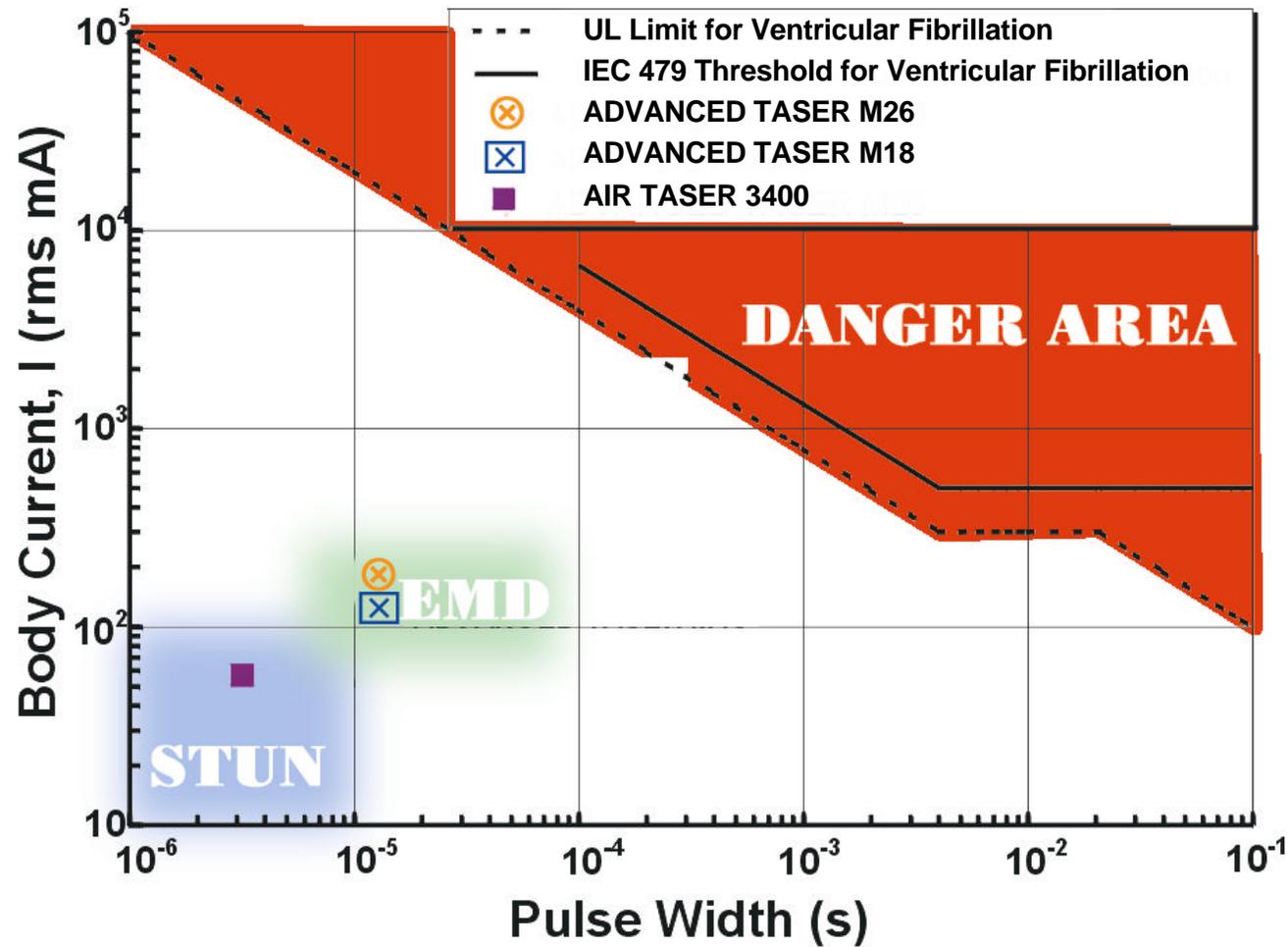


(Click on image above to start video)

NOTE: The subject above is an extremely focused SWAT team member. He was given a goal to reach the target in front of him. The purpose of this video is to demonstrate the effects of the EMD system even on these elite individuals. The probes are on the lower chest and thigh for both systems.

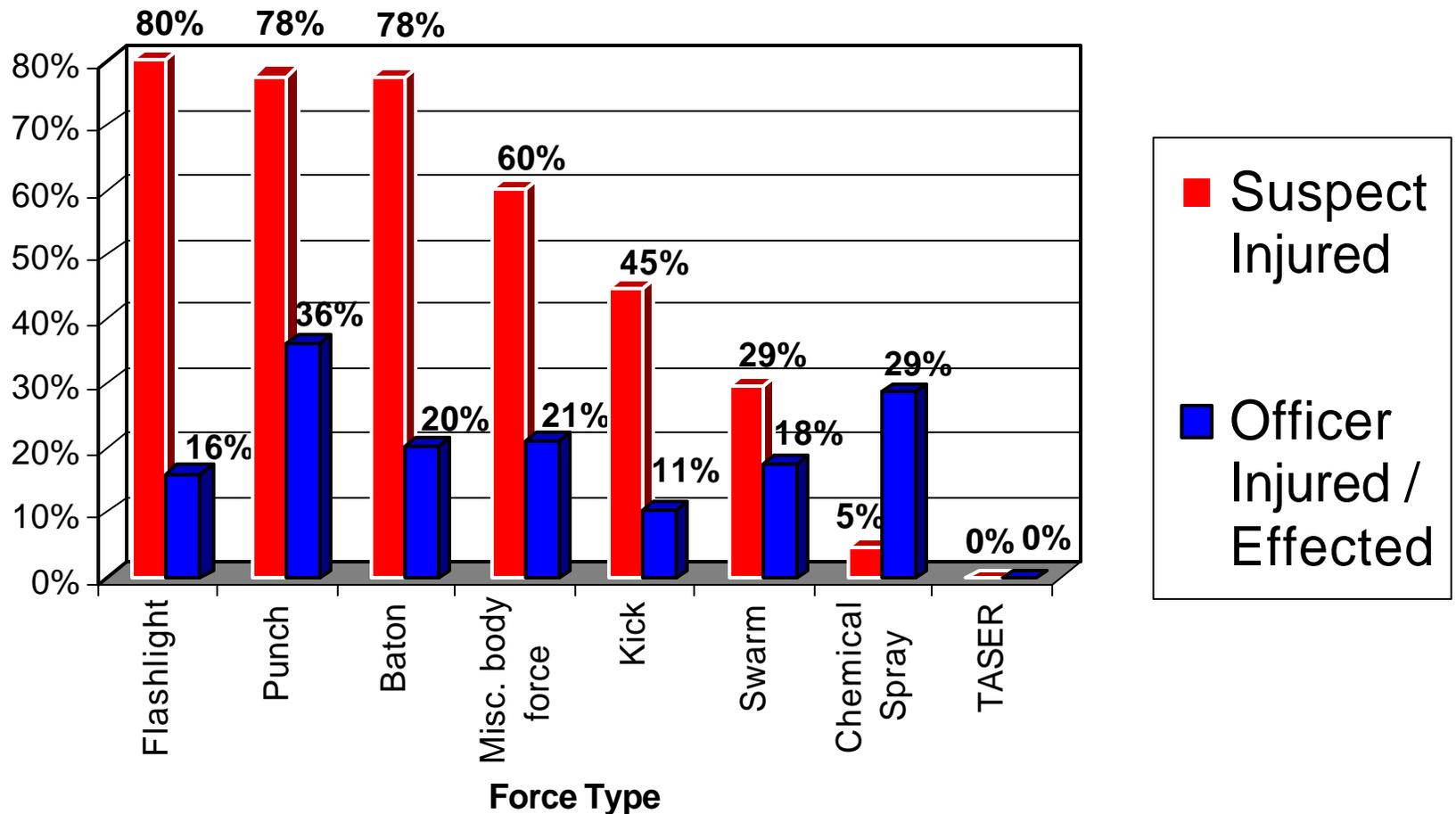


Electrical Safety



Comparison of Injuries

TASER Technology Reduces Injuries



Source: Study of Use of Force at Los Angeles Police Department, Greg Meyer. Statistics are for TASER technology deployed at LAPD in the TASER TE-86.

Original Study Available at <http://home.earthlink.net/~gregmeyer/injury.html> on the internet.



Safety Data

- LAPD Data was from a field study using older 5-7 Watt stun systems.
- With over 400 volunteers and field uses, no injuries have resulted from M26 -- strongly supporting the data trend will continue without injuries.

ADVANCED TASER M-26



Constructed of impact resistant sonic welded polymer.



Modular Design



Dataport Interface
Allows Deployment
Flexibility.



Modular Deployment

Standard "Pistol" Configuration



Uses existing muscle memory:

- Simplifies training
- Improves accuracy

Integrated Laser.

Coloration Patterns mark as less-lethal.



Modular Deployment

Active CCTV Controlled Response



Neutralize threats without exposing human operators.

Low cost platform integrates M26 with currently installed systems.

Ability to install multiple weapons per camera.



Modular Deployment

M16 Integration: Dual Less-Lethal / Lethal Response



Less-lethal capability with immediate lethal response capability.

Integrates using NATO rail mounts, operates similar to M203 Grenade Launcher.

Adds only 1 lb. to soldier's gear, and no additional equipment beyond rifle.



M26 / M26A Features

- Unmatched Takedown Power
- Less-Lethal / No Injuries
- Integrates without Compromising Lethal Firepower
- 21 Foot Range (close to intermediate support)
- Integrated Laser Sighting
- Rugged Design
- AA Batteries (Military Standard)
- Low Cost (under \$500 per unit)
- KISS Operation, only one moving part
- **Immediately Available (ZERO R&D required)**



ADVANCED TASER M26

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M26 ADVANCED TASER®

Dual Lethal / Non-Lethal Capability

Electro-Muscular Disruption Weapon Attachment for M16 Assault Rifle

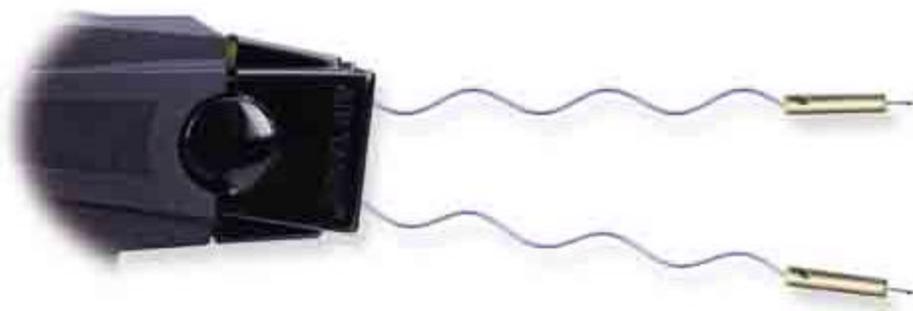
In 1975 the original TASER® was introduced as the first Conducted Energy Weapon (CEW). This system used an electronic pulse to stun a remote target from up to 15 feet away. Through extensive research, TASER International has created a new generation of Conducted Energy Weapons significantly extending the range and effectiveness of these weapons.

Using a new electronic waveform and increased power, the ADVANCED TASER M26 is the first non-lethal weapon that can reliably stop a focused, aggressive combatant. In addition to the "stun" effect of older CEW's, the ADVANCED TASER directly contracts skeletal muscles resulting in physical incapacitation. In tests against over 300 individuals, all of whom were selected from military and special forces, police units, and SWAT teams, the ADVANCED TASER has had over 99% incapacitation in less than 1 second. With this greatly increased effectiveness, the ADVANCED TASER is the first in a new class of Electro-Muscular Disruption (EMD) weapons.

The ADVANCED TASER incorporates a modular design that allows for the weapon to be mounted under the barrel of an M16 or other assault weapon. This offers soldiers the ability to deploy lethal or non-lethal force without changing weapon platforms. The ADVANCED TASER weighs 1.2 pounds and has an effective range of 21 feet.

Background

The original, first generation TASER was introduced in 1974. It was the first Conducted Energy Weapon, firing two darts up to a distance of 15 feet.



Once these probes make contact with the target, an electrical impulse is transmitted from the handheld weapon through the wires to the remote target. These impulses are short (3-15 microsecond) bursts of electrical current that depolarize the nerve tissue within the target. Effectively, these electrical pulses create electrical interference within the nervous system of the subject. Much like radio jamming, these pulses interfere with the normal communications within the human nervous system.

However, because these less-lethal weapons use a signaling mechanism to impair the target, they do not require nor cause physical damage.

Stun Weapons

First Generation CEWs

The first generation of Conducted Energy Weapons, including the original TASER, use a 7 Watt TASER-wave discharge to stun the target. In order to differentiate between the bio-effects of the first generation Conducted Energy Weapons and third generation weapons, we have created two categories of CEW's: Stun weapons and EMD (Electro-Muscular Disruption Weapons).

Stun technology weapons operate in a 7-14 Watt range and interfere with the communication signals within the sensory nervous system of the target. The sensory nervous system includes the nerves primarily located in the skin, that sense stimuli from the environment and feed this information back through the nerve fibers into the brain for interpretation. Because these nerves sit near the surface of the skin and are constructed for high sensitivity to stimulation, they are easier to stimulate than the motor nerves and muscle tissue located deeper in the body. Hence, these Stun weapons create a stun effect by overwhelming the nervous system with electrical interference. The brain, over-stimulated by the electrical energy, is stunned and the target is usually immobilized. These 7 Watt systems have an effectiveness rating of approximately 86%.

Second Generation CEWs: AIR TASER 34000

TASER International introduced the second generation of TASER technology with a 7 Watt output in 1995: the AIR TASER 34000 series. The primary difference in the second generation CEW's was the use of solid state timing circuits to deliver the TASER output for a controlled period of time. This advancement was designed to eliminate the potential for weapon failure caused by users releasing the trigger and accidentally terminating the energy discharge to the target. The second generation 34000 series further improved on the first generation by reducing the size and weight by over 50%, adding battery level indicators.

EMD Weapons

Third Generation CEWs: ADVANCED TASER M26

In December 1999, TASER International introduced the third generation of TASER technology with the ADVANCED TASER. Unlike the earlier 7-Watt stun systems, the ADVANCED TASER operates at over 14 Watts with a newly developed TASER-wave output. These higher-powered systems not only stun the target; they directly control the muscles, causing an uncontrollable contraction. Hence, Conducted Energy Weapons with power output greater than 14 watts are designated as Electro-Muscular Disruption (EMD) weapons due to the fact that they directly control the skeletal muscles. This EMD effect causes an uncontrollable contraction of the muscle

tissue, allowing the M-Series to physically debilitate a target regardless of pain tolerance or mental focus.

Prior to the launch of the M-Series, over 300 elite volunteers from SWAT teams, military Special Forces, and police agencies were hit with the ADVANCED TASER M-26 (26-Watt system) with a 100% incapacitation rate. Each individual was immobilized in less than 1/2 second. The ADVANCED TASERs are the first less-lethal weapons that can stop these focused, goal-oriented individuals. Traditional less-lethal weapons operate using primarily pain compliance techniques. The new EMD technology used in the ADVANCED TASER uses a physiological mechanism to incapacitate the human body. In the words of one leading use of force expert, "most less-lethal weapons attack the will to fight. The ADVANCED TASER attacks the ability to fight."

EMD vs. Stun Technology

Stun systems act by "stunning" the target with a high level of electronic stimulation. However, highly focused individuals may not be incapacitated by the stun effect. EMD systems use a more intense (yet medically safe) wave-form to directly cause contraction of the muscles and override the central nervous system. Hence the EMD systems not only stun the target, they physically debilitate the target by contracting his muscles. At a high level, **stun systems effect the sensory nervous system**, the portion of the nervous system that communicates from the skin back to the brain, carrying information "in" to the brain. Stun systems create very intense sensations that will stun the target by stimulating these nerves to create false signals.

EMD systems effect the sensory and motor nervous systems. The motor nervous system contains the nerves that conduct signals from the brain "out" to the muscles telling them what to do. The ADVANCED TASER M26 EMD weapon directly stimulates these nerves and muscle, causing the muscles of the target to contract thereby creating direct physical incapacitation.

All three generations of TASER technology operate at approximately 50,000 volts. However, Watts are the key to creating the EMD effect, not Volts. The Watts are the "broadcast power" with which the weapon is transmitting into the nervous system of the target. **The higher wattage of EMD systems allow the energy to penetrate deeper into the body to effect the motor nerves and muscles that are deeper than the sensory nerves which are in the surface skin.**

Significant pre-release medical testing involving both animal and human testing has provided strong and substantiable evidence that the new EMD technology leaves no lasting injury and that the risk of fatality is extremely small, and lower than comparable less-lethal technology.

The M26 Weapon Series

Modular Design Approach

The EMD technology described in the preceding section creates the foundation upon which the new M26 weapon series was developed. The design philosophy of the M26 weapon platform was to create a module design that would allow for the weapon to be deployed in a flexible, modular manner to allow for a virtually unlimited number of real world application for the underlying weapon technology.

The core of the M26 is the EMD powertrain, the circuitry that powers the weapon and controls weapon discharge. The EMD powertrain is an integrated circuit which includes the power generation system to create the EMD pulse electricity, and a microprocessor system with integrated memory and system time clock. The microprocessor with integrated memory allows the M26 to store a track record of every time the weapon is discharged. This information can be downloaded through a dataport connection to a Windows® 95 compatible computer to monitor weapon usage patterns, and to help prevent abuse by end users.



Through this dataport, the M26 powertrain can interface with a variety of control systems and share data with those systems. For example, the M26 can be fired remotely from an installed video camera system. Hence, the M26 can provide an active response to intrusion without requiring human resources, or placing human resources at risk.

One potential configuration is shown next page. The M26 can be mounted to a closed circuit television camera. With the M26 aligned along the visual axis of the camera, it can be rotated into position to locate and target an intruder using pre-existing, installed security cameras. A guard in a remote location can control the camera to view an intruder. He can then send a signal to the M26 to activate the laser on the target, and to fire the cartridge. The target can be dropped to the ground and safely immobilized until officers are deployed on scene for arrest. The ability to neutralize the threat without placing human assets at risk is a significant advantage of this approach.

ADVANCED TASER Camera Mount



Another potential configuration is to interface the M26 with a remote trigger button in the field. A soldier could deploy the M26 by positioning the unit in a traffic area where he would anticipate a potential target would be acquired. Using a remote control RF transmitter that communicates with a receiver control module plugged into the data port of the M26, he can send a remote signal to fire the unit while observing from a safe distance.

The ability to control the M26 weapon through a simple, phone jack type interface allows for limitless flexibility in deployment options.

Configurations: Standard

The M26 standard design uses a housing that uses the same muscle memory as a standard semi-automatic handgun. The philosophy that led to this shape is that the weapon should be designed to conform to the existing training of the officer or soldier. By using the same human interface design as a standard semi-automatic pistol, the M26 can be used effectively by any firearm trained individual with virtually no training. (However, training is strongly recommended prior to deployment.)

The safety operates similar to a semi-automatic handgun: a thumb switch that flips "up" to arm, "down" to safe. (The safety is the only moving part on the ADVANCED TASER.) Arming the M26 automatically activates the built-in laser sight.

The shape of the M26 makes training much easier since officers are familiar with the shape and mechanical operation paradigms. Further, because the M26 complies with the same skills used in firearm training, the system is more reliable under high stress situations.

M26 Standard Configuration



The M26 comes with a yellow sticker as shown above. Depending on the application (patrol vs. tactical), police departments or military forces can apply these bright color kits to clearly distinguish the M26 from lethal force. The M26 is also available in a full yellow color polymer to further distinguish the unit.

The standard M26 is carried in a holster similar to a side arm and can be quickly deployed with minimum training required.

Configurations: Military

The M26 can also be configured in a customized housing to mount underneath an assault weapon or shotgun (M26A). In this configuration, the M26 powertrain is configured in a linear fashion to mount in a low profile in an under-barrel mode. This allows the soldier or officer to immediately cycle between lethal and less-lethal force modes.

M26A Assault Rifle Mount System



(Not Actual Photo – concept representation shown here)

The M26A uses the standard M26 powertrain, the only difference is the outer housing configuration. The M26A is designed to fit on NATO spec rail mounts such as the Knight Rail System. The mounting rails are integrated into the M26A's polymer frame. The entire frame is made from two interlocking polymer casings – there are no moving parts other than the safety switch minimizing the number of interfacing parts that can jam or break.

The M26A is designed specifically for peacekeeping and other such missions where soldiers will require viable less-lethal force options for deployment on “dirty” battlefields. The M26A allows for the soldier to deploy less-lethal force without changing to a separate weapon platform. Further, by mounting to the standard issue lethal weapon platform, the less lethal weapon integrates into an existing necessity while adding only one pound to the soldier's load.

The M26A is not yet available. The design is complete and ready for production. Units can be delivered within 4 months, based upon minimum production quantities to amortize tooling requirements.

SPECIFICATIONS

	M26	M26A
Range	21 Feet / 7 Meters	21 Feet / 7 Meters
Weight	18 oz.	20 oz.
Size	7.5 in x 6” x 1.5”	12” x 2” x 2” (approx.)
Batteries	8 x AA Batteries	8 x AA Batteries
Maintenance	None (other than fresh batteries)	None (other than fresh batteries)
Color	Black or Yellow / Custom Available	Custom to suit
Temperature Range	-20’ F to 140’ F (Alkaline Batteries will not perform well below 30 ‘ F, must use NiMH batteries below freezing)	-20’ F to 140’ F (Alkaline Batteries will not perform well below 30 ‘ F, must use NiMH batteries below freezing)
Water Resistance	Splash Proof, Non submergible	Splash Proof, Non submergible
Configuration	Pistol Shape	Mounts to standard NATO Spec. rail system under assault rifle
Availability	1/1/2000	4-6 months from receipt of order.