

Taser Conducted Energy Device

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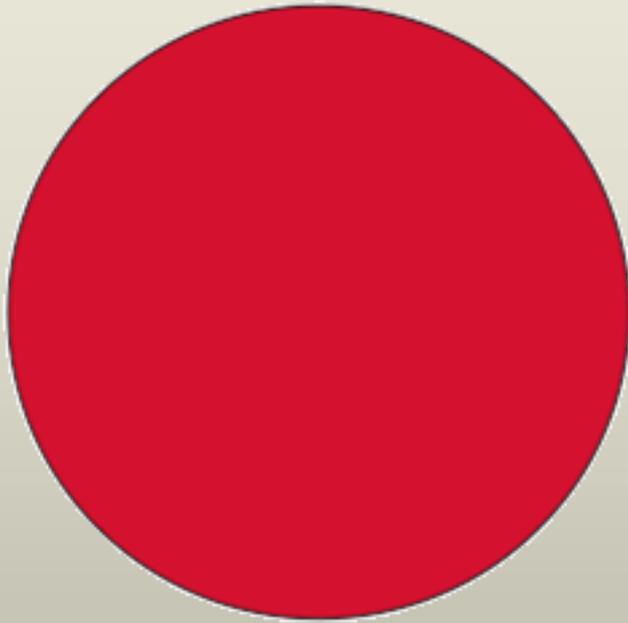
Taser

50,000 Volts!



One Million Volts!

TASER: Low Current



**110 V wall Outlet:
16 Amperes**

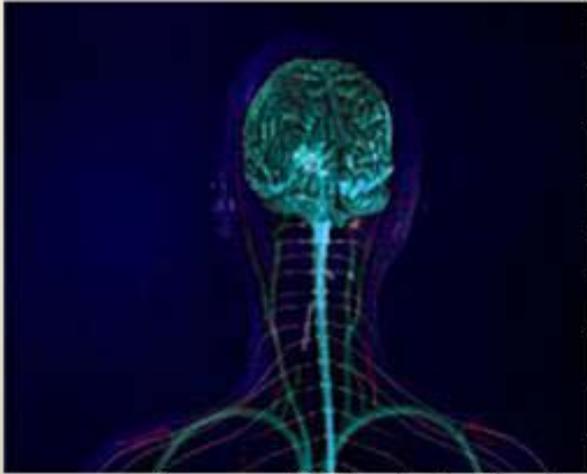


**Christmas
Tree Bulb:
1 Ampere**

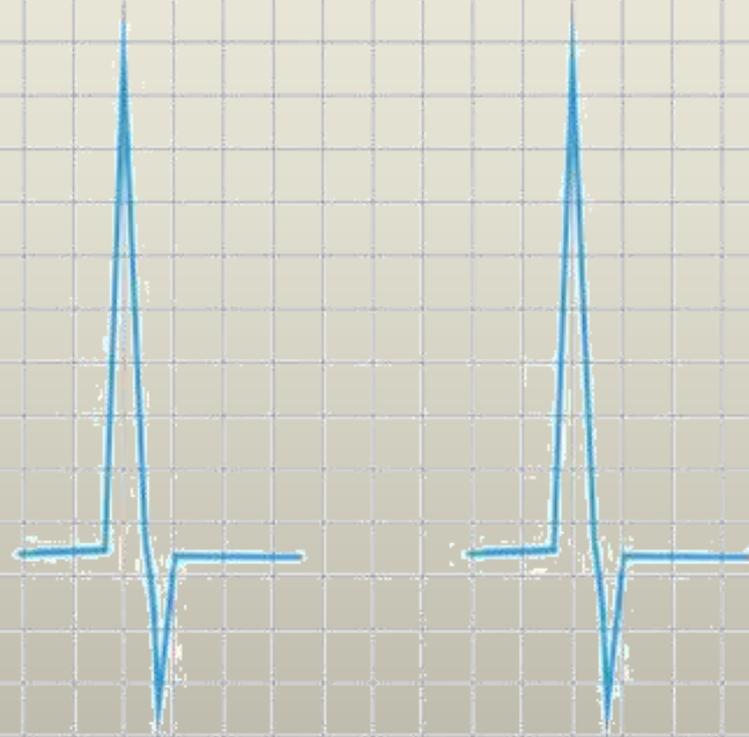


**TASER
X26:
0.0021
Ampere**

Technology



JAMMING THE NERVOUS SYSTEM

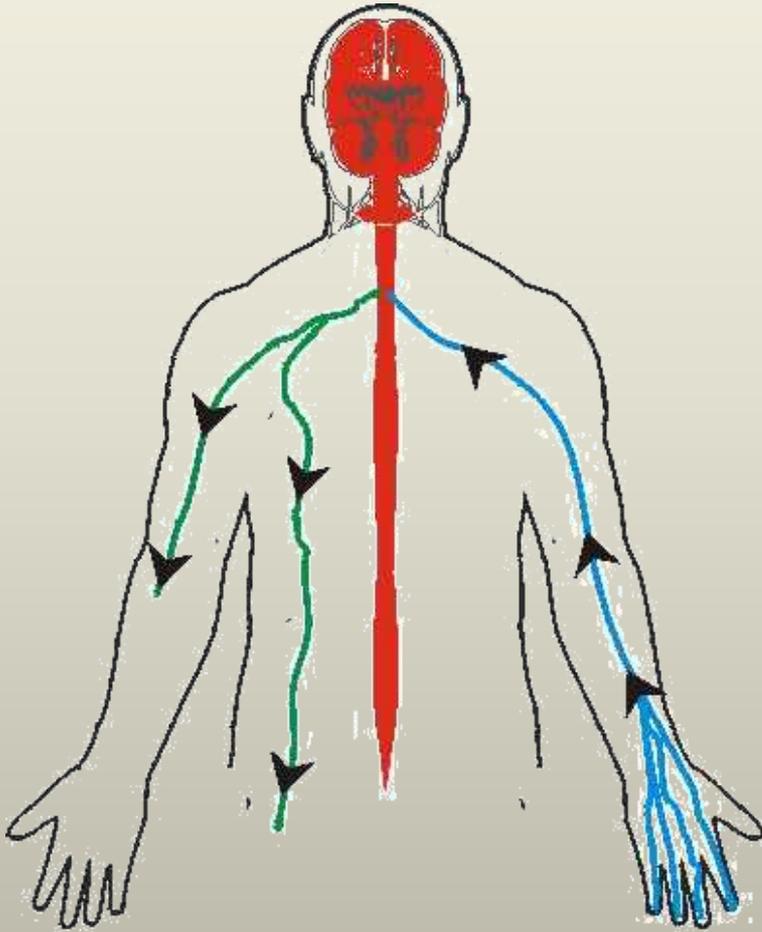


NERVE SIGNAL OR
"BRAIN WAVE"

TASER WAVE

Nervous System

Stun vs. NMI



Central Nervous System

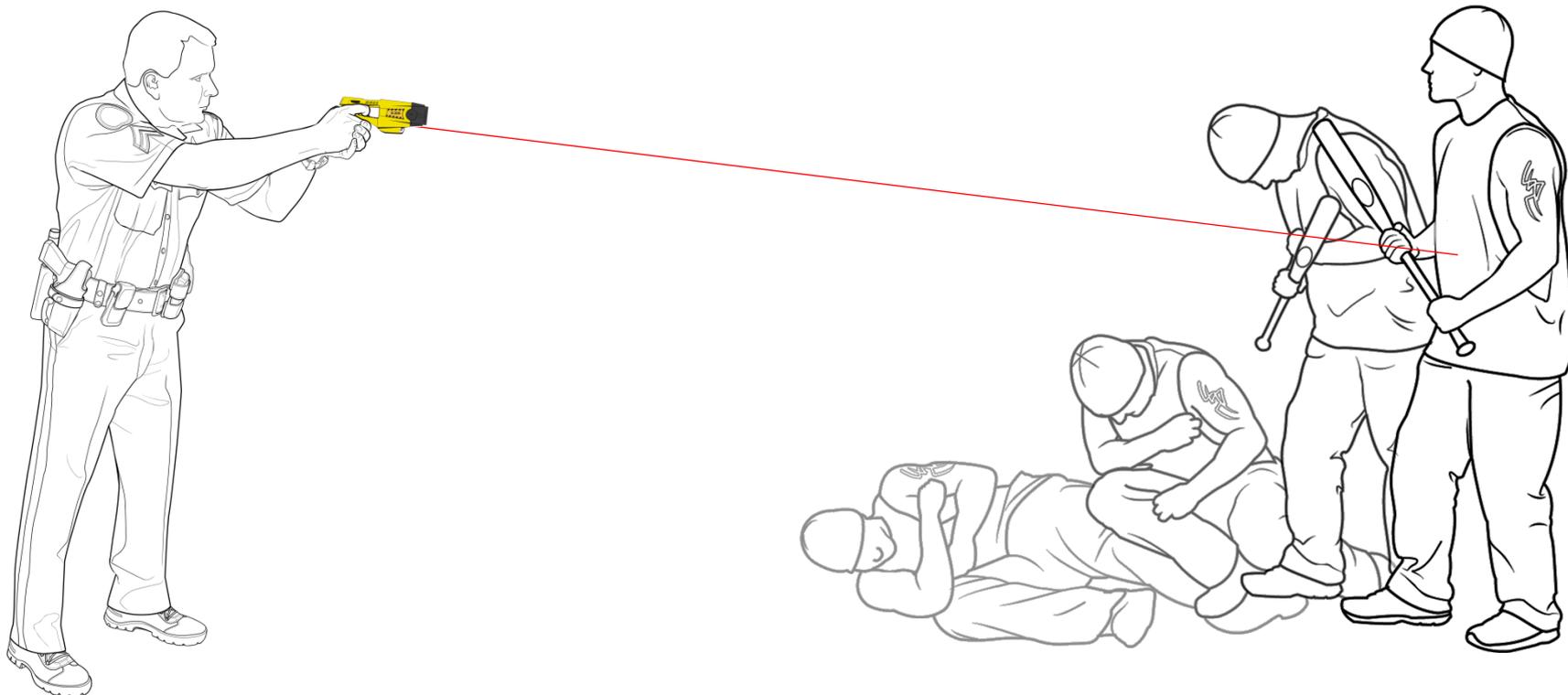
Command center – brain & spinal cord.

Motor Nervous System

Carries commands from the brain to muscles (NMI systems affect BOTH the sensory and motor nerves)

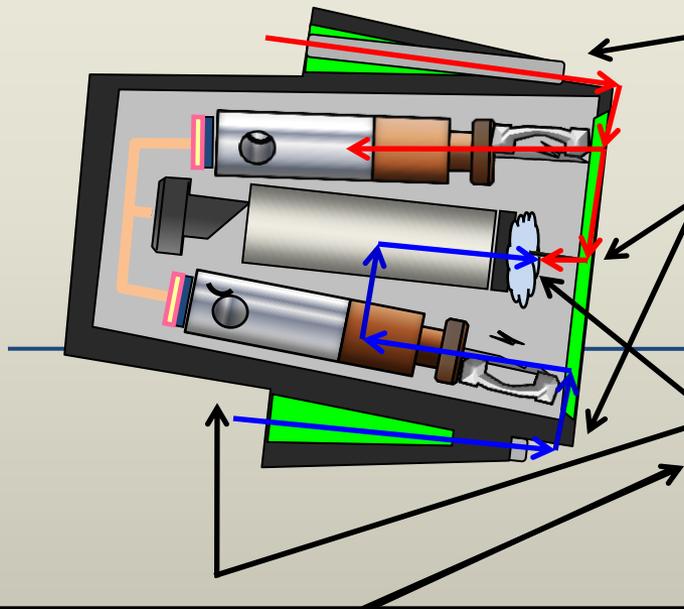
Sensory Nervous System

Brings information into the brain (effected by stun systems)



Electronic Control Devices (ECD's) are designed to use propelled wires or direct contact to conduct energy to affect the sensory and/or motor functions of the nervous system.

The X26 is a software upgradable, ECD manufactured by TASER International, Inc.



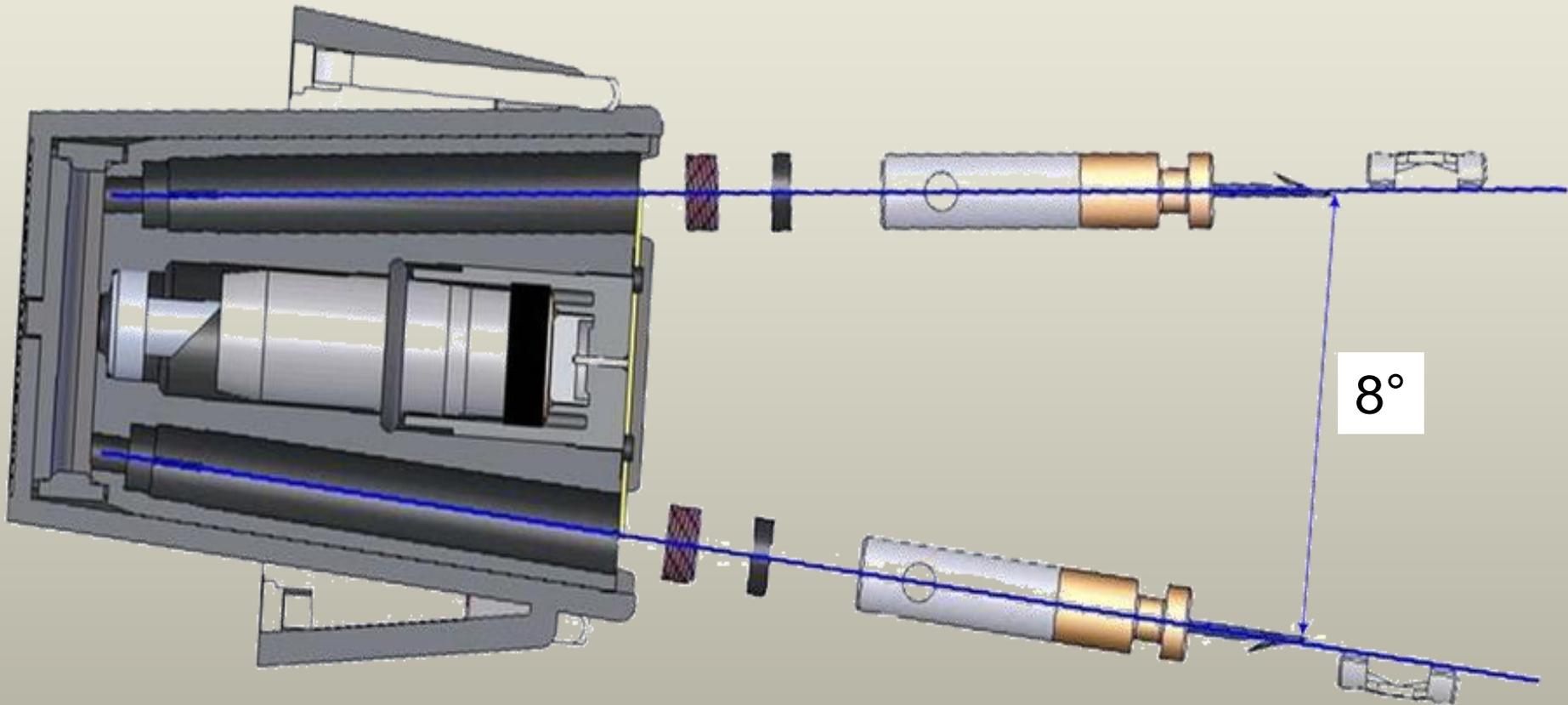
Electricity is conducted down the metal contacts and energizes ignition pin.

The electricity fires a small primer that forces the nitrogen capsule rearward into a hollow puncture pin that releases the compressed nitrogen into the probe chambers, which forces the probes out of the bores.

The blast doors, probes, probe wires, foam poron pads, ejectors and AFIDs are then propelled forward.

15, 21, LS & XP25 TASER Cartridges

The top probe is “horizontal” relative to ECD



Bottom probe 8-degrees down

Cartridges

- TASER Cartridges are used in the X26, M26 and SHOCKWAVE ECDs
 - Available in 15, 21, 25 and 35 ft
- All TASER Cartridges have a 5 year expiration from date of manufacture



15 ft.
(4.6 meters)
Yellow Blast Doors
Live Cartridge
Regular Probe



21 ft.
(6.4 meters)
Silver Blast Doors
Live Cartridge
Regular Probe



XP 25 ft.
(7.6 meters)
Green Blast Doors
Live Cartridge
XP Probe



XP 35 ft.
Special Duty
(10.67 meters)
Orange Door
Live Cartridge XP Probe

Accountability and Oversight

- AFIDS
- Download includes: date, time, temperature, battery life, and duration of each cycle
- Tascam – see and hear
- Training
- Review of each Taser use

Committee by Department
Civilian Police Review Board



EVIDENCE Sync Upload

TASER Evidence SYNC

EVIDENCE SYNC™

Ver. 1.31.2836.20-2837

[My Profile](#) | [Help](#) | [Log out](#)

ZZX29058H

DEVICE SUMMARY

- Event Log
- Device Status
- Firmware History
- Device Settings

DEVICE INFORMATION



ECD Name ZZX29058H [EDIT](#)

ECD Serial ZZX29058H

ECD Model TASER_ECD_X2

ECD Status Good

[PDF REPORT](#) [DISCONNECT](#)

ACCOUNT



Michael Dzezinski
Badge: 2730
Admin

FIRMWARE

ECD

FWBundle OK, 03.038, 2013-01-15 09:02:39

X2-HVM OK, 00.016, 2011-06-01 10:44:19

LDR OK, 03.033, 2012-10-16 16:08:04

MC OK, 03.033, 2012-12-06 13:34:26

USB_APP OK, 03.033, 2012-10-16 16:09:37

USB_LDR OK, 03.033, 2012-10-16 16:09:55

This is the latest firmware.

[CHECK FOR UPDATE](#)

WARRANTY

Your warranty has expired

DEVICE ASSIGNMENT

Assigned to: Michael Dzezinski (2730)

To reassign the device, enter the last name of the Officer below:

[ASSIGN](#)



AFIDs



- Each Cartridge contains 20-30 Anti-Felon Identification Tags (AFID's) with the cartridge serial number printed on them
- Cartridges manufactured after November 2009 have the serial number and 2D bar code LASER engraved onto the back of the cartridge

TASER Cam



Preferred Target Zone Front

Lower torso (blue zone)

- Reduces risk of hitting sensitive body areas – Refer to warnings
- Increases dart-to-heart safety margin distance



Preferred Target Zone Rear

- Below neck (blue zone)
 - Large muscles



Controlling/Cuffing Under Power

- Officers will go hands on with the subject during the 5-second cycle without feeling the effects of the NMI.

Gaining control of the arrestee during the 5-second cycle, when they are incapacitated, will assist in preventing injury to the arrestee and officers.

Physiologic or Metabolic Effects

Studies show ECD effects are comparable or less than from:

- Struggling
- Resisting
- Fighting
- Fleeing
- Some other force tools or techniques

Higher Risk Populations

- ECD use has not been scientifically tested on:
 - Pregnant women
 - The infirm
 - The elderly
 - Low body-mass index (BMI) persons
- ECD use on these individuals could increase the risk of death or serious injury.

Drive-Stun Backup

- Probe deployments are usually more desirable/effective than drive stuns (that are not three-point deployments)
- NMI vs. pain compliance
- With only one probe drive stun can complete the circuit
- Urbana PD, in their future policy, has elected to use the drive stun only to complete the circuit (NOT DRIVE STUN ALONE)

National Institute of Justice

While exposure to conducted energy devices (CEDs) is not risk free, there is no conclusive medical evidence that indicates a high risk of serious injury or death from the direct effects of CEDs.

Police Executive Research Forum

In a study that compared seven law enforcement agencies that use CEDs with six agencies that do not, researchers found:

A 70-percent decrease in officer injuries associated with the use of CEDs. During the two years before CEDs were used, 13 percent of the officers involved in use-of-force incidents required medical attention. When CEDS were deployed, the percentage requiring medical attention declined to 8 percent.

A 40-percent decrease in suspect injuries associated with the use of conducted-energy devices. During the two years before the agencies began using CEDs, 55 percent of the suspects required medical attention, while 40 percent required medical attention after the agencies started using the devices.

NIJ funded study – published in Journal of Emergency Medicine

Researchers conclude CEDs not likely to cause cardiac complications. A team of doctors reviewed 1,201 instances of CED use in the field and found no evidence of cardiac problems, even when the probes hit suspects in the chest area. Approximately 15 percent of the cases involved incidents in which an electrical charge likely affected the heart area. The researchers did not find any sudden death events suggestive of cardiac dysrhythmias in this group, or in the group as a whole. They concluded that fatal cardiac incidents are unlikely to occur when CEDs are used to subdue suspects.

Tasers Properly Used Limit Injury to Both Officers and Arrestees

- Conducted electrical devices (CEDs), such as Tasers, limit injury to police officers and suspects if used properly, according to a three-year study released by researchers at the University of South Carolina and funded by the U.S. Department of Justice.

University of South Carolina and funded by the U.S. Department of Justice

- Excessive use and the potential for abuse was a finding of the university study. Some police officers were found to be over-reliant on CEDs and are not putting their hands on the suspect. Prisoners are punished when officers use a CED too often and at too low of a level.
- Taser is not the issue, and proper oversight, accountability, good policy, good training is what is needed to prevent excessive use of force.

Proper Training & Accountability/Oversight

- Departments need a detailed policy indicating the Taser's use.
- Controlled use and good training
- Continued training
- Supervisors and administrators must hold officers accountable.
- Detailed documentation of each and every Taser usage.
- City Government and citizens share in the oversight.

Reading List

Alpert, Geoffrey P., and Roger G. Dunham. "Policy and training recommendations related to police use of CEDs: Overview of findings from a comprehensive national study." *Police Quarterly* 13.3 (2010): 235-259.

Alpert, Geoffrey P., et al. "Police use of force, TASERs and other less-lethal weapons." National Institute of Justice (2011).

Dymond, Abi. "'The Flaw in the Taser Debate is the Taser Debate': What do We Know about Taser in the UK, and How Significant are the Gaps in Our Knowledge?." *Policing* (2014): pau011.

Bozeman, W.P., Hauda, W.E., Heck, J.J., Graham, D.D., Martin, B.P., Winslow, J.E. (2008), Safety and Injury Profile of Conducted Electrical Weapons Used by Law Enforcement Officer Against Criminal Suspects. *Annals of Emergency Medicine*.

National Institute of Justice. (2011) Study of Deaths Following Electro Muscular Disruption

www.nij.gov Further studies can be found at this link

Council of Canadian Academies (2013). The Health Effects of Conducted Energy Weapons

White, M. D., Ready, J., Riggs, C., Dawes, D. M., Hinz, A., & Ho, J. D. (2013). An incident-level profile of TASER device deployments in arrest-related deaths. *Police Quarterly*, 16(1), 85-112.

VanMeenen, K. M., Cherniack, N. S., Bergen, M. T., Gleason, L. A., Teichman, R., & Servatius, R. J. (2010). Cardiovascular evaluation of electronic control device exposure in law enforcement trainees: a multisite study. *Journal of Occupational and Environmental Medicine*, 52(2), 197-201.

Mark W. Kroll (Editor), Jeffrey D. Ho (Editor). TASER®
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Non-Lethal Defense Technologies; Nov 30 2007

Bouton K, Vilke G, Chan T, et al. Physiological Effects of a Five Second TASER Exposure. San Diego State University San Diego Heart Institute: Society for Academic Emergency Medicine; 2007

Jauchem JR, Sherry CJ, Fines DA, Cook MC. Acidosis, lactate, electrolytes, muscle enzymes, and other factors in the blood of *Sus scrofa* following repeated TASER exposures. *Forensic Sci Int*. Aug 10 2006;161(1):20-30

Independent Conclusions

Some of the latest TASER ECD Research
can be viewed at

- <http://www.taser.com/RESEARCH>

