

20 August 1999: Link to follow-up STOA reports on "[Development of Surveillance Technology and Risk of Abuse of Economic Information \(an appraisal of technologies of political control\)](#),"
April and May, 1999

20 October 1998: Link to [September 1998 update](#) (101K)

6 February 1998:
Link to [Bibliography](#) (85K); [zipped version](#) (32K)

4 February 1998
Source: [Hardcopy](#) from STOA, Luxembourg
Thanks to Axel Horns, Ulf Möller and STOA

EUROPEAN PARLIAMENT

SCIENTIFIC AND TECHNOLOGICAL OPTIONS ASSESSMENT

STOA

AN APPRAISAL OF TECHNOLOGIES OF POLITICAL CONTROL

Working document
(Consultation version)

Luxembourg, 6 January 1998

PE 166 499

Directorate General for Research

Cataloguing data:

Title: **An appraisal of technologies for political control**

Publisher: European Parliament
Directorate General for Research
Directorate B
The STOA Programme

Author: **Mr. Steve Wright - Omega Foundation - Manchester**

Editor: Mr. Dick Holdsworth
Head of STOA Unit

Date: 6 January 1998

PE Number: PE 166 499

This document is a working document. The current version is being circulated for consultation. It is not an official publication of STOA or of the European Parliament.

This document does not necessarily represent the views of the European Parliament.

AN APPRAISAL OF THE TECHNOLOGY OF POLITICAL CONTROL

ABSTRACT

The objectives of this report are fourfold: (i) to provide Members of the European Parliament with a guide to recent advances in the technology of political control; (ii) to identify, analyse and describe the current state of the art of the most salient developments; (iii) to present members with an account of current trends, both in Europe and Worldwide; and (iv) to develop policy recommendations covering regulatory strategies for their management and future control.

The report contains seven substantive sections which cover respectively:

(i) The role and function of the technology of political control;

(ii) Recent trends and innovations (including the implications of globalisation, militarisation of police equipment, convergence of control systems deployed worldwide and the implications of increasing technology and decision drift);

(iii) Developments in surveillance technology (including the emergence of new forms of local, national and international communications interceptions networks and the creation of human recognition and tracking devices);

(iv) Innovations in crowd control weapons (including the evolution of a 2nd. generation of so called 'less-lethal weapons' from nuclear labs in the USA).

(v) The emergence of prisoner control as a privatised industry, whilst state prisons face increasing pressure to substitute technology for staff in cost cutting exercises and the social and political implications of replacing policies of rehabilitation with strategies of human warehousing.

(v) The use of science and technology to devise new efficient mark-free interrogation and torture technologies and their proliferation from the US & Europe.

(vi) The implications of vertical and horizontal proliferation of this technology and the need for an adequate political response by the EU, to ensure it neither threatens civil liberties in Europe, nor reaches the hands of tyrants.

The report makes a series of policy recommendations including the need for appropriate codes of practice. It ends by proposing specific areas where further research is needed to make such regulatory controls effective. The report includes a comprehensive bibliographical survey of some of the most relevant literature.

AN APPRAISAL OF THE TECHNOLOGY OF POLITICAL CONTROL

EXECUTIVE SUMMARY

The objectives of this report are fourfold: (i) to provide Members of the European Parliament with a guide to recent advances in the technology of political control; (ii) to identify, analyze and describe the current state of the art of the most salient developments; (iii) to present members with an account of current trends, both in Europe and Worldwide; and (iv) to develop policy recommendations covering regulatory strategies for their management and future control. The report includes a large selection of illustrations to provide Members of Parliament with a good idea of the scope of current technology together with a representative flavour of what lies on the horizon. The report contains seven substantive sections, which can be summarised as follows:

THE ROLE & FUNCTION OF POLITICAL CONTROL TECHNOLOGIES

This section takes into account the multi-functionality of much of this technology and its role in yielding an extension of the scope, efficiency and growth of policing power. It identifies the continuum of control which stretches from modem law enforcement to advanced state suppression, the difference being the level of democratic accountability in the manner in which such technologies are applied.

RECENT TRENDS & INNOVATIONS

Taking into account the problems of regulation and control and the potential possessed by some of these technologies to undermine international human rights legislation, the section examines recent trends and innovations. This section covers the trend towards militarisation of the police technologies and the paramilitarisation of military technologies with an overall technological and decision drift towards worldwide convergence of nearly all the technologies of political control. Specific advances in area denial, identity recognition, surveillance systems based on neural networks, discreet order vehicles, new arrest and restraint methods and the emergence of so called 'less lethal weapons' are presented. The section also looks at a darker side of technological development including the rise of more powerful restraint, torture, killing and execution technologies and the role of privatised enterprises in promoting it.

The EU is recommended to: (i) develop appropriate structures of accountability to prevent undesirable innovations emerging via processes of technological creep or decision drift; (ii) ensure that the process of adopting new systems for use in internal social and political control is transparent, open to appropriate political scrutiny and subject to democratic change should unwanted or unanticipated consequences emerge; (iii) prohibit, or subject to stringent and democratic controls, any class of technology which has been shown in the past to be excessively injurious, cruel, inhumane or indiscriminate in its effects.

DEVELOPMENTS IN SURVEILLANCE TECHNOLOGY

This section addresses the rapid and virtually unchecked proliferation of surveillance devices and capacity amongst both the private and public sectors. It discusses recent innovations which allow bugging, telephone monitoring, visual surveillance during night or day over large distances and the emergence of new forms of local, national and international communications interceptions networks and the creation of human recognition and tracking devices.

The EU is recommended to subject all surveillance technologies, operations and practices to: (i) procedures ensuring democratic accountability; (ii) proper codes of practice consistent with Data protection legislation to prevent malpractice or abuse; (iii) agreed criteria on what constitutes legitimate surveillance targets, and what does not, and how such surveillance data is stored, processed and shared. These controls should be more effectively targeted at malpractice or illegal tapping by private companies and regulation further tightened to include additional safeguards against abuse as well as appropriate financial redress.

The report discusses a massive telecommunications interceptions network operating within Europe and targeting the telephone, fax and email messages of private citizens, politicians, trade unionists and companies alike. This global surveillance machinery (which is partially controlled by foreign intelligence agencies from outside of Europe) has never been subject to proper parliamentary discussion on its role and function, or the need for limits to be put on the scope and extent of its activities. This section suggests that that time has now arrived and proposes a series of measures to initiate this process of reclaiming democratic accountability over such systems. It is suggested that all telephone interceptions by Member States should be subject to consistent criteria and procedures of public accountability and codes of practice. These should equally apply to devices which automatically create profiles of telephone calls and pattern analysis and require similar legal requirements to those applied for telephone or fax interception.

It is suggested that the rapid proliferation of CCTV systems in many Member States should be subject to a common and consistent set of codes of practice to ensure that such systems are used for the purpose for which they were authorised, that there is an effective assessment and audit of their use annually and an adequate complaints system is in place to deal with any grievances by ordinary people. The report recommends that such codes of practice anticipate technical change including the digital revolution which is currently in process, and ensure that each and every such advance is subject to a formal assessment of both the expected as well as the possible unforeseen implications.

INNOVATIONS IN CROWD CONTROL WEAPONS

This section addresses the evolution of new crowd control weapons, their legitimation, biomedical and political effects. It examines the specific introduction of new chemical, kinetic and electrical weapons, the level of accountability in the decision making and the political use of such technologies to disguise the level of violence being deployed by state security forces. The research used to justify the introduction of such technologies as safe is reanalysed and found to be wanting. Areas covered in more depth include CS and OC gas sprays, rubber and plastic bullets, multi-purpose riot tanks, and the facility of such technologies to exact punishment, with the possibility that they may also bring about anti-state retaliatory aggression which can further destabilise political conflict.

This section briefly analyses recent innovations in crowd control weapons (including the evolution of a 2nd. generation of so called 'less-lethal weapons' from nuclear labs in the USA) and concludes that they are dubious weapons based on dubious and secret research. The Commission should be requested to report to Parliament on the existence of formal liaison arrangements between the EU and the USA to introduce such weapons for use in streets and prisons here. The EU is also recommended to (i) establish objective common criteria for assessing the biomedical effects of all so called less lethal weapons and ensure any future authorization is based on independent research; (ii) ensure that all research used to justify the deployment of any new crowd control weapon in the EU is published in the open scientific press and subject to independent scientific scrutiny, before any authorization is given to deploy. In the meantime the Parliament is asked to reaffirm its current ban on plastic bullets and that all deployment of devices using peppergas (OC) be halted until such a time as independent European research on its risks has been undertaken and published.

NEW PRISON CONTROL SYSTEMS

This section reports on the emergence of prisoner control as a privatised industry, whilst state prisons face increasing pressure to substitute technology for staff in cost cutting exercises. It expresses concern about the social and political implications of replacing policies of rehabilitation with strategies of human warehousing and recommends common criteria for licensing all public and private prisons within the EU. At minimum this should cover operators responsibilities and prisoners rights in regard to rehabilitation requirements; UN Minimum Treatment of Prisoners rules banning the use of leg irons; the regulation and use of psychotropic drugs to control prisoners; the use of riot control, prisoner transport, restraint and extraction technologies. The report recommends a ban on (i) all automatic, mass. indiscriminate prisoner punishment technologies using less lethal instruments such as chemical

irritant or baton rounds; (ii) kill fencing and lethal area denial systems; and (iii) all use of electro-shock, stun and electric restraint technology until and unless independent medical evidence can prove that it safe and will not contribute to either deaths in custody or inhumane treatment, torture or other cruel and unusual punishments.

INTERROGATION, TORTURE TECHNIQUES AND TECHNOLOGIES

This section discusses the use of science and technology to devise new efficient mark-free interrogation and torture technologies and their proliferation from the US & Europe. Of particular concern is the use and abuse of electroshock devices and their proliferation. It is recommended that the commercial sale of both training in counter terror operations and any equipment which might be used in torture and execution, should be controlled by the criteria and measures outlined in the next section.

REGULATION OF HORIZONTAL PROLIFERATION

The implications for civil liberties and human rights of both the vertical and horizontal proliferation of this technology are literally awesome. There is a pressing need for an adequate political response by the EU, to ensure it neither threatens civil liberties in Europe, nor reaches the hands of tyrants. The European Council agreed in Luxembourg in 1991 and in Lisbon in 1992 a set of eight Common Criteria for Arms Exports which set out conditions which should govern all decisions relating to the issue of licences for the export of arms and ammunition, one condition of which was "the respect of human rights in the country of final destination." Other conditions also relate to the overall protection of human rights. However these eight criteria are not binding on member states and there is no common interpretation on how they should be most effectively implemented. However, a code of conduct to achieve such an agreement was drawn up and endorsed by over 1000 Non-Governmental Organizations based in the European Union.

Whilst it is recognised that it is not the role of existing EU institutions to implement such measures as vetting and issuing of export licences, which are undertaken by national agencies of the EU Member States, it has been suggested by Amnesty International that the joint action procedure which was used to establish EU regulations on Export of Dual use equipment could be used to take such a code of practice further.

Amnesty suggest that the EU Member States should use the Joint Action procedures to draw up common lists of (i) proscribed military, security and police equipment and technology, the sole or primary use of which is to contribute to human rights violations; (ii) sensitive types of military, security or police equipment and technology which has been shown in practice to be used for human rights violations; and (iii) military, security and police units and forces which have been sufficiently responsible for human rights violations and to whom sensitive goods and services should not be provided. The report makes recommendations to help facilitate this objective of denying repressive regimes access to advanced repression technologies made or supplied from Europe.

FURTHER RESEARCH

The report concludes by proposing a series of areas where new research is required including: (i) advanced area denial and less-lethal weapon systems; (ii) human identity recognition and tracking technologies; (iii) the deployment of 'dum-dum' ammunition within the EU; (iv) the constitutional issues raised by the U.S. National Security Agency's access and facility to intercept all European telecommunications; (v) the social and political implications of further privatisation of the technologies of political control and (vi) the extent to which European based companies have been complicit in supplying equipment used for torture or other human rights violations and what new independent measures might be instituted to track such transfers.

CONTENTS

[Abstract](#)

[Executive Summary](#)

[Acknowledgements](#)

[Table of Charts and Figures](#)

1	<u>Introduction</u>	1
2	<u>Role and Function of Political Control Technologies</u>	3
3	<u>Recent Trends and Innovations</u>	6
4	<u>Developments in Surveillance Technology</u>	15
5	<u>Innovations in Crowd Control Weapons</u>	22
6	<u>New Prison Control Systems</u>	40
7	<u>Interrogation, Torture Techniques and Technologies</u>	44
8	<u>Regulation of Horizontal Proliferation</u>	53
9	<u>Conclusions</u>	59
10	<u>Notes and References</u>	60

Appendix 1. Military, Security & Police Fairs. [Not provided with report]

ACKNOWLEDGEMENTS

Whilst sole responsibility for the accuracy and contents of this study rest with the authors, the Omega Foundation would like to thank the following individuals and organisations for providing information and assistance to compile this report:

Professor Jonathan Rosenhead of the London School of Economics, London, U.K; Simon Davies and David Banisar of the London and Washington branches of Privacy International; Tony Bunyan & Trevor Hemmings of Statewatch, London; John Stevenson, House of Commons, London; Julian Perry Robinson of Sussex University; Detlef Nogala of the University of Hamburg; Heiner Busch Of CILIP, Berlin; Hilary Kitchin of the Local Government Information Unit, London; The Committee For The Administration of Justice, Belfast; David Eisenberg, Center For Defense Information, Washington; Terry Allen of Covert Action Quarterly, Washington; Brian Wood of the International Secretariat of Amnesty International, London; Kate O'Malley of Amnesty International U.K. Section London; Human Rights Watch, Washington; Lora Lumpe and Steven Aftergood of the Federation of American Scientists, Washington; Brian Martin of the University of Wollongong, Australia; Cathy Rodgers of RDF Films, London; Martyn Gregory Films, London and Dr. Ray Downs, Program Manager of Technology Development, U.S. National Institute for Justice, Washington.

Thanks are due to the Press officers serving the Northern Ireland Office, the British Army and RUC Information Offices between 1976 - 1982, who provided the comprehensive statistical data required to perform the quantitative analysis outlined in section 5.

We would also like to thank David Hoffman for permission to use many of the black and white images used to illustrate the text.

Table of Charts

Chart	Title	Page No.
1	Declining Legitimacy and Repressive State Violence	5
2	The Pattern of Revolution	7
3	The Main Chemical Riot Control Agents	12
4	Comparative Impact Effects of Various 'Less Lethal' Kinetic Impact Weapons	13
5	US Human Engineering Laboratory Technology Assessment of Various 'Less Lethal' Kinetic Weapons	26
6	Trends in Riot Weapon Use in Northern Ireland from 1969-1986	27
7	Impact of Introduction of New Riot Weapons on the Level of Political Killings in Northern Ireland	28

8	Structure of Riot Weapon Use	29
9	Multi Variant Time Series Analysis of Northern Irish Conflict 1976-1981	30
10	Biderman's Chart of Coercion	48
11	Pre-Interrogation Treatment Used on Detainees	49
12	Techniques used by the British Army in Northern Ireland to Mimic Sensory Deprivation	50
13	Police Torture Exports Licensed by the US Commerce Department 1991-1993	56

Table of Figures

[JYA Note: Figures were not provided with the report]

Section 3. Recent Trends and Innovations

- 1 Public Order - Tactical Options
- 2 Convergence of Police and Military Systems
- 3 Interception - Punishment
- 4 Cochrane Area Denial
- 5 Fingerprint Recognition Systems
- 6 Night Vision. From Vietnam to Belfast
- 7 Discreet Order Vehicles
- 8 New Arrest & Restraint Methods
- 9 Convergence and Riot Technology
- 10 Insect Like Images of Riot Police
- 11 US Peppergas Adverts
- 12 'Dum Dum' ammunition and effects
- 13 Wound effects of expanding ammunition
- 14 Frag 12. Pre-fragmented exploding ammunition

15 Typical forms of execution technology

16 Targetted Execution Technology

17 Special Force Killing

Section 4. Developments in Surveillance Technology

18 Parabolic Microphone

19 JAI Stroboscopic Cameras

20 Automated Vehicle Recognition Systems

21 US Made cameras in Tiananmen Square

22 CCTV in Tibet

23 Video Capture/Video Fit

24 Taps and Bugs

25 US/UK NSA European Communication Interception Network

Section 5. Innovations in Crowd Control Weapons

26 The Philosophy of Crowd Control Weapons

27 Israeli and Chinese Riot Weapons

28 Chemical Spray Backpack & Effects

Table of Figures (contd.)

Section 5. Contd.

29 Crowd Dispersion and Capture

30 French patients suffering severe burns from CS sprays

31 Capstun OC & Manufacture

32 British and German riot guns used in Northern Ireland

33 Injector Weapons

34 2nd Generation Less Lethal Weapons

35 Sticky Foam

36 Laser weapon systems

Section 6. New Prison Control Systems

37 Prison Control Technology

Section 7. Interrogation, Torture Techniques and Technology

38 Redress Trust Map of Torture States

39 Restraining Technology. Hiatt Leg Irons. Chinese Thumb Cuffs

40 British and Chinese Thumb Cuffs & Leg Irons

41 House of Fun

42 Hand Held Electro-shock Weapon

43 Electronic Shield

44 Taser Gun and Dart H

45 Tibetan Monk Palden Gyatso

46 Torture Techniques use in Uruguay

47 Chilean Torture Technique 1

48 Chilean Torture Technique 2

49 US Counter Insurgency Training at the School of the Americas

50 Chinese Electro-shock manufacture and quality control

51 Electro-shock weapons on display at Chinese Security Fairs

Table of Figures (contd.)

Section 8. Regulation of Horizontal Proliferation

- 52 Arwen Riot Control Weapon on display at COPEX
- 53 Electro-shock weapons offered at European Security Fairs
- 54 Supplying the security needs of authoritarian regimes in Latin America
- 55 Ispra Gas Riot Packs
- 56 SAE Alsetex Back Pack + on display at IDEF Military Exhibition in Turkey, 1995
- 57 Foreign Internal Security Equipment on display at IDEF 1995 (Turkey)

AN APPRAISAL OF THE TECHNOLOGY OF POLITICAL CONTROL

PROJECT No I/STOA/RSCH/LP/POLITCON.1

1. INTRODUCTION

The purpose of this report is to explore the most recent developments in the technology of political control and the major consequences associated with their integration into processes and strategies of policing and internal control. A brief look at the historical development of this concept is instructive.

Twenty five years ago, the British Society for Social Responsibility in Science warned that a new technology of repression was being spawned in an effort to contain the conflict in Northern Ireland. (B.S.S.R.S., 1972). In 1977, members of BSSRS took this concept further in a seminal work, the Technology of Political Control (Ackroyd et. al., 1977). BSSRS analysed the role and function of this technology in terms of a new apparatus largely created as a result of research and development undertaken as part of Britain's colonial wars, (most recently in the ongoing Northern Ireland conflict), and whose main purpose was quelling internal dissent. According to critical U.S. NGO research organisations of that period such as NARMIC & NACLA, work on this technology of political control was further enhanced by technical developments achieved by the United States' military industrial complex, largely as a result of the extended global military interests of the U.S., and its deployment of highly technocratic counter-insurgency doctrines, particularly during the Vietnam War.¹

Up until that period, shrewd commentators on technology and society such as Haabermas Ellul (1964) recognised the potential risk of a specific loss of traditional freedoms and civil liberties associated with broad technological advances in the future, such as surveillance. However, BSSRS was the first group of scientists and technologists to identify and characterise a whole class of technology whose principal designated function was to achieve social and political control.

In Ackroyd et. al (1977), BSSRS. defined the technology of political control as "a new type of weaponry." "It is the product of the application of science and technology to the problem of neutralising the state's internal enemies. It is mainly directed at civilian populations, and is not intended to kill (and only rarely does). It is aimed as much at hearts and minds as at bodies." For BSSRS, "This new weaponry ranges from means of monitoring internal dissent to devices for controlling demonstrations; from new techniques of interrogation to methods of prisoner control. The intended and actual effects of these new technological aids are both broader and more complex than the more lethal weaponry they complement."

The concept of technology has many and varied interpretations. As emphasised in the interim report (Omega 1996), the definition adopted for the purposes of this work encompasses not just the 'hardware' - the tools, instruments, machines, appliances, weapons and gadgets (i.e. the apparatus of technical performance); but also the associated standard operating procedures, routines, skills, techniques (the software); and the related forms of rationalised human social organisations, arrangements, systems and networks (the liveware) of any programme of political control.² In other words, it is insufficient to describe developments in a purely technical sense, it is also necessary to consider these technologies as social and political factors.³

When first published in 1977, 'The Technology of Political Control' anticipated that the deployment of these technologies in Northern Ireland, which acted as a laboratory for their future development, would spread to mainland Britain. For BSSRS, governments would no longer reach for the machine gun when threatened at home. It will have plastic bullets which kill only occasionally, depth interrogation which tortures without leaving physical scars. It uses electronics for telephone tapping and night surveillance; computers to build files on actual or potential dissidents. NARMIC also warned that this technology was not just reserved for low intensity conflicts overseas but would return to be used to quell dissent on the homefront.(NARMIC, 1971) Little by little this has happened.

There have been quite awesome changes in the technologies available to states for internal control since the first BSSRS publication, a quarter of a century ago. So many new technologies have been created that specialist publications have emerged to service the burgeoning market.⁴ In the limited space available here, it is not possible to describe all the many new technologies which have been developed. However, a broad selection of illustrations have been incorporated (at the end of the report), to give MEPs a good idea of the scope of the current technology and a representative flavour of what lies on the horizon. An extensive bibliography has been provided for those Members of the European Parliament wishing to explore specific areas and implications in more depth.⁵

For the purposes of this report and its focus on appraising subsequent developments in the technology of political control, it is worth focussing on the same areas of Technology covered by BSSRS, which have not already been the subject of recent STOA reports. Whilst the need to examine the critical role of Northern Ireland in the evolution of some of these technologies makes the overall assessment somewhat anglo-centric, every effort has been made to show evidence of the proliferation and impact of this technology in other European countries and worldwide by naming the actual companies and corporations involved in both manufacture and supply.

Taking into account the multi-functionality of much of this technology, Section 2. of this report explores its role and function and the continuum of control which stretches from modern law enforcement to advanced state suppression. With specific reference to problems of regulation and control and the potential some of these technologies present for undermining international human rights legislation, Section 3. provides a analysis of recent trends and innovations. Section 4. explores current developments In surveillance technology, from bugs and wiretapping to new global systems of mass supervision and telecommunications surveillance already approved by the European Union. Section 5. discusses the political and biomedical implications of innovations in crowd control weapons including the prospect of a 2nd. generation of paralysing and disabling technologies currently being developed by former US nuclear weapons laboratories, together with the secret arrangements to incorporate such technologies into EU policing practices and export markets. Section 6. is devoted to the emergence of new prison control systems and the prospects of privatised multinational prison corporations transforming crime control into industry. Section 7. presents evidence of Research & Development devoted to the creation of new interrogation, torture techniques & technologies which leave few marks and the growing role of EU member states and their allies in creating export markets for supplying this equipment to tyrannical states.

The report ends with an examination of the whole question of future regulation of the vertical & horizontal proliferation of this dual use technology, in the face of relatively weak

democratic controls on its manufacture, deployment and export. Some of these technologies are highly sensitive politically and without proper regulation can threaten or undermine many of the human rights enshrined in international law, such as the rights of assembly, privacy, due process, freedom of political and cultural expression and protection from torture, arbitrary arrest, cruel and inhumane punishments and extra-judicial execution. Proper oversight of developments in political control technologies is further complicated by the phenomena of 'bureaucratic capture' where senior officials control their ministers rather than the other way round Politicians both at European and sovereign state level, whom citizens of the community have presumed will be monitoring any excesses or abuse of this technology on their behalf, are sometimes systematically denied the information they require to do that job. Therefore possible areas of policy change are presented at the end of each section, which could bring much of this technology back within the reach of democratic control and accountability, as well as suggesting some further areas of future research.

2. THE ROLE & FUNCTION OF POLITICAL CONTROL TECHNOLOGIES

Throughout the Nineties, many governments have spent huge sums on the research, development, procurement and deployment of new technology for their police, para-military and internal security forces.⁶ The objective of this development work has been to increase and enhance each agency's policing capacities. A dominant assumption behind this technocratisation of the policing process, is the belief that it has created both a faster policing response time and a greater cost-effectiveness. The main aim of all this effort has been to save policing resources by either automating certain control, amplifying the rate of particular activities, or decreasing the number of officers required to perform them.⁷

The resultant innovations in the technology of political control have been functionally designed to yield an extension of the scope, efficiency and growth of policing power. The extent to which this process can be judged to be a legitimate one depends both on one's point of view and the level of secrecy and accountability built into the overall procurement and deployment procedures. There are essentially two opposing schools of thought.

The first school of thought identifies developments in policing technology with efficiency, cost-effectiveness and modernisation. This school believes that the police and internal security agencies require the most up to date forms of equipment to fight crime, mob-rule and terrorism. Sophisticated law enforcement is viewed as value free and state security agencies are considered to be in the best position to determine their operational requirements. (See Applegate 1969), New technologies aid the police by ensuring that messages are rapidly received and dealt with, personnel are freed

for other duties and overall efficiency is enhanced. Only those with something to hide need fear the enlarged data gathering capacities of police computers. Modern riot technology is presented as a much preferred non-lethal alternative to the use of guns and the police should always be allowed to use 'minimum force when dealing with actual or potential law breakers. Existing controls and regulations governing the use of this technology are considered by adherents of this school to have been adequately designed to ensure that no misuse takes place. Advanced police technology is therefore understood in this context as an invaluable aid to upholding the freedoms cherished as inalienable rights by citizens living in Western Liberal democracies. Its export to other countries sharing the same economic and ideological views, is viewed as an opportunity to help modernise law enforcement and buttress mutual stability, law and order.

The opposing school of thought on the other hand views police technology and the associated 'policing revolution' quite differently (See Manwaring-White, 1983). They believe that innovations in political control technology has put powerful new tools at the disposal of states in need of technical fixes for their most pressing and intractable social and political problems. It is at the point where authority fails that repression begins (Hoefnagels, 1977) and at that point an illegitimate government will use more force just to keep the lid on.(See Chart.1a.) As the crisis deepens, further force is required and the role of technology in such a situation is to act as a force amplifier. Once the shaded area is reached (Chart.1b), terror becomes the only government service.

New police technologies are perceived to be one of the most important factors in attempting sub-state conflict control. Such 'control' is viewed as more apparent than real, but serves the purpose of disguising the level of coercive repression being applied. This school of thought argues that once operationally deployed, these technologies exert a profound effect on the character of policing. Whether these changes are symptom or cause of the ensuing change in policing organisations, a major premise of this school of thought is that a range of unforeseen impacts are associated with the process of integrating these technologies into a society's social, political and cultural control systems.

The full implications of such developments may take time to assess but they are often more important and far reaching than the first order intended effects. It is argued that one impact of this process is the militarisation of the police and the para-militarisation of the army as their roles, equipment and procedures begin to overlap. This phenomena is seen as having far reaching consequences on the way that future episodes of sub-state violence is handled, and influencing whether those involved are reconciled, managed, repressed, 'lost' or efficiently destroyed. Police telematics and their use of databanks (the subject of an earlier STOA report in this area) for example, facilitate prophylactic or pre-emptive policing as 'data-veillance' is harnessed to target certain strata or classes of people rather than resolve individual crimes. (E.g. the proposed introduction of the Eurodac system which will utilise biometric information to control and restrict the entry of all Asylum seekers into Europe, building in the process a new technopolitics of exclusion).⁸ New surveillance technology can exert a powerful 'chill effect' on those who might wish to take a dissenting view and few will risk exercising their right to democratic protest if the cost is punitive riot policing with equipment which may lead to permanent injury or loss of life. As highlighted in the interim report, the human response to the deployment of such technologies may be counter-intuitive and render progressive, deployments of newer more powerful systems either obsolete or dysfunctional. This possibility is discussed in greater detail below.

Any evaluation of these opposing schools of thought needs to identify common ground since few would doubt that there are fundamental changes taking place in the types of tactics techniques and technologies available to internal security agencies for policing purposes. Yet many questions remain unanswered, unconsidered or under-researched. Why for example did such a transformation in the technology used for socio-political control dramatically change over the last twenty five years? Is there any significance in the fact that former communist regimes in the Warsaw Treaty Organisation and continuing centralised economic systems such as China, are beginning to adopt such technologies? What are the reasons behind a global convergence of the technology of political control deployed in the North and South, the East and West? What are the factors responsible for generating the adoption of such new policing technology - was it technology push or demand pull? What new tools for



Chart 1. Declining Legitimacy & Repressive State Violence

5

policing lie on the horizon and what are the dynamics behind the process of innovation and the need for a vast arsenal of different kinds of technology rather than just a few? Are the many ways this technology affects the policing process fully understood? Who controls the patterns of police technology procurement and what are the corporate influences?

In deciding between these schools of thought, we need to determine the extent to which future innovation is about the maintenance of existing power relationships, rather than citizen protection. In other words, the extent to which their deployment ensures that only certain permitted ways of behaving are allowed to continue without interference. Since this technology provides a continuum of flexible responses or options, perhaps the overriding factor is the extent to which its development and deployment is subject to democratic control. Is the process of regulation democratically accountable or are there more hidden processes at work? Do these technologies proliferate, if so why and how and what are the most important mechanisms or processes involved?

Since all this technology represents an unequal distribution of coercive power, it is important for Members of the European Parliament to be satisfied that sufficient democratic control is exercised to ensure that such powers are not abused and that unwanted technological and decision drift is adequately checked. Whilst the Interim Report (Omega, 1996) provided a brief analysis of the role and function of specific classes of political control technology, what follows is an analysis of the state of the art in certain key areas of this technology which the authors believe warrant further scrutiny.

3. RECENT TRENDS & INNOVATIONS

Since the 'Technology of Political Control' was first written (Ackroyd et al.,1977) there has been a profusion of technological innovations for police, paramilitary, intelligence and internal security forces. Many of these are simple advances on the technologies available in the 1970's. Others such as automatic telephone tapping, voice recognition and electronic tagging were not envisaged by the original BSSRS authors since they did not think that the computing power needed for a national monitoring system was feasible. The overall drift of this technology is to increase the power and reliability of the policing process, either enhancing the individual power of police operatives, replacing personnel with less expensive machines to monitor activity or to automate certain police monitoring, detection and communication facilities completely. A massive Police Industrial Complex has been spawned to service the needs of police, paramilitary and security forces, evidenced by the number of companies now active in the market.⁹ An overall trend is towards globalisation of these technologies and a drift to increasing proliferation, without much regard to local conditions.

One core trend has been towards a militarisation of the police and a paramilitarisation of military forces in Europe. Often this begins via special units involved in crisis policing, such as the Special Weapons and Tactics Squads such as the Grenz Schutz Gruppe in Germany; the Gendarmeries National in France; the Carabinieri in Italy; and the Special Patrol Group in the UK or the federal police paramilitary teams in the United States (FBI, DEA & BATF) that adopt the same weaponry as their military counterparts. Then a growing percentage of ordinary police are trained in public order duties and tactics which incorporate some element of firearms training. The tactical training is often a mirror image of the low intensity counter-revolutionary warfare tactics adopted by the military (See Chart 2). In Britain, where 10% of police on a revolving basis train according to a military style manual,

Insurgent Phases		Sequence of Insurgent Action		Counter Action	
Communist Concept (Based on Sino-Japanese War 1937)		British Interpretation		With Aim of Achieving Revolution	
'Passive' [Organizational]		Preparatory	Activity by anti-government organisations, including political agitation and manoeuvring propaganda activities. Formation of cells & cadres, (political, intelligence and military), and civil and industrial unrest. Infiltration into positions of authority. In general covert preparations by those whose aim is to achieve a revolution. Any overt military preparations take place in the remotest areas.	1.	Civil & Law Enforcement Activity
		Active Resistance	Civil disobedience, disturbances, riots, strikes, lawlessness. Sabotage, particularly against communications. Assassinations, coercion and terrorism on a limited scale. Use of propaganda & psychological means to discredit the government.	2.	Internal Security Operations
		[Terrorism]	Ambushes and minor insurgent activity on a limited scale. Increased terrorism, a climate of dissidence, civil and industrial disobedience is engendered.		
'Active' [Direct Action]		Insurgency [Guerilla Warfare]	Operations involving the use of guerrilla tactics by local formed units have resulted in the guerillas gaining control over parts of the country. Insurgent bases are established in relatively safe areas. Increased activity in daylight. More ambitious operations by formed units with some perhaps from a neighbouring country. A whole series of operations ranging up to actions between formed units with a simultaneous situation of widespread guerrilla activity. Areas dominated by guerrillas may be enlarged and declared liberated.	3.	Counter Insurgency Operations
		Open Offensive	As above but having escalated to include regular land and perhaps sea and air forces of the opposing sides. The revolutionary movement now assumes the form of a peoples war against the government. Large areas dominated by the guerrillas.	4.	Almost using the techniques of Limited War

Chart 2. The Pattern of Revolution

7

'Public Order - Tactical Options' using batons, shields and colonial style military wedges (See Fig.1[*No figures provided with report*]) (Northam, 1988). In the US, one study uncovered a pattern of former and reserve soldiers being intimately involved in police operations with almost 46% of trainees drawing expertise from "police officers with special operations in the military." (Krasker & Kapella, 1997).

In some European countries, that trend is reversed, e.g. Last year, the Swiss government (Federal Council and the Military Department) made plans to re-equip the Swiss Army Ordungsdienst with 118 million Swiss Francs of less-lethal weapons for action within the country in times of crisis. (These include 12 tanks, armoured vehicles, tear gas, rubber shot and handcuffs). The decision was made by decree preventing any discussion or intervention. Their role will be to help police large scale demonstrations or riots and to police frontiers to 'prevent streams of refugees coming into Switzerland'.¹⁰ A disturbing case of police deploying riot weapons against a peaceful festival occurred last year in Zurich on 1 May, using water cannon laced with CN irritant and rubber bullets below the advised 20 metres threshold, shows the process of convergence well.¹¹

Convergence is the process whereby the technology used by police and the military for internal security operations converges towards being more or less indistinguishable. The term also describes the trend towards a universal adoption of similar types of technologies by most states for internal security and policing. Security companies now produce weapons and communications systems for both military and the police.(Fig.2). Such systems increasingly represent the muscle and the nervous system of public order squads. For example, according to BSSRS(1985), GCHQ's telephone interception network was used to track UK miners during the 1984-5 strike, so that when miner's cars were stopped, police knew who they were and punishment or dissuasion could be targeted appropriately.(See Fig.3)

3.1 Area Denial replaces personnel guarding either areas or perimeters. It has involved deploying technology which can either create punishment when its limits are infringed or systems with built in intelligence which can both locate the point of infringement and activate a corrective response.¹² Sophisticated varieties incorporate punishment mechanisms which vary from pain induced by electroshock to kill fences and fragmentation mines. Many European companies make electrified razor coil stun fences e.g. Bollore, Cogny & Santerne in France; Birmingham Barbed Tape, Gallagher and Armbell, in UK; Reinaet Electronics in the Netherlands. Many South African companies remain in the market from the 'snake of fire' days, e.g., Edair; Grinaker; Microfence.¹³ Nowadays, the South African Government has introduced new regulations on the maximum voltage for stun fences and new criteria for not mixing barbed wire and stun capacities - if snagged a victim can't be repelled and continues receiving current. Europe needs to adopt best practice in this regard. It would also be useful if existing research justifying company claims for sub-lethality of stun fences should be made public. These systems are not cattle fences and the same criteria cannot be used.

Neural networks with semi-intelligence are being introduced to protect sensitive control zones. Systems produced by companies, such as Productivity Systems in France and Cambridge Neurodynamics in the UK, can allow pattern recognition and an ability to learn. Neural systems will play an increasing role in sentinel duties as robot technology improves Already prototypes known as insectoids are being evolved to cheaply replace personnel on routine guard duties that require 24 hours cover and can be programmed to track the fence and carry either lethal or sub-lethal weapons (Knoth, 1994).

8

The Non-lethal Warfare programmes discussed in 5.6 below are also exploring area denial technology. For example, *Defense Week* reported (19/11/96) that Alliant Tech Systems (USA) is working on alternatives to anti-personnel land mines. One of these is a wire barrier system dispersed by the Volcano Mine System. The company received a 10 month contract in early August [1996] from the Army Armament, Research, Development and Engineering Center at Picatinny Arsenal, New Jersey. The company is still to decide what kind of wire to use for the canister-launched area-denial weapon system, but the general idea is that the Volcano system will shoot out thin wire with something like fish hooks along it in enough mass to cover a soccer-field sized area. "It's intended to snag. It's not going to kill you" said marketing manager Tom Bierman.

3.2 Surveillance Technologies are one of the fastest growing areas of the technology of political control and a key problem is how to deal with the torrent of information it yields The term covers a vast range of products and devices but the overall trend is towards miniaturization, more precise resolution through the adoption of digital technology and increasing automation so that the technology can be more effectively targeted. The technology also parallels political shifts in targeting so that instead of investigating crime, a reactive activity, the fastest growing trend is towards

tracking certain strata, social classes and races of people living in red-lined areas before any crime is committed. Such a form of proactive policing is based on military models of gathering huge amounts of low grade intelligence. With new systems such as Memex, it is possible to quickly build up a comprehensive picture of virtually anyone by gaining electronic access to all their records, cash transactions, cars held, etc. Such pre-emptive policing means the majority are ignored and policing resources are more tightly focused on certain groups. Such powerful forms of **artificial intelligence** need continuous assessment. They have an important role to play in tracking criminals. The danger is that their infrastructure is essentially a massive machinery of supervision that can be retargeted fairly quickly should the political context change.

Automatic fingerprint readers are now common place, and many European companies make them¹⁴ (see Fig 5). But any unique attribute of anatomy or personal style can be used to create a **human identity recognition system**. For example Cellmark Diagnostics(UK) can **recognise genes**; Mastiff Security Systems(UK) can **recognise odour**, Hagen Cy-Com(UK) and Eyedentify Inc.(USA) can recognise the pattern of capillaries at the back of the retina; whilst AEA Technology (UK) are capable of **signature verification**. Over 109 companies in Europe are known to be supplying such **biometric systems**. **DNA fingerprinting** is now a reality and Britain has set up the first DNA databank, and is already carrying out mass dawn raids of over 1000 people at targeted suspects.¹⁵ Plans are being drawn up by at least one political party to DNA profile the nation from birth.¹⁶ The leading edge companies are racing towards developing **face recognition systems** which they see as being able to revolutionise crime customs and intruder detection as well as service access control. Whilst fully reliable systems are perhaps five years off, prototype systems have been developed in France¹⁷, Germany¹⁸ the UK¹⁹ and the USA²⁰.

Night vision technology developed as a result of the Vietnam war has now been adapted for police usage (See Fig.6). Particularly successful are **heli-tele surveillance** versions which allow cameras to track human heat signatures in total darkness. The art of **bugging** has been made significantly easier by a rapidly advancing technology and there is a burgeoning European market.²¹ Many systems described in Section 4 (below), do not even require physical entry into the home or office. For those who can secure access to their target room,

9

there is a plethora of devices, many pre-packaged to fit into phones, look like cigarette packets or light fittings and some, like the ever popular PK 805 and PK 250, that can be tuned into from a suitable radio. However, the next generation of covert audio bugs are remotely operated, for example the multi-room monitoring system of Lorraine Electronics called DIAL (Direct Intelligent Access Listening) allows an operator to monitor several rooms from anywhere in the world without effecting an illegal entry. Up to four concealed microphones are connected to the subscribers line and these can be remotely activated by simply making a coded telephone call to the target building. **Neural network bugs** go one step further. Built like a small cockroach, as soon as the lights go out they can crawl to the best location for surveillance.²² In fact Japanese researchers have taken this idea one step further, controlling and manipulating real cockroaches by implanting microprocessors and electrodes in their bodies. The insects can be fitted with micro cameras and sensors to reach the places other bugs can't reach.²³ **Passive Millimeter Wave Imaging** developed by the US Millitech corporation can scan people from up to 12 feet away and see through clothing to detect concealed items such as weapons, packages and other contraband. Variations of this through-clothing human screening under development (by companies such as the US Raytheon Co.), include systems which illuminate an individual with a low-intensity electromagnetic pulse. A three side very-low X ray system for human usage, in fixed sites such as prisons, is being developed by Nicolet Imaging Systems of San Diego. **Electronic monitoring** of offenders or '**tagging**', where the subject wears an electronic bracelet which can detect if they have relocated from their home after certain hours etc, has entered into use in the 1990's after being developed to regulate prison populations in the USA. (Schmidt, 1988). **Satellite tracking** of VIPs, vehicles, etc., is now facilitated by the once military Global-Positioning System(GPS) which is now available for commercial uses. **Vehicle recognition** technologies are discussed in Section 4 below.

3.3 Data-veillance - The use of telematics by the police has revolutionised policing in the last decade and created the shift towards pre-emptive policing. It is properly the focus of an earlier STOA report on the technology of political control. Some of the most recent trends are discussed in Section 4 below. A comprehensive analysis of how such equipment has led to widespread abuse of civil liberties and human rights has been published by Privacy International (1995) and includes 100 pages of all the companies involved in servicing the security requirements of the regimes mapped in Fig.38.

Using data profilers, torturing states have used these systems to compile death lists. For example, the Tadiran computer supplied to Guatemala and installed in the control center of the national palace. According to a senior Guatemalan military official, "the complex contains an archive and a computer file on journalists, students, leaders, people on the left, politicians and so on." Meetings were held in the annex to select assassination victims. A US priest who fled the country after appearing on such a death list said, "They had printout lists at the border crossings and at the airport. Once you got on that - then its like bounty hunters."²⁴ Within Europe, systems, such as that produced by Harlequin, allow the automatic production of maps of who phoned whom to show friendship networks. Other companies such as Memex described above, allow entire life profiles of virtually anyone in a state having an official existence. Photographs and video material can be included in the record and typically up to 700 other databases can be hoovered at any one time, to extend the data profile in real time.²⁵ Significant changes in the capacity of new surveillance systems can be anticipated with the advent of new materials such as Buckminster Fullerene, which will lead to minaturisation of systems by several orders of magnitude.²⁶

10

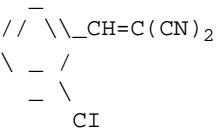
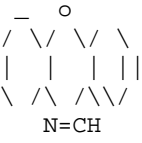
3.4-Discrete Order Vehicles - Hundreds of companies are now manufacturing police and internal security vehicles in Europe.²⁷ The newer companies entering the market for law enforcement vehicles tend to manufacture for both military and police purposes (e.g., armoured personnel carriers, patrol, riot control, mobile prison, perimeter patrol etc.) and configured to have a 'non-aggressive design'. In real terms this means that their external appearance rather than their operational characteristics are modified to give a non-threatening appearance. Such 'discreet order vehicles' look benign - like ambulances, whilst retaining a retaliatory capacity, capable of dispersing, containing or capturing dissident groups or individuals.(See Fig.7 Savage, 1985). Some models such as the Amac vehicle and more recently the Talon incorporate repellent electrified panels as well as a weapons capacity such as water cannon. Such vehicles are frequently used to seal people into a dispersal zone where the riot squads are at work, rather than chase them out.

3.5 Less-lethal Weapons - For reasons explained more fully in Section 5 (below), the essential role of new crowd control weapons and tactics is to amplify the level of aggression that can be unleashed by an individual officer. Thus the same rationale lies behind the use of the new US side handle batons, the use of horse, riot shield charges using riot wedges and snatch squads and the new martial arts style arrest techniques which entered European policing training in the mid 1980's.²⁸ (see Fig 8). The biggest growth area however, has been in what used to be called 'non-lethal weapons.' The fact that some of these weapons kill, blind, scalp and permanently maim led the authorities and manufacturers to act - they came up with a new name - "less-lethal weapons" - i.e. they only sometimes kill. Again a PR objective is catered for in the names which sound as if the security forces are using relative restraint. Whether it be in Belfast or Beijing, these technologies are converging around the same design types. (See Fig 8). One of the authors of the 'Technology of Political Control' (Ackroyd, 1977) Professor Jonathan Rosenhead, believed that the emergence of such technology in China vindicated their original thesis. That is, after the Tiananmen Square massacre, the Chinese authorities needed weapons options which would not excite international criticism, particularly when some much lucrative foreign investment was entering the Tiger economies of the Pacific Rim.²⁹

As described in Section 5 below, this area has seen prodigious innovation including a second generation of new weapon types being produced in the former nuclear weapon laboratories of the US in conjunction with big business.³⁰ The Council for Science & Society explained the phenomenon in terms of technological and decision drift (CSS, 1978). BSSRS argued that such processes were integral to any attempt to apply technical fixes - an alternative explanation is that the riot control arsenal is never complete. Much of a weapon's effect lies in creating a sense of uncertainty.³¹ Even the insectoid appearance of riot squad members is part of the threat impact despite its ostensible purpose of personal protection.(See Fig 10).

Individually these weapons are becoming more powerful, for example each new riot agent is more powerful than the one it replaces. Thus CS is nearly 20 times more powerful than the CN it replaced; CR is more than 30 times more powerful than CN and the newest and most aggressively marketed agent OC, (See Fig.11), the most powerful of them all (Chart 3). Little notice has been taken of the professional hazard assessments of the most commonly used kinetic impact weapons deployed in Europe and USA which have consequences in the 'dangerous or severe damage region'. (See Chart 4).

Chemical Name and Formula	Code	Form	Melting Point C°	Effects	Relative Power	ICt ₅₀ (mg min/m ³) (1)
1-Chloroacetophenone $ \begin{array}{c} \text{---} \\ // \quad \backslash \quad \backslash \\ \backslash \quad \text{---} \quad / \quad \\ \text{---} \quad \quad \quad \\ \quad \quad \quad \quad \quad \quad \text{O} \end{array} $	CN	White Solid	59	Burning sensation in the eyes. Blisters at very heavy concentration. Salivation, nausea and headaches.	1	20

2-Chlorobenzylidene malonitrile 	CS	White Solid	94	Strong lachrymation with involuntary closing of the eyes. Burning sensation on moist skin, 2nd degree burns. Coughing and vomiting at higher concentrations.	5	3.6
Dibenz (b.f.)-1,4-oxazepine 	CR	Pale Yellow Solid	72	Very intense skin pain particularly around moist areas. Involuntary closing of eyes resulting in temporary blindness which may induce panic or hysteria.	30	0.7
Oleoresin Capsicum	OC	Colourless	65	Uncontrollable coughing and gasping for breath. Eyes close immediately. Loss of body motor control. Intense burning sensation on skin. Leads to immediate incapacitation.	Most powerful (exact figs unavailable)	N/A

(1) IC₅₀ The mean incapacitating dose. The dose that will affect 50% of the test population.

Chart 3. The Main Chemical Riot Control Agents

Weapons (2)	Manufacturer	Country	Weight of Projectile	Range	Impact Energy / Joules (1)
L5A3 Plastic Bullet	Royal Ordnance	UK	135g	25-60m	150-210
'Cross Cartridge'	Heckler and Koch	Germany	179g	up to 30m	above 125
Flash Ball	Verney Carron	France	28g	12m	200
Jelly Baton	Crown Air cartridge	Netherlands	N/A	N/A	265
Bean Bag	MK Ballistics	USA	40g	10-30m	120

'Cease and Desist'	Milstor Corp	USA	N/A	Less than 18m	130
--------------------	--------------	-----	-----	---------------	-----

Impact Energy	Severity of Injury
Under 20 Joules	Safe/low
Between 40-122 Joules	Dangerous
Over 122 Joules	Severe damage region

Notes:

(1) Testing of kinetic energy projectiles was carried out at the Aberdeen Proving Grounds in the USA in 1975 to assess their safety and the likelihood, and type, of injuries that might result from their use (see Technical Report Number 24-75: Evaluation of the Physiological Effects of a Rubber Bullet, a Baseball and a Flying Baton, Wargovich, et al., US Army Land and Warfare Laboratory, September 1975.) The results showed that for kinetic energy projectiles at different energies the level of injury was as shown above. (J. Rosenhead, New Scientist, 16/12/76, pp. 672-74)

(2) Information taken from manufacturers product data, updated to modern measurement units where required.

Chart 4. Comparative Impact Effects of Various Kinetic 'Less Lethal' Weapons

3.5 Lethal Weapons - Police Forces in Europe have acquired many of the weapons normally associated with the military i.e. hand guns, rifles and submachine guns, e.g., the Heckler & Koch MP5. Shotguns are increasingly favoured by police forces because their wide spread of shot enables a blast to hit more than one target and in the US, shotguns are standard issue for a wide range of tasks including anti-terrorist and riot control. Indeed many shotguns and holsters specially adapted for police use have appeared on the market. E.g., those by Ithaca, Mossberg, Remington, Sage International and Wilson Arms. Many of these are literally sawn off shotguns and their wider spread increases the number of likely targets. For example, the Witness shotgun has a barrel of only 12.5 inches. Specialist shotgun ammunition enables some of these weapons to smash the cylinder block off a car or literally cut a human in half. The shotgun 'bolo round' advert e.g. claims "it slices - it dices". Shotgun ammunition leaves no evidence of what weapon was used to fire it. Similarly caseless cartridges do not leave "a spent cartridge signature" and this has significant implications for associating a particular weapon with a specific crime.

In theory, police weapons should have a different level of lethality and penetration compared with those used by the military. In urban settings there is always the risk of hitting passers-by and if a round has high velocity and penetration, it will easily pass through an intended target and continue penetrating walls and go on perhaps to kill innocents beyond the observed fire zone. To obviate this problem, manufacturers are increasingly producing hollow point, expanding, or 'dum-dum' ammunition for police and special forces use.(See Fig 12). Paradoxically, the Hague Declaration (IV,3) of 1989, which prohibited the use of hollow point or dum dum ammunition, does not apply to the policing of civil conflicts. Soft nosed ammunition which mushroom in the body, cause far more serious damage than ordinary ammunition. Dum-dums would take an arm or a leg off, whereas ordinary ammunition would sail through leaving a relatively clean hole.(See Fig.13). Some these weapons like Winchester's Black Talon or the high explosive filled pre-fragmented Frag 12 (see Fig.14) cause horrific injuries and raise serious questions about due process and the right to a fair trial since without immediate medical attention, a target would be effectively an extra-judicial execution. Many companies are now producing these bullets in Europe.

3.6 Execution technologies - The equipment illustrated in (Fig.16) are not just museum pieces. In the USA, companies such as Leutcher Associates Inc of Massachusetts supplies and services American gas chambers, as well as designing, supplying and installing electric chairs, auto-injection systems and gallows. The Leutcher lethal injection system costs approx. \$30,000 and is the cheapest system the company sells. Their electrocution systems cost £35,000 and a gallows would cost approximately \$85,000. More and more states are opting for Leutcher's \$100,000 "execution trailer" which comes complete with a lethal injection machine, a steel holding cell for an inmate, and separate areas for witnesses, chaplain, prison workers and medical personnel.³⁴ Some companies in Europe have in the past offered to supply such devices as gallows (Michael Huffey Ltd, UK) or tender designs for the construction of 'Libyan Rehabilitation centre" complete with

stainless steel execution bays. (*Observer*, 5/84). A fuller picture is unavailable, but what is known is that European designers are tendering for Middle Eastern prison building work with all the attendant requirements to cater for Islamic shari'a laws and requisite punishments and amputations. Modern target acquisition aids such as laser sights, coupled with silenced weapons technology also make extra-judicial execution much easier (see fig. 16) or if the deed must be achieved in public, systems like 'syncrofire' (fig.16) take the guilt away from the execution squad by allowing the firemaster to achieve it by pushbutton. Special forces are of course taught how to achieve such executions (See Fig.17 and this is one of the areas of expertise transfer that needs to be brought back within democratic control. (see Section 8 below)

3.1 RECOMMENDATIONS

- (1) Given the civil liberties implications associated with new technologies of political control, there is a pressing need to avoid the risks of such technologies developing faster than any regulating legislation. Therefore the EU should develop appropriate structures of accountability to prevent undesirable innovations emerging via processes of technological creep or decision drift.
- (2) In principle, the process of innovation of new systems for use in internal social and political control should be transparent, open to appropriate public scrutiny and be subject to change should unwanted and unanticipated consequences emerge.
- (3) Any class of technology which has been shown in the past to be excessively injurious, cruel, inhumane or indiscriminate in its effects, should be subject to stringent and democratic controls. Therefore within Europe:-
 - (a) No development or deployment of blinding laser weapons and ancillary devices for police and internal security purposes should be permitted;
 - (b) No deployment of 'sub-lethal' area denial mine systems such as the Volcano (discussed above), should be allowed for law enforcement or correctional purposes;
 - (c) Police personnel should not be routinely armed with 'dum-dum' bullets, use of which is banned in international armed conflicts. Further research should be commissioned by the European Parliament to clarify the legal situation particularly in relation to the suggestion that such ammunition can bypass the legal process and effect extra-judicial execution.
 - (d) Further measures should be developed to regulate electrified 'stun' & 'kill' fences. Dual function fences with a kill function should not be permissible as their use violates the right to life and the right to a fair trial.

4. DEVELOPMENTS IN SURVEILLANCE TECHNOLOGY

Surveillance technology can be defined as devices or systems which can monitor, track and assess the movements of individuals, their property and other assets. Much of this technology is used to track the activities of dissidents, human rights activists, journalists, student leaders, minorities, trade union leaders and political opponents.

"Subtler and more far reaching means of invading privacy have become available to the government. Discovery and invention have made it possible for the government, by means far more effective than stretching upon the rack, to obtain disclosure in court of what is whispered in the closet."

So said US Supreme Court Justice Louis Brandeis, way back in 1928. Subsequent developments go far beyond anything which Brandeis could have dreamt of. New technologies which were originally conceived for the Defence and Intelligence sectors, have after the cold war, rapidly spread into the law enforcement and private sectors. It is one of the areas of technological advance, where outdated regulations have not kept pace with an accelerating pattern of abuses. Up until the 1960's, most surveillance was low-tech and expensive since it involved following suspects around from place to place and could use up to 6 people in teams of two working 3 eight hour shifts. All of the material and contacts gleaned had to be typed up and filed away with little prospect of rapidly cross checking. Even electronic surveillance was highly labour intensive. The East German police for example employed 500,000 secret informers, 10,000 of which were needed just to listen and transcribe citizen's phone calls.

By the 1980's, new forms of electronic surveillance were emerging many of these were directed towards automation of communications interception. This trend was fuelled in the U. S. in the 1990's by accelerated government funding at the end of the cold war, with defence and intelligence agencies being refocussed with new missions to justify their budgets, transferring their technologies to certain law enforcement applications such as anti-drug and anti-terror operations. In 1993, the US department of defence and the Justice department signed memoranda of understanding for "Operations Other Than War and Law Enforcement" to facilitate joint development and sharing of technology. According to David Banisar of Privacy International, "To counteract reductions in military contracts which began in the 1980's, computer and electronics companies are expanding into new markets - at home and abroad - with equipment originally developed for the military. Companies such as E Systems, Electronic Data Systems (founded by Ross Perot) and Texas Instruments are selling advanced computer systems and surveillance equipment to state and local governments that use them for law enforcement, border control and Welfare administration."[36](#)

According to Banisar, the simple need for increased bureaucratic efficiency - necessitated by shrinking budgets has been a powerful imperative for improved identification and monitoring of individuals. "Fingerprints, ID cards, data matching and other privacy invasive schemes were originally tried on populations with little political power, such as welfare recipients, immigrants, criminals and members of the military, and then applied up the socioeconomic ladder. One in place, the policies are difficult to remove and inevitably expand into more general use."³⁷ These technologies fit roughly into three broad categories, namely surveillance, identification and networking, and are often used in conjunction as with video cameras and face recognition or biometrics and ID cards. For Banisar, "They facilitate mass and routine surveillance of large segments of the population without the need for warrants and formal investigations. What the East German secret police could only dream of is rapidly becoming a reality in the free world."³⁸

4.1 Vehicle Recognition Systems

A huge range of surveillance technologies has evolved, including the night vision goggles discussed in 3 above; parabolic microphones to detect conversations over a kilometre away(see Fig.18); laser versions marketed by the German company PK Electronic, can pick up any conversation from a closed window in line of sight; the Danish Jai stroboscopic camera (Fig.19) which can take hundreds of pictures in a matter of seconds and individually photograph all the participants in a demonstration or March; and the automatic vehicle recognition systems which can identify a car number plate then track the car around a city using a computerised geographic information system.(Fig.20) Such systems are now

commercially available, for example, the Talon system introduced in 1994 by UK company Racal at a price of £2000 per unit. The system is trained to recognise number plates based on neural network technology developed by Cambridge Neurodynamics, and can see both night and day. Initially it has been used for traffic monitoring but its function has been adapted in recent years to cover security surveillance and has been incorporated in the "ring of steel" around London. The system can then record all the vehicles that entered or left the cordon on a particular day.³⁹

Such surveillance systems raise significant issues of accountability particularly when transferred to authoritarian regimes. The cameras in Fig 21 in Tiananmen Square were sold as advanced traffic control systems by Siemens Plessey. Yet after the 1989 massacre of students, there followed a witch hunt when the authorities tortured and interrogated thousands in an effort to ferret out the subversives. The Scoot surveillance system with USA made Pelco camera were used to faithfully record the protests. the images were repeatedly broadcast over Chinese television offering a reward for information, with the result that nearly all the transgressors were identified. Again democratic accountability is only the criterion which distinguishes a modern traffic control system from an advanced dissident capture technology. Foreign companies are exporting traffic control systems to Lhasa in Tibet, yet Lhasa does not as yet have any traffic control problems. The problem here may be a culpable lack of imagination.(Fig.22) Several European countries are manufacturing vehicle and people tracking technologies, including France⁴⁰, Germany⁴¹, The Netherlands⁴² and the UK⁴³.

4.2 CCTV Surveillance Net Works

In fact the art of visual surveillance has dramatically changed over recent years. of course police and intelligence officers still photograph demonstrations and individuals of interest but increasingly such images can be stored and searched. (Fig. 23) The revolution in urban surveillance will reach the next generation of control once reliable face recognition comes in. It will initially be introduced at stationary locations, like turnstiles, customs points, security gateways, etc., to enable a standard full face recognition to take place. However, in the early part of the 21st. century, facial recognition on CCTV will be a reality and those countries with CCTV infrastructures will view such technology as a natural add-on.

It is important to set clear guidelines and codes of practice for such technological innovations, well in advance of the digital revolution making new and unforeseen opportunities to collate, analyze, recognise and store such visual images. Such regulation will need to be founded on sound data protection principles and take cognizance of article 15 of the 1995 European Directive on the protection of Individuals and Processing of Personal Data.⁴⁴Essentially this says that:

"Member States shall grant the right of every person not to be subject to a decision which produces legal effects concerning him or significantly affects him and which is based solely on the automatic processing of data."

The attitude to CCTV camera networks varies greatly in the European Union, from the position in Denmark where such cameras are banned by law to the position in the UK, where many hundreds of CCTV networks exist. Nevertheless, a common position on the status of such systems where they exist in relation to data protection principles should apply in general. A specific consideration is the legal status of admissibility as evidence, of digital material such

as those taken by the more advanced CCTV systems. Much of this will fall within data protection legislation if the material gathered can be searched, e.g., by car number plate or by time. Given that material from such systems can be seamlessly edited, the European Data Protection Directive legislation needs to be implemented through primary legislation which clarifies the law as it

applies to CCTV, to avoid confusion amongst both CCTV data controllers as well as citizens as data subjects. Primary legislation will make it possible to extend the impact of the Directive to areas of activity that do not fall within community law. Articles 3 and 13 of the Directive should not create a blanket covering the use of CCTV in every circumstance in a domestic context.

A proper code of practice should cover the use of all CCTV surveillance schemes operating in public spaces and especially in residential area. The Code of Practice should encompass:- a) a purpose statement covering the key objectives of the scheme; b) a consideration of the extent to which the scheme falls within the scope of Data Protection legislation; c) the responsibilities of the owner of the scheme and those of local partners; d) the way the scheme is to be effectively managed and installed; e) the principles of accountability; f) the availability of public information on the scheme and the principles of its operation in residential areas; g) the formal approaches to be used to assess, evaluate and audit the performance of both the scheme and the accompanying Code of Practice; h) mechanisms for dealing with complaints and any breaches of the Code including those of security; i) detailing the extent of any police contacts or use of the scheme; and j) the procedures for democratically dealing with proposals of technological change.

Given that the United Kingdom has one of the most advanced CCTV network coverage in Europe and that the issues of regulation and control have been perhaps more developed than elsewhere, it is suggested that the Civil Liberties Committee formally consider the model Code of Practice for CCTV produced by the Local Government Information Unit (LGIU, 1996) in London (A Watching Brief) at a future meeting of this committee, with a view to recommending it for adoption throughout the EU.

4.3 Bugging & Tapping Devices

A wide range of bugging and tapping devices have been evolved to record conversations and to intercept telecommunications traffic. (See Fig. 24) In recent years the widespread practice of illegal and legal interception of communications and the planting of 'bugs' has been an issue in many European states. For example, Italy, France, Sweden,⁴⁵ Belgium,⁴⁶ Germany,⁴⁷ Norway,⁴⁸ the Netherlands⁴⁹ and the U.K.⁵⁰ The level and scale of some of these illegal activities is astonishing. For example, a court meeting on 30 September 1996 was told that the Presidential Palace's anti-terrorist unit was tapping six former Mitterand administration officials, including ex-cabinet chief Giles Manage.⁵¹ An official panel, the independent Commission for the Control of Security Interceptions, said that 100,000 telephone lines are illegally tapped each year in France and that state agencies may be behind much of the eavesdropping. They found that curbs imposed by official bodies may have tempted them to farm out their illegal bugging to private firms.⁵²

However, planting illegal bugs like the one shown in (Fig 24) is yesterday's technology. Modern snoopers can by specially adapted lap top computers like that shown in (Fig.24), and simply tune in to all the mobile phones active in the area by cursoring down to their number. The machine will even search for numbers 'of interest' to see if they are active. However,

these bugs and taps pale into insignificance next to the national and international state run interceptions networks.

4.4 National & International Communications Interceptions Networks

Modern communications systems are virtually transparent to the advanced interceptions equipment which can be used to listen in. Some systems even lend themselves to a dual role as a national interceptions network. For example the message switching system used on digital exchanges like System X in the UK supports an Integrated Services Digital Network (ISDN) Protocol. This allows digital devices, e.g. fax to share the system with existing lines. The ISDN subset is defined in their documents as "Signalling CCITT1-series interface for ISDN access. What is not widely known is that built in to the international CCITT protocol is the ability to take phones 'off hook' and listen into conversations occurring near the phone, without the user being aware that it is happening. (*SGR Newsletter*, No.4, 1993) This effectively means that a national dial up telephone tapping capacity is built into these systems from the start. (System X has been exported to Russia & China) Similarly, the digital technology required to pinpoint mobile phone users for incoming calls, means that all mobile phone users in a country when activated, are mini-tracking devices, giving their owners whereabouts at any time and stored in the company's computer for up to two years. Coupled with System X technology, this is a custom built mobile track, tail and tap system par excellence. (*Sunday Telegraph*, 2.2.97).

Within Europe, all email, telephone and fax communications are routinely intercepted by the United States National Security Agency, transferring all target information from the European mainland via the strategic hub of London then by Satellite to Fort Meade in Maryland via the crucial hub at Menwith Hill in the North York Moors of the UK. The system was first uncovered in the 1970's by a group of researchers in the UK (Campbell, 1981). The researchers used open sources but were subsequently arrested under Britain's Official Secrets legislation. The 'ABC' trial that followed was a critical turning point in researcher's understanding both of the technology of political control and how it might be challenged by research on open sources. (See Aubrey, 1981 & Hooper 1987) Other work on what is now known as Signals intelligence was undertaken by researchers such as James Bamford, which uncovered a billion dollar world wide interceptions network, which he nicknamed 'Puzzle Palace'. A recent work by Nicky Hager, *Secret Power*, (Hager, 1996) provides the most comprehensive details to date of a project known as [ECHELON](#). Hager interviewed more than 50 people concerned with intelligence to document a global surveillance system that stretches around the world to form a targeting system on all of the key Intelsat satellites used to convey most of the world's satellite phone calls, internet, email, faxes and telexes. These sites are based at Sugar Grove and Yakima, in the USA, at Waihopai in New Zealand, at Geraldton in Australia, Hong Kong, and Morwenstow in the UK.

The ECHELON system forms part of the UKUSA system but unlike many of the electronic spy systems developed during the cold war, ECHELON is designed for primarily non-military targets: governments, organisations and businesses in virtually every country. The ECHELON system works by indiscriminately intercepting very large quantities of communications and then siphoning out what is valuable using artificial intelligence aids like Memex. to find key words. Five nations share the results with the US as the senior partner under the UKUSA agreement of 1948, Britain, Canada, New Zealand and Australia are very much acting as subordinate information servicers.

Each of the five centres supply "dictionaries" to the other four of keywords, phrases, people and places to "tag" and the tagged intercept is forwarded straight to the requesting country. Whilst there is much information gathered about potential terrorists, there is a lot of economic intelligence, notably intensive monitoring of all the countries participating in the GATT negotiations. But Hager found that by far the main priorities of this system continued to be military and political intelligence applicable to their wider interests. Hager quotes from a "highly placed intelligence operative" who spoke to the *Observer* in London. "We feel we can no longer remain silent regarding that which we regard to be gross malpractice and negligence within the establishment in which we operate." They gave as examples. GCHQ interception of three charities, including Amnesty International and Christian Aid. "At any time GCHQ is able to home in on their communications for a routine target request," the GCHQ source said. In the case of phone taps the procedure is known as Mantis. With telexes its called Mayfly. By keying in a code relating to third world aid, the source was able to demonstrate telex "fixes" on the three organisations. With no system of accountability, it is difficult to discover what criteria determine who is not a target.

In February, The UK based research publication Statewatch reported that the EU had secretly agreed to set up an international telephone tapping network via a secret network of committees established under the "third pillar" of the Maastricht Treaty covering co-operation on law and order. Key points of the plan are outlined in a memorandum of understanding, signed by EU states in 1995.(ENFOPOL 112 10037/95 25.10.95) which remains classified. According to a *Guardian* report (25.2.97) it reflects concern among European Intelligence agencies that modern technology will prevent them from tapping private communications. "EU countries it says, should agree on "international interception standards set at a level that would ensure encoding or scrambled words can be broken down by government agencies." Official reports say that the EU governments agreed to co-operate closely with the FBI in Washington. Yet earlier minutes of these meetings suggest that the original initiative came from Washington. According to Statewatch, network and service providers in the EU will be obliged to install "tappable" systems and to place under surveillance any person or group when served with an interception order. These plans have never been referred to any European government for scrutiny, nor one suspects to the Civil Liberties Committee of the European Parliament, despite the clear civil liberties issues raised by such an unaccountable system. We are told that the USA, Australia, Canada, Norway and Hong Kong are ready to sign up. All these bar Norway are parties to the ECHELON system and it is impossible to determine if there are not other agendas at work here. Nothing is said about finance of this system but a report produced by the German government estimates that the mobile phone part of the package alone will cost 4 billion D-marks.

Statewatch concludes that "It is the interface of the ECHELON system and its potential development on phone calls combined with the standardisation of "tappable communications centres and equipment being sponsored by the EU and the USA which presents a truly global threat over which there are no legal or democratic controls."(Press release 25.2.97)

Clearly, there needs to be a wide ranging debate on the significance of these proposals before further any further political or financial commitments are made. The following recommendations have that objective in mind.

4. RECOMMENDATIONS

- (i) All surveillance technologies, operations and practices should be subject to procedures to ensure democratic accountability and there should be proper codes of practice to ensure redress if malpractice or abuse takes place. Explicit criteria should be agreed for deciding who should be targeted for surveillance and who should not, how such data is stored, processed and shared. Such criteria and associated codes of practice should be made publicly available.
- (ii) All requisite codes of practice should ensure that new surveillance technologies are brought within the appropriate data protection legislation.
- (iii) Given that data from most digital monitoring systems can be seamlessly edited, new guidance should be provided on what constitutes admissible evidence. This concern is particularly relevant to automatic identification systems which will need to take cognizance of the provisions of Article 15, of the 1995 European Directive on the Protection of Individuals and Processing of Personal Data.
- (iv) Regulations should be developed covering the provision of electronic bugging and tapping devices to private citizens and companies, so that their sale is governed by legal permission rather than self regulation.

(v) Use of telephone interception by Member states should be subject to procedures of public accountability referred to in (i) above. Before any telephone interception takes place a warrant should be obtained in a manner prescribed by the relevant parliament. In most cases, law enforcement agencies will not be permitted to self-authorise interception except in the most unusual of circumstances which should be reported back to the authorising authority at the earliest opportunity.

(vi) Annual statistics on interception should be reported to each member states' parliament. These statistics should provide comprehensive details of the actual number of communication devices intercepted and data should be not be aggregated. (This is to avoid the statistics only identifying the number of warrants, issued whereas organisations under surveillance may have many hundreds of members, all of whose phones may be subject to interception).

(vii) Technologies facilitating the automatic profiling and pattern analysis of telephone calls to establish friendship and contact networks should be subject to the same legal requirements as those for telephone interception and reported to the relevant member state parliament.

(viii) The European Parliament should reject proposals from the United States for making private messages via the global communications network (Internet) accessible to US Intelligence Agencies. Nor should the Parliament agree to new expensive encryption controls without a wide ranging debate within the EU on the implications of such measures. These encompass the civil and human rights of European citizens and the commercial rights of companies to operate within the law, without unwarranted surveillance by intelligence agencies operating in conjunction with multinational competitors.

(ix) The Committee should commission a more detailed report on the constitutional issues raised by the National Security Agency (NSA) facility to intercept all European telecommunications and the impact this supervisory capacity has on a) any existing

constitutional safeguards protecting individuals or organisations from invasion of privacy such as those extant for example in Germany, b) the political, cultural and economic autonomy of European member states. This report should also cover the social and political implications of the EU/FBI proposals made to operate a global telecommunications surveillance network as discussed above. This report should also analyze the financial and constitutional implications of the proposals and provide an update of the work undertaken so far and the status of political approval.

(x) Relevant committees of the European Parliament considering proposals for technologies which have civil liberties implications for example the Telecommunications Committee in regard to surveillance, should be required to forward all relevant policy proposals and reports to the Civil Liberties Committee for their observations in advance of any political or financial decisions on deployment being taken.

(xi) All CCTV surveillance schemes operating in public spaces and especially in residential areas should be governed by a comprehensive Code of Practice which encompasses:- a) a purpose statement covering the key objectives of the scheme; b) a consideration of the extent to which the scheme falls within the scope of Data Protection legislation; c) the responsibilities of the owner of the scheme and those of local partners; d) the way the scheme is to be effectively managed and installed; e) the principles of accountability; f) the availability of public information on the scheme and the principles of its operation in residential areas; g) the formal approaches to be used to assess, evaluate and audit the performance of both the scheme and the accompanying Code of Practice; h) mechanisms for dealing with complaints and any breaches of the Code including those of security; i) detailing the extent of any police contacts or use of the scheme; and j) the procedures for democratically dealing with proposals of technological change. It is suggested that the Civil Liberties Committee formally consider adopting the model Code of Practice for CCTV, produced by the Local Government Information Unit (LGIU) in London (A Watching Brief, 1996).

5. INNOVATIONS IN CROWD CONTROL WEAPONS

The original development of riot weapons goes back to Paris before the first World War, where the police began chemical crowd control using bombs filled with ethyl bromoacetate, an early form of teargas. The British colonies proved to be the forcing ground for the wide range of chemical and kinetic impact weapons which followed. The irritant CS for example was first used in Cyprus in 1956, and between 1960 and 1965, CN and CS were used on 124 occasions in the colonies. (Ackroyd et al, 1977).The growing demands of counter-insurgency and urban warfare generated a first generation of new riot weapons serviced by a growing police industrial complex.

Thus plastic and rubber bullets were products of British colonial experience in Hong Kong where the flying wooden teak baton round became the template for future kinetic weapons. The concept was one of a flying truncheon which could disperse a crowd without using small arms. They were however regarded as too dangerous for use on white people, so in 1969, Porton Down came up with a 'safer' version for use in Northern Ireland in 1970. Just as plastic bullets were considered far too dangerous for use in mainland Britain until 1985 when they proliferated throughout the UK's police forces,so were wooden baton rounds regarded as too dangerous for the residents of Northern Ireland but not Hong Kong. Now plastic bullets have been deployed in virtually every continent from the USA to Argentina, from South Africa

to Israel and China. Obviously, the shift in whether or not a riot weapon was appropriate or safe had nothing to do with differences in physiology. Wooden and plastic baton rounds created injuries which did not take account of generation or race. A predominant concern appears to have been what can be portrayed as politically safe in a particular context.

The seductive notion of soft and gentle knockout weapons is recent but not new. It has its roots back in the 1970's when so called 'non-lethal' weapons formed the holy grail of riot weapon Research & Development. During that decade, then Congressman James Scheur outlined a new philosophy of crowd control weapons.(see Fig.26). He saw such developments resulting from 'spinoffs from medical, military, aerospace and industrial research' and expressed the view that: 'We are now in the process of developing devices and products capable of controlling violent individuals and entire mobs without injury.'⁵³ The veracity of this assessment is briefly examined below, particularly the assertion that control is achieved without harm.

Some idea of the range and variety of riot control weapons under consideration at that time can be gleaned from the 1972 US National Science Foundation's Report on Non-lethal Weapons. (NSF, 1972). Altogether it listed 34 different weapons, including chemical and kinetic weapons; electrified water jets; combined stroboscopic light and pulsed sound weapons; infrasound weapons; dartguns which fire drug-filled flight stabilized syringes; stench parts which give off an obnoxious odour; the taser which fires two small electrical contacts discharging 50,000 volts into the target; and instant banana peel which makes roads so slippery, they are impassable.

Many of these weapons were then only partly developed or had problems of public acceptability: others have since achieved operational status. They include: incapacitation weapons such as the electronic riot shields and electro-shock batons (discussed in Sections 6, 7, & 8 below); Bulk chemical irritant distributor systems, (delivered by watercannon such as the UK made Tactica or the many back pack sprays like those made by the Israeli company Ispra (Fig.27 or the German Heckler & Koch (Fig. 28); New forms of irritant such as OC (or peppergas); kinetic impact weapons like the German & UK plastic bullet guns (shown in Fig. 32) or the South African hydraulically fired, TFM Slingshot rubber bullet machine; biomedical weapons, such as the compressed air fired drug syringe now commercially available both in the US & China (shown in Fig. 33).

The range of weapons currently deployed for crowd control is vast indeed and defies any attempts to be comprehensive. In Britain, since the first use of CS gas, rubber bullets and water cannon at the beginning of the Northern Irish Conflict in 1969, there has been a globalisation of such public order technologies. To our knowledge some 856 companies across 47 countries have been or are currently active in the manufacture and supply of such weapons. This proliferation has been fuelled by private companies wishing to tap lucrative security markets, a process which has led to both vertical and horizontal proliferation of this technology. (See Appendix 1 [*not provided with report*]) For example, one company, Civil Defence Supply, who provide nearly all UK police forces with sidehandled batons, boast of an international riot training programme, having trained the entire Mexican Police Granaderos with armadillo linked riot shields, CS and baton firing guns like the Arwen and what they call the complete 'Early Resolution System', for its elite forces.

To understand why this arsenal of crowd control weapons has been developed, it is vital

to understand the thinking which underlies their construction. An important task in assessing new crowd control technologies is to examine the criteria used to evaluate just what is an 'acceptable' police weapon, and to whom. In the discussion below, an attempt is made to clarify why the theory of 'non-lethal' weapons used for 'minimum force' policing, does not match the reality of paramilitarised riot squad approaches to 'peacekeeping'. Governments themselves have been using Technology Assessment to evaluate the relative effectiveness of such weapons. For example, since 1963, there has been an exchange of information on public order weapons between the US, Canada, Britain & Australia, allowing Porton Down to share technical evaluation of proposed non-lethal hardware, with US military scientists. Virtually all the most recent US government projects on this weaponry have been classified as "special access" (see 5.6 below) but the early work is quite revealing. Military scientists working at the US Army Human Engineering Laboratory in the early 1970's elaborated a systematic set of procedures to evaluate the desirable and undesirable effects of particular weapons. (See Chart 5a), covering a comparative assessment of both the medical and physiological consequences of each weapon type, together with an evaluation of public acceptability.(See Chart 5b).⁵⁴

5.1 Cost-Effective Crowd Control Weapons

The simplistic theory which underlies the use of riot weapons assumes that a 'minimum force' strategy of area denial or dispersal can actually contain deep seated conflicts. The problem with this approach is that real peace can never be simply defined as an absence of anyone remaining in the conflict zones. 'Minimum force' is an elastic concept, particularly when the force deploying it no longer enjoys widespread legitimacy.

A dominant assumption behind the acquisition of new police weapons, is the belief that they will create both a faster policing response time and a greater cost-effectiveness. Again, a key aim has

been to save policing resources by either automating certain control functions, amplifying the rate of particular control activities, or decreasing the number of officers required to perform them. Consequently, nearly all the weapons discussed in this report, have been functionally designed to yield an extension of the scope, efficiency and growth of policing power. New riot weapons enable police, paramilitary and state security forces to distribute more coercion to a greater number of people. Therefore they allow a fewer number of officers to threaten a larger number of people in a crowd and over a distance. Hence, riot weapons allow fewer officers to break up a disturbance than when using unarmed personnel, or a larger gathering to be tackled than could otherwise be taken on. The basis of this cost-effectiveness criterion has been neatly summed up by the then Brigadier, Sir Frank Kitson:

"For example, three or four times as many troops might be required, if they were only allowed persuasion, as would be needed if they were allowed to use batons and gas; and three or four times as many troops might be needed if they were restricted to using batons and gas, as would be required if they were allowed to use small arms." (Kitson, 1971,p. 90).

However, although in the short term, it may seem that these weapons can contain overtly violent conflict, their use in the longer term may feed or exacerbate the processes responsible for its development. A study undertaken at the Richardson Institute at the University of Lancaster, described evidence of such processes at work in Northern Ireland. (Wright, 1987)⁵⁵ The study found that less-lethal weapons used in the context of a phased deployment of counter-insurgency strategies, could lead to more force being used. In the beginning this was

24

evidenced by the deployment of higher numbers of riot weapons, then the substitution of each new less-lethal weapon by a more severe type. The initial use of water canon thus gave way to the use of CS gas. This was augmented by rubber bullets which were then replaced by the harder hitting PVC variety, (See Chart 6) and in greater quantities. Further empirical work suggested that because these riot systems were being deployed in the context of a phased set of counter-insurgency tactics, the resistance they bred led to a successive deployment of each subsequent and more violent phase of the low intensity conflict programme. In effect they bred the dissent they were designed to 'fix'. (Wright, 1981) Graphing the deployment of less-lethal weapons against the crude indicator of political killings in Northern Ireland revealed a pattern which appeared to corroborate this finding. As each new weapon deployment was associated with an upsurge in the death count (See Chart 7). Over longer time periods, another study detected predictable levels of weapon utilization. (Wright, 1981)

For example, fairly constant levels of munitions were used as if the supply itself was the greatest determinant of usage. (See Chart 8). A new form of multivariate time series analysis was evolved to describe the effect of deployments of these weapons and tactics. (Wright, 1987). What emerged was a complex set of causal influences which locked the participants into their own violent behaviour. During the period when this conflict broke down, variables indicating violent behaviour of the various participants, were most influenced by their own previous behaviour. (See Chart 9) Paradoxically, whilst these weapons were meant to provide a new series of flexible responses, their ultimate effect was to programme their targets into traditional anti-state activities and procedures. In other words, their most invidious characteristic may be to undermine non-violence as a means of public protest. (Wright, 1992) The real physical effects of these weapons described below, may go some way to explaining their dysfunctional impact on conflict behaviour.

5.2 Harmless Weapons? - The Scientific Evidence

Statements made by military scientists and police chiefs about "non-lethal" weapons and "minimum force", have led the public to believe that crowd control weapons were designed for humanitarian reasons and are in fact harmless. Such sentiments have been echoed by many governments and reinforced by reports from laboratories and the manufacturers actually creating the technology of political control.

If safety was the prime consideration, we might expect the research on such weapons to be especially thorough prior to their authorization. Since most future developments are still essentially modifications of existing chemical or kinetic impact weapons, it is worth reexamining the historical research which has permitted and legitimised this research in respect to the European state which has used these weapons the most, i.e. the United Kingdom.

5.3 Harmless Kinetic Impact Weapons?

In January 1977, the then Secretary of State For defence, was asked about the research on the likely death and injury rates from rubber and plastic bullets carried out prior to their introduction. The reply referred to a report produced by four surgeons working at the Victoria Hospital in Belfast in 1972, (two years **after** rubber bullets had been used in Northern Ireland), and said that comparable information for plastic bullets was not available.⁵⁶

25

Assessment of various 'less lethal' kinetic weapons

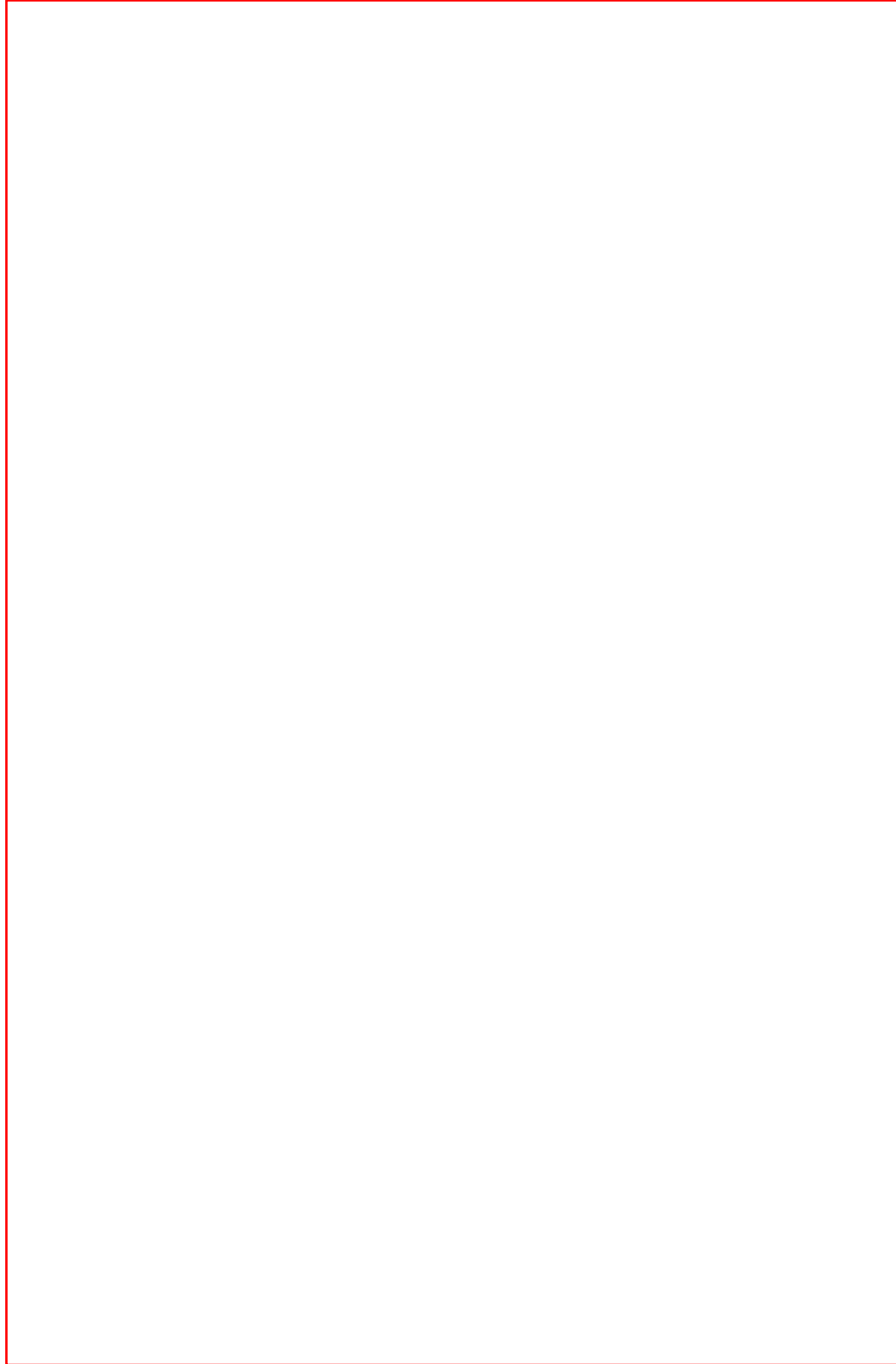




Chart 6. Trends in Riot Weapon use in Northern Ireland from 1969 - 1986



Chart 7. Impact of introduction of new riot weapons on the level of political killings in Northern Ireland

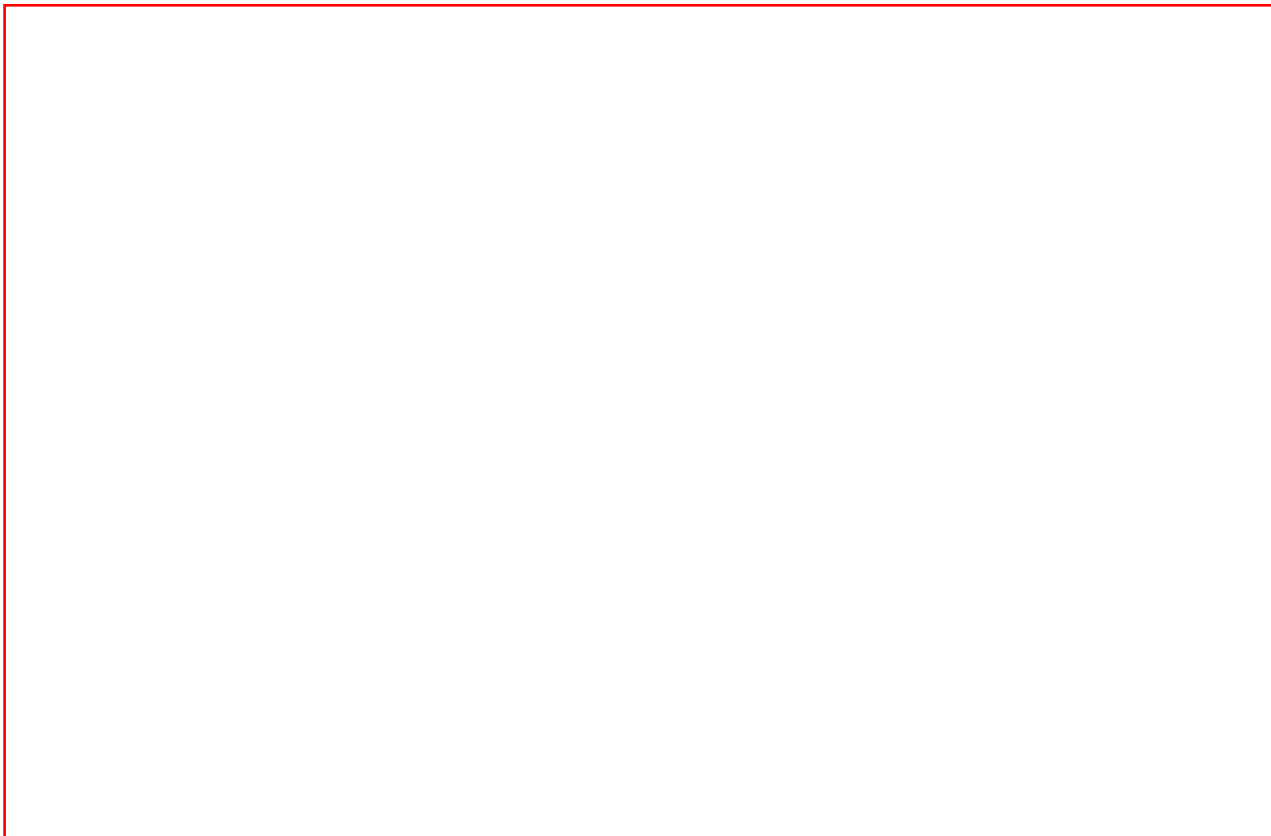


Chart 8. Structure of riot weapon use



Chart 9. Multi variant time series analysis of Northern Irish conflict 1976 - 1981

The Belfast surgeons report makes stark reading. (Millar et al, 1972). It informs us that of 90 patients who sought hospital treatment after being hit by rubber bullets, 41 needed in patient treatment. Their injuries included three fractured skulls, 32 fractures of the facial bones (nose, jaw, cheek etc.), eight ruptured eye globes (all resulting in blindness), three cases of severe brain damage, seven cases of lung injury, and one case of damage to liver, spleen and intestine. The overall role call included one death, two people blinded in both eyes, five with severe loss of vision in one eye and four with severe disfigurement of the face. The surgeons also found evidence of rubber bullets being fired at much closer ranges than those for which they were designed. Rubber bullets were not meant to be fired at distances of less than 25 metres but the surgeons found that half of those brought into hospital had been shot at less than 15 metres and one third at less than 5 metres. Part of the problem is that such area dispersal weapons are meant to create a dispersal zone. If anyone is unfortunate enough to be in such a zone, there may not be much choice in avoiding being targeted by such weapons, since part of their threat is the fear of becoming a random victim.

In the 1970's, military researchers in the US undertook their own research on kinetic weapons. They concluded that rubber bullets had an extremely high probability of undesirable effects in any scenario for their possible operational use. The US Army research undertaken on live animals, found that impact weapons with energy levels of above 90 ft. lbs., caused injuries, "in the severe damage region." (Thein, et al, 1974; Wargovitch, et al, 1975). A member of BSSRS, Jonathan Rosenhead, was able to use the comparative kinetic energy/damage figures in the US literature, to establish that given their muzzle velocity (about 293 ft. lbs.), for most if not all of its range, the rubber bullet is in the severe damage region. (Rosenhead, 1976).

It is worth noting that for the purposes of this present study, sample kinetic riot weapons from the USA, the UK, Germany, and the Netherlands were assessed using the original US military criteria on impact effects. It was found that all these weapons were in either the dangerous or severe damage region categories. (See Chart 4)

Plastic bullets totally replaced rubber bullets in Northern Ireland by 1975. Although authoritative sources such as *Jane's Infantry Weapons* (1976), asserted that rubber bullets were withdrawn because the disability and serious injury rates 'were not considered acceptable', the official explanation was simply the plastic baton round's greater accuracy.⁵⁷ Rosenhead argued that given the

even higher muzzle velocity of the plastic bullet, it was even more dangerous, especially at close range.

His analysis has been amply born out by the history of injuries and deaths caused by plastic bullets in Northern Ireland. A survey undertaken by Mr Laurance Rocke, (Senior Registrar at the Royal Victoria Hospital in Belfast), reported in the *Lancet* during 1983, that plastic bullets are even more deadly than the rubber bullets they replaced.(Rocke, 1983). They cause more severe injuries to the skull and brain and therefore more deaths. Despite the security forces rule that baton rounds must be aimed below the waist, 31 of the 99 plastic bullet victims covered in the Rocke survey suffered head injuries, He attributed the difference in the respective injuries and deaths for rubber and plastic bullets to their corresponding ballistic characteristics. Plastic bullets caused serious injuries less often than rubber bullets because the latter was less stable in flight and tended to hit a victim sideways. Plastic bullets resulted in more fractured skulls, lacerated scalps and deaths.

More worrying are the human faces behind these statistics. Between May 1973 and August

1984, 12 people were killed by plastic bullets. Inquests have found that six of the twelve fatalities were not involved in any civil disturbances when they were shot and seven of the twelve victims were children aged under 15.⁵⁸

During August 1981, an international commission of enquiry, sponsored by the Association of Legal Justice, travelled to Belfast to investigate the use of plastic bullets. One of its members was senior British research scientist, Dr. Tim Shallice, who wrote in the *New Statesman*, "The conclusion seemed inescapable to members of the commission: the Northern Ireland authorities were knowingly allowing widespread, indiscriminate and illegal use of a weapon whose lethal potential was well known" (Shallice, 1981).

Since then it has been very much business as usual. Just last summer in Northern Ireland, the RUC used the now British owned Heckler and Koch anti-riot weapon to fire thousands of plastic bullets. Whilst an immediate inquiry was called, few reports emerged of the way that innocent residents out for a night socialising were corralled by Landrovers and fired upon as all escape exits were sealed off.

Evidence Gathered by the Committee for the Administration of Justice in Northern Ireland (CAJ), suggests a serious flouting of official guidelines for the RUC use of plastic bullets, when over 6002 plastic bullets were fired in just one weekend (July, 1996). CAJ recorded instances of the RUC firing indiscriminately when no disturbances were going on (including people being injured by plastic bullets as they were coming out of a disco); young people being shot by plastic bullets as they left a fast food restaurant; CAJ observers and journalists shot at by plastic bullets; people who were clearly attempting to leave areas of disturbance were also targeted. Victims of the conflict seeking medical attention at Altnagelvin Hospital were subject to a baton charge by riot police who had entered the casualty area dressed in full riot gear with dogs. Witness statements were gathered which suggested that many people refused to seek treatment from injuries they sustained from baton rounds for fear of arrest. (CAJ, 1996)

In such circumstances, the indiscriminate deployment of plastic bullets removes people's rights of assembly and may remove their rights to freedom of movement and in some situations their right to life. The provisions of the UN Code of Conduct for Law Enforcement Officers in regard to the principle of proportionality appear to have been breached last summer by the RUC, (as well as their duty not to use excessive force if it is possible to use non-violent means before resorting to force and firearms). We can think of no reason to challenge the European Parliament's decision of May, 1982 which called for a ban on the use of plastic bullets within the EU, and recommend that the European Parliament reaffirm their call for a total ban on this weapon.

5.4 Harmless Chemical Irritant Weapons?

We know that over 300 companies are currently manufacturing and marketing chemical incapacitants to military, security, prison and police forces around the world and a vast range of equipment is available, including cartridges, grenades, backpack sprays and hand held aerosols. Yet the safety of the commonly used riot control agents is also questionable. In high doses they can kill, a reality harshly brought home by deaths of children in South Africa during the apartheid years. Even in lower doses, there are a range of very unpleasant side effects including bronchitis, asthma, lung and eye damage, contact dermatitis and prolonged diarrhoea. An examination of the actual research undertaken on CS prior to its authorization

for use in the Derry riots of 1969 reveal some gross omissions and assumptions. The claim that CS did not harm people with breathing ailments rested on a study of two bronchitic rabbits; possible effects on the unborn child were tested by the response on fertilised chicken eggs when injected with CS.⁵⁹ Inadequate evidence had been gathered on its effects on those suffering from heart complaints and experiments to determine whether or not CS was carcinogenic, were not completed until two years after it had been intensively used in Northern Ireland.

After the 1969 Derry riots, a committee of inquiry was set up, (the Himsworth Committee) to look at the medical and toxicological effects of CS. Although it drew heavily on existing Porton studies, the Himsworth Committee accepted that under certain circumstances CS can kill and that it can also produce highly unpleasant but non-fatal injuries to the lungs. Himsworth made the sensible recommendation that in future, riot agents should be regarded more akin to drugs than weapons and the authorities should publish the results of safety tests, in the scientific press, in full, prior to any authorization. (HMSO, Cmnd 4775, 1971). This is such a clear and reasonable precautionary stance, that we recommend that the European Parliament adopt it as the baseline criterion for all the chemical irritants which might ever be deployed in the EU.

Alas, for the amount of attention the UK government paid to this recommendation, we have only to look at the circumstances surrounding the introduction for use throughout the UK in certain special circumstances, of CR in 1973. CR is an incapacitant which causes temporary blindness. According to one Porton report, it feels like being thrown blindfolded into a bed of stinging nettles. (See Fig. 28)⁶⁰ In 1977 the Secretary of State for Defence was challenged to withdraw authorization for CR until the Himsworth recommendations were complied with. The Minister refused, claiming this was already the case and went on to quote a string of articles all except one of which was published after 1973. None of these articles addressed the issue of carcinogenicity, an important consideration for chemicals that are intended for direct spraying on the skin. If research on these new weapons was not fully completed before they were used then the idea that they were deployed because of safety considerations must be rejected. Less-lethal weapons of this type are also presented as more acceptable alternatives to guns. But these weapons augment rather than replace the more lethal weapons in police arsenals. Euphemistic labels such as watercannon, teargas and rubber bullets are used to create the impression that these weapons represent soft and gentle forms of control, CS is never referred to by the authorities as vomit gas, in spite of its capacity to cause violent retching.

A further danger of stronger incapacitating chemicals sprayed directly on to crowds is the impact it can have on changing police practices. In the 1960's crowd dispersion was seen as the key requirement so that the a provision of escape routes was part of the training packages used. With the advent of new paralysing systems, crowd capture becomes a possibility as foam barriers to seal off all escape routes become a precursor for mass arrest. This tactic was deployed against German anti-nuclear protestors in Wackendorf, over ten years ago, when 7,000 police were used to ring a crowd of 1000 activists.⁶¹ (See Fig 29). On this occasion chemical foam was used in area denial rather than capture so the example is illustrative. However, with the back pack sprayers now being produced, much fewer personnel could achieve the same tactic. This is part of the problem on the horizon.

5.5 Harmless Irritant Gas Sprays?

The introduction of hand held gas irritant sprays into Europe into countries such as Germany, France and most recently, the UK, has yielded an offensive as well as a defensive capacity. Again in the UK we might have assumed they would be governed by existing UK policy on the introduction of new chemical weapons for domestic control.

Until the nineties, despite intensive research, only four chemical agents were primarily used for such purposes, namely CN, CS, CR and most recently (Peppergas) OC. This is because there are real difficulties in marrying an agent with low toxicity and high effectiveness. CN and CS (developed by Porton Down in the fifties) are in fact war gases and hundreds of deaths are attributed to their use in the Vietnam conflict where they were used to flush out Vietcong in tunnels.⁶²

Porton scientists have always been quite realistic about the possible dangers of new chemical weapons for public order control. "As with other foreign chemicals to which man may be exposed, no matter how detailed, extensive and carefully effected are the pre-clinical toxicity investigations and observations in controlled human exposures, there can be no complete guarantee from such studies that there is absolute safety in use for a given chemical."⁶³ Such caution about weapons designed to be sprayed directly in the face is well founded. Their use in riot control is based on an assumption that the level of irritant will be dispersed because they will be deployed in wide open spaces. There are special dangers associated with using chemical aerosols in tight confines where dangerous concentrations can build up. As another scientist has commented, "Politician and scientist alike must accept the inescapable conclusion that any substance capable of producing an intolerable irritation at low concentrations must also produce a concomitantly high toxicity. In other words, the existence of ideal riot agents of sufficient safety not to impair the health of rioters or accidentally exposed innocents is merely notional."⁶⁴

As we have seen, there is evidence that CS can cause permanent but non-lethal lung damage at comparatively low doses⁶⁵, as well as second degree burns with blistering and severe dermatitis.⁶⁶ In situations where high exposure to CS has occurred, heart failure, hepatocellular damage and death have been reported (HMSO, 1971). Some evidence also exists that people subject to repeated doses of CS develop tolerance, further increasing their level of exposure.⁶⁷ One study has concluded that a single exposure to high level of respiratory irritants similar to CS have led to the development of 'reactive airways disease syndrome' in some individuals, characterised by prolonged cough and shortness of breath.⁶⁸ New restraint tactics used alongside gas sprays are a potential recipe for fatalities.

It is revealing that when tests on French made (SAE Alsetex) CS spray took place in the UK, a Metropolitan police inspector suffered burns to his eyes during tests in Northampton - thought to be due to the propellant.⁶⁹ It also emerged that Dr Jill Tan, the Home Office scientist who gave these devices the all clear, suffered blisters to her face when sprayed with the CS product during tests. Self-Defence expert Inspector Pete Boatman who was training the instructors when the accident happened has now been banned from training officers outside his region because his Chief Constable is worried about being sued by people injured by the incapacitant.⁷⁰ Throughout the CS trials in the UK, which began on March 1, 1996, the public were constantly reassured about the safety of this product based on French studies, studies undertaken in the USA and military research conducted at Porton Down. A UK Channel 4 Dispatches programme revealed serious flaws in

1996). The French gendarmerie keep no statistics or records of CS use to suggest it is safe. Indeed Professor Jean Claud Roujeau of the Hospital Henri Mondor in Paris can quote much evidence to the contrary. "I have to disagree because we have seen, in the last few years, several cases of patients suffering from severe skin reactions to these spray. These reactions look like acute burns, they are very spectacular and sometimes need hospitalisation for several days, and can reach 10-20 per cent of the body surface area of the patient. (See Fig. 30) It is generally agreed that above 20 per cent there is a risk of death, so I think it is impossible to consider these products as generally safe and harmless." (Liberty, opp cit)

The British Government also cited work by the US National Toxicology Programme (NTP) in Boston, but one of the world's leading toxicologists Professor Howard Hu said, "The NTP was purely designed to assess whether CS can cause cancer in laboratory animals. It was not designed to see whether CS could cause pulmonary (breathing) problems of a non carcinogenic nature, or skin problems and it really says nothing about the potential of CS to cause health problems in vulnerable people." Professor Hu also said that CS may actually cause asthma. "One of the conditions that CS may cause is commonly referred to as RADS, a variant of asthma caused by a very high, brief intense exposure to an irritant like CS". He also said that CS may be linked to chromosomal mutation - damage to the body's DNA itself.

In fact, the French made spray was given a specification in the UK which demanded that it be a 5% solution and release 5 centileters of fluid per burst which compares with U.S. versions which contain a 1% solution and release a 1% burst. In other words the French Sprays adopted by the UK were 25 times as strong as those used in the United States. It is perhaps somewhat revealing that the UK Government gave the go ahead for deployment of these sprays before the trials were complete and before all the relevant research was published in the scientific press.

In fact the safety concerns outlined above, are even more pressing in regard to this newly introduced disabling chemical, Oleoresin Capsicum (OC), or 'peppergas'. OC is a new irritant based on extracts from Chile pepper. As a plant toxin it is banned for use in war by the 1972 Biological Weapons convention but not for internal security use.

Porton Down began researching analogues of capsicum after it was used as a military harassing agent in World War I in the form of acylated vanillylamide and its more potent homologues such as VAN as a possible replacement for the riot agent CN. However, the agent was predominantly used in the seventies for Porton funded studies in the neurophysiology of pain such as those conducted in 1975 by Foster and Ramage at Manchester University's Medical School.⁷¹ However, it was in the USA that companies transformed this irritant into a commercial product which is now widely used by both police, corrections departments and private citizens.

The effects of peppergas are far more severe, including temporary blindness which last from 15-30 minutes, a burning sensation of the skin which last from 45 to 60 minutes, upper body spasms which force a person to bend forward and uncontrollable coughing making it difficult to breathe or speak for between 3 to 15 minutes.

For those with asthma, taking other drugs, or subject to restraining techniques which restrict the breathing passages, there is a risk of death. The Los Angeles Times has reported at least 61 deaths associated with police use of pepper spray since 1990 in the USA,⁷² and the American Civil Liberties Union (ACLU) documented 27 deaths in custody of people

sprayed with peppergas in California alone, since 1993.⁷³

Whilst peppergas has been widely adopted in the US and Canada so far it has not seen widespread usage in Europe. Nevertheless, several European companies such as France,⁷⁴ Germany,⁷⁵ Spain⁷⁶ and the UK⁷⁷ are known to be either marketing their own brand or importing OC sprays and backpacks from the USA. However, the US Army concluded in a 1993 Aberdeen Proving Ground study that pepper spray could cause "Mutagenic effects, carcinogenic effects, sensitization, cardiovascular and pulmonary toxicity, neurotoxicity, as well as possible human fatalities .There is a risk in using this product on a large and varied population" (Salem, 1993) However, the pepper spray got the go ahead despite the reservations of the US military scientists after FBI tests gave it the all clear.

It has subsequently been revealed that the head of the FBI's Less-Than lethal Weapons Programme, Special Agent Thomas WW Ward, took a \$57,000 bribe from a peppergas manufacturer to give the Zarc product Capstun, the all clear. British researchers highlighted the conflict of scientific evidence to the South California branch of ACLU who then took vigorous action to have the agent withdrawn. Berkley's Police Commission voted for a 60 day moratorium on Peppergas.⁷⁸ ACLU is now looking at the legal implications and has asked the FBI to immediately retract and rescind all research documentation. Allan Parachini, Public Affairs Director of ACLU has said "The Ward Scandal in some ways exceeds the Rodney King beatings in terms of its potential impact on law enforcement, since FBI research helped convince police departments across the country that pepper spray was a safe and effective way to subdue suspects." In fact the breach of trust is much more

serious since many other countries as disparate as Australia and India have subsequently adopted peppergas on the back of US research.

Not surprisingly, recent company marketing has focused on providing training and certification to insulate officers from lawsuits associated with deaths in custody cases. The effects of OC are so severe that companies such as Bioshield & Foxguard have started to market decontamination wipes to meet peppergas "post application requirements which in turn reduces the potential for litigation".

In the face of such findings, any European Member State who permits the deployment of the OC irritant, may well find themselves facing legal action in the future, if fatalities or other unusual impacts emerge. It is recommended that the European Parliament errs on the side of caution and calls for a moratorium on the acquisition, sale and deployment of Oleoresin Capsicum irritant sprays, until independent research is undertaken on its safety and published in full in the scientific press for peer review.

5.6 Second Generation Incapacitation Weapons

In the Nineties, the revolution in so called 'non-lethal weapons' was given fresh impetus by new US programmes to fight internal conflicts - ostensibly without casualties. The US Government was driven towards finding a universal panacea because of a series of embarrassing and widely publicised debacles including the Rodney King beating, the Waco siege and their unfortunate experiences in Somalia, where they failed in crowd control operations with only lethal technology. The new policy was avidly pushed in the States by the likes of Col. John Alexander (who made his name as part of the Phoenix Assassination programmes during the Vietnam war) and science fiction writers such as Alvin Toffler (Toffler, 1994) and Janet and Chris Morris, (Morris & Morris, 1990, 1994) and picked up by the

DoD and Justice Department.

Thus a second generation of kinetic, chemical, optico-acoustic, microwave, disabling and paralysing technologies is on the horizon, to join the existing arsenal of weapons designed for public order control. Much of the initial new work has been undertaken in US nuclear laboratories such as Oak Ridge, Lawrence Livermore and Los Alamos. Many cynics see the work as a rice bowl initiative with scientists looking for new weapons projects to justify their future careers as the cold war made their old skill redundant. Already they have come up with a pandora's box of new technologies. These include:

- * Ultra-sound generators, which cause disorientation, vomiting and involuntary defecation, disturbing the ear system which controls balance and inducing nausea. The system which uses two speakers can target individuals in a crowd.
- * Visual stimulus and illusion techniques such as high intensity strobes which pulse in the critical epileptic fit-inducing flashing frequency and holograms used to project active camouflage.
- * Reduced energy kinetic weapons. Variants on the bean bag philosophy which ostensibly will result in no damage (similar claims were once made about plastic bullets). (See Fig. 32)
- * New disabling, calmative, sleep inducing agents mixed with DMSO which enables the agent to quickly cross the skin barrier and an extensive range of pain causing, paralysing and foul-smelling area-denial chemicals. Some of these are chemically engineered variants of the heroin molecule. They work extremely rapidly, one touch and disablement follows. Yet one person's tranquillization may be another's lethal dose. (See Fig. 33)
- * Microwave and acoustic disabling systems. (see Fig. 34)
- * Human capture nets which can be laced with chemical irritant or electrified to pack an extra disabling punch. (See Fig. 34)
- * Lick 'em and stick 'em technology such as the Sandia National Laboratory's foam gun which expands to between 35-50 times its original volume. Its extremely sticky, gluing together any target's feet and hands to the pavement. (See Fig. 35)
- * Aqueous barrier foam which can be laced with pepper spray.
- * Blinding laser weapons and Isotropic radiator shells which use superheated gaseous plasma to produce a dazzling burst of laser like light. (See Fig. 36)

* Thermal guns which incapacitate through a wall by raising body temperature to 107 degrees.

* Magnetosphere gun which delivers what feels like a blow to the head.

We are no longer at a theoretical stage with these weapons. US companies are already piloting new systems, lobbying hard and where possible, laying down potentially lucrative patents. For example, last year *New Scientist* reported that the American Technology Corporation (ATC) of Poway California has used what it calls acoustical heterodyning technology to target individuals in a crowd with infra-sound to pinpoint an individual 200-300

metres away. The system can also project sonic holograms which can conjure audio messages out of thin air so just one person hears.⁷⁹ Meanwhile, *Jane's* reported that the US Army Research Laboratory has produced a variable velocity rifle for lethal or non lethal use a new twist to flexible response.⁸⁰ Other companies are promoting robots for use in riot and prison control.

The National Institute of Justice in the US is now actively soliciting new ideas for such weapons from corporate bodies,⁸¹ and corporate US has responded with bodies like SPIE (The International Society For Optical Engineering), which have enthusiastically responded with a special conference on 'Enabling Technologies for Law Enforcement and Security' at the Hynes Convention centre in Boston, Nov 19-21, 1996. The panel on less than lethal technologies has experts talking on subjects such as: The non-lethal laser baton; design of a variable velocity gun system for law enforcement applications; sticky shocker; definition of lethality thresholds for KE less-lethal projectiles; violence reduction and assailant control with laser sighted police pistols; directed energy technologies: weaponisation and barrier applications; pepper spray projectile for countering hostage and barricade situations; aqueous foam as a less than lethal technology for prison applications etc. A formal Pentagon policy on the use of non-lethal weapons was prepared last year in response to Congressional instructions to initiate a joint acquisitions programme. Whilst there are practical problems regarding whether it is preferable to leave an enemy or a citizen dead rather than permanently maimed, and whether or not hallucinogenic or other psychotropic 'calmative' agents fall foul of the Chemical Weapons Convention, the spending call was for \$15 million annually over the next three years, to fund new and existing projects.⁸²

Critics of such projects suggest that non-lethal war is a contradiction in terms. Many of the so called non-lethal weapons are in reality are far from non-lethal. They can and have killed, maimed, blinded and scalped innocent bystanders. There is a real danger that they will make conflicts more lethal by enraging crowds and by paralysing people making them more vulnerable to other operations by the military and security forces. In that sense these weapons could be considered pre-lethal and actually lead to higher casualty rates. (See above) In fact the US proponents of these weapons are under no illusions. Their focus is 'not to replace lethal munitions but to augment existing and future capabilities which will provide a spectrum of force response options.'⁸³ The area most commentators have not addressed is the extent that such weapons will help the military create new roles for themselves as part of internal policing operations.

Most of the debate has been about their role in war. We know from the proceedings of the Non Lethal Defence II conference, (organised by The American Defence Preparedness Association held in March last year), that the that the Joint Program Office of Special Technology Countermeasures (JPO-STC) have developed a multi-service co-ordination strategy that incorporates both the HQ Allied Forces of Southern Europe and the 'Doctrine & Training HQ' of the United Kingdom.⁸⁴ Other formal liaison links between the USA non-lethal research community and Member States are anticipated but little public information has emerged.

The work done so far has led to dubious weapons based on dubious research, strongly influenced by commercial rather than humanitarian considerations. There is a pressing need for a wide ranging debate in the European Parliament of the humanitarian and civil liberties implications of allowing these weapons on to European soil to become part of the technology of political control in the EU. Much of the work that has been undertaken in secret, but part of the bibliography of the present report covers a representative sample of the available literature. What is required is a much more detailed assessment of these weapons than space

permits here and it is recommended that a new study be commissioned to achieve this work. In the meantime, it would be useful to ask for the European Commission to report on existing liaison arrangements between Member States and the US on Non-lethal weapons and the nature and extent of any joint activities.

5.6 RECOMMENDATIONS

(i). Informed by principle 3 of the United Nations Basic Principles on The Use of Force & Firearms (which states that: " the development and deployment of non-lethal incapacitating weapons should be carefully evaluated in order to minimise the risk of endangering uninvolved persons, and the use of such weapons should be carefully controlled.") and principle 4 (which require governments to take steps to ensure that arbitrary or abusive use of force is not used by law enforcement officers, and that force is used "only if other means remain ineffective"), the committee

should consider asking the European Parliament to reaffirm its demand of May 1982, for a ban on the use of plastic bullets.

(ii). In the light of last summer's events at Drumcree in Northern Ireland, the Committee is advised to seek confirmation from the Commission that: Member States are fully aware of their responsibilities under Principles 3 and 4 of the United Nations Basic Principles on the Use of Force & Firearms by Law Enforcement Officials and to ask for clarification of exactly what steps individual Member States are taking to ensure that these are fully met as the power of "less-lethal weapons" changes and whether consistent standards apply.

(iii). The European Parliament should be asked to establish objective criteria for assessing the biomedical effects of so called non-lethal weapons that are independent from existing commercial or governmental research undertaken to-date. It is also recommended that further research is commissioned on the range and types of technologies which have been developed by the US non-lethal doctrine so far, together with an assessment of their anticipated and unforeseen social and political implications.

(iv). The Commission should be requested to report on the existing liaison arrangements for the second generation of non-lethal weapons to enter European Union from the USA and call for an independent report on their alleged safety as well as their intended and unforeseen social and political effects. During the interim period, deployment by the police, the military or paramilitary special forces, of US made or licensed chemical irritant, kinetic, acoustic, laser, electromagnetic frequency, capture, entanglement, injector or electrical disabling and paralysing weapons, should be prohibited within Europe.

(v). The European Parliament should: (a) Note the biased research on Peppergas (OC) undertaken by corrupt FBI officials and the continuing use of FBI safety assurances in other countries on the basis of this flawed research; (b) Call for a ban on Peppergas (OC) deployment or usage within EU Member States, until new independent research on OC is undertaken.

(vi). That all research on chemical irritants should be published in open scientific journals before authorization for any usage is permitted and that the safety criteria for such chemicals should be treated as if they were drugs rather than riot control agents.

(vii). Research on the alleged safety of existing crowd control weapons and of all future innovations in crowd control weapons should be placed in the public domain prior to any decision towards deployment.

6. NEW PRISON CONTROL SYSTEMS

Some of the equipment described above, such as the surveillance, area denial, surveillance and crowd control technologies, also finds a ready use inside permanent prisons and houses of correction. Other devices such as the area denial, perimeter fencing systems such as portable coils of razor wire, prison transport vehicles with mini cage cells, and tagging equipment are used to create temporary holding centres.

Permanent prisons are however, literally custom built control environments, where every act and thing, including the architecture, the behaviour of the prison officers and daily routines, are functionally organised with that purpose in mind. Therefore many of the technologies discussed above are built in to the prison structure and integral to policing systems used to contain their inmates. For example, area denial technology, intruder detection equipment and surveillance devices are instrumental in hermetically sealing high security prisons. Everything from electronically operated prison gates and cell doors, to razor wire and video surveillance on the perimeter walls, serve this end.

If disturbances develop within a prison, the riot technologies and tactics outlined above, are also available for use by prison officers. The trend has been to train specialized MUFTI (Minimum Force Tactical Intervention) squads for this purpose. Outside Europe, irritant gas has been used not only to crush revolt but also to punish political detainees,⁸⁵ or to eject reticent prisoners from their cells before execution.⁸⁶ Anyone deemed to be a trouble maker may become the potential target for further containment, the type and variety of which, depend to a large extent on the prevailing norms and political climate. Thus physical restraint equipment covers a range from straitjackets and body-belts at one end of the spectrum to thumbcuffs and leg shackles at the other. Recently, the International Observatory on Prisons criticized Spain's so called Register of Special Treatment Prisoners held in solitary confinement for prolonged periods and said this could be infringing the European Convention against Torture.⁸⁷

Other approaches include special stripped and padded cells, segregated units which have been used Inverness in Scotland to form a cage within a cage;⁸⁸ isolation units like the now abandoned system used at Wakefield Jail;⁸⁹ the Tote Trakt cells used to imprison the Bader Meinhof gang in Germany, which were designed to mimic sensory deprivation; or entire blocks of segregated isolation cells like the 750 Security Housing Units and 3,000 maximum security cells run by the California House of Corrections department at the punitive warehousing prison at Pelican Bay.⁹⁰ The Pelican Bay complex is a good example of where a lack of proper accountability can bring widespread systematic abuse, even if the prison is one of the most modern. In 1995, Judge Thelton E. Henderson said the prison was one of the most abusive and that prison officers not only ignored the abuses but "also followed a management strategy that permitted the use of excessive force for the purpose of management and deterrence." The Judge informed the Federal District Court of guards who assaulted prisoners in cells with batons, high voltage taser guns, chained them up for

hours in "fetal restraints" with their wrists bound to their ankles for 22 hours a day.⁹¹

Apart from mechanical restraint, prison authorities also have access to pharmacological approaches for immobilising inmates, colloquially known as 'the liquid cosh.' These vary from psychotropic drugs such as anti-depressants, sedatives and tranquilliser to powerful hypnotics. Drugs like largactil or Seranace offer the chemical equivalent of a strait jacket and their usage is becoming increasingly controversial as prison populations rise and larger numbers on inmates are 'treated'. In the United States, the trend for punishment to become therapy reaches its apotheosis with 'behaviour modification' which uses Pavlovian reward and

punishment routines to recondition behaviour. Drugs like anectine, (a curare derivative), which produce either fear or pain, are used in aversion therapy. In prisons, the possibilities of testing new social control drugs are extensive, whilst actual controls are few. Houses of correction form the new laboratories for developing the next generation of drugs for social reprogramming, whilst the pharmacology laboratories of both the universities and the military provide scores of new psychoactive drugs each year.⁹²

Way back in the 1970's, J.A. Meyer of the US Defence Department suggested a countrywide network of transceivers for monitoring all prisoners on parole, via an irremovable transponder.⁹³ The idea was that parolees movements could be continuously checked and the system would facilitate certain areas or hours to be out of bounds, whilst having the economic advantage of cutting down on the costs of clothing and feeding the prisoner. If prisoners go missing, the police can automatically home in on their last position. The system came into operation use in America in the mid 1980's when some private prisons started to operate a transponder based parole system.⁹⁴ The system has now spread into Canada and Europe where it is known as electronic tagging. Whilst the logic of tagging is difficult to resist, critics have argued that whilst tagging carries the promise of being an effective alternative to prison, a look at the criminological literature, this assertion is questionable.(MacMahon, 1996). The clientele appears not to be offenders who would have been imprisoned but rather low risk offenders who are most likely to be released into the community anyway. Because of this, the system is not cheaper since the authorities gain the added expense of supplying monitoring devices to offenders who would have been released anyway. Electronic tagging is however beneficial to the companies who sell such systems. Tagging also has a profitable role inside prisons in the U.S. and in some prisons, notably, DeKalb County Jail near Atlanta, all prisoners are bar coded. (Christie, 1993, p. 96)

Critics such as Lilly & Knepper (1992, 186-7) argue that in examining the international aspects of crime control as industry, more attention is needed to the changing activities of the companies which used to provide supplies to the military. At the end of the cold war, "with defence contractors reporting declines in sales, the search for new markets is pushing corporate decision making, it should be no surprise to see increased corporate activity in criminal justice." Where such companies previously profited from wars with foreign enemies, they are increasingly turning their energy to the new opportunities afforded by crime control as industry.(Christie, 1994). Increasingly in the U.S, we witness the trend toward private prisons and the critical issue here is can the privatisation of prison control create a rehabilitation process if its dominant raison d'etre is profit from control systems and hence cost cutting.

Many European countries are now experiencing a rapid process of privatisation of prisons by corporate conglomerations, predominantly from the USA. Many of the prisons run by these organisations in the US have cultures and control techniques which are alien to European traditions. Such a process of privatisation can lead to a bridgehead for importing U.S. corrections mentality, methods and technologies into Europe and there is a pressing need to ensure a consensus on what constitutes acceptable practice. There is a further danger that such privatisation will lead to cost cutting practices of human warehousing, rather than the more long term beneficial practice of prisoner rehabilitation.

In some European countries, particularly Britain, where changes in penal policy are leading to a rapid rise in prison population without additional resources being applied to the sector, the imperative is to cut costs either through using technology or by privatising prisons.⁹⁵ Already, the UK Prison Service has compiled a shopping list of computer based options with existing CCTV surveillance systems being complemented by geophones, identity

recognition technology and forward looking infra-red systems which can spot weapons and drugs.⁹⁶ Alongside such proactive technologies, UK prisons will face increasing pressure to tool up for trouble. Much this weaponry including the contract for between £950,000 and £2,500,000 of side handled batons, kubotans, riot shields etc. made by the Prison Service in March 1995, are likely to be originally manufactured in the United States.⁹⁷

The U.S.A adopts a far more militarised prison regime than anywhere in Europe outside of Northern Ireland. A massive prison industrial complex has mushroomed to maintain the strict control regimes that typify American Houses of Correction. The future prospect is of that alien technology coming here, with very little in the way of public or parliamentary debate. A few examples of US prison technologies and proliferation illustrate the dangers.

Many US prisons now use peppergas. The Department of Justice and every Federal Court that has looked at its use in correctional facilities has found abuses. For example at the privately run West Tennessee Detention Facility, prison guards pumped peppergas into two dormitories seized by inmates.⁹⁸ In late 1994, the Department of Justice Civil Rights Division, investigated a County Jail in Syracuse, New York, and reported "an unacceptably high and improper use of pepperspray . . . Nearly every inmate told of excessive and improper use . . . particularly when inmates are not resistant and after the inmate has been restrained and presents no danger." One suicidal inmate in Syracuse was restrained with three cans of pepperspray and died shortly afterwards of positional asphyxia.⁹⁹ In the US, Federal Laboratories are already marketing a remote control systems (TG Guard), which can automatically dispense peppergas through specific zones in a prison complex from a remote firing location.¹⁰⁰ (See Fig. 37).

Many prisons in the U.S, use Nova electronic 50,000 volt extraction shields, electronic stun prods and most recently the REACT remote controlled stunbelts. In 1994, the US Federal Bureau of Prisons decided to use remote-controlled stunbelts on prisoners considered dangerous to prevent them from escaping during transportation and court appearances. By May 1996, the Wisconsin Department of Corrections said that no longer will inmates be chained together "but will be restrained by the use of stunbelts and individual restraints." Stun Tech of Cleveland Ohio has said that it wants to see its stunbelts introduced into the chain gang programs of Alabama, Florida and Louisiana. In fact by 1996, it was reported that the US Marshals service and over 100 county agencies have obtained such belts as well as 16 state correctional agencies including Alaska, California, Colorado, Delaware, Florida, Georgia, Kansas, Ohio and Washington (Amnesty International, 1997).

Stun Tech literature claims that its high pulse stunbelt can be activated from 300 feet. After a warning noise, the Remote Electronically Activated Control Technology (REACT) belt inflicts a 50,000 volt shock for 8 seconds. This high pulsed current enters the prisoners left kidney region then enters the body of the victim along for example blood channels and nerve pathways. Each pulse results in a rapid body shock extending to the whole of the brain and central nervous system. The makers promote the belt "for total psychological supremacy . . . of potentially troublesome prisoners." Stunned prisoners lose control of the bladders and bowels. "After all, if you were wearing the contraption around your waist that by the mere push of a button in someone's hand, could make you defecate or urinate yourself, what would you do from the psychological standpoint?"¹⁰¹ Amnesty International wants Washington to ban the belts because they can be used to torture, and calls them, "cruel, inhuman and degrading." Some officials say the belts can save money because fewer guards would be needed. But human rights activists and some jailers oppose them as the most degrading new measure in an increasingly barbaric field." (Kilborn,1997) Already, some European countries are in the process of evaluating stunbelt systems for use here. (Marks, 1996)

The U.S. Federal Bureau of Prisons is responsible for a prison population of some 101,000 inmates experiencing according to their Chief of Security, Jim Mahan, a 25% overcrowding effect within the 81 feral prisons across the U.S.A. An additional 17 new facilities are under construction and 10 others will be privatised. As a result of rising tensions within US jails and the need to respond, the Federal Bureau of Prisons has become a formal part of the new research programme on less-lethal weapons. Disturbance control squads are specialised units used in US jails to quell riots and Mahan identified future needs in term of (a) aqueous foams; (b) containment nets; (c) anti-traction devices; (d) aesthetic darts/pellets; (e) chemical area dispensers; (f) noise weapons such as acoustic generators; (g) infra-ultrasound; (h) low energy lasers; (i) optical munitions in addition to the kinetic energy, chemical and electrical weapons they now deploy.¹⁰²

Without proper licensing and a clear consensus on what is expected from private prisons in Europe, multinational private prison conglomerations could act as a bridgehead for similar sorts of technology to enter the European crime control industry. Proper limits need to be set when a licence is granted with a comprehensive account taken of that company's past track record in terms of civil liberties, rehabilitation and crisis management rather than just cost per prisoner held.

6. RECOMMENDATIONS

The Committee should ask the Commission to:

- (i). Ensure that the UN Minimum treatment of prisoners rules banning the use of leg irons on prisoners are implemented in all EU correctional facilities.
- (ii). Implement a ban on the introduction of inbuilt gassing systems inside European goals on the basis of the manufacturers warnings of the dangers of using chemical riot control agents in enclosed spaces. Restrictions should also be made on the use of chemical irritants from whatever source in correctional facilities wherever research has shown that a concentration of that irritant could either kill or be associated with permanent damage to health.
- (iii). Ensure that all private prison operations within the European Union should be subject to a common and consistent licensing regime by the host member. No licence should be granted where proven human rights violations by that contractor have been made elsewhere. Any failure to secure a licence in one European state should debar that private prison contractor from bidding for other European contracts (pending evidence of adequate human rights training and appropriate improvements in standard operating procedures and controls by that corporation or company).
- (iv). Seek agreement between all Member States to ensure that:
 - (a) All riot control, prisoner transport and extraction technology which is in use or proposed for use in all prisons, (whether state or privately run), should be subject to prior approval by the competent member authorities on the basis of independent research;

(b) Automated systems of indiscriminate punishment such as built in baton round firing mechanisms. should be prohibited.

(c). The use of electroshock restraining devices or other remote control punishment devices including shock- shields should be immediately suspended in any private or public prison in the European Union, until and unless independent medical evidence

can clearly demonstrate that their use will not contribute to deaths in custody, torture or other cruel, inhuman or degrading treatment or punishment.

(v) The European Parliament should be requested to establish a rigorous independent and impartial inquiry into the use of stun belts, stunguns and shields, and all other types and variants of electroshock weapons in Member States, to assess their medical and other effects in terms of international human rights standards regulating the treatment of prisoners and the use of force; the inquiry should examine all known cases of deaths or injury resulting from the use of these instruments, and the results of the inquiry should be published without delay

(vi). Prohibit the use of kill fencing and lethal area denial systems in any prison whether private or public, within the European Union.

7. INTERROGATION, TORTURE TECHNIQUES & TECHNOLOGIES

Millennia of research and development have been expended in devising ever more cruel and inhumane means of extracting obedience and information from reluctant victims or achieving excruciatingly painful and long-drawn-out deaths for those who would question or challenge the prevalent status quo. What has changed in more recent times is (i) the increasing requirement for speed in breaking down prisoners' resistance; (ii) the adoption of sophisticated methods based on a scientific approach and (iii) a need for invisible torture which leaves no or few marks which might be used by organisations like Amnesty International to label a particular government, a torturing state.¹⁰³ According to Amnesty, there is also an increasing trend for torture and ill treatment to directed at common criminal suspects and social 'underdogs' such as immigrants and members of racial minorities (Forrest, 1996). Today, the phenomena of torture has grown to a worldwide epidemic. A report by the Redress Trust in 1995, found that 151 countries were involved in torture, inhuman or degrading treatment (Fig. 38), despite the fact that 106 states have ratified, acceded to or signed the Convention Against Torture.¹⁰⁴

The advent of modern torture technique can be traced back to the Russian NKVD, which used sensory deprivation and multiple levels of brutality to induce stress before 'conveyor' style questioning by relays of interrogators for days on end, thereby industrialising state terror. These approaches had the dual requirement of extracting information and breaking down personality in order to elicit public confessions as the era of the 'show trial' opened up.¹⁰⁵ There is a continuum between such coerced confessions and torture.¹⁰⁶

These techniques can themselves be regarded as part of an evolving technology which can be further researched and developed before being transferred elsewhere. Again, like all the technology of political control, torture technology has three components, hardware, software and liveware (the human elements), which are all woven together to form manipulative programmes of socio-political control. The hardware can include both modern and medieval prisoner restraining, disabling and repressive technologies, for example leg shackles, thumbcuffs, and suspension equipment, which despite being prohibited by Rule 33 of the United Nations Standard Minimum Rules For the Treatment of Prisoners (United Nations, 1955),¹⁰⁷ are still being manufactured (Fig. 39 & Fig. 40);¹⁰⁸ it also encompasses blunt trauma-inducing drugs (e.g. Aminazin, apomorphine, curare, suxamethonium, haloperidol, insulin, sulfazin, triftazin, tizertsin, sanapax, etaperazin, phrenolong, trisedil, mazjeptil, seduksin and motiden-depo (Plate and Darvi, 1981). After World War II, the USA, for example, undertook considerable research on the use of drugs for obtaining intelligence from interrogees independent from their volition, for example, project Chatter.¹⁰⁹ This research was expanded during the Korean War and included laboratory experiments on animals and

humans using Anabasis aphylla, scoplamin and mescaline in order to determine their speech inducing qualities. Overseas experiments were conducted as part of the project."¹¹⁰ The CIA later expanded this work in what became known as Projects Bluebird and Artichoke. A whole series of projects were then initiated under Projects MKDELTA and MKULTRA which were concerned with "the research and development of chemical, biological and radiological materials capable for employment in clandestine operations to control human behaviour."¹¹¹ Much of the CIA work on behaviour modification was later adapted towards less-lethal disabling chemicals.¹¹² More recently, Spain has been accused of using vagrants to test the use of anaesthetic drugs to make it easier for the security forces to kidnap guerillas of the Basque separatist organisation ETA.¹¹³

7.1 Torture Hardware

Other torture hardware includes electroshock weapons, electrically heated hot tables, whips, iron-chain filled rubber hoses, cat-o'-nine-tails, clubs, canes, specially designed torture devices and interrogation rooms using white noise (Fig. 41) (Sweeney 1991a and 1991b) and stroboscopic UV light (*New Scientist*, 1973). Much of this equipment is home made but some of the newer technologies are purpose built and may be used by successive law enforcement agencies after one torturing regime is replaced by another. For example, the 'Apollo machine' which was devised by SAVAK, the Shah's secret police in Iran (it delivered an electric shock to sensitive parts of the body, while a steel helmet covered prisoners' heads to amplify their screams), was also used by the succeeding regime's religious police. (Mather,1982)

Helen Bamber, Director of the British Medical Foundation for the Treatment of the Victims of Torture, has described electroshock batons as 'the most universal modern tool of the torturers'. (Gregory, 1995) Recent surveys of torture victims have confirmed that after systematic beating, electroshock is one of the most common factors (London, 1993); (Rasmussen, 1990). If one looks at the country reports of Amnesty International, electroshock torture is the Esperanto of the most repressive states. Many examples of its use have been reported including Austria,¹¹⁴ Greece (Council of Europe, 1994); China (Amnesty International 1992b), Ballantyne, 1992, 1995); and Saudi Arabia (Amnesty International, 1994). Amnesty International has just published a survey of fifty countries where electric shock torture and ill treatment has been recorded since 1990.¹¹⁵

According to the manufacturers, the new pulsed variants of electroshock weapon were developed in the 1980's on the basis of biomedical research. They come in several variants including hand held prods and batons, (Fig. 42) electrified riot shields (Fig. 43) and electrified dart systems like the Taser (Fig. 44.). Electroshock weapons work on the induction coil principle. They are battery powered devices which step up the voltage several thousand fold to produce a high voltage low amperage shock that affects the victim's muscle control. As well as severe pain and a temporary paralysis, such weapons also achieve a psychological effect because of the dancing display of crackling blue lightning which traverses the electrodes of both shields and prods.

An independent survey by the UK Forensic Science Service (FSS) (commissioned by the British Home Office), examined the possible hazardous effects of a range of different electroshock devices on the human body (Robinson, et al., 1990). The FSS study reported that receiving a typical discharge from an electroshock prod up to half a second startles and repels the victim; one to two seconds and the victim loses the ability to stand up; three to five seconds and loss of skeletal muscle control is total and immobilization occurs. The effect can last for between five and fifteen minutes. The FSS study also reported that modern pulsed electroshock weapons are more powerful than the old fashioned cattle prods by nearly two

orders of magnitude.

Portable electrified riot shields have been manufactured since the mid-1980's for prisoner capture and control. They comprise a transparent polycarbonate plate through which metal strips are interlaced. A button activated induction coil in the handle sends 40,000 - 100,000 volts arcing across the metal strips, accompanied by intermittent indigo flashing sparks and an intimidating crackle as the air between the electrodes is ionized. They work by charging up and then instantly discharging a capacitor, to produce a chain of high impulse shocks. A sales video shows how the victim can be instantaneously thrown to the ground on impact, completely incapacitated.

Manufacturers' claims that these products are "safe" are open to interpretation. Deaths have been reported from both Tasers¹¹⁶ and from shock shields.¹¹⁷ One of the key experts used by manufacturers of electroshock weapons to justify claims of the generic safety of these devices has refuted such an interpretation.¹¹⁸ There is also the need to take into account the political context in which many of these weapons are used since push button torture may be just one methodology applied as part of an entire spectrum of abuse.

7.2 Torture Software

Apart from such hardware, there are also numerous standard operating procedures which form the 'software' component of torture. Examples of training supplied to authoritarian regimes include the low intensity conflict training used to capture, stress and 'soften up' dissidents (Watson 1980), advisory support and technical assistance, including teaching of scientific methods of 'deep interrogation' procedures and the more brutal forms of human destruction.

Research and development in modern torture techniques and technologies has focused upon methods which cause suffering and intimidation without leaving much in the way of embarrassing long-term visible evidence of brutality. However, researchers in torture rehabilitation are gradually evolving more sophisticated methods for detecting and verifying the use of torture (Karlsmark, et al., 1988; Rasmussen and Sklyv, 1993).

A vast range of torture techniques have been evolved.¹¹⁹ The names of these techniques signify how systematized this behaviour has become. Some torturing states evolve their own lexicon of systematized abuse. For example, in China there are dian ji (electrical assault), gui bian (down on knees whipping), jieju (chains and fetters), shouzhikao (finger cuffs), zhiliaio (rod fetters), menbanliao (shackleboard) (Figs. 39, 40, & 45.) and so on, (Human Rights Watch, 1992; Amnesty International, 1992b).¹²⁰ A similar set of routinized torture techniques emerged in Latin America in the 1970's. (Figs. 46, 47 & 48).

The flow of modern repressive 'technique' includes expertise in courses on low intensity conflict management in operations deemed to be 'counter terror' or operations other than war. Some of these approaches are formally coded.¹²¹ In January 1997, for example, a CIA 'Human Resource Exploitation Training Manual' was released in response to a FOIA request and detailed torture methods against suspected subversives during the 1980's refuting claims by the agency that no such methods were taught there.¹²²

Intense interrogation methodologies border on torture, particularly when they incorporate scientific approaches based on psycho-pharmacology or sensory deprivation, or involve levels of physical terror and softening-up processes of intimidation which sap the will of the prisoner to resist. What has evolved from this quest for ever more powerful techniques to break the

human spirit is a classical form of operant conditioning designed to teach the target psyche debilitation, dependence and dread (Biderman & Zimmer, 1965). (See Chart 10). Just occasionally, hard evidence of such research comes to light (Anon, 1993). In the case of Northern Ireland, BSSRS member Tim Shallice was probably the first to identify a scientific methodology at work in the pre-interrogation treatments (See Chart 11) used on detainees in the first wave of internment introduced into Northern Ireland in 1971. Shallice identified the real nature of the special treatment dished out to a selected few - associating it with sensory deprivation techniques (Shallice, 1973) (See Chart 12), and an experiment where those targeted were "guinea pigs" according to McGuffin (1974).

In Northern Ireland, the findings of pioneer sensory isolation pioneers such as Hebb, 1958; Smith & Lensky, 1959, Lilly, 1955 and Zubek and Solomon, et al. 1959, were modified by the British Army to create a new process of coercive and debilitating torture which left no marks.¹²³ Hebb found that after leaving such experiments, volunteers were disorientated and very suggestible to propaganda. We can conclude that in the far more disturbing conditions of arrest, the anxiety created by these techniques would confuse the victims' thought processes so much that they would fall easy prey to the bad man-good man act. The works of Lilly, Smith and Lensky showed that among the after-effects of sensory deprivation experiences were loss of identification, feelings of unreality and disorientation. Fear and panic were found to be common in anyone remaining in an environment of perceptual deprivation for more than two hours. As was apparent from the psychological research, anything over 24 hours 'at the wall' would be sufficient to induce psychotic breakdown. It has now been established that the long term effects of such experiences are traumatic neuroses comparable to shell shock or in modern parlance, it rapidly induced post traumatic stress syndrome.¹²⁴

We know that such approaches are designed to intimidate the wider population rather than just to extract specific information from any one individual; they are heuristic and can be taught to others (See McHardy, 1976 and the *Times*, 1980). The parallels of the British techniques with those of the CIA Human Resource Training Manual discussed above are striking. The CIA manual discusses using intense fear, deep exhaustion, solitary confinement, unbearable anxiety, standing to attention for long periods of time, sleep and food deprivation, stripping suspects naked and keeping them blindfolded in windowless, dark interrogation rooms with no toilet. Only in January of 1997, did the CIA formally renounce and prohibit its agents from using these torture manuals.¹²⁵ In the meantime, variants of this methodology have appeared elsewhere, e.g., by the Palestinian Authority which was set up in May 1994.¹²⁶

Some interrogation techniques are intended to kill. For example the use of a heavy wooden roller to crush the limbs of detainees in Kashmir. This practice results in the release of myoglobin, heme and other related muscle proteins and toxins (Rhabdomyolysis) which leads to acute renal failure. In the absence of kidney dialysis, the results are fatal.¹²⁷ Other regimes have resorted to delayed poisoning of their dissidents who die after their release from incarceration, e.g. by the use of Thallium which was deployed against Kurds in Iraq and most recently (according to the ongoing Truth Commission), by South Africa's Apartheid regime.¹²⁸

7.3 Torture Liveware

In any bureaucracy of repression, there are personnel schooled in the ideological attitudes necessary to keep such systems in operation (Fig.49). In some cases this schooling takes place literally, for example at the infamous School of the Americas based at Fort Benning in

General Method	Effects (Purposes)	Variants

1. Isolation.	Deprives victim of all social support of his ability to resist. Develops and intense concern with self. Makes victim dependent upon interrogator.	Complete solitary confinement. Complete isolations. Semi isolation. Group isolation.
2. Monopolisation of Perception.	Fixes attention upon immediate predicament. Fosters introspection. Eliminates stimuli competing with those controlled by captor. Frustrates all action not consistent with compliance.	Physical isolation. Darkness or bright light. Barren environment. Restricted movement. Monotonous food.
3. Induced Debility Exhaustion	Weakens mental and physical ability to resist.	Semi-starvation. Exposure. Exploitation of wounds. Induced illness. Sleep deprivation. Prolonged constraint. Prolonged interrogation. Forced writing. Over-exertion.
4. Threats.	Cultivates anxiety and despair.	Threats of death. Threats of non return. Threats of endless interrogation and isolation. Threats against family. Vague threats. mysterious changes of treatment.
5. Occasional indulgences.	Provides positive motivation for compliance. Hinders adjustment to deprivation.	Occasional favors. Fluctuations of interrogators's attitudes. Promises. Rewards for partial compliance. Tantalising.
6. Demonstrating 'Omnipotence'.	Suggests futility of resistance.	Confrontation. Pretending co-operation taken for granted. Demonstrating complete control over victim's fate.
7. Degradation.	Makes cost of resistance more damaging to self esteem than capitulation. Reduces prisoner to 'animal level' concerns.	Personal hygiene prevented. Filthy infested surrounds. Demeaning punishments. Insults and taunts. Denial of privacy.
8. Enforcing Trivial Demands.	Develops habits of compliance.	Forced writing. Enforcement of minute rules.

Chart 10. Biderman's Chart of Coercion

CHART 11: PRE-INTERROGATION TREATMENTS USED ON DETAINEES

1. General assault with truncheons and knuckledusters. Kicks to testicles and stomach. Faces slapped, ears drummed, arms twisted, chest hair pulled. Nose, chest, mouth and throat were held. During these attacks, detainees were alternatively threatened and bribed.
2. Men were forced to run barefoot over broken glass and stones whilst being beaten .
3. Some men were dropped blindfold from helicopters hovering near the ground.
4. Alsatian dogs were used to savage some of the men.
5. Torturous exercises were imposed - up to 48 hours for some men.
6. Men were forced to stand against a wall for many hours with their legs akimbo.
7. Detainees were repeatedly awakened as soon as they fell asleep.
8. Food and drink were withheld.
9. Bags were kept over the heads of some of the prisoners for up to six days.
10. On certain occasions an electric cattle prod was used.
11. Some victims had their testicles manually compressed.
12. Others were burned with matches and candles.
13. Detainees were urinated upon.
14. Injections of amphetamine drugs were given to some of the prisoners
15. Psychological tortures were used such as: Russian roulette; firing blanks, blindfolding; the use of stockings and surgical masks by the assailants; forcing men to stare at a white perforated wall in a small cubicle.

1. Prisoners were hooded before interrogation.
2. A sound machine was used to produce a constant hiss of 'white noise'.
3. Long periods of immobilization in the 'stoika' position, i.e., being forced to lean against a wall with legs wide apart standing on the toes, with only the fingertips touching the wall. Detainees who collapsed from exhaustion were beaten back into position.
4. Little or no food or drink.
5. Prisoners were forced to wear loose overalls several sizes too big.
6. In addition these men were deprived of sleep for days on end.

EFFECTS OF THESE PROCEDURES

Although these processes were not technically the same as sensory deprivation, the purpose guiding their use was the deliberate production of related effects.

Measures 1, 2, 3 and 5 cause visual, auditory, tactile and kinaesthetic deprivation and thus mimic sensory deprivation. Measures 1, 4, and 6, deprive the brain of the sugar and oxygen necessary for normal functioning. Measures 1, 4 and 6, may also disturb normal body metabolism. Applied together in conditions of high physical and psychological stress, they could effect rapid nervous breakdown.

Georgia, otherwise known at the 'School of the Assassins' or 'La escuela del golpe' (the coup school). It has been accused of training death squads in Guatemala and Honduras, e.g. Battalion 3-16 (Walker, 1994). In 1995, the *Baltimore Sun* obtained Freedom Of Information Act documents on Battalion 3-16, (which used electroshock and rubber suffocation devices on prisoners in Honduras), that confirmed that the Unit had been trained in interrogation techniques by the CIA (*Baltimore Sun*, 11 June 1995). Last year, further manuals were released under FOIA on Project X, part of the US Foreign Intelligence Assistance Programme which reveal that until the 1980's, the US military ran an intelligence training programme in Latin America and elsewhere, that taught foreign officers to offer bounties for captured or killed insurgents, spy on non-violent political opponents, kidnap rebels' family members, blackmail unwanted informants and the use of drugs to facilitate interrogation. Project X manuals were distributed by the US Army School of Americas but their use was stopped only in 1991 when the Defense Intelligence Agency raised ethical and legal questions.¹²⁹

Thus the creation of a bureaucracy practising systematic human rights violation will often include external 'liveware', e.g., the various foreign technical advisers, counter-insurgency and low intensity conflict strategists, paramilitary, intelligence and internal security police as well as the 'white collar mercenaries' who act as key technical operators in any administrative policy of repression. This 'liveware' category includes all the people who are conditioned by fear or training to actually put into practice the software and hardware components of a particular policy of repression.¹³⁰ For the last decade, the export of such 'security' training has become a highly profitable commercial proposition (Gordon, 1987) and it is a characteristic of the trade in torture technology and expertise that it has become so intensely privatised (Klare and Arnsen, 1981). Such technologies are now entering Europe from the USA.

7.4 International Controls On The Export Of electroshock & Stun Technology

In theory, a substantial body of international human rights obligations should effectively prevent such transfers, including: the Universal Declaration of Human Rights; Article 7 of the International Covenant on Civil and Political Rights; Article 5 of the African Charter on Human and People's Rights; Article 5 of the American Convention on Human Rights; Article 3 of the European Convention for the Protection of Human Rights and Fundamental freedoms; UN Convention Against Torture; the UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials and the UN Standard Minimum Rules For the Treatment of Prisoners. Yet in January 1995, it was possible for a UK investigative reporter working for UK Channel 4 Dispatches, to obtain the enthusiastic willingness of several British companies to supply such devices, which are in fact banned under UK law (Gregory 1995).

7.5 The European Torture Trail

Until the Channel 4 Programme, 'The Torture Trail' was shown, it was not widely realized that such an extensive European electroshock manufacturing and supply base existed. Undercover TV actors were given privileged access to a secret network of companies making electroshock weapons and to come away with orders worth over £3 million (consisting of 10,000 electroshock shields and 5000 shock batons from British Aerospace (BAe) and 15,000 electroshock units from ICL Technical Plastics). But perhaps the insights this programme gave into the procurement and proliferation of electro-control technology is even more astonishing. Philip Morris, the Sales Manager for Royal Ordnance, agreed to use the Royal Ordnance's worldwide procurement network to bring the electroshock deal together, irrespective of the equipment's country of origin or its eventual destination; Ordnance would organise the whole package. Royal Ordnance's parent company, invited their clients to meet up at the secretive

Covert Operation & Procurement Exhibition (COPEX), held at Sandown Park racecourse In November 1994. A wide range of internal security was on display. Foreign invitees included delegations from China, Algeria, Bosnia-Herzegovina, Colombia, Iran, Saudi Arabia, Sri Lanka and Turkey.

The Dispatches team followed through that rendezvous with a meeting at the Royal Ordnances own offices in Lancashire, where they were shown a 40,000-volt shock baton made in Eire, together with an electronic riot shield made in Tennessee, USA, by Nova Technologies, which could immobilise 120 people without a battery change. While the deal was struck, Royal Ordnance made an extraordinary confession, that they had sold 8000 german electroshock batons as part of the Al Yamamah deal to Saudi Arabia.¹³¹

A further insight into the complicity of companies involved in this business was afforded by the programme's interview with the manager of ICL Technical Plastics in Glasgow, Frank Stott.¹³² He claimed that he used to sell shock batons to the apartheid regime in South Africa, and to Abu Dhabi for the Gulf States; and a year after the Tiananmen Square massacre, he sold electric-shock weapons to the Chinese authorities via Hong, with the UK government's blessing, and said that the trip was supported by the Department of Trade & Industry. Mr. Stott claimed that the Chinese had an ulterior motive for buying his electroshock weapons: they wanted to copy them. (China has a prodigious electroshock weapon manufacturing industry (for example, the Tianjin Bohai Radio Works manufactures 80,000 shock instruments a year - all quality controlled (Fig. 50). It is instructive to note that one of the products photographed in China for this programme, an extending electroshock probe (See Fig. 51), has been awarded a British patent (no. GB214906A).¹³³

7.6 RECOMMENDATIONS

- (i). New regulations on the nature of in-depth interrogation training should be agreed which prohibit export of such techniques to forces overseas known to be involved in gross human rights violation.
- (ii). All training of foreign military, police, security and intelligence forces in interrogation techniques, should be subject to licence, even if it is provided outside European territory .
- (iii). Restrictions on visits to European MSP related events by representatives of known torturing states should be effectively implemented.
- (iv) The Commission should be requested to achieve agreement between member States to:
 - (a) immediately prohibit the transfer of all electroshock stun weapons to any country where such weapons are likely to contribute to unlawful killings, or to torture or cruel, inhuman or degrading treatment, for example by refusing any export licence where it is proposed that electroshock weapons will be transferred to a country where persistent torture or instances of instances of electric shock torture and ill treatment have been reported;
 - b) introduce and implement new regulations on the manufacture, sale and transfer of all electroshock weapons from and into Europe, with a full report to the European Parliament's Civil Liberties committee made each year. [Special consideration should be given to controlling the whole procurement process, covering even the making of contracts of sale, (to prevent a purchase deal made in a European country being met by a supplier or subsidiary outside of the EU, in an effort to obviate extant controls)].

- (c). Ensure that the proposed regulations should cover patents and prohibit the patenting of any device whose sole use would be the violation of human rights, via torture or the creation of unnecessary suffering. The onus should be on the patent seeker to show that his patent would not lead to such outcomes.
- (v) The European Parliament should look at commissioning new work to investigate how existing legislation within member states of the EU, can be brought to bear to prosecute companies who

have been complicity in the supply of equipment used for torture as defined by the UN convention of torture. This new work should examine, in conjunction with the Directorate of Human Rights:

- (a) The extent to which such technology produced by European companies is being transferred to human rights violators and the role played by international military, police and security fairs organised both inside and outside European Borders;
- (b) The possible measures that could be set in place to monitor and track any technology transfer within this category and any potential role in this endeavour that might be played by recognised Non-Governmental Organisations.

8. REGULATION OF HORIZONTAL PROLIFERATION

The last Gulf War was in many ways an exception to the changing character of political conflict. With the end of the Cold War, the future lies increasingly in a bewildering array of separatist and counter-insurgency wars; border disputes; ethnic and religious violence; coups d'etat; national security and counter-revolutionary operations - what the military once called "low intensity conflicts" and now call "operations other than war." Civil conflicts in Somalia, Kashmir, Cambodia, Sri Lanka, Rwanda, the former Soviet Union, the former Yugoslavia, South Korea and most recently, Albania, being cases in point.

8.1 The European Trade in Repression

Many of the major arms companies also have a paramilitary/internal security operation and diversification into these markets, is increasingly taking place. Weapons specifically designed to quell dissent are incredibly cheap compared to their major warfare counterparts like ships, aircraft and tanks, and have the market advantage of being used almost continuously against the enemy within. The move into a post-Cold War world has been accompanied by a change in the nature of warfare. Military scientists are on the threshold of dramatic weapons and technologies destined to transform internal political control. The clients most enthusiastically seeking this technology are the torturing states outlined in Figure 38. In those contexts we can accurately describe the technology of political control, as technology of repression and identify exports of these commodities as a repression trade.¹³⁴

NGO's like Amnesty International, have begun to catalogue the trade in specialised military, security and police technologies, to measure its impact on industrialising repression, globalising conflict, undermining democracy and strengthening the security forces of torturing states to create a new generation of political prisoners, extra-judicial killings and 'disappearances'. (Amnesty International, 1996). The key issue for Members of the European Parliament is how they will deal with the human and political fall out of what is a systemic process of exporting repression: either importing a tidal wave of dispossessed refugees, or keeping them in desperation at the borders of Europe. In the longer term, it is important to

examine the role and function of specific technologies in crushing dissent and to analyze the trade in repression and its correlates in terms of human displacement - huge numbers of nonpersons which some country must import. Such refugees will themselves become targets for further political control and exclusion in the newly moulded Fortress Europe, now well on the way to putting whole societies under surveillance, in an effort to deny them permanent residence. The export of the technology of political control and the flow of refugees must be understood as part of the same process. There is an urgent need for greater transparency and democratic control of such exports and a clearer recognition of their frequent linkage with gross human rights violations in their recipient states.

As discussed above, this arsenal of control includes area denial technologies such as razor wire to seal off selected zones, surveillance, telephone and fax tapping networks used to track dissidents; computerised communications, command and control systems linked to data banks and remote terminals(in security vehicles, border checkpoints etc.); automatic vehicle recognition and tracking equipment; riot technology including whips, sawn-off shotguns, incapacitating and less-lethal weapons, such as water cannon, stun grenades, multi-shot riot guns, plastic bullets, chemical irritants, injector weapons, sound, light and electromagnetic zapping technologies; pre-fragmented exploding ammunition, dum-dum bullets, stroboscopic cameras which can photograph every participant in a demonstration in seconds; helicopter mounted crowd monitoring equipment; public order vehicles; identity recognition systems; silenced sub-machine guns and assassination rifles; precision laser and night target acquisition aids; prison and restraining technologies as well as blunt trauma inducing drugs and specially designed implements of torture.

To many of the suppliers attending the specialised paramilitary, police and security fairs, the answer to the question would you sell your equipment to countries on the Redress Trust's map of the torturing states (Fig. 38), would be a resounding yes please! In fact MSP technologies are aggressively marketed at a series of special fairs and exhibitions which take place all over the world (See Appendix 1.) Potential customers get an opportunity to sample the latest wares. (Fig. 52) Weapons are sometimes on display that are banned for use in many European states (Fig. 53) and some clue is afforded to the dynamics behind proliferation and conversion of these technologies as European Fairs organisers target other continents such as Latin America. (Fig. 54). Equipment on display at such fairs one month sometimes finds a ready application on the streets soon after. (Fig. 55) At Turkey's IDEF exhibition, European gas back packs were on display (Fig. 56) as well as a flypast by the UK flying team the Red Arrows, British licensed production internal security vehicles were exhibited alongside Russian helicopter attack gunships. (Fig. 57)

In the wake of growing evidence that MSP transfers from the European Union have contributed to the deliberate and indiscriminate killing of civilians, disappearances, torture, and ill treatment on a mass scale, there is widespread public disquiet at the apparent inaction of the governments of the European Union to address this concern.¹³⁵ A few examples examining the MSP transfers to just two human rights violating countries are sufficient to illustrate the nature of this trade, i.e., European companies based in:- Austria¹³⁶; Belgium¹³⁷; Denmark¹³⁸; Finland¹³⁹; France¹⁴⁰; Germany¹⁴¹; Greece¹⁴²; Italy¹⁴³; Netherlands¹⁴⁴; Sweden¹⁴⁵; & the UK¹⁴⁶; exporting MSP supplies to Indonesia; or European companies based in Belgium¹⁴⁷; France¹⁴⁸; Germany¹⁴⁹; Italy¹⁵⁰; Netherlands¹⁵¹; and the UK¹⁵²; exporting MSP goods to Turkey.

Similarly, many companies in the UK; Belgium; Switzerland; Germany; Austria; Sweden and Finland are arranging licensed production through joint ventures with companies in third countries. For example: Land Rover¹⁵³; GKN Defence¹⁵⁴(UK); FN Nouvelle Herstal¹⁵⁵(Belgium);

Heckler & Koch¹⁵⁶(Germany); Steyr-Mannlicher¹⁵⁷(Austria); FFV Ordnance¹⁵⁸(Sweden); PT Pindad¹⁵⁹(Indonesia) and Pilatus¹⁶⁰(Switzerland). These arrangements have the effect of circumventing European or Member State strategic export controls.

8.2 European Electroshock Weapon Exports

Pierre Sane, Secretary General of Amnesty International, speaking on 'The Torture Trail' called for all governments to investigate and to put in place new mechanisms, such as public disclosure in advance, to halt the trade in electroshock equipment which use it to torture. In response to the disclosures on the programme the European Parliament made a resolution on the 19 January 1995, which called on the Commission to bring forward proposals to incorporate these technologies within the scope of the arms export controls and ensure greater transparency in the export of all military, security and police technologies to prevent the hypocrisy of governments who themselves breach their own export bans.(Doc EN\RE\264264474)¹⁶¹

The ineffectiveness of any action subsequently taken can be judged by the fact that the same team of TV researchers returned to the torture trail in 1996 and found it was very much business as usual. Despite the furor created by the first Dispatches Torture Trail programme, on their second expedition 'Back On The Torture Trail' the undercover team found that of the eight British companies contacted only two were unwilling to quote for a new order of 300 electroshock batons. The most enthusiastic companies featured in this programme were not put off by the fact that the intended destination was Zaire. None of the companies featured bothered to check out the fake company's bona fides. In fact they were faxing their quotations to a public fax bureau machine at a railway station in Switzerland. Some of these companies said they could get around legal restrictions by transshipping them so that they would not enter the UK and seemed well rehearsed in getting around European restrictions. For example, SDMS's chairman said that they and their South African associates had previously sold electroshock products to Libya, Nigeria, Sierra Leone, Angola, Mexico, Peru, Burma & Indonesia. Another company offered to avoid export regulation by selling Dispatches undercover research team, 300 shock batons made by the Macoisa company of Mexico City at a cost of \$25,000. Macoisa's boss, Alfredo Aguilla, told the undercover team he could export the 40,000 volt batons on behalf of his British client anywhere they chose. Aguilla told the programme's producer that bad human rights record were no problem.¹⁶²

'Back to the Torture Trail' marked a turning point in human rights organisations understanding of the implications of loopholes in existing strategic exports controls legislation. Speaking in the programme, the Secretary Of Amnesty International, Pierre Sane said: "It is not just good enough to prohibit the manufacture of this equipment in the UK, or the sale or possession of this equipment in the UK. Legislation should also prohibit companies from engaging in offshore sale of this equipment (Gregory, 1996).

8.3 Export Of Implements of Torture From The U.S.A.

Sadly, it no longer comes as a surprise to discover that other leading Western Liberal Democracies have been colluding with the torture trade. Yet during the 1980's some clues were afforded by reports that US companies such as Technipol were freely advertising thumbcuffs, leg irons and shackles (Klare & Amson, 1981). The Danish Medical Group of Amnesty found that electronic prods manufactured by the US Shok-Baton Company had been used in the violation of human rights,¹⁶³ and a repentant Uruguayan torturer confessed that he had used US-made electroshock batons.(Cooper, 1984).¹⁶⁴ In fact scores of US companies either manufacture or supply electroshock devices, thumbcuffs and leg irons.¹⁶⁵

Recipient no./value of licenses for cmdty. OA82C ¹ for cmdty. OA84C ¹	no./value of licenses for cmdty. OA82C ¹	no./value of licenses for cmdty. OA84C ¹	Recipient no./value of licenses for cmdty. OA82C ¹
ALBANIA		2/\$1,240	LIECHTENSTEIN
1/\$5,250			
ALGERIA	1/\$35	2/\$370	LITHUANIA
7/\$453,593			
ANDORRA	1/\$37,500	7/\$704,552	MACAO
4/\$3,220			3/\$4,619
ARGENTINA	26/\$7,367,559	104/\$10,041,640	MALAYSIA
16/\$150,519			3/\$660,123
AUSTRALIA	(²)	5/\$91,408	MALTA
1/\$1,778			
AUSTRIA	11/\$448,068	78/\$3,996,467	MEXICO
34/\$3,157,455			33/\$1,755,366
BAHAMAS		3/\$9,978	MONTSERRAT
1/\$1,710			
BAHRAIN	1/\$1,527		MOZAMBIQUE
1/\$2,435			
BANGLADESH	3/\$90	6/\$15,704	NEPAL
2/\$579			
BARBADOS		8/\$13,224	THE NETHERLANDS
1/\$3,232			(²)
BELGIUM	(²)	4/\$1,312,394	NETH. ANTILLES
8/\$35,228			1/\$3,969
BELIZE	1/\$5,037	8/\$18,824	NEW CALEDONIA
11/\$30,021			
BENIN	1/\$1,371		NICARACUA
14/\$591,478			
BERMUDA		1/\$3,112	NIGERIA
6/\$89,625			3/\$2,428,710
BOLIVIA	9/\$655,845	25/\$1,084,933	NORWAY
7/\$76,967			1/\$306
BOTSWANA		3/\$7,255	OMAN
1/\$467			3/\$7,449
BRAZIL		48/\$252,334	PAKISTAN
37/\$7,069,539			2/\$2,759,234
BULGARIA		10/\$566,428	PANAMA
58/\$1,566,633			11/\$111,794
CHILE	20/\$260,908	40/\$1,208,813	PAPUA NEW GUINEA
10/\$64,417			5/\$33,313
CHINA		1/\$32,250	PARAGUAY
57/\$2,875,177			3/\$66,000
COLOMBIA	2/\$65,500	18/\$949,543	PERU
27/\$2,300,885			1/\$12,881
COSTA RICA	12/\$114,624	27/\$488,122	PHILIPPINES
41/\$3,865,650			1/\$37,500
CYPRUS	2/\$140	4/\$18,749	POLAND
7/\$550,404			2/\$659,332
CZECH REPUBLIC	2/\$47,090	7/\$68,025	QATAR
4/\$167,875			1/\$49
DOMINICA		5/\$40,489	ROMANIA
6/\$130,128			
DOM. REPUBLIC	6/\$144,740	90/\$1,070,584	RUSSIA
39/\$7,349,121			
ECUADOR	11/\$315,016	63/\$1,111,575	RWANDA
1/\$404			
EGYPT	4/\$1,190	4/\$8,041	SAUDI ARABIA
14/\$5,478,476			14/\$5,060,804
EL SALVADOR		66/\$707,171	SEYCHELLES
			1/\$79

ESTONIA		7/\$1,704,997	SINGAPORE	7/\$5,589
25/\$433,443				
FINLAND	5/\$22,714	52/\$2,895,730	SLOVAKIA	
1/\$270,000				
FRANCE	(²)	4/\$88,237	SLOVENIA	1/\$8,934
1/\$125,000				
FRENCH GUIANA		2/\$120,000	SOUTH AFRICA	
7/\$837,991				
THE GAMBIA		2/\$2,100	SPAIN	(²)
1/\$18,379				
GEORGIA		1/\$210,500	SRI LANKA	1/\$9,663
GERMANY	(²)	3/\$42,925	SURINAM	
7/\$32,589				
GHANA	2/\$22,200	12/\$1,174,602	SWEDEN	4/\$8,911
77/\$9,419,883				
GRENADA		1/\$726	SWITZERLAND	13/\$444,243
93/\$4,441,647				
GUATEMALA	6/\$170,771	55/\$2,531,484	TAIWAN	
1/\$6,990				
GUINEA	1/\$11,500	2/\$195,201	TANZANIA	
2/\$2,005				
GUYANA		9/\$9,750	THAILAND	3/\$396,714
135/\$6,134,985				
HONDURAS		4/\$121,588	TRINIDAD & TOBAGO	5/\$17,568
21/\$29,651				
HONG KONG	7/\$49,646	49/\$1,265,271	TUNISIA	4/\$39,043
HUNGARY	3/\$358,500	12/\$1,159,371	TURKEY	(²)
2/\$154,000				
ICELAND	(²)	1/\$540	UAE	2/\$21,062
14/\$531,261				
INDONESIA	3/\$7,076	4/\$36,201	UGANDA	
1/\$1,293				
IRAN		1/\$219	UKRAINE	
5/\$2,253,875				
IRELAND		15/\$214,821	UNITED KINGDOM	(²)
5/\$50,387				
ISRAEL	21/\$160,189	41/\$3,689,794	URUGUAY	3/\$48,443
48/\$1,449,694				
ITALY	(²)	2/\$105,500	VENEZUELA	51/\$1,609,012
220/\$9,691,215				
JAMAICA		11/\$110,151	ZAMBIA	
1/\$3,668				
JORDAN	3/\$12,400	9/\$329,300	ZIMBABWE	
8/\$20,988				
KENYA		1/\$2,988		

KOREA (SOUTH)	9/\$362,666	10/\$592,982	TOTALS	365/\$27,638,035
2083/\$117,270,285				

KUWAIT 9/\$785,283
KAZAKHSTAN 24/\$3,831,270
commodity categories see p. 1.
LATVIA 2/\$304,082
NATO members do not require
LEBANON 1/\$28,140
0A82C items.

Notes: (1) For explanation of the
(2) Australia, Japan, New Zealand and
validated licences to import commodity

personal correspondence,

Source: Department of Commerce,
21 April 1995 (available upon request).

Back in 1984, it emerged that US export regulations even had special customs codes for such items as 'specially designed instruments of torture' (US Department of Commerce, 1984). There was even some suggestion (in para 376.14) that the US government could distance itself from human rights violations through 'judicious use of export controls'. (US Department of Commerce, 1983). Concerned by the possible scale of the trade in such technologies and the possibility they could be exported on via Europe which has much laxer arms export controls and transparency than the US, the UK human rights organisation, the Omega Foundation, sought comprehensive US export trade statistics. A Freedom of Information request was put down on Omega's behalf by the Federation of American Scientists (FAS).

What emerged was that the new category codes in the export administration regulations have if anything been extended to include, *inter alia*:

- * 'saps, thumbcuffs, thumbscrews, leg irons, shackles and handcuffs, specially designed implements of torture, straight jackets etc. (OA82C)' and
- * 'stun guns, shock batons, electric cattle prods and other immobilization guns (OA84C)' (United States Department of Commerce 1994).

The statistics of the export licences of such repressive equipment show that from September 1991 to December 1993, the US Commerce Department approved over 350 export licences under commodity category OA82C. The further category OA84C aggregates together data on electric shock batons with shotguns and shells. Over 2000 licences were granted from September 1991 to December 1993. (See Chart 13) As feared, the list names many EU Member States including Austria, Belgium, France, Germany; Iceland, Ireland, Italy, The Netherlands, Spain and the United Kingdom. While the licenses represent a snapshot of permissions for the sale to go forward, they do not indicate actual delivery, nor are they comprehensive since countries in NATO, such as Turkey, do not require a licence (*Arms Sales Monitor*, 1995). FAS has pointed out that aggregating data in this way, by lumping noncontroversial data on equipment such as those on helmets with controversial data on equipment often used for torture such as shock batons, effectively frustrates public oversight. Given the nature of some of the recipients - Saudi Arabia for example, where Amnesty has already recorded instances of Iraqis being tortured with electric shock batons (Amnesty International, 1994), many observers feared the worst.¹⁶⁶ Pressure to desegregate such categories in the US eventually proved successful but there remains a lack of effective checking and some items which should be in the amended category, are still slipping through.¹⁶⁷

8. 4 Controlling The Spread of Push-Button Torture

Alarmed by new information emerging on the extent of the worldwide trade in torture technologies, the International Secretariat of Amnesty launched a worldwide campaign against 'Arming the Torturers, Electroschock Torture and the Spread of Stun Technology', as this report was being finalized in March 1997 (Amnesty International 1997). Amnesty's report identified over 100 companies willing to supply modern stun weapons since 1990¹⁶⁸, in twenty countries, including members of the EU, (Belgium¹⁶⁹, France¹⁷⁰, Germany¹⁷¹, Luxembourg¹⁷², Netherlands¹⁷³, Spain¹⁷⁴ and the United Kingdom¹⁷⁵). The proposals made by Amnesty International to halt this trade in push-button torture, have been incorporated into the policy recommendations below.

8. RECOMMENDATIONS

The Commission should be requested to achieve agreement between Member States to undertake changes to their respective strategic export controls so that:

- (i) All proposed transfers of security or police equipment are publicly disclosed in advance, especially electroshock weapons, (including those arranged on European territory where the equipment concerned remains outside Member States' borders) so that the human rights situation in the intended receiving country can be taken into consideration before any such transfers are allowed.;
- (ii) Reports are issued on the human rights situation in receiving countries;
- (iii) Member States Parliaments are notified of all information necessary to enable them to exercise proper control over the implementation of the law, including information on human rights from non-governmental organisations;
- (iv) Member States monitor and regulate all exhibitions promoting the sale of security equipment and technology to ensure that any proposed transfers such as electroshock weapons, will not contribute to unlawful killings, or to torture or cruel, inhuman or degrading treatment or punishment;

(v) All military, police and security exhibitions are required to publish guest lists, names of exhibitors, products and services on display and no visas or invitations should be issued to governments or representatives of security forces, known to carry out human rights violations.

(vi) The sender should take legal responsibility for the stated use of military, security and police transfers in practice, for example making future contracts dependent on adherence to human rights criteria and that such criteria are central to the regulatory process.

(vii) The European Parliament should explore the possibilities of using the Joint Action procedures used to establish the EU regulations on the export of Dual Use equipment to draw up common lists of (a) proscribed military, security, police (MSP) technology and training, the sole or primary use of which is to contribute to human rights violations; (b) sensitive MSP technologies which have been shown in the past to be used to commit human rights violations; and (c) military, security and police units and forces which have been sufficiently responsible for human rights violations and to whom sensitive goods and services should not be supplied.

(viii) The European Parliament should commission new research into the extent to which European companies are complicity in supplying MSP equipment used to commit human rights violations and the prospects of instituting independent measures of monitoring the level and extent of such sales whilst tracking their subsequent human rights impacts and consequences.

9. CONCLUSIONS

With proper accountability and regulation, some of the technologies discussed above do have a legitimate law enforcement function; without such democratic controls they provide powerful tools of oppression. The unchecked vertical and horizontal proliferation of the technologies of political control described in this report, present a powerful threat to civil liberties in Europe in the *as written* century, particularly if the political context of freedoms of expression changes in the next century, as many times as it has in the last. Whilst there are sufficient real abuses of power by the police, internal security and intelligence agencies to keep the conspiracy theorists busy for the foreseeable future, technological and decision drift will have an equal if not more powerful role to play if current trends develop unchecked. The real threat to civil liberties and human rights in the future, is as likely to arise from an incremental erosion of civil liberties, than it is from some conscious plan. The rate of such erosion is speeding up and is rapidly being fuelled by the pace of innovation in the technology of political control. An arsenal of new weapons and technologies of political control has already been developed or lies waiting on the horizon for a suitable opportunity to find useful work.

As the globalisation of political control technologies increases, Members of the European Parliament have a right and a responsibility to challenge the costs, as well as the alleged benefits of so called advances in law enforcement. This report has sought to highlight some of the areas which are leading to the most undesirable social and political consequences (such as advances in so called 'non-lethal weapons' or the emergence of a vast international machinery of communications supervision) and where a return to a fuller form of democratic control is seen as desirable. The social and political implications of other innovations mentioned above such as human recognition and tracking technologies, are under explored and further work should be undertaken. In the meantime, urgent action is required by other Directorates, to ensure European technology of political control does not get into the hands of tyrannical and repressive regimes, as it so often does today. Members of the Committee are requested to consider the policy recommendations provided in the report as just a first step to help bring the technology of political control, back under democratic control.

NOTES & REFERENCES

[JYA Note: A few of the citations lack the year; shown as written.]

1. For a detailed analysis of NARMIC & NACLA's work in this area, see for example. *Police on the Home Front* (NARMIC, 1971). Also see *Iron Fist & Velvet Glove: An Analysis of the US Police, 1976* Published by the Center for Research on Criminal Justice, Berkley.

2. Based on a definition from Winner, 1974.

3. For a discussion of the perspective in terms of the role technology plays in the future of policing, see (Nogala, D. 1995).

4. A general reader interested in the overall state of the art should consult annual publications such as Jane's Security & Co-In (Counter-Insurgency) Catalog [provides a wide range of product information]; British Defence Equipment Catalogue [produced in association with UK MoD]; International Defence Equipment Catalogue [very detailed catalogue leaning towards the military and paramilitary end of the spectrum produced by Monch publications, Germany]; International Defence Directory [very useful index of companies and products, e.g., listing batons-electronic. Also provides some useful detail on companies representatives within other countries]; or periodicals which deal with certain market sectors such as Intersec, Jane's Defence Review, Jane's Defence Weekly; CCTV Today; Police & Government Security Technology; Cross Border Control - International, Military Technology; or for a more radical updating of news, the CILIP report of Berlin, the Statewatch publication from London or the Fortress Europe newsletter from Sweden. The Exhibition catalogues of the fairs listed here as Appendix 1, also provide a revealing insight into what is being traded, by who to whom.

5. For a critical evaluation of the utility of the various commercial and public domain information sources on military, security and police technologies, see Abel, 1997.

6. Whilst it remains impossible to put an exact figure on the global worth of sales of the technology of political control, most commentators agree that it is rapidly growing . This trend accelerated at the end of the Cold War when many military companies diversified their product range into the civilian internal security market. For example, one estimate suggested that the US market for 'low intensity conflict merchandise' would increase from \$1 billion in fiscal 1991 to \$1.5 billion in fiscal 1996. This was contrasted sharply with a projected 25% decrease in US Department of Defense (DoD) expenditure on conventional weaponry during the same period.(Frost & Sullivan International, 1991)

7. A process which reached an apotheosis with the introduction of robot policemen patrols in the United States. (Davie, 1984). This work has continued into the Nineties with the evolution of 'insectoids' for guard duty functions. (see Section 3. on area-denial)

8. An explanation of the role and function of Eurodac is provided in the consultants final report to the Council of The European Union general Secretariat, 'The Eurodac System For Recording Asylum Seekers' Fingerprints', (O/Ref.:(EUD2/JPB/1&C) Paris, October 11, 1995. For a discussion of the implications of Eurodac, see Fortress Europe, circular letter No. 46, Sweden, August 1996. A more detailed explanation of the concept of a technopolitics of exclusion within the context of an evolving Fortress Europe, is presented in (Abel, et. al. 1991).

9. Klare garnered information on a few score companies (Klare & Arnson, 1981); Wright managed a few hundred (Wright, 1987); Whereas the Omega Foundation now has details on over 5,000 companies.

10. Statewatch, October, 1996, pp. 6-7.

11. Einsatz der Stadtpolizei bei den Auseinandersetzungen vom 1 Mai 1996. bericht der Geschäftsprüfungskommission an den Gemeinderat der Stadt Zurich, Zurich, February 1997, p. 190.

12. For example the CLASSIC (Covert Local Area Sensor System) system built by Racal UK, which is used detect illegal immigrants attempting to enter Hong Kong.

13. The snake of fire was the electrified border fence which guarded South Africa's border with Mozambique and Zimbabwe. According to the South African Bureau for Refugees, it killed more refugees in three years than the Berlin Wall killed in its entire history. (New Scientist. 27 Jan 1990)

14. E.g., Morpho systemes in France; Siemens Automatisierungstechnik in Germany; Security Systems International in Switzerland; ICL DESC, Ferranti and Unysis in the U.K.

15. The Guardian, May 3, 1995 .

16. Sylvester, R, 1996, Labour Plans DNA test for everyone from Birth, Telegraph, July 22.

17. E.g., by Avenire Technologie International and Tour Bull:Worldwide Information Systems.

18. E.g., by helling Kommanditgesellschaft fur Industrieprodukte.

19. E.g., by Aspley Ltd, BAeSEMA Ud, Bel Tech Security products, Belgrave Group, Cambridge Neurodynamics, DelTech Security Ltd, Electronics Graphics, GEC Traffic Automation Ltd, IO Research Ltd, Keygrove Marketing, Noble Campion Ltd, NPS Photograph Storage and retrieval System, Picdar Ud, SD-Scicon UK, Solarray Identification Systems (SIS), Strategic Imaging Systems(SISYS).

20. E.g., by Axiom Research Co., Compu-Colour, Edicon, Epic solutions, Identikit Co Inc, Kyber Group, Neurometric Visions Systems, Precision Dynamics Corp, Sirchie Fingerprint Labs,

21. Via companies such as PratiElectro in Belgium; Spectronic & SST in Denmark; Compagnie Francaise d'Exportation; Crelec Electronique; Data Mast; DLD SA; Elecktron France SA; Export Trading Services SARL, Protex Arms, Societe des Laboratoires Mouillard, Transtel Transmissions; VK Electronic in France; HP Marketing & Consulting Wust; HABRA Electronik; Hussains International; KDM; Micro and Security Electronic; PK Electronic and Rennhak Nachtsichtsysteme in Germany; ATET SRi in Italy; ALphaSafety in Luxembourg; Reinaert Electronics in the Netherlands; Defex in Spain and Spycatcher, Soundex, Lorraine Electronics PK Electronics, CAZ, Counterspy; and TR Associates in the UK.

22. Davies, S, (1997), Police tap into the secrets of technology, Daily telegraph, January 28, p. 7.

23. Whymant, R (1977), 6-legged superspy scuttles to our aid, Times, 29 January.

24. Quoted from Jane Hunter, Israeli Foreign Policy, South African and Central America, South End Press. 1987.

25. See, The Surveillance Society, Sci-Files, BBC, broadcast, BBC2, 3 March 1997 .

26. This new form of carbon will enable current CRAY type super computers to be carried in the pocket, the implications of having such storage capacity for policing purposes are barely assessed since the trend is towards suppressed demand - i.e., police forces use up whatever capacity they are provided with. (Sci-Files, BBC, UK, 'The Last Nobel', 17,3,97.)

27. Typical examples include those made by Sicherheits Transport in Austria; Beherman Demoen & FN Nouvelle Herstal in Belgium; Timoney Technologies in Eire; Renault, Saviem and Panhard in France; Bonowi Mercedes Benz, Rheinstahl and Thyssen in Germany; Alma in Greece; Fiat and Inveco in Italy; Alphasafety in Luxembourg; DAF Special Products Division in the Netherlands; Nauteknik Defence & Security in Norway; Bravia -- Sodedade Luso-Brasileira & ITB in Portugal; DEFEX and Santa Barbara SA in Spain; Hagglunds Vehicles in Sweden; Bucher Guyer and MOWAG in Switzerland; Aselan Military, FMC & Octobus in Turkey; Alvis, GKN, Glover Webb, Land Rover, Short Brothers, Transac and Trojan vehicles in the UK.

28. E.g., by the end of 1983 70 martial arts instructors were teaching London police officers Japanese martial arts techniques - the old techniques were viewed as two pedestrian. These new techniques go hand in hand with mini-truncheon usage. The techniques were evolved originally for use in Northern Ireland according to Brigadier Michael Harvey, the military trainer responsible for teaching them,

because of "the inadequacy of techniques used in Northern Ireland where six soldiers were often needed to make one arrest." (Sunday Telegraph, 7.7.85)

29. Interview with Professor Rosenhead, January 1997.

30. For example the Lawrence Livermore laboratory has developed a pulsed light weapon and a projectile launcher with impact velocity control; Delta Defence has created a pepper Spray Launcher; Foster Miller a Dabbling Net and Launcher system; Sandia Laboratories have produced the sticky foam gun. Some of these have already been approved for example, DEFTEC's semi-lethal shot gun rounds; Alliant's non-lethal launched ordnance and the Volcano fish-hook mine system, Olin's vehicle stopper.

31. "As soon as a new non-lethal weapon has been used, the shock effect will be reduced in future." (Deane-Drummond, 1975).

32. For an excellent discussion, see Sugarman S & Rand, K, Cease Fire, Rolling Stone, March 10, 1994, pp. 31-39.

33. E.g., Hirtberger, Austria; Cartridge Factory Lapua, Sako Ltd, Finland; Laboratoire Arcane, Societe Francaise de Munitions (SFM, France; Dynamit Nobel, Germany; Norma Projectilfabrik, Sweden; SM Swiss Muniton Enterprise; Beechwood, Cobra, Conjay Arms Co., Edgar brothers, Parker Hale Ltd. in the UK. The development of these weapons has in fact gone hand in hand with their converse - guns like the Belgium FN Herstal's Five-seven pistol which can penetrate 48 layers of Kelvar. Such developments lead to a ratchet-like arms race between the police and their adversaries on who can out gun whom since it may be the opposition who acquire the hi-tech first.

34. Guardian, 10/2/96 and the Atlantic 2/90.

35. Speech by Hansjourg Geiger, German Federal Commission for the Stasi Files, April 14, 1993.

36. David Banisar, Covert Action Quarterly, No. 56, Spring 1996.

37. Ibid.
38. Ibid.
39. 'Your number may be up', Times, May 13, 1994. Company Press release 17,5, 94.
40. For example, Compagnie Francaise d'Exportation, DLD SA, Elektron France SA, IN SNEC, Positive, SAGEM. Thomson CSF Securite.
41. E.g., Bosch & HABRA Elecktronic.
42. E.g., Gatsometer BV.
43. E.g., Action Information management, Arkonia Electronics, CCS UK, MAtra Marconi, McCue, Micromill, Navstar Systems, Pearpoint, Primary Image, Racal, Radmec, Sarasota Automation, Securicor Datatrak, Siemens Plessey Controb, Strategi Imaging Systems, Symonds Travers Morgan, Terrafix, and The Integrated Security Group.
44. Common Position EC No/95, Adopted by the Council on 20 February 1995, Directive 95/EC of the European Parliament and the Council, 'On the Protection of Individuals, With Regard to the Processing of Personal Data and on the Free Movement of Such Data'.
45. E.g., debate re use of bugging and other unconventional methods against motorcycle gangs. (Statewatch, September, October 1996.
46. E.g., the revelations in the De Morgen newspaper on 24 April 1996, that the Belgium Intelligence service "Abemene Dienst Inlichtingen en Veiligheid", had decided to create regional networks based in various Army barracks to spy on the activities of Belgian citizens.

-
47. An intense debate has gone on since 1995 about allowing bugging of personal homes which would need to amend article 13 of the constitution on the inviolability of residence. (Unverletzlichkeit der Wohnung).
48. Where a judicial inquiry into secret surveillance, by the Norwegian surveillance police, was appointed by the Norwegian Parliament on 1 February, 1996 (Statewatch, May-June. 1996, p. 5)
49. Dutch politicians called for an inquiry in January 1996, after reports that one of the country's largest banks was intercepting staff calls. Financial Times, 18.1.96.
50. Where new legislation for both MI5 and for ordinary police has created new powers to bug and burgle. (See Statewatch, February 1996 and the Guardian, 30 Nov 1996)
51. Reuters World Report, 30 September 1996.
52. For further information, see the annual reports of the Commission nationale de controle des interceptions de securite, Paris.
53. Quoted from NARMIC, 1971, p .17, (who refer to Scheurer's own book (undated), To Walk the Streets Safely, p. 81,
54. These tables are taken from the papers of Thein,1974; Egnar, 1976 and Wargovitch, 1975. Whilst immediate political consequences were factored into the equation, little systematic evaluation seems to have been devoted to the longer-term political consequences of deploying these weapons. The official view filtered out any consideration of hidden or dysfunctional impacts of these weapons.
55. These concepts were formally laid out as follows:
- (i) The use of less-lethal weapons constitutes an aggressive act. If those who are targeted with these technologies make this interpretation, there is a possibility that further use will lead them to reply with retaliatory aggressive responses.

(ii) If (i) is so, then in certain circumstances, the use of less-lethal weapons may be considered as an overcorrective response. Overcorrective responses can bring about an opposite effect to the one intended, e.g., uncontrollable conflict and further polarization.

(iii) If powers of control were lost because of these dysfunctional processes, a resurgence of the phenomena under attempted control may develop as the fix loses its potency. If such processes were applicable to the case of less lethal weapons and the nature of the underlying dynamic was not recognised, reliance on ever even more powerful fixes would prove counterproductive. (Wright, 1978, 1987)

56. Hansard, Written Answers, 21 January 1977, col 331.

57. Hansard Written Answer, Friday 28 January, 1977, No. 54 .

58. An account of the circumstances surrounding these deaths is provided in 'A Report On the Misuse of the Baton Round in the North of Ireland, Submission to the Mitchell Commission, United Campaign Against Plastic Bullets, 1995 and Curtis, L, They Shoot Children, Information on Ireland, 1982.

59. Upshall, DG, 'The effects of CN & CS on the developing chicken embryo', quoted by Himmsworth, (HMSO, 1971).

60. CR, nicknamed firegas, was developed in the early seventies as a substitute for CS. It can be dissolved in water and thus fired from watercannon. The UK company Schermuly marketed a hand held CR SPAD spray at the British Army Equipment Exhibition in 1988. Although authorised throughout the UK since 1973, apart from a reported use in the Maze Prison which the authorities have always denied, CR is thought to remain a special forces weapon.

61. From the Guardian, 27.7.1986.

62. SIPRI, the problem of Chemical and Biological Warfare, Vol 1, 1971, p. 64.

63. Ballantyne B. 'Riot Control Agents - Biomedical and Health Aspects of the Use of Chemicals in Civil Disturbances, Medical Annual (1977), pp.7-41.

64. Jones,R (1973), 'Return To Riot Control', New Scientist, May 31, pp. 546-547.

65. See Leonard Jason-Lloyd, CS gas - an indiscriminate weapon?, New Law Journal, July 26, 1991. pp. 1043-1045. Earlier inhalation toxicology studies indicate that at high levels of CS exposure to cause chemical pneumonitis and fatal pulmonary edema (whats that [*as written*]). Ref. Ballantyne B, Callaway S., 'Inhalation toxicology and Pathology of animals exposed to o-chloro-benzylidene malononitrile (CS)', Med. Sci. & Law, 1972; 12:43-65. Kacmarek B, Gaszynski W., Ultrastructure of the rabbits lung tissue after administration of CS preparation. Acta Med Pol. 1977; 18:327-328.

66. A Parneix-Spake et Al, Severe Cutaneous Reactions to Self Defence Sprays, Arch Dermatol Vol 1 29, July 1993, p. 913.

67. The development of tolerance to CS has been reported by Porton researchers in studies on human volunteers (Beswick FW, Holland P, Kemp KH, 'Acute effects of exposure to orthochloro-benzylidene malononitrile (CS) and the development of tolerance'. Br. J. Ind. Medicine. 1972; 29: 298-306.

68. Hu H., Fine J., Epstein P., Kelsey K., Reynolds P., Walker B., 'Tear gas - Harassing Agent or Toxic Chemical Weapon', JAMA, August 4, 1989 - Vol 262, No. 5.

69. Gibbons S., Training accident delays street trials of CS spray., Police Review, 16 June 1995.

70. Chief Constable Ted Crew is reported in the Independent as saying, "I am advised that were there to be a civil claim resulting from the use of CS spray, I might find that because we had trained the officers using it, I had some liability.' (29)

71.Foster, RW and Ramage, AG, 'Observations on the Effects of Dibenzoxazepine (CR) & Nonoyl Vanillyamide (VAN) on Sensory Nerves', The British Journal of Pharmacology, March 1975, pp. 436-7.

72. Los Angeles Times June 18, 1995.

73. ACLU, Oleoresin Capsicum, - Pepper Spray Update, More Fatalities, More Questions, June, 1995, p. 2.

74. SAE Alsetex.

75. Defense Technology GmbH (Def-Tec) & IDC Chemie Handels GmbH.

76. Nitspy Defensa Y Contraespionaje.

77. ALM International UD; Civil Defence Supply; Edgar Brothers; & Safeguard Technology. In June 1994, at an ACPO Drugs Conference, Civil Defence Supply admitted they were already importing peppergas sprays and were working on their evaluation with the Home Office and ACPO.

78. Nancy Rhodes, Pepper Spray, Product Liability and Cops, Policing By Consent, No.11, August 1 1996.

79. See 'Perfect Sound from Thin Air, New Scientist, 7 September 1996, p. 22.

80 See Jane's International Defense Review, 9, September 96, p. 20.

81. See National Institute of Justice Solicitation For Law Enforcement, Courts and Corrections Technology, Development, Implementation and Evaluation, August 1996.

82. Barbara Starr, USA defines policy on non-lethal weapons, Jane's Defence Weekly, March 6, 1996.

83. Comment from Hildi S. Libby, systems manager of the Non-Lethal Program, US ARDEC, to the American Defense Preparedness Association Non-lethal Defence II conference, 6-7 March 1996.

84. Proceedings of the Non Lethal Defence II conference organised by The American Defence Preparedness Association, held at Maclean, Virginia, 6-7 March 1996.

85. For example, by Israeli warders against Palestinian detainees at Ramallah and Jnaid prisons. For accounts, see Schwartz M, (1984) Israel's Gas Chamber, The Middle East, June., and a report by the West Bank Amliate of the International Commission of Jurist, Jnaid - The New Israeli Prison in Nabulus - An Appraisal, October 1984.

86. In South Africa, such a case was reported in 1981, when four condemned men were subdued with 'teargas' before being taken to the gallows, (see the Guardian, 16 July 1981).

87. See Statewatch, March-April, 1996, p. 9.

88. A detailed account of this system is given in Wilson, A, 'How Rebels Are Silenced', Observer, 27 Feb. 1977 and Guardian August 8, 1979.

89. These Units were secretly maintained with full details of their operation only coming to light when a court case was brought by a civil liberties group, (Guardian, April 8,1980).

90. Covert Action Quarterly, Summer 1993.

91. New York Times, 13 January 1995.

92. Jessica Mitford's, The American Prison Business, Penguin 1977, provided a good discussion of early behaviour modification techniques tested in US gaols.

93. Meyer, JAT (1971) Crime Deterrent Transponder System IEEE AES-7, No. 7, January.

94. Used in New Mexico based home punishment schemes. See Guardian Nov 8, 1984 for details and the Adam Smith Institute, 'Justice Policy 1984', for a case arguing the need for such schemes in Europe.

95. For example last year the UK treasury announced enforced cutbacks of some 3,000 prison jobs. With the UK prison population expected to grow by 20,000 over the next 10 years due to the sentencing changes introduced by Home Secretary Michael Howard, staffing levels are sliding back to those prevailing at the time of the prison riots in the late 1980's. In these circumstances, the shortsighted prospect is one of expensive wardens being replaced with cheaper and more malleable technology, both passive and punitive.

96. Warren P, 'Prisons go shopping in face of staff cuts', Computing, 25 January 1996.

97. Restricted Contract Procedure (CC3160) for Her Majesty's Prison Service, Supply and Transport Services, Tenders Electronic Daily, Luxembourg.

98. Inmates demand return, Houston Chronicle, Oct. 30, 1995,

99. Department of Justice, Civil Rights Division, 'Investigation of Onondaga Country Jail, Oct 18, 1994. pp. 2-3.

100. Law Enforcement Product News. 9.10.95, p. 42.

101. Quoted in Amnesty International, United States of America - Use of electro-shock belts. June 1996.

102. Presentation to the Non-lethal Defence II conference, held by the American Defense Preparedness Association March 1996.

103. Much of the information used in this section is extracted from Wright 1996 and Amnesty International, 1997(a), which is largely based on company documentation held by the Omega Foundation.

104. Fig. 1 is taken from the 1996 Annual Report of the Redress Trust. The mission of the Redress Trust (which is based at 6 Queen Square in London WC1 N 3AR, UK), is 'to promote the rehabilitation and protection of people who are or at any time have been victims of torture anywhere in the world, and to help them, and when appropriate, their families to gain redress for their suffering.'

105. Such were the successes of the coercive interrogations practiced in the former Soviet Union that the US Rand Corporation at that time explored the possibility that the 'Russians have developed and are now using some form of hypnosis possibly in conjunction with drugs and other treatments, as a technique for eliciting confessions from persons who, under ordinary forms of duress, would not be likely to comply with demands for a public recantation'. (See Janis, 1949)

106. See (Gudjonsson, G. 1996) for a discussion of this process. Gudjonsson quotes R.A. Leo's account of the changing nature of police interrogation in the USA from the 1930's onwards. Leo, for example, identified 6 interrogation methods which focussed on pain, discomfort and torture. These consisted of 'brute force'; 'physical torture'; 'deniable physical and psychological coercion'; (e.g. rubber hoses which left no marks); 'incommunicado interrogation', i.e., isolation from lawyers, family and friends); 'physical duress' (e.g. food /sleep deprivation); 'threats of harm'. (Leo 1992) found that these methods declined from the 1930's to be replaced by psychological methods of interrogation relying on trickery, manipulation and deception. (See Inbrau, et al. 1986)

107. See United Nations Standard Minimum Rules for the Treatment of Prisoners (United Nations, 1955) which apply to both leg irons and to stun belts, section 33 says: Instruments of restraint such as handcuffs, chains, irons and straitjackets should never be applied as punishment. Furthermore, chains and irons should not be used as restraints. Other instruments of restraint should not be used except in the following circumstances: (a) as a precaution against escape during a transfer, provided that they shall be removed when the prisoner appears before a judicial or administrative authority.

108. Leg irons, restraints, etc., are supplied in Canada by Shackles; in China by Chengdushi Mensuochang, Jing An Import & Export Co., Shandong Muping General Lockware Plant; in France by Equipol, GK Productions International, Rivolier; in Germany by Bonowi, Clemen & Jung Inh. V& K Pleithner, Dipl. Ing H. Wallfuss, Electron - Import & Export Co., Helling Kommanditgesellschaft fur Industrieprodukte, Nowar Security Equipment; in Luxembourg by AlphaSafety; in Spain by Larranaga Y Elorza; in Taiwan by Pan Right; in the U.K. by Group 4 Total Security, Hiatt & Co., M.P. Supplies Co.; and in the USA by A.E Nelson Leather, AEDEC, AETCO, American Handcuff, Arms Tech Inc, Badge Co of New Jersey, Bianchi International, Hiatt Thompson Co., Law Enforcement Associates, Monadock Lifetime Products, Peerless Handcuffs, Smith & Wesson and Techopol International, to name but a few.

109. Project Chatter was begun by the US Navy in 1947 in coordination with the Army, the Air Force, the CIA and FBI and for security reasons, handled outside the usual committee machinery of the Research & Development Board. (Document submitted in evidence to the joint hearings of the Senate Labor and Public Welfare Committee on Health & the Senate Judiciary Sub-Committee on Administrative Practice & procedure, Biomedical and Behavioural Research, Nov. 1975, pp. 988-990.

111. There were 149 MKULTRA subprojects concerned with behaviour modification, drug acquisition. and testing and administering drugs surreptiously. (CIA Inspector General, memorandum for Director of Central Intelligence dated 26 July 1963, Report of Inspection of MKULTRA, submitted in evidence to the joint hearings of the Senate Labor and Public Welfare Subcommittee on Health and the Senate Judiciary Subcommittee on Administrative Practice and Procedure, Biomedical and Behavioural Research, 1975, 10,12 September and November 1975, pp. 879-905.

112. According to documentation made available to a Congressional Inquiry, a portion of the Research & Development Programme of the the TSS/Chemical Division was aimed towards the discovery of the following materials and methods: (i) Substances which will promote illogical thinking and impulsiveness to the point where the recipient would be discredited in public; (ii) materials which will render the induction of hypnosis easier; (iii) materials and physical methods which will produce amnesia for events preceding and during their use; (iv) physical methods of producing shock and confusion over extended periods of time and capable of surreptitious use; (v) substances which produce physical disablement such as paralysis of the legs, acute anaemia etc.; (vi) substances which alter personality structure in such a way that the recipient becomes dependent on another person; (vii) material which will cause mental confusion making it difficult for an individual to maintain a fabrication under questioning; (viii) substances which lower ambition and working efficacy when administered in undetectable amounts; (ix) substances which promote weakness or distortion of eyesight or hearing; (x) knockout pill which can be surreptiously administered; (xi) a material whose use in very small amounts makes it impossible to perform any physical activity whatsoever. (US Senate Committee on Intelligence and Human Resources Subcommrtee on Health and Scientific Research, joint hearing: Project MKULTRA, the CIA's Program of Research in Behaviour Modification, 3 August 1977, pp. 123-4).

113. The daily El Mundo quoting military intelligence files said the 1988 experiments in which a beggar died, had been dubbed "Operation Mengele" within the service after Nazi death-camp doctor Josef Mengele. (Reuter September 17, 1996) It should be noted that in 1980 Amnesty International reported the use of LSD and sensory deprivation methods against ETA suspects held in La Salve Police Station. (See New Statesman, 11 December 1981, pp. 12-13.)

114. In October 1996, the Austrian government approved the publication of a report from the ECPT which contained allegations that detainees of Austrian as well as foreign nationality were at risk of grave ill treatment particularly while detained at the Bureau of Security in Vienna. ECPT reported:

"From various sources the delegation received allegations according to which people detained by the Bureau of Security in Vienna during February and March 1994 had received electric shocks inflicted with batons equipped to administer an electric discharge. . . . These detainees all described a similar instrument which was a portable device the size of an electric razor one extremity of which had two electrodes, a device which a police official carried in a personal bag." (Amnesty International, 1997)

115. In its report Arming the Torturers (Amnesty International, 1997) named the fifty countries where electroshock torture and ill treatment had been carried out in prisons, police stations and detention centres. They are:

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

Amnesty recognises that the real figure is probably higher, "as the use of these weapons in torture can be very difficult to detect."

116. See for example, Ordog. et. al. 1987; Law & Order, 'Reviewing Taser Usage 1992; Allen, T.B., 1991.

117. See Cusac, A.M, 1996, who quotes the engineer who examined the electric shield associated with the death of Harry Landis, a Texan Prison officer in December 1995. He said "The manufacturer puts in its literature that the shields will not hurt anyone, including people with heart conditions. But they have

118. Prof Kaufman of Heinrich Heine University in Dusseldorf in a letter to a member of Germany Amnesty MSP Group dated 2 November 1995 cautions that an opinion he gave on a particular product ten years ago could not be used by others since his "expert opinion referred explicitly to the model of the apparatus which was presented to us in those days." In the light of "a great number of changing manufacturers and distributors of such apparatus . . . refer more or less directly to the above mentioned opinion." Prof Kaufman's view is that this is "basically inadmissible as from the point of view of the electrophysiology, assertions on risks can only be made on the exact knowledge of the respective operational data." He viewed a US advert which used his work as "completely devious". . . "since the models presented were examined only as far as safety technics were concerned - we never participated in any sort of 'optimization of the weapon' aimed at obtaining certain effects." Prof Kaufman being aware that "as far as it appears from the manufacturers prospectus - the apparatus offered on the market nowadays differ widely in their operational data from the apparatus then tested." In other words manufacturers are misusing scientific data on one specific device to justify the safety of many new electroshock weapons which is simply inadmissible.

119. See Forrest, 1996, Chap 5 & Chap 7 for a more detailed discussion.

120. The Tibetan monk featured in Fig. H, Palden Gyatso spent decades in prison and labour camps and was systematically tortured. At one desperate point he told a member of the Omega Foundation that he ate his boots to survive. On his release he managed to obtain the instruments used in torture by his Chinese captors and smuggle them out of his country. He said of the electroshock devices. "They use this on your body. If they press that button your whole body will be in shock. If they do it for too long you lose consciousness but you do not die. If they press this button, you can die."

121. Excellent discussions on the codification of counter-terror procedures and their proliferation in practice are provided by Chomsky and Herman (1979) and McClintock 1985a; 1985b; 1992).

122. Quoted from the Baltimore Sun, "Torture was taught by CIA, 27 January 1997. The Human Resources Exploitation manual appears to have been based on a predecessor called KUBARK Counterintelligence Interrogation, (July 1963) used in the Vietnam period which was declassified at the same time.

123. The initial effects of the procedures in Fig. M are as follows:

Measures (1), (2), (3) and (5) cause visual, auditory, tactile and kinaesthetic deprivation. Measures (1), (4), & (6) deprive the brain of the sugar and oxygen necessary for normal functioning. Measures (1), (4), & (6) may disturb normal body metabolism.

124. For a further account of the sensory deprivation techniques used in Northern Ireland see the British Medical Association, 1986. Allegations of continued ill treatment of detainees in Northern Ireland have continued into the nineties, See for example, Committee on The Administration of Justice, 1991 & 1993).

125. International Herald Tribune 29 January 1997.

126. The Palestinian Authority and its many police forces have been accused by Amnesty of torturing detainees using, for example, position abuse and sleep deprivation or interrogation via assaults whilst a sack was placed over the victim's head. (Amnesty International, Palestinian Authority, Prolonged political detention, torture and unfair trials, London, 2 December 1996.

127. Personal communication to the authors from Dr. Siraj Shah of the Kashmir Council for human rights, in London, dated 5 October, 1993.

128. Amnesty International reported evidence of thallium, a commercial rat poison, being used by the Iraqi authorities to effect delayed execution of their political detainees.(See Amnesty International, Political Killings 1983.)

129. Quoted from Priest, D., 'Army's Project X Had Wider Audience', Washington Post, March 5, 1997.

130. An excellent analysis of the training of torturers has been achieved by TV producer Rex Bloomstein whose latest programme on this subject, 'The Roots of Evil' is due to be screened by the BBC during the autumn of 1997.

131. The Dispatches programme team concluded that given that the £500,000 cost of the electroshock deal was paid for in oil, and because BAe would have had to invoice the MoD for payment and the UK government would have had to issue an export licence, they must have known what was going on (Lashmar, 1995).

132. Stott sits on the board and is a founding member of the Association of Police and Public Security Suppliers, Britain's foremost commercial promoter of police technology and internal security equipment supplies.

133. Electroshock weapons are carried by all prison camp guards in China. According to Pierre Sane, the Secretary General of Amnesty International, the use of shock weapons in China today 'has become so endemic that it is almost impossible to document and follow the cases of the number of victims.'
134. The concept of a trade in the technology of political control was originally described by NARMIC and NACLA and formalised by Wright (1977, 1978) and Klare & Arnson, 1981).
135. European Union: human rights and military, security and police transfers - When will established criteria be implemented?", July 1994, p. 8.
136. Austria: Steyr Mannlicher supplied AUG 5.56mm assault rifles for service with the Indonesian Parachute and Counter-Terrorist police units (Military Powers 10/91).
137. Belgium: FN Herstal supplied M49 sub machine guns, FAL 7.62mm Assault Rifles, Minimi 5.56mm light machine guns for police and security force use (Military 10/91) and have a representative office in Jakarta (Defence Manufacturers Association ASEAN Report [DMA 8/90]).
138. Denmark: Dansk Industri Syndikat the Madsen sub-machine gun (made under licence by IMBEL, Brazil) used by Indonesian Police (DMA 8/90).
139. Finland: Sako supplied Valmet rifles to Security Forces (Jane's Security & Counter-Insurgency Equipment 1990 [COIN 90]).
140. France: Acmat supplied wheeled armoured vehicles to the Indonesian Police (Military Powers 10/91); Creusot Loire supplied 205 AMX-13 tracked armoured vehicles (Military Powers 10/91); GIAT supplied 20 105mm LGI MkII light guns plus a significant quantity of ammunition (Jane's Defence Weekly [JDWI 21/5/94]); Manurhin supplied SG540 SIG Assault Rifles (DMA 8/90); Morpho Systems supplied an Automated Fingerprint Recognition System (MiliPol 1993 Catalog); Panhard supplied 18 VBL Light Amphibious Scout Cars (JDW 18/12/96).
141. Germany: Heckler & Koch supplied MP5 Sub machine guns used by the Indonesian Special Forces and it was reported that the Indonesian Marines were to take delivery of MSG 90 Military Sniper Rifles (Asian Defence Journal 11/95) and police & security forces were already equipped with G3 Rifles (DMA 8/90).
142. Greece: Pyral exported ammunition (Hellenic Defence Industries Catalog 96/7).
143. Italy: Beretta Model 12 Sub machine guns and BM-59 rifles used by police & security forces (Military Powers 10/91).
144. Netherlands: NWM de Kruithoorn 20mm ammunition is largely supplied by NWM (DMA 8/90).
145. Sweden: Bofors Indonesia's 40mm Bofors ammunition is obtained either from Sweden or Chartered Industries of Singapore (DMA 8/90); FFV (Sweden) sub-machine guns [produced under licence in Egypt] supplied to Indonesia (COIN 90).

146. UK: GKN Defence 10 AT-10s Saxon GKN Wheeled armoured vehicles supplied to the Indonesian Police (Military Powers 10/91); Glover Webb Tactical Water Cannon. "Britain fuels Suharto repression" (Observer 21/7/96); Interarms Military and sporting armaments (FIS 93); Land Rover Indonesia purchased 1500 Land Rovers in 1979 which are popular and still in wide use, including 10 for anti-riot duties and 2 for the Presidential Guard (DMA 8/90); Amongst the British military and security equipment sold to Indonesia in the last decade. was a prototype of Siemens Plessey Defence Systems GENERICs - the NATO command information system. GENERICs can display complex information about events unfolding across a landscape. It would enable the user to concentrate forces efficiently in response to demonstrations and riots (Independent, 3/8/96, Technology that gives the edge to 'Big Brother').

147. Belgium: Cockerill Mechanical Industries \$100 million subcontract to build armoured infantry fighting vehicles (AIFVs) for Turkish Army (JDW 9/9/89); FN Herstal Minimi 5.56mm light machine gun used in Turkey (JDW 15/7/89).

148. France: Euro Vecteur (GIAT) has set up a subsidiary in Turkey [Savunma Sanayii] to oversee the firm's contract for 515 Dragor turrets (JDW 4/2/95); Thomson-CSF the TRS 22XX long range mobile (NATO Class 1) radar has been adopted by Turkey. Local company Tefken is co-producing 14 examples (International Defense Review [IDR] 9/96).

149. Germany: Alcatel (Radio & Defense Systems) - Aselsan Electronics (Turkey) manufactures the Alcatel SEL RATAAC-S Surveillance radar under licence (IDR 6/96); Heckler & Koch - Turkey manufactures H&K rifles and sub-machine guns under licence (American Academy of Arts & Science 2/94); Thyssen Henschel Fox NBC Reconnaissance vehicles supplied to Turkey (JDW2/11/91).

150. Italy: Agusta SpA \$19 million contract to supply Turkish Ministry of Defence with 20 AB-206B Jet Ranger Helicopters.

151. Netherlands: DAF has received a \$50 million subcontract to provide weapon station and vehicle integration. The first 20 AIFVs will be assembled by DAF after which assembly will begin in Turkey (JDW 9/9/89); Eurometaal - Eurometaal USA listed as exporting several shipments of grenades to Turkey (PIERS 12/95), Turkey will begin production of cluster bombs as part of a joint venture between MCIA (Turkey) & Eurometaal. Under the ten year agreement 206,000 cluster bombs will be produced for Turkey and 103,000 for Holland (Arms Trade News 21/1/94).

152. UK: Burle Ltd listed as exporting CCTV equipment (FIS Turkey 94); Chemring Ltd 32,355 complete round flare bombs and IR Decoy and Chaff-S Ammunition (Turkey Contracts Bulletin 1/95); GEC Marconi Communication Systems resolved dispute with the Turkish Armed Forces regarding the contract for the Scimitar H (HF-SSB) radios as part of a £96 million contract started in 1990 (JDW4/2/95); GEC Marconi Secure Systems crypto devices and spare parts (Turkey Contracts Bulletin 2/95); Pilatus Britten Norman sold a Multi Sensor Surveillance Aircraft (MSSA) to Turkey for Border Surveillance for an undisclosed amount (Aerospace Daily 16/6/93); Racal Comsec Ud - CLASSIC [Covert Local Area Sensor System for Intruder Classification] was originally developed to detect illegal immigrants attempting to enter Hong Kong. A total of 1700 systems have been ordered by 31 countries, of which 10 are NATO members (including Canada, Portugal, Spain and Turkey) (IDR 6/96); Short Brothers - recent customers for the Shorts Shorland vehicles include 40 APCs (Armoured Personnel Carriers) to the Turkish Ministry of Interior to be used by the Gendarmerie; Transac supplied 'armoured vehicles' (FIS Turkey 94).

153. Land Rover (UK) have a licence production agreement with Otobus Karoseri (Otokar) of Turkey. Since 1987, Otokar has built Land Rover 4x4 vehicles under licence with production running at approx. 2500 vehicles a year. The Scorpion has an all welded steel hull with around 70% of the automobile components drawn from the well known Land Rover Defender 90/100 (4x4). Machine gun, night vision and day vision equipment are standard (JDW 6/8/94). Export licence control is not exercised as the UK Government classifies the Land Rover components as civilian spare parts. This is despite the end product being a highly maneuverable and lethal internal security vehicle. Additional reports have shown how this type of third country licenced production have allowed MSP transfers that would not be permitted direct from the UK. It was reported in 1995 that Otokar had obtained a \$200 million deal to supply 700 Scorpion vehicles to Algeria (Defense News 2616195). The UK currently has a military embargo on Algeria.

154. GKN Defence (UK): produce Mowag (Switzerland) armoured and internal security vehicles under licence. Also produced in Chile and Canada (Armada International 4-5/96). Oman has received the first batch of GKN Defence built MOWAG Piranha 8x8 vehicles. (JDW 16/9/95). GKN Defence have also established licenced production of its vehicles in the Philippines. The first 7 Simba 4x4 APCs have been delivered to the Philippines Armed Forces. 150 vehicles have been ordered fitted with a 12.7mm Browning MG armed turret. Eight Simbas will be supplied from the UK, several as kits and the rest assembled at the Subic Bay plant operated by the joint venture Asian Armoured Vehicle Technologies Corp. A number of variants will probably be developed. (JDW 30/4/94). It was reported in 1989 that the Philippines is therefore set to become the first ASEAN nation with an armoured vehicle manufacturing capability and could act as a base for regional export sales. (JDW 16/12/89).

155. FN Nouvelle Herstal SA (Belgium) is helping to build an ammunition producing factory in Eldoret, Kenya and is providing much of the machinery. It is estimated that the factory has cost between £6-170 million, but the Kenyan Government refuses to discuss the financing arrangements. The factory will be capable of producing 20 million bullets a year. (Guardian 20/6/96).

156. Heckler and Koch (Germany). H+K small arms are produced under licence in many countries throughout the world. MKE MP5 A3 and MP5 K Sub machine guns for 9mm Parabellum ammunition are produced by MKE under licence from Heckler and Koch (Germany). Are very similar in almost all aspects to the original Heckler & Koch version. (Police & Security Equipment 96/7). In 1994, the American Academy of Arts & Science reported that H+K rifles were produced under licence in the following countries: France, Greece, Norway, Portugal, Sweden, Turkey, UK, Mexico, Burma, Iran, Pakistan, Saudi Arabia, Thailand. H+K Sub-machine guns were produced under licence in: Greece, Portugal, Turkey, UK, Iran, Saudi Arabia. (AAAS 2/94). Such licenced production can mean in practice that Heckler & Koch small arms are transferred to countries that the European Union may have export restrictions on. For example it was reported that in "late 1991, 50,000 Heckler & Koch G3 automatic rifles were also supplied to Sudan, probably via Iran." (JDW 9/5/92).

157. Steyr Mannlicher (Austria): First batch of 1000 STEYR 5.56mm AUG Assault rifles for Malaysian Armed forces completed by SME Tools in Malaysia (Total of 65,000 rifles are to be produced over 5 year period) (JDW 5/10/91).

158. FFV Ordnance (Sweden) 9mm Model 45 sub machine gun - generally known as the Carl Gustaf. Made under licence in Port Said, Egypt. A silenced version was used by US special forces in S.E. Asia. The weapon was also copied & produced in Indonesia - currently not in production. (COIN 90).

159. PT Pindad (Persero) (Indonesia): PT Pindad has signed a licence agreement with Chartered Industries of Singapore to produce the CIS 40-AGL 40mm automatic grenade launcher. (JDW 28/5/94). Also reported as producing the following small arms under licence production agreements: version of FNC rifle as SS1-V1 and SS1-V2, version of Browning High Power pistol - made under licence from FN, Belgium; version of Beretta 9mm Model SMG - made under licence from Beretta, USA; 60mm Mortar - made under licence from Tampella, Finland; 81 mm Mortar (Quantity 500) (Tampella, Finland); Model 38/49 SMG and Model 12 SMG - made under licence from Beretta, USA; Model 45 (Carl Gustav) SMG - made under licence from Sweden; FNC, FN FAL, FN MAG FN Mauser 98 carbine (used by police) - made under licence from FN, Belgium; FN Minimi SAW - made under licence from FN, Belgium. (Defence Manufacturers Association 8/90: Indonesia - Police & Security Equipment Holdings).

160. It was reported in 1994 that the Swiss company, Pilatus Flugzeugwerke opened a military trainer production line at its UK subsidiary on the Isle of Wight, called Pilatus Britten-Norman Ltd (UK), to side step tough new arms-export regulations.(Flight International 6/4/94). One reason suggested for the move was that the Swiss aircraft company wanted to take advantage of laxer British rules on arms exports. Pilatus Aircraft, a subsidiary of Oerlikon-Buhle, currently manufactures the PC-7 and PC-9 in Stans, near Lucerne. The planes, originally developed for training, have been widely sold to countries such as Guatemala, Burma, Iraq, Iran and El Salvador. Swiss law prohibits military sales to 'areas of conflict'. Pilatus has long claimed that its planes are not military equipment and that, if armies buy them for training, that is not the same as buying them for killing. At least one company in Belgium openly offers gun ready conversion services. (Observer 27/3/94). The UK subsidiary already has a licenced production agreement with the Philippines, the PADC (Philippines Aerospace Development Corporation) was reported to be building the Islander light transport and passenger aircraft. The Islander has A STOL capability and can be used for cargo, passenger, survey, aerial spraying and in its Maritime Defender version, maritime surveillance operations. The original agreement called for the transfer of 105 Islanders to the

PADC. The first 6 were built by Britten-Norman and sold by PADC. The next 14 were delivered unfinished, and the next 35 were assembled by PADC. After Britten-Norman was acquired by Swiss firm. Pilatus, in 1979. The assembling licence was suspended. But in March 1980 a new agreement was reached for the assembly of 12 more Islanders, including one turboprop BN-2T Turbine Islander. In 1981, PADC were no longer just assembling the Islander but building it from the ground up. PADC hoped to become the exclusive distributor of the Pilatus Products in the ASEAN region.(Arms Production 1984).

161.The full text of resolution Doc EM\RE\264264474 read:

- **aware** of the European Parliament's concerns regarding the export of repressive technologies to repressive regimes that violate human rights,
- **disturbed** at recent revelations that such technologies are being produced in at least three European Union (EU) countries, namely Germany, Ireland and the United Kingdom, companies such as Equipol, France Selection Neral et Cie (France) Tactical Arms International UK and British Aerospace are all known to have supplied electroshock units,
- **horrified at** the information that these technologies have been exported amongst others to Saudi Arabia, China, the Gulf States and South Africa under the Apartheid regime,
- **aware that** these technologies have been used in gross violation of human rights, aware of government complicity in these transactions that have been formally banned by the governments concerned, for example ICL Technical Plastics in Glasgow, which produces electroshock weapons ,

1. Requests a statement from the governments concerned regarding the allegations;

2. Urges support for Amnesty International's call for a full investigation into the extent of the trade in the EU;

3. Calls on the Commission to bring forward proposals to incorporate those technologies within the scope of arms export controls and ensure greater transparency in the export of all military security and police technologies to prevent the hypocrisy of governments who themselves breach their own export bans;

4. Instructs the President to forward this resolution to the Council, the Commission and the EU Member State Governments.

162. For further details, see Ballantyne, 1996.

163. Amnesty International Danish Medical Group, 1987.

164. The image used in Fig.46 was taken by this man and supplied to Amnesty International.

165. For example AB Electronics (electronic restraint devices); AFY Distributors (electroshock batons);Amazing Concepts (Intimidator electric shock weapons);; Armas No Mortales (electroshock weapons); B.West Imports (paralyser Stun Batons); Custom Armouring Corp (Nova Electronic riot equipment); Federal Laboratories Division(Electronic batons); Hiatt Thompson (restraint devices); Nova Technologies (electronic restraint and stun devices); Paralyzer Protection (electric shock stun guns and batons); Ranger Joes (stun guns); Reliapon Police Products (Nova Electronic restraints and shields); S. & J. Products (electronic restraint devices); SAS R&D Services (electronic batons); Sherwood Communications Associates UD(Equaliser and Lightning stun guns); Stun Tech Inc (Electronic immobilisation weapons and the REACT belts); Taser Industries (electronic dart shock weapons); The Edge Company (Thunderbolt stun gun); American Handcuff Co., (leg irons); C&S Security (gang transport chains); Smith & Wesson (belly chains and other restraining equipment); Technipol International (leg irons and thumbcuffs); Tobin Tool and Die (shackles); WS Darley (leg irons and belly chains) - to name but a few companies who have advertised their wares. This information has been collected from company brochures, Police & Security News

(various volumes) and Thomas Register (1992).

166. Confirmation of these fears was provided by a secret list of licenses issued by the Commerce Department over the last decade that was obtained by the US magazine 'Counterpunch', (October 1, 1995), that was not made available to FAS. It cited Air Parts International's export to Yemen of shock batons with high voltage, Creative Security's export of shock batons to Saudi Arabia; Jonas Aircraft and Arms export of saps - (lead bludgeons covered with leather) to Egypt and shock batons to Saudi Arabia in 1992; Nova Technologies export of electronic stun guns to the Philippines; Premier Crown Corporation's export of twenty six inch shock batons with hot centre to Saudi Arabia; Smith & Wesson's export of shock batons and mace batons to both Saudi Arabia & Yemen; Transtechnology Corporation's export of riot shields with Arabic inscription to Yemen; and Tri County Police Supplies export of shock batons to Thailand.

72

167. On November 13, 1995, The US Secretary of Commerce informed the speaker of the House, Newt Gingrich, that he had disaggregated these items to form a new ECCN. OA83D on the Commerce Control List. Commerce also added a new section to the Export Administration Regulations. Section 776.19, "Implements of Torture" to further segregate these items. (Brown, 1995). Yet even after this review took place, it was disclosed that the US government had approved the sale of thumbcuffs to Russia; blackjacks, stun guns and shock batons to Lithuania, Moldova, Panama and Tanzania; and electronic riot shields and batons to Mexico.(Lelyveld, 1996).

168. Amnesty is careful to point out in its reports that it is not making any accusation against any company of direct complicity in torture but that these companies have offered to supply since 1990. It is not a definitive list because of the difficulty in obtaining data on the subject in many countries and because of the inevitable business and market changes.

169. The Belgium companies are thought to be Belgium Business International (BBI), Browning and Falcon Security & Telecommunications. In June 1996, De Morgen newspaper quoted a BBI salesman, 'We work via other countries like Spain or no . . . the easiest is Paris. But if you have your own transitaire [middleman] we just deliver to them..We have several models. The most useful is no bigger than two packs of cigarettes and gives shocks of 150,000 volts. The problem with this type of weapon is that you have to stretch your arm to come into contact with the enemy. That's why I advise the mattracks [truncheons] with two electrodes at the end - ideal for riot police or presidential guards. Even last year, the central African Presidential Guards were equipped with this. Yes, Belgium is rather strict, but Africa and Latin America permit us to just export it to a middle man and then we have it depart from there.'

170. The French companies are thought to be Auto F; Doursoux -Securitec s.a.r.l; Equipol; France Selection; GK Productions; Glam Securite; Le Protecteur; Nieral & Cie Sarl and SAE Alsetex (See Fig. 53).

171. The German companies are thought to be Bonowi; Electron-Import & Export; Enforcer (Pulz & Charbit) GmbH; M.S.C; M.T.S.; M.V.S.; NOWAR Security Equipment GmbH; Otto Boenicke; PK Electronic; Rennhak Nachtsichtsysteme; Sicherheitstechnik Schmid (STS); Sipe Electronic GmbH; Solid Company Sicherheitstechnik Import & Export; TEWI Textil Wighardt; Tradimex Vertriebs GmbH; Waffenhandel Uwe Ulriche; Wapo Electronic GmbH.

172.The company referred to is thought to be Alpha Safety which advertised such products in 1993 but is thought to be no longer trading.

173. The company referred to is thought to be Reinaert Electronics.

174. The company referred to is thought to be NitSpy Defensa Y Contraespionaje.

175. The companies referred to were largely uncovered by the Channel 4 Dispatches programmes, referred to in the text. (Gregory 1995,1996) They include British Aerospace Defence Ltd (Royal Ordnance Division); CCS Communication, Control Inc; Compass Safety International; ICL Technical Plastics UD; International Procurement Services; J & S Franklin UD; PK Electronic International UD; SDMS Security Products UD.

73

JYA Note: A detailed [Bibliography](#) composed of pages 74-100 is a separate file (85K); or a [Zip-compressed version](#) (32K).

STOA PROGRAMME

**European Parliament
Directorat-General for Research
Directorate B**

SCH 4/81	EAS 12
L-2929 Luxembourg	Rue Belliard 97-113
	B-1047 Bruxelles
Tel: +352 4300 22511	Tel: +32 2 284 43748
Fax: +352 4300 22418	Fax: +32 2 284 49059

[End STOA document]

To get a hardcopy of the report (112 pages) send a fax request to Scientific and Technological Options Assessment (STOA) in Luxembourg:

Fax number: 352-4300-22418

No electronic version is available from STOA. Draft reports remain in paper format until finalized by the European Parliament. For information see STOA's publications Web site:

<http://www.europarl.eu.int/dg4/stoa/en/publi/publi.htm>

Transcription and hypertext by [JYA/Urban Deadline](#)