

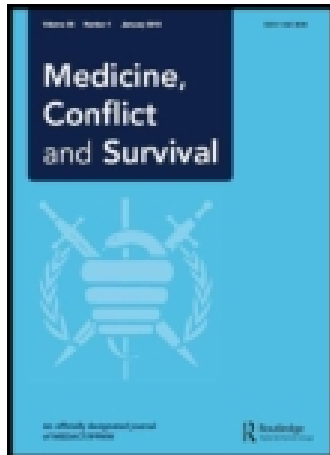
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Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954

Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Medicine, Conflict and Survival

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/fmcs20>

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Published online: 22 Oct 2007.

To cite this article: Harold Hillman (2003) Electrical devices used by prison officers, police and security forces, *Medicine, Conflict and Survival*, 19:3, 197-204, DOI:

[10.1080/13623690308409691](https://doi.org/10.1080/13623690308409691)

To link to this article: <http://dx.doi.org/10.1080/13623690308409691>

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Electrical Devices Used by Prison Officers, Police and Security Forces

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Electrical devices for crowd control, immobilizing threatening suspects and torturing prisoners are manufactured, traded and used in many countries. This article discusses their physiological, clinical and pathological effects and considers some legal implications of their use.

KEYWORDS Crowd control Human rights Non-lethal weapons
 Tasers Torture

Types of Electrical Devices

A number of different kinds of electrical devices are used by police, prison officers and interrogators (see Table 1). They originate from cattle prods, which have been used for half a century. Like electric fences, they delivered small voltages to animals, which presumably gave tingling, and slightly painful, effects to discourage animals from straying. However, during the past 25 years, these primitive devices have been developed to deliver much more power and they have been used for controlling crowds, immobilizing armed individuals, torturing prisoners and preventing unruly behaviour among members of chain gangs.

TABLE 1
ELECTRICAL DEVICES USED

Devices	Nature of Devices	Main Uses
Cattle prods	Low voltage baton, used on skin	Controlling cattle; intimidation and torture of prisoners
Electric batons	High voltage baton, non-lethal	Controlling crowds; torture of prisoners
Electric shields	High voltage shields	Controlling crowds
Stun guns	High voltage on contact with skin	Remote immobilization of armed persons; torture of prisoners
Stun belts	High voltage applied to waist	Control of accused in court and prisoners in chain gangs
Tasers	Fire barbs into skin which discharge high voltages through wires	Immobilization of armed persons and prisoners

Countries Involved in Trading or Using Devices

Some countries produce these devices and some use them; a few countries do both. Neither the production nor use of these devices is prohibited by international treaties. The information in Tables 2 and 3 refers to the years 1991 to 1997;¹ more recent figures are likely to show an increase. It is, perhaps, paradoxical that some democratic countries, such as Germany, Japan and Spain, manufacture or trade the devices, but do not use them. In most countries, the possession of the devices is not illegal – indeed, in the United States some companies are marketing them to women for self-defence against potential rapists. In several countries, they are not available to members of the public, but are frequently used by prison staff and security authorities. Police forces in the United Kingdom have been considering using electrical devices since 2001. Their use world-wide is spreading.²

TABLE 2
COUNTRIES THAT MANUFACTURED, SOLD, MARKETED, ADVERTISED
OR TRADED IN ELECTROSHOCK DEVICES

Country	Number of Companies	Country	Number of Companies
Belgium	3	Mexico	1
Brazil	1	Netherlands	1
Canada	not known	Russian Federation	1
China	8	South Africa	3
France	7	South Korea	3
Germany	13	Spain	1
Indonesia	1	Taiwan	6
Israel	5	United Kingdom	6
Japan	1	United States	42

Source: Amnesty International, Ref.1.

TABLE 3
COUNTRIES WHERE ELECTRIC SHOCK TORTURE HAS BEEN REPORTED

Afghanistan	Ethiopia	Russian Federation
Algeria	Greece	Saudi Arabia
Argentina	Guatemala	Senegal
Austria	Haiti	Somalia
Bangladesh	India	South Africa
Bolivia	Indonesia/East Timor	Sri Lanka
Brazil	Iran	Sudan
Bulgaria	Iraq	Togo
Chad	Lebanon	Turkey
Chile	Mexico	United States
China	Morocco/Western Sahara	Uruguay
Colombia	Nepal	Venezuela
Congo	Netherlands Antilles	Vietnam
Cyprus	Nigeria	Yemen
Ecuador	Paraguay	Yugoslavia-Kosovo
Egypt	Peru	Zaire
El Salvador	Philippines	

Source: Amnesty International, Ref.1.

Use of Electrical Devices

Electrical devices are used because they:

- Cause paralysis rapidly;
- Are not lethal;
- Leave hardly visible burn marks;
- Are painful;
- Can be used several times on the same person;
- Can be operated remotely;
- Are easily portable;
- Are easy to manufacture;
- Are relatively cheap to buy;
- Can be used to torture people.

And there is no practical protection against them.

Effects of Electrical Devices

A considerable amount of information has been accumulated on this subject in recent years by Amnesty International and is available on Medline; further evidence can be gleaned from other disciplines, such as the meat industry, clinical medicine, pathology and physiology. Some of the sources of evidence are listed in Table 4. Much of this is basic and traditional and, in recent years, more direct evidence has become available on the effects of electrical devices on conscious volunteers,³ examination of the skin of pigs about to be slaughtered,⁴ the effects of electrical devices on the human body,^{5, 6} the pathology of the skin of people who have been tortured electrically,⁷ and methods of detection of torture.⁸ The dangers of the devices to the operatives have also been examined.⁹

TABLE 4
EVIDENCE RELATING TO THE EFFECTS OF ELECTRICAL DEVICES
ON HUMAN SUBJECTS

<ul style="list-style-type: none">• Physiological experiments on sensation and motor activity in animals and human beings• Accidental electrocution in patients• Observations on prisoners executed by the electric chair• Autopsies after the electric chair• Experiments on electric stunning of animals for slaughter• Clinical experience of treatment of burns• Testing of electric devices on anaesthetized animals• Early use of electroshock for psychiatric conditions (before anaesthesia was used)• Observations on patients electrically shocked for cardiac arrest or defibrillation• Observations of human volunteers subjected to electroshock devices• Observations of prison guards who have had stun belts tried on them• Reports of the experiences of prisoners tortured with electrical devices• Manufacturers' specifications of electrical devices

Variables Governing the Effects

The severity of the effects of the electrical devices depends upon the devices used, the environment of use and the characteristics of the persons upon whom they are used (see Table 5). With the exception of the electrical output of the devices under specific test conditions, most of the parameters are unknown, many change during the use of the devices and some are unknowable before the device is used. Several would affect the reliability and safety of the devices for operation.

Routes of Current

When the current arrives at the skin, it can then follow alternative routes. It may:

- Travel along the skin, if this is moist, for example, due to perspiration or rain;
- Enter the body by any of the natural orifices;
- Cross into the skin, probably via sweat glands and hair follicles, causing sweating and erection of the hairs;
- Be conducted along the extracellular fluids to the nerves and muscles, exciting contraction;
- Cross cell membranes and stimulate cell metabolism, causing a rise in temperature;
- Stimulate the nerves and ganglia of the autonomic nervous system to produce a stress response.

Physiological Effects of Electric Currents

There is much information on the effects of electric currents from Amnesty International,^{1, 10} from the database of the International Rehabilitation Council for Torture Victims in Copenhagen and the data bases of medical literature. However, these have not often explored the physiological

TABLE 5
FACTORS DETERMINING THE EFFECT OF ELECTRICAL DEVICES

Output of the Device	State of the Subject	Contact with the Subject
Voltage and current	Age of subject	Distance between device output
Shape of pulse	Body shape	Humidity of the air
Pulse frequency	Health	Clothes worn
Duration of pulse	Skin thickness	Moisture of skin
Duration of application	Type of clothes worn	Movement of the subject
Delays between dosage		Point of contact with the body
Output impedance		Frequency of pulse
		The degree of penetration (of taser)

aspects of the use of electric devices. In order of time applied and severity, they are as follows:

- *Sensory stimulation* causes localized tingling and pain, accompanied by mounting anxiety.
- *Motor effects* include contraction of local muscles spreading distally from the point of stimulation. The hairs on limbs stand up, in ‘goose-pimples’. Severe muscular contraction causes painful cramps. Sudden contraction may cause fractures or dislocations.
- *Skin effects* are seen first as short-lasting local pallor, followed by erythema.
- *Burns* are localized and may be so microscopic as to require histological samples to detect.
- Stimulation of the *autonomic nervous system* may cause perspiration, vomiting, micturition and defaecation, and *cardio-respiratory effects* including hyperpnoea, tachycardia, arrhythmia and hypertension.
- *Psychological effects* occur due to anxiety, pain from minute burns, cramp, inability to respond or protect oneself from torture and possibly as a consequence of a fall.
- *Falls* may cause fracture of the skull, jaw, hips or wrists, or concussion.
- *Taser barbs* may strike the eyes, open mouth, genitalia and large blood vessels.
- Effects of drug or alcohol abuse may be exacerbated.
- Other medical conditions may be triggered (see Table 6).

Exacerbation of Other Conditions

Most of the conditions listed have been found in persons subjected to electrical devices, although they have often suffered from them previously. Medically, it may sometimes be difficult to know if the condition was pre-existing, or exacerbated by subjection to the electrical device, or caused by the device, or would have afflicted the person in any case. It may be difficult to establish which of such conditions come under these categories for the purpose of

TABLE 6
CONDITIONS THAT COULD BE TRIGGERED OR CAUSED
BY ELECTRICAL DEVICES

Abortion	Head injury
Abrasions or lacerations	Heart attack
Asthma	Hypertension
Death	Interference with pacemaker
Diabetes	Mental illness
Epilepsy	Muscular dystrophy*
Fracture of bone	Stokes-Adams attacks

Note: * This has been reported in six patients after accidental electric shock. See Ref.11.

litigation or insurance. In addition to the effects of the devices on the subjects, they may be dangerous to the operatives: current may leak, the devices may short-circuit, or they may be directed accidentally at their colleagues.⁹

Legal Aspects of the Use of Electrical Devices

The use of torture generally has been condemned by the United States Constitution, the Universal Declaration of Human Rights, the European Convention on Human Rights, a United Nations Resolution, the World Medical Association, the International Council of Nurses and many other prestigious organizations. Yet many of the signatories to these documents do not accept that the use of these electrical devices constitutes torture. In the Nuremburg Trials, the Adolf Eichmann case, the Rwanda trials and contemporaneously the trial of Slobodan Milosevic, the charges are of genocide, with torture only mentioned to strengthen the case. It is hoped that as developed countries become more intolerant of torture, they will translate this feeling into recognition that the use of electrical devices constitutes torture and prohibit the manufacture, trading and use of these devices.

In consideration of legal aspects of their use, one must recognize two different categories of regime. On the one hand, there are advanced countries, run by the rule of law, in which justice can sometimes be obtained by recourse to the legal system, though this may require that the complainant have considerable resources. Only a few of the countries listed in Table 3 have such regimes. On the other hand, the large majority of countries are repressive, or partially repressive and are not run by the rule of law or concern for human rights. The decisions of the governments, sometimes taken in secret, are the current rules. They are *responsible* for the electrical devices, the torture and the absence of effective redress. There is no reasonable likelihood that their security personnel or police will stop these practices, or be punished for them. It is much more likely that complainants will be intimidated or punished.

With this background, some of the legal problems associated with the use of the electrical devices can be examined:

- The victims may not be able to enforce their rights or obtain compensation for the effects of the electrical devices, but those who use them have the moral consequences of exacerbation of illnesses (Table 6), arising out of their use. In the United States, the stun belt may cause several such complications. In 1997 Amnesty International put this concern to then US Attorney General Janet Reno, at a time when stun guns and stun belts were being widely adopted throughout the American prison system – they are now everyday equipment in many American prisons. Reno did not reply. British police authorities, who are considering their use in the United Kingdom, seem to be unaware of the legal responsibility.

- In many countries with the rule of law, including Britain, hand guns are issued to particular policemen, as well as special anti-terror forces, called to potentially dangerous situations. They have to record and account for each individual use of guns to senior officers. In the Russian Federation, China, United States and Syria, on the other hand, the police are routinely armed and are not expected to account for their use of guns. The same is true for electrical devices, such as cattle prods, stun guns and stun belts. These are issued to individual camp supervisors, interrogators, prison officers and police personnel who use them at their own discretion, without having to record or justify each use.
- Employers of those who use electrical devices would be responsible for any accident due to malfunction or negligence, which might occur to any operative.
- Very often, interrogators and police dealing with crowds would not, and could not, know the medical histories of the prisoners or people against whom they were using the medical devices although, in most advanced countries, prisoners undergo medical examinations on admission to prisons. Many of them may be pregnant, or suffer from hypertension, diabetes, epilepsy and other diseases, but are unaware of this.
- It is argued that the use of stun guns or tasers against armed crime suspects, or dangerous rioting prisoners is justified on the grounds that it is better than shooting them. Use renders them instantly immobile and available for restraint. This seems an arguable case, but once such devices have been issued to junior police and prison staff it is difficult to limit their subsequent use.
- In many countries, such as China, Iraq and Syria, the security and police officers *deliberately* use these devices to torture and intimidate prisoners. It is then no use drawing the attention of their governments to the cruelty, injustice or danger of the devices.

The effects listed above are mostly short term, but there is a legal aspect to aggravation of diseases, which has a much longer perspective. Lawyers in democratic countries need to turn attention to this problem, while those under repressive regimes do not dare to address it.

The use of electrical devices has too short a history for international bodies to have incorporated their prohibition into their legal codes so far, but it is hoped that the time will come when, in the words of the American Constitution, the practice will be deemed 'cruel and unusual'. Although about 100 companies all over the world manufacture, trade, export or broker the sale of these instruments of torture (Table 2) and their use is

widespread (Table 3), extraordinarily few companies have been charged with manufacturing or dealing with them world-wide. Amnesty International has listed 12 measures that could discourage their use.¹ The social and legal consequences of electrical devices falling into the hands of insurgents, guerrilla groups and gangsters could perhaps be anticipated.

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(Accepted 25 February 2003)

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